

THỎA THUẬN
“СОГЛАСОВАНО”
Phó Tổng Giám Đốc phụ trách XDCB
Зам. Генерального Директора по
капитальному строительству

Signed by: Đặng Đức Phong
Date: 08/10/2025 10:27:02
Certified by: Vietsovpetro CA

Đặng Đức Phong

PHÊ DUYỆT
“УТВЕРЖДАЮ”
Tổng giám đốc Vietsovpetro
Генеральный Директор

Signed by: Vũ Mai Khanh
Date: 08/10/2025 16:13:58
Certified by: Vietsovpetro CA

Vũ Mai Khanh

THỎA THUẬN
“СОГЛАСОВАНО”
Phó Tổng giám đốc phụ trách thương mại
Зам.Ген.директора СП
по коммерческой работе

Signed by: Trần Quốc Thắng
Date: 08/10/2025 14:59:45
Certified by: Vietsovpetro CA

Trần Quốc Thắng

PHÊ DUYỆT
“УТВЕРЖДАЮ”
Phó Tổng giám đốc thứ nhất
Первого Зам.Ген.Директора

Signed by: Сараев Олег Петрович
Date: 08.10.2025 15:35:07
Certified by: Vietsovpetro CA

Сараев О. П.

HỒ SƠ MỜI THẦU **ДОКУМЕНТЫ ПРИГЛАШЕНИЯ НА ТЕНДЕР**

Gói thầu / пакета: **Thiết bị hệ thống điều khiển và thiết bị báo khí, báo cháy cho giàn RC-12 /**
Инструментальное оборудование и детекторы для проекта RC-12.

Số hiệu gói thầu: **VT-2965/25-XL-DA-HMH.**

Loại gói thầu / Вид тендерного пакета: **Mua sắm hàng hóa / На приобретение товаров.**

Đơn hàng số / Заявка No.: **VT-2965/25-XL-DA.**

Gói thầu này áp dụng theo: “Quy chế về thể thức mua sắm hàng hóa và thuê dịch vụ để đảm bảo tính liên tục cho sản xuất và duy trì hoạt động thường xuyên của Liên doanh Việt – Nga Vietsovpetro số VSP-000-TM-238, phiên bản 02, sửa đổi số 01 hiệu lực ngày 01/01/2025”.

Применяется Положению: Данный тендерный пакет применяет “Положение о порядке приобретения товаров и услуг для обеспечения непрерывности хозяйственно-производственной деятельности и поддержания постоянной работы СП “Вьетсовпетро” № VSP-000-TM-238, версия 02, редакция 01, вступает в силу с 01/01/2025г.”

I. DANH MỤC HỒ SƠ MỜI THẦU TRÌNH PHÊ DUYỆT - TENDER DOCUMENTS:

Description of content:

Part 1. BIDDING PROCEDURES

Chapter I. Instructions to bidders



Chapter II. Bid data sheet
Chapter III. Evaluation criteria
Chapter IV. Bidding forms

Part 2. TECHNICAL REQUIREMENTS

Chapter V. Technical requirements

Part 3. CONDITIONS OF CONTRACT

Chapter VI. General conditions of the contract

Chapter VII. Special conditions of the contract

Part 4. CONTRACT FORMS

Part 5. APPENDIX

II. DANH MỤC ĐÍNH KÈM - ПРИЛОЖЕНИЯ:

1. Đơn hàng số: **VT-2965/25-XL-DA.**
2. KHLCNT đã được Lãnh đạo Vietsovpetro phê duyệt.

Tổ chuyên gia xét thầu / Руководство рабочей группы экспертов:

Tổ trưởng tổ chuyên gia

Phó phòng Thương mại

Руководитель рабочей группы экспертов

Зам. Начальника КО СП

Signed by: Nguyễn Quốc Thành

Date: 29/09/2025 15:31:09

Certified by: Vietsovpetro CA

Nguyễn Quốc Thành

Tổ phó TCG phụ trách kỹ thuật:

Phó Giám Đốc XN Xây lắp

Зам.Руководителя группы по тех.вопросам

Зам. Директора ПСОРОНГД

Signed by: Nguyễn Thế Văn

Date: 29/09/2025 11:01:38

Certified by: Vietsovpetro CA

Nguyễn Thế Văn

Thành viên Tổ chuyên gia / Члены рабочей группы:

ПСОРОНГД:

Nguyễn Mạnh Hoàng

Signed by: Nguyễn Mạnh Hoàng

Date: 25/09/2025 08:33:47

Certified by: Vietsovpetro CA

Lưu Sùng Bá

Signed by: Lưu Sùng Bá

Date: 24/09/2025 15:37:44

Certified by: Vietsovpetro CA

Mai Văn Trần Minh Quân

Signed by: Mai Văn Trần Minh Quân

Date: 24/09/2025 14:39:00

Certified by: Vietsovpetro CA

OKC СП:

Ngô Đình Minh

Signed by: Ngô Đình Minh

Date: 24/09/2025 14:46:18

Certified by: Vietsovpetro CA

MЭОиА СП:

Huỳnh Lê Thiện Chinh

Signed by: Huỳnh Lê Thiện Chinh

Date: 26/09/2025 13:54:08

Certified by: Vietsovpetro CA



BO CP:

Trần Sơn Tùng

Signed by: Trần Sơn Tùng
Date: 29/09/2025 10:01:55
Certified by: Vietsovpetro CA

KO CP:

Hồ Mai Hương

Signed by: Hồ Mai Hương
Date: 24/09/2025 14:37:46
Certified by: Vietsovpetro CA



INVITATION TO BID

Bidding package No. VT-2965/25-XL-DA-HMH

Title of bidding package: Instruments and Detectors Package

Nam of the Project: RC-12 WellHead Platform

Issued on: Date: / / 2025 to 09:00 AM date / / 2025

Bid closing time: 09:00 AM date / / 2025

Issued including

Decision: ITB No. /25-HSMT-PTM/BMĐH approved / /2025



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Chapter V. Technical requirements

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Part 4. APPENDICES



BRIEF DESCRIPTION

Part 1. BIDDING PROCEDURES

Chapter I. Instructions to bidders

This Chapter provides information to help bidder in preparation of Bid Proposal. Information includes rules of preparation, submission of Bid Proposal, bid opening, bid evaluation and contract award. Chapter I contains provisions that are to be used without modification.

Chapter II. Bidding data sheet

This Chapter specifies in detail contents of Chapter I for applying for each bidding package.

Chapter III. Bid proposal evaluation criteria

This Chapter includes criteria for evaluation of Bid Proposal.

Chapter IV. Bidding forms

This Chapter includes forms that bidder shall complete to form a part of Bid Proposal.

Part 2. TECHNICAL REQUIREMENTS

Chapter V. Technical requirements

This Chapter includes scope, progress of goods supply, technical requirements, drawing for description the specification of goods and related services; contents on inspection and testing of goods (if any).

Part 3. TERMS AND CONDITIONS OF CONTRACT AND CONTRACT FORMS

Chapter VI. General Conditions of Contract

This Chapter includes general conditions applied for all contracts of various bidding packages. Chapter VI contains common provisions that are completed by awarded bidder before contract comes into effect.

Chapter VII. Particular Conditions of Contract

This Chapter includes contract data and specific conditions, which specifies detailed conditions for each contract. Particular conditions of contract are to be modified and supplemented but not to replace general conditions of Contract.

Chapter VIII. Contract forms

This Chapter includes forms which, once completed, shall become integrated part of contract. Forms of contract performance guarantee (Performance Bond) and Advance payment guarantee (if any) are completed by awarded bidder before contract comes into effect.

Part 4. APPENDICES

- Attachment 01: Scope of supply
- Attachment 02: Technical requirements
- Attachment 03: Technical evaluation criteria
- Other technical documents, ... with link for reference (if any).



ABBREVIATION

ITB	Instructions to Bid
BDS	Bid data sheet
GCC	General conditions of contract
PCC	Particular conditions of contract
VND	Vietnam Dong
USD	US Dollar
EUR	European currency



Part 1. BIDDING PROCEDURES

Chapter I. INSTRUCTIONS TO BIDDERS

1. Scope of bid	1.1. Employer as specified in the Bid Data Sheet (BDS) issues this Invitation to Bid for selection of Bidder to implement bidding package for procurement of goods following single-stage one-envelope procedure. 1.2. Title of the bidding package; number, quantity of parts (in case bidding package is divided into many independent parts) belongs to bidding package as specified in BDS.
2. Explanation of terms used in bidding	2.1. The Deadline for bid submission is the deadline for submission bids and is specified in the Invitation to Bid. 2.2. Day refers to Gregorian calendar day, including weekends, holidays, and Tet holidays according to the provisions of labor law. 2.3. Time and day, month on the national bidding network shall be defined time and day, month published the national bidding network (GMT+7).
3. Source of funds	Source of funding (or method of capital arrangement) for bidding package as specified in BDS .
4. Prohibited acts in bidding	4.1. Offering, giving, receiving or taking a bribe. 4.2. Abusing positions or entrusted power to influence or illegally intervene in bidding process in any form. 4.3. Collusive practice, including: a) Reaching, with or without undue influence, an arrangement or agreement which is designed to let one or more parties to prepare bids for all bidders or to withdraw submitted bids so that one of them will win the bid; b) Reaching an arrangement or agreement on refusal to supply goods or services, or subcontract, or reaching other agreements to limit competition so that one party will win the bid; c) A bidder or investor with appropriate qualifications and experience has submitted a bid and meets the requirements laid down in the Invitation to Bid but deliberately refuses to provide additional documents proving their capacity and experience at the Vietsovetro's request for clarification of the bid or verification of their submitted documents with the aim of facilitating one party's winning of the bid. 4.4. Fraudulent practice, including: a) Forging or falsifying information and/or documents used in bidding; b) Deliberately providing information and documents which are not accurate or objective in bids or proposals with the aim of falsifying the contractor selection result. 4.5. Obstructive practice, including: a) Destroying, deceiving, altering or concealing of evidence or making false statements; threatening, harassing or intimidating any party to prevent the verification or investigation into a corrupt,



	fraudulent or collusive practice made with a supervision, inspection or audit authority; b) Obstructing the competent person, employer, Vietsovpetro, bidders in the course of contractor selection; c) Impeding competent authorities' rights of supervision, inspection or audit of bidding activities; d) Deliberately making false complaints, denunciations or petitions with the aim of impeding bidding process; e) Acts of violation against laws and regulations on cybersecurity and safety intended to intervene or impede the online bidding process. 4.6. Inequality and non-transparency, including: a) A bidder of a package or investment project is also the Vietsovpetro or employer or takes charge of performing tasks of the Vietsovpetro or employer of that package or investment project, violating against the regulations stated in Point 5 ITB; b) A person or entity concurrently engages in the preparation and appraisal of Invitation to Bid, or RFP of the same package or investment project; c) A person or entity concurrently engages in the evaluation of bids or proposals and the appraisal of the contractor selection result of the same package or investment project; d) A person who is working for the Vietsovpetro/employer directly engages in the contractor selection, or acts as a member of the expert team or appraising team in charge of appraising the contractor selection result, or is a competent person or head of the Vietsovpetro/employer, for a package or investment project for which his/her family relative, as defined in the Law on enterprises, directly submits a bid or acts as the legal representative of a bidder; e) A bidder submits a bid for a procurement, construction or non-consulting service package for which the bidder is also acting as a consultant on preparation, verification and appraisal of cost estimate, technical design, building drawings and designs, front-end engineering design (FEED); preparation and appraisal of Invitation to Bid; evaluation of bids; inspection of goods; appraisal of contractor selection result; supervision of contract execution; f) A person acts as a bidder for a package of a project or investment project of the Vietsovpetro or employer for which he/she worked and held the executive or managerial position within 12 months from the date of his/her resignation therefrom; g) A supervision consultant also acts as the inspection consultant of the same package; 4.7. Unauthorized disclosure of the following information and documents on the contractor/investor selection: a) Contents of bidding documents before they are issued as prescribed; b) Contents of Bids, notebooks, minutes of bid evaluation meetings, comments and evaluations for each Bids before publishing



	contractor selection result; c) Content of request for clarification of Bid proposals of the Vietsovpetro and responses of bidders during the evaluation process of Bid proposals before publishing the bidder selection result; d) Report of the Vietsovpetro, report of the Expert Group, appraisal report, report of consulting bidder, report of relevant professional authorized organization during the bidder selection process before publishing the bidder selection result; e) The bidder selection result before being published according to regulation as prescribed. 4.8. Illegal transfer of awarded contract: The contractor transfers to other contractor(s) a workload of task of the package worth more than 10% of package value; or worth less than 10% of package value but more than 02 million USD (after deducting the workload of the subcontractor's responsibility as declared in the contract), calculated on the signed Contract price.
5. Eligibility of bidders	A bidder that is an organization shall be deemed to be eligible if complying the following requirements: a) It is required to have registration of establishment and operation issued by the competent authority of the country where the bidder is operating; b) It must keep independent accounting records; c) It is not undergoing dissolution process or subject to revocation of enterprise registration certificate, cooperative/cooperative union/artel registration certificate; is not facing insolvency as prescribed by the law on bankruptcy; d) It must ensure competitiveness in bidding as prescribed in Point BDS; e) It is not being prohibited from participating in bidding; f) It is not liable to criminal prosecution; g) It is not the state of temporary suspension, termination of participation in national bidding network; h) It is name is registered on National bidding network before the grant of approval for contractor selection result as prescribed in BDS.
6. Contents of Invitation to Bid	6.1. The Invitation to Bid consists of Parts 1, 2, 3, 4 accompanied with documents of Bid Proposal amendment as specified in ITB 7 (if any) including as follows: Part 1. Bidding Procedures: - Chapter I. Instructions to Bidders (ITB); - Chapter II. Bidding Data Sheet (BDS); - Chapter III. Bid Proposal Evaluation Criteria; - Chapter IV. Bidding Forms. Part 2. Technical Requirements: Chapter V. Technical Requirements.



	Part 3. Conditions and Forms of Contract: This part includes the terms, conditions, data and forms that constitute the complete contract. Part 4. Appendices 6.2. Vietsovpetro is not responsible for the preciseness, completeness of the Invitation to Bid, explanation for clarification documents or amendment of Invitation to Bid as prescribed in ITB 7 if these documents are not provided by Vietsovpetro. In case of any contradiction, documents issued by Vietsovpetro shall prevail. 6.3. The bidder shall examine all instructions, forms, supply requirements and other requirements in the Invitation to Bid for preparation Bid Proposal including all information or documentation as required by the Invitation to Bid.
7. Clarification and amendment of Invitation to Bid	7.1. The amendment of the Invitation to Bid shall be made as prescribed in BDS prior to the deadline for submission of bid proposal by issuing the written documentation for amendment in accordance with the methods as prescribed in BDS. To give bidders reasonable time in preparing their bid proposal, Vietsovpetro may, at its discretion, extend the deadline for the submission of bid proposals. 7.2. Any bidder who needs clarification of the ITB shall send a written request to Vietsovpetro in a minimum period of time as prescribed in the BDS prior to date of Deadline for bid submission in order that Vietsovpetro shall take consideration. After receiving the written request for clarification by the deadline, Vietsovpetro shall make a written clarification response in a minimum period of time as prescribed in BDS, that specifying clarification content request without specifying the name of the requesting bidder, and send it to every bidder who have received the ITB from the Vietsovpetro. If the clarification leads to amendment ITB, Vietsovpetro shall amend the ITB in accordance with ITB 7.1. 7.3. If necessary Vietsovpetro hold pre-bidding conference to discuss the contents in Bidding Document in which the bidders are unclear as stipulated in BDS. Vietsovpetro shall send an invitation to the pre-bidding conference to all contractors who have received the Invitation to Bid and post it on the System. The discussion shall be formally recorded as minutes of clarification which shall be sent to all bidders who have bought or acquired Invitation to Bid from Vietsovpetro. 7.4. In case the Invitation to Bid is required to be modified after the pre-tender conference, Vietsovpetro shall issue a written document for amendment as specified in ITB 7.1, minutes of pre-bidding conference is not the amendment of Invitation to Bid. 7.5. No participation in pre-bidding conference or without a confirmation letter that bidder having participated in pre-bidding conference is not the reason to reject the Bid proposals' bidder.
8. Cost of bidding	The bidder shall bear all costs associated with the preparation and submission of its Bid Proposal. Vietsovpetro shall not be liable for those cost under any circumstances.



9. Language of Bid Proposal	The bid proposal, as well as all correspondence and documents relating to the bid proposal exchanged by the bidder and Vietsovpetro, shall be written in English. Any supporting documents in bid proposal can be written in other languages and concurrently attached with translation in English. In case of no translation, if necessary, Vietsovpetro may ask bidder for supplementation of documents.
10. Documents comprising the Bid Proposal	The Bid Proposal shall comprise of the following: 10.1. Application for bidding in accordance with ITB 11; 10.2. Consortium agreement in case the bidder is Consortium in accordance with Form 03, Chapter IV – Bidding forms; 10.3. Bid Bond, in accordance with ITB 18; 10.4. Proof documents for eligibility of bidder in accordance with ITB 5; 10.5. Proof documents for eligibility of signatory under the application for bidding, in accordance with ITB 20.3; 10.6. Proof documents for capacity and experience of bidder, in accordance with ITB 16; 10.7. Technical proposals and proof document for adequacy of goods and related services, in accordance with ITB 15; 10.8. Price proposals and price schedules with full information, in accordance with ITB 11, 13; 10.9. Proposals of technical alternatives, in accordance with ITB 12 (if any); 10.10. Other contents as specified in BDS.
11. Application for bidding form and price schedules	The application for bidding form and respective price schedules shall be prepared using the relevant forms furnished in Chapter IV, Bidding Forms.
12. Proposals of technical alternatives	12.1. In case Invitation to Bid stipulates in BDS for probability of technical alternatives, then those technical alternatives shall be considered. 12.2. Technical alternatives are only considered when main solution meets requirements and bidder is ranked first. In this case, bidder shall provide all information necessary for evaluation of the alternatives by Vietsovpetro, including: notes, drawings, technical specifications, progress of supply, costs and other relevant information. The evaluation of technical alternatives in accordance with Section 5, Chapter III.
13. Bidding prices and discounts	13.1. Bidding price stated in the Application for bidding and in the bidding price tables with discounts must comply with the regulations as specified in this Section: a) The bidding prices means the price stated in Application for bidding, including all costs for implementation of bidding package (not including discounts). b) In case the bidding packages is not divided into independent parts, on condition that bidder offers discount, this can be offered directly in Application for Bidding or put in separate letter for



	discount. Bidder has to specify the content of discount and details of discount allocation into specific items in columns of “List of goods”, “Services description”. In case details are not provided, the discount is assumed to apply uniformly for all items in the columns of “List of goods”, “Services description”. Letter for discount (if any) can be submitted with Bid Proposal or separately provided that Vietsovpetro receive prior to Deadline for bid submission. c) Bidder shall submit Bid Proposal for all work described in ITB 1.1 and offer unit prices, extended amount for work specified in columns of “List of goods”, “Services description” in accordance with respective Form prescribed in Chapter IV – Bidding forms. In case columns “Unit price” and “Extended amount” are not offered or offered “0”, it is assumed that bidder allocates prices of these goods and services into others prices of those in bidding package, bidder is responsible to provide goods, services in accordance with requirements of Invitation to Bid and not receive payment from Vietsovpetro during implementation of contract. Bidder is required to offer prices in each Price schedules as prescribed in BDS. 13.2. In case bidding package is divided into independent parts and bidder is allowed bidding in each part specified in BDS, bidder is able to bid for one or many parts of bidding package. Bidder has to bid all work of such part which the bidder attends. Should the bidder offer discount, bidder shall specify details and prices of discount in each part as per ITB 1.2. 13.3. The bidder shall be responsible for the bidding price quoted to perform and complete the work in accordance with the requirements as stated in the Invitation to Bid. In case the bidder offer a low unit price in abnormal manner which affecting to the quality of the bidding package, the Vietsovpetro may require the bidder to clarify the feasibility of such abnormal unit price. 13.4. Bidder’s bidding price quoted shall include all taxes, fees and charges (if any) in response to tax rates, expenses, fees at the time of 28 days prior to the stipulated deadline for bid submission. In case bidders announce bidding prices not including taxes, fees, charges (if any), bidders’ Bid Proposal shall be rejected. 13.5. Bidders offer the bidding price as stipulated in BDS.
14. Currencies of Bid and payment	14.1. The currency of the bid shall be offered in VND/ USD/ EUR. Cost incurred inside Vietnam shall be offered in VND. Cost incurred outside Vietnam shall be offered in VND/ USD/ EUR. Bidders have to offer by only one currency for a specific work. In case bidding price is offered in foreign currency, bidder has to prove that the respective work has been using foreign currency. 14.2. The currency of payment for work items shall correspond with the currency of bid for those items. Domestic costs are only paid in VND. 14.3. The currency for conversion of different bidding prices from various currencies into unique currency for evaluation and comparison is: VND/USD applying the selling rate stated by



	Vietcombank on the date when the bid is closed. If all bidding prices are in foreign currency, then bid evaluation and comparison shall be done in USD. In the event that one of bidding prices is in VND, then bid evaluation and comparison shall be done in VND. 14.4. Without prejudice to any terms mentioned above and relevant applicable laws, contract currency for domestic bidders shall be in VND, applying the selling rate stated by Vietcombank on the date when the bid is closed.
15. Documents establishing the conformity of the Goods and related services	15.1. To establish the eligibility of the goods and related services in accordance with Invitation to Bid, the bidder shall furnish as part of its Bid Proposal the documentary evidence that the goods conform to the technical specifications and standards specified in Chapter V. 15.2. The term “Goods” is construed including but not limited to machinery, equipment, raw materials, fuel, materials, supplies, accessories; consumables; medical supplies used for medical establishment. 15.3. The term “origin” shall mean as country or territory where produces whole goods or implements final basic processing in case many countries or territories take part in production process of those goods. 15.4. The term “Related Services” including but not limited to the Services such as: warranty, maintenance, overhaul, repair, supply of spare parts or supply of other after sales services like training, technology transfer, ... 15.5. The documentary evidence responsiveness of the goods and related services may be in the form of documents, drawings, data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the goods and related services, demonstrating substantial responsiveness of the goods and related services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Chapter V. 15.6. The bidder shall also provide a list giving full particulars, current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods during the period specified in the BDS following commencement of the use of the goods. 15.7. Standards for manufacturing, production process of material and equipment, as well as references to brand names or catalogue numbers specified by Vietsovpetro in the Chapter V, are intended to be descriptive only and not restrictive to bidder. The bidder may offer other standards of quality, brand names, catalogue numbers, provided that it demonstrates, to Vietsovpetro’s satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Chapter V.
16. Documents establishing the capacity and	16.1. The bidder shall provide necessary information in Forms in Chapter IV – Bidding Forms in order to demonstrate capacity and experiences for performance of contract as specified in Chapter III



experiences of the bidder	– Bid Proposal evaluation criteria. The bidder shall prepare original documents for verification with information stated in bidder’s Bid proposal if Vietsovpetro requires. 16.2. The documentary evidence of the bidder’s capacity to perform the contract if its bid proposal is awarded as specified in BDS.
17. Period of validity of Bid Proposal	17.1. Bid Proposal shall remain valid not shorter than the period specified in the BDS. 17.2. In exceptional circumstances, prior to the expiration of the bid proposal’s validity period, Vietsovpetro may request bidders to extend the period of validity of their Bid Proposal. The Bid Bond as also requested shall be extended for 30 days beyond the deadline of the extended validity period. If a bidder refuses to extend its Bid Proposal validity as required, the Bid Proposal shall not be further considered and the Bid Bond shall be returned to bidder. The bidder have accepted Vietsovpetro’s extension request shall not be permitted to modify any contents of its Bid Proposal. The extension request and acceptance or non-acceptance shall be in writing.
18. Bid Guarantee	18.1. When attending the bid, prior to deadline for bid submission, the bidder shall implement bid guarantee and attach it to Bid proposal under the following forms: i) a form unconditional guarantee issued by a bank or financial institution which is legally operating in Vietnam or foreign bank branches established under Vietnamese law; ii) submit a certificate of insurance guarantee issued by a domestic non-life insurance enterprise, or branch of a foreign non-life insurance enterprise established under the Vietnamese law; iii) pay a deposit or bank transfer to VSP’s account as specified in BDS 18.2. In case the validity of Bid proposal is extended as specified in ITB 17.2, the Bid bond’s validity shall be accordingly extended. In case of consortium bidder, all partners of consortium shall implement the same form of Bid bond. In case of Consortium, the Bid Bond shall comply with one of the following: a) Each Consortium partner shall provide a separate Bid Bond; however, the aggregate amount of Bid Bond submitted by all Consortium partners is not less than the required amount specified in ITB 18.2. If the Bid Bond of any Consortium partner is determined to be invalid, the bid of the Consortium shall not be considered and evaluated further. If any Consortium partner is in breach of the rules resulting in without return of Bid Bond in accordance with point b ITB 18.5, then Bid bond of all Consortium partners shall not be returned. b) All partners of the Consortium shall nominate one partner to arrange a single Bid Bond for itself and all other partners in the Consortium. In this case, the Bid Bond shall be in the name of the Consortium or the name of the partner who arranges the Bid Bond



	for the entire Consortium provided that the total amount is not less than the required amount in BDS of ITB 18.2. If any Consortium partner is in breach of the rules resulting in without return of the Bid Bond in accordance with ITB 18.5, the Bid Bond shall not be returned. 18.2. Amount, currency and valid period of the Bid Bond shall be as specified in the BDS. 18.3. The Bid Bond shall be considered illegitimate in one of following cases: having lower value, with shorter valid period as specified in ITB 18.2, incorrectly states the name of the beneficiary, not original and without legitimate signature, signed before Vietsovpetro issues the Invitation to Bid or accompanied with adverse condition for Vietsovpetro (including not fully committed with content of the Bid Bond Forms – 04A, 04B, 04C in Chapter IV). In case of using a letter of guarantee or certificate of insurance, the letter of guarantee or certificate of insurance must be provided, signed and stamped (if applied) by one of the following: a lawful representative of a domestic credit institution, a branch of a foreign bank established under Vietnamese law, a domestic non-life insurance enterprise, a branch of foreign non-life insurance enterprise established under Vietnamese law. In case of using a letter of guarantee (of deposit/transfer to Vietsovpetro's account), the letter must be signed and stamped by the legal representative of the contractor. 18.4. Unsuccessful bidder shall be returned or released the Bid Bond in the maximum duration specified in the BDS since the date for notification of result of selecting bidder. For successful bidder, the Bid Bond shall be returned or released after the bidder furnishes the contract performance guarantee. 18.5. The Bid Bond shall not be returned in one of following cases: a) After the deadline for submission of bids and during the validity period of the bid, the bidder withdraws their Bid proposals or gives a written refusal to perform one or some tasks proposed in their Bid proposals in accordance with the requirements laid down in the Invitation to Bid; b) The bidder performs any of the prohibited acts specified in Point 4 ITB or commits violations of the bidding law resulting in bid cancellation as prescribed in Point 32 ITB; c) The successful bidder fails to furnish the required performance security as prescribed Point 37 ITB; The first ranked bidder is invited to negotiate the Contract. Within seven (07) days from the date of receipt of the invitation to negotiate the Contract from Vietsovpetro, the bidder does not come to negotiate or refuses to negotiate the Contract or offers conditions different from the content in the Bid Proposals or withdrawing commitments in the Bid Proposals resulting to unsuccessful Contract negotiations, the Bid bond shall be not returned to bidder, except in cases of force majeure; d) The bidder fails or refuses to complete the Contract within



	twenty (20) days from the date of receipt of notification of Bid award from Vietsovpetro, except in cases of force majeure; e) The bidder refuses to sign the Contract within ten (10) days from the date of completion of the Contract, except in cases of force majeure. 18.6. In case the Invitation to Bid is divided into independent parts, bidder may submit the bid bond in either of the two ways as follows: a) A bid bond for all parts that bidder participate in the bidding (the value of bid bond will be equal to the total values of the parts that bidder takes part in). Where the value of bid bond submitted by the bidder is less than the total of values, Vietsovpetro is entitled to decide the application of such bid bond to the parts that bidder takes part in; b) Separated bid bonds for each part that bidder takes part in the bidding. Where the bidder's breach results in a failure to refund the bid bond as stipulated in section ITB 18.5, the failure to refund the value of bid bond shall be calculated on the part violated by the bidder.
19. Deadline for bid submission	19.1. The deadline for bid submission is the time specified in the BDS. 19.2. Vietsovpetro may at its discretion, extend the deadline for the submission of Bid Proposal by amending the Invitation to Bid in accordance with ITB 8, in which case all rights and obligations of Vietsovpetro and bidders previously subject to the deadline shall thereafter be subject to the new deadline as extended. 19.3. The bidder submits directly or delivers the Bid Proposal to Vietsovpetro address provided that it arrives before deadline for submission of bid specified in the BDS. Vietsovpetro receive Bid Proposal of all bidders before deadline for submission of bid, including even if bidder has not bought or received the Invitation to Bid from Vietsovpetro. In such case, the bidder shall pay an amount equal to the selling price of the Invitation to Bid to Vietsovpetro account prior to the Bid Proposal is received and before the deadline for bid submission.
20. Submission, withdrawal, substitution and amendment of Bid Proposal	20.1. The bidder shall prepare Bid Proposal comprising: one original as specified in ITB 10 and some copies with amount mentioned in the BDS. The cover of dossier shall be marked clearly “ORIGINAL OF BID PROPOSAL”, “COPY OF BID PROPOSAL”. In case of amendment, alternative of Bid Proposal, the bidder shall prepare one original and some copies of dossier with amount specified in the BDS. The cover of dossier shall be marked clearly “ORIGINAL OF AMENDED BID PROPOSAL”, “COPY OF AMENDED BID PROPOSAL”, “ORIGINAL OF ALTERNATIVE”, “COPY OF ALTERNATIVE”. In case of technical alternative in the Bid Proposal specified in ITB 12, the bidder shall prepare one original and some copies with



	amount mentioned in BDS. The cover of dossier shall be marked clearly “ORIGINAL OF TECHNICAL ALTERNATIVE”, “COPY OF TECHNICAL ALTERNATIVE OPTION”. 20.2. Bidders shall be responsible for the appropriateness of the copies compared to the original. In case of deviation between original and copy but without changing the bidder ranking, the original shall be used for evaluation. In case of deviation between original and copy leading to different results in evaluation of original and the copy, and resulting change in the bidder ranking, the Bid Proposal of that bidder shall be rejected. 20.3. The original of Bid Proposal shall be typed, printed with inerasable ink, with continuous page numbers. The application for bidding form letter, letter of discount (if any), supplementary documents, clarifying the Bid Proposal, price offer list and other forms in Chapter IV – Bidding forms shall be signed and stamped by the bidder's legitimate representative or the bidder’s legitimate attorney (if any), in case of attorney, letter of attorney specified in Form 02, Chapter IV – Bidding forms or certified copy of company charter, decision on establishment of branch or other documents to demonstrate power of attorney shall be submitted with the Bid Proposal. 20.4. In case of Consortium bidders, Bid Proposal shall be signed by legal representative of all partners in Consortium or legal partner representating Consortium bidders according to Consortium agreement. In order that all partnerss of Consortium to be legally bound, Consortium agreement must be signed by legal representatives of all partners of Consortium. 20.5. Any words added, written between lines, erased, overwritten shall only be deemed legitimate if having signature nearby or in that page of signatory on the application for bidding letter. 20.6. The envelope of Bid Proposal comprises of original and copies, duly marking “BID PROPOSAL”. In case of amendment, alternative of Bid Proposal, then the amended, alternative document (including original and copies) shall be placed in separated envelopes other than the envelope for Bid Proposal, clearly marking “AMENDMENT OF BID PROPOSAL”, “ALTERNATIVE BID PROPOSAL”. In case the bidder proposes an alternative technical plan, the entire alternative technical plan, including technical proposals and price proposals, must be contained in separate envelopes from the Bid Proposal envelop, the outside must clearly state "PROPOSED ALTERNATIVE TECHNICAL OPTION". The envelopes: for Bid Proposal; amended Bid Proposal, proposed alternative technical options (if any) must be sealed. Sealing method is according to the bidders' own regulations. 20.7. The envelopes shall: a) bear the name and address of the bidder; b) be addressed to Vietsovpetro in accordance with BDS;



	c) bear title of bidding package in accordance with ITB 1.2; d) bear a warning “not to open before the time and date for bid opening”. 20.8. The bidder shall be responsible for aftermath or disadvantages if is not in accordance with this Invitation to Bid such as not sealing or losing seal of Bid Proposal during delivery to Vietsovpetro, not marking right information on envelopes of Bid Proposal as specified in ITB 20.6 and ITB 20.7. Vietsovpetro shall not be responsible for confidentiality of information in Bid Proposal if the bidders do not comply with above requirements. 20.9. Vietsovpetro shall not consider any Bid Proposals submitted after the Deadline for bid submission. Any Bid Proposals received by Vietsovpetro after the Deadline for bid submission shall be declared late submission, be rejected and be returned unopened to the Bidder. 20.10. After submitting the Bid Proposals, the Bidders may amend, replace or withdraw the Bid Proposals by sending a written notice signed by the bidder's legal representative, in case of attorney, a power of attorney letter must be enclosed as prescribed in ITB 20.3. Dossier for amendment or replacement of Bid Proposal must be enclosed with a written notification of the corresponding amendment, replacement and must ensure the following conditions: a) Being prepared by the Bidders and being submitted to the Vietsovpetro in accordance with ITB 20, the dossier containing the notification must be clearly stated "AMENDMENT OF BID PROPOSAL" or "SUBSTITUTION OF BID PROPOSAL" or "WITHDRAWAL OF BID PROPOSAL "; b) Being received by Vietsovpetro before the Deadline for bid submission as stipulated in ITB 19. 20.11. The Bid Proposals which the bidder requests to withdraw in accordance with ITB 20.10 shall be returned unopened to the bidder. 20.12. The Bidder is not allowed to modify, replace or withdraw the Bid Proposal after the Deadline for bid submission until the expiration of the Bid Proposal's validity as stated in the application for bidding form letter or until the expiration of the extended validity of the Bid Proposal.
21. Bid opening	21.1. Except in the cases specified in ITB 20, Vietsovpetro shall publicly open and read out, clearly information in accordance with ITB 21.3 of all Bid Proposal received before the deadline for submission of bids. The bid opening shall take place publicly at time and place specified in the BDS in the presence of bidders and representatives of related organizations. The bid opening does not depend on presence or absence of bidders’ representatives attending the bid. 21.2. In case bidder requests withdrawal or substitution of Bid Proposal, Vietsovpetro shall firstly open and read out clearly information in envelope of which outer notification marks



	“WITHDRAWAL OF BID PROPOSAL”, the envelope of Bid Proposal of bidder with request for withdrawal shall remain sealed and be returned unopened to Bidder. Vietsovpetro shall not accept the Bidders' withdrawal of the Bid Proposal and still open such the Bid Proposal if the written notice of "Withdrawal of Bid Proposal" does not include documents providing that the person signing such documents is the bidder's legal representative and must be publicly announced during the bid opening. Next, Vietsovpetro shall open, read out clearly information in envelope of which outer notification marks “SUBSTITUTION OF BID PROPOSAL” and this shall be replaced with the previous. This previous shall not be opened and be returned unopened to bidder. Vietsovpetro shall not accept the bidder to replace the Bid Proposal if the written notice of Bid Proposal replacement is not accompanied by documents proving that the person signing the document is the bidder's legal representative and must be made public during the bid opening. For envelope with notification marked “SUBSTITUTION OF BID PROPOSAL”, any attached notification document accompanied with amended Bid Proposal shall be opened, read out clearly. Vietsovpetro shall not accept the bidder to amend the Bid Proposal if the written notice of Bid Proposal’s amendment does not include documents proving that the person signing the document is the bidder's legal representative. Only Bid Proposal opened and read out at the bid opening then shall be considered further and evaluated. 21.3. All the Bid Proposals shall be opened one at a time following the alphabetical sequence of the bidders’ names and sequence below: a) Examine the seals; b) Open original of Bid Proposal, amendment of Bid Proposal (if any) and read out clearly at least the following information: name of bidder, quantity of originals and copies, bidding price in letter of bid, bidding price in summarized price list, discount (if any), validity of Bid Proposal, date of contract performance, value, validity of Bid Bond and other necessary information. In case bidding package is divided into many independent parts, then bidding prices and discount for each part shall be read out. Only discount read out in bid opening shall be further considered and evaluated; c) Representatives of Vietsovpetro shall countersign in original of letter of bid, Bid Bond, summarized price list, letter of attorney of bidder’s legal representative (if any), letter of discount (if any), Consortium agreement (if any). Vietsovpetro shall not reject any Bid Proposal at the bid opening, except for late submission Bid Proposals as specified in ITB 20. 21.4. Vietsovpetro shall prepare a record of the bid opening that shall include information specified in ITB 21.3. The record shall be signed by representatives of Vietsovpetro and bidders attending bid



	opening. The omission of a bidder's signature on the record shall not invalidate the contents and effect of the record. The record shall be distributed to all bidders attending the bid.
22. Confidentiality	22.1. Information relating to the evaluation of bids and recommendation of contract award shall not be disclosed to bidders or any other persons not officially concerned with the bidder selection process until publication of result of bidder selection. Under no circumstances, is the information in Bid Proposal revealed to any other bidders, except for the information that need disclosing during the bid opening. 22.2. Except for the case of enquiries for clarification of Bid Proposal and comparing documents, bidder is not allowed to contact with Vietsovpetro for issues related to bidder's Bid Proposal and other relevant issues of bidding package during the time from bid opening until the result of tendered selection is published.
23. Clarification of Bid Proposal	23.1. After bid opening, the bidder shall be responsible to clarify the Bid Proposal if required by Vietsovpetro, including eligibility, capacity and experiences of the Bidder. In terms of technical, financial proposal in bidder's Bid Proposal, the clarification shall comply with the principle of not changing the basic content of the submitted Bid Proposal and not changing the offered bidding price. 23.2. During the evaluation process, clarification of Bid proposal between Bidders and Vietsovpetro is perform directly in written. 23.3. Clarification of Bid Proposals is only performed between the Vietsovpetro and Bidder whose Bid Proposals need to be clarified. In terms of clarification contents that directly affect evaluation of eligibility, capacity, experiences, technical requirement, financial issues, if period of clarification exceeds deadline and bidder does not submit documentation for clarification or submitted documentation does not comply with requirements of clarification from Vietsovpetro, Vietsovpetro shall evaluate based on the Bid Proposal submitted before deadline for bid submission. Vietsovpetro shall give the Bidder a reasonable period of time to clarify the Bid Proposal. 23.4. In case after Deadline for submission of bids, the bidder knowing that the Bid Proposal it has submitted falls short of documents establishing its eligibility, similar contracts, production capacity, financial reports, tax declaration and payment obligations, documents on personnel, specific equipment proposed in its Bid Proposal may provide such evidence to the Procuring entity within a period of time specified in the BDS. The Procuring entity shall receive, consider and evaluate the bidder's additional and clarifying documents, which shall be considered as part of the Bid Proposal. 23.5. In case of any inconsistencies in the Bid Proposal's content or on the condition that the content is unclear, Vietsovpetro request clarification toward the bidder based on compliance as specified in ITB 23.1.



	23.6. In case of doubt about the authenticity of documents provided by the Bidder, Vietsovpetro shall verify with organizations and individuals related to the content of the documents. 23.7. In case the Invitation to Bid requires the commitment, Contract Principles for equipment rental, main material supply, warranty, upkeep and maintenance, but such documents are not enclosed in the Bid Proposals, Vietsovpetro shall request Bidders to clarify their Bid Proposals and supplement documents within an appropriate period of time but not less than 03 working days as a basis for evaluation of Bid Proposals.
24. Deviations, imposing conditions and omissions	During the evaluation of bid proposal, the following definitions apply: 24.1. “Deviation” is a difference from the requirements specified in the Invitation to Bid; 24.2. “Imposing Conditions” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Invitation to Bid; 24.3. “Omission” is the Bidder’s failure to submit part or all of the information or documentation required in the Invitation to Bid.
25. Determination of responsiveness	25.1. Vietsovpetro’s determination of a responsiveness of Bid Proposal is to be based on the contents of the Bid Proposal itself, as defined in ITB 10. 25.2. A substantially responsive Bid Proposal is one that meets the requirements of the Invitation to Bid without material deviations, conditions, or omissions. A material deviation, reservation, or omission is one that: a) If accepted, would affect in any substantial way the scope, quality, or performance of the goods and related services; limit in any substantial way, inconsistent with the Invitation to Bid, Vietsovpetro’s rights or the bidder’s obligations under the contract; b) If rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive Bid proposal that meet the requirement of the Invitation to Bid. 25.3. Vietsovpetro shall examine the technical aspects of the Bid Proposal submitted in accordance with ITB 15 and ITB 16, in particular, to confirm that all requirements of the Invitation to Bid have been complied without any material deviation or reservation, or omission. 25.4. If the Bid Proposal is not substantially responsive to the requirements of Bidding Document, it shall be rejected; not being allowed to deviations, reservation conditions or omission of basic content in such Bid Proposal with the purpose of making Bid Proposal to be met substantially responsive to the requirements of Bidding Document.
26. Nonmaterial mistake	26.1. Provided that a Bid Proposal is substantially responsive, Vietsovpetro may waive any mistakes in the bid proposal that not to be a material deviation, reservation or omission.



	26.2. Provided that a bid proposal is substantially responsive, Vietsovpetro may request that the bidder submits the necessary information or documentation, within a reasonable period of time, to rectify inappropriate points or nonmaterial mistake in the bid related to documentation requirements. The request for provision of information and documentation to rectify such mistakes shall not be related to any aspect of the bidding price. Failure of the bidder to comply with the request may result in the rejection of its Bid Proposal. 26.3. Provided that a bid proposal is substantially responsive, Vietsovpetro shall rectify quantifiable nonmaterial mistakes related to the bidding price; the bidding price shall be adjusted to reflect the price of a missing or non-conforming item or component; this adjustment is for comparison purposes only.
27. Sub-contractor	27.1. Sub-contractors are organizations, individuals signing contracts with the bidders to perform related services. 27.2. Requirements of Subcontractors are specified in BDS. 27.3. Sub-contracting will not change the bidder's responsibilities. The bidders shall be responsible for the workload, quality, progress and other responsibilities for the parts of the contract carried out by the subcontractors. Sub-contractors' capacity and experiences shall not be considered in evaluation of the Bidder's Bid proposal. The bidder itself must comply with capacity criteria (no consideration of sub-contractors' capacity and experiences). 27.4. The bidder may sign contracts with sub-contractors according to the list of sub-contractors stated in the Bid Proposal or signing contracts with sub-contractors approved by Vietsovpetro to participate in performing the work. 27.5. The bidders is not allowed to utilize the sub-contractors to carry out the tasks other than the tasks of the subcontractors mentioned in the Bid Proposal; the replacement or addition of sub-contractors other than the list of sub-contractors prescribed in the Bid Proposal shall only be carried out when there is a valid and appropriate reason and is approved by Vietsovpetro; in case sub-contractors are utilized to carry out the tasks other than the tasks listed in the Bid Proposal that using a sub-contractor with a value of 10% or higher (after deducting the work part of the sub-contractor's responsibility) calculated on the contract price signed, as an act of "bid transfer".
28. Bid preferences in the selection of bidder	28.1. Rules of bid preferences: Bidders shall be granted preferential treatment when supplying goods of which costs for domestic production occupy 25% or higher. 28.2. Bid preferences are applied during evaluation process for comparing and rating Bid Proposal: Goods are eligible for bid preferences provided that bidders prove that domestic production costs account for above 25% of total



	price. Percentage (%) of domestic production cost of goods is calculated according to the following formula: $D (\%) = G^*/G (\%)$ Where: - G*: Domestic production cost calculated by quoted price of goods defined in the Bid Proposal which subtracts tax values and external costs, inclusive of fees and charges (if any); - G: Quoted price of goods defined in the Bid Proposal subtracting tax values; - D: Percentage (%) of domestic production cost of goods, D gains the rate of 25%, which can enable goods to receive the bid preferences as regulated in this clause. 28.3. Bid preferences calculation is specified in the BDS. 28.4. Bidder must declare information about the eligible types of goods for bid preferences according to Forms 15A, 15B and 15C Chapter IV that is on the basis of consideration and evaluation of bid preferences. In case bidders does not declare so, the Bidder's goods are considered not eligible for bid preferences. 28.5. In case goods do not receive bid preferences, evaluation and determination of bid preferences shall not be applied. 28.6. In case of bidders ranking equally, priority shall be given to those with: - Goods originating from the Socialist Republic of Vietnam and the Russia Federation. - Services/Jobs that employ workers from the Socialist Republic of Vietnam and the Russian Federation.
29. Bid Proposal evaluation	29.1. Vietsovpetro shall apply evaluation criteria listed in this clause and methods of evaluation are specified in the BDS. Any other criteria and methods of evaluation shall not be allowed. 29.2. Vietsovpetro shall evaluate directly on the bid proposals submitted by the bidder. 29.3. Verify and evaluate eligibility of Bid Proposal: - The verification and evaluation of eligibility of Bid Proposal as specified in clause 1, Chapter III – Bid Proposal Evaluation criteria; - Any bidders who have eligibility Bid Proposal shall be further considered and evaluated with respect to capacity and experiences. 29.4. Evaluation of capacity and experiences: - Capacity and experiences are evaluated as specified in clause 2, Chapter III – Bid Proposal Evaluation criteria; - Bidders with satisfactory capacity and experiences shall be considered and evaluated to examine their technical capability. 29.5. Technical and price-based evaluation: - Evaluation of technical capability must adhere to the evaluation standards and methods prescribed in Section 3, Chapter III – Bid Proposal Evaluation criteria;



	b) Bidders who satisfy technical requirements shall be considered to evaluate the price specified in Section 4, Chapter III – Bid Proposal Evaluation criteria. 29.6. After price-based evaluation, Vietsovpetro shall make and approve ranking list of bidders. The bidder ranked at the first position in the bidder's ranking list shall be eligible for the contract negotiation. Ranking of bidders shall be made as prescribed in the BDS. 29.7. In case the Invitation to Bid is divided into independent parts and bidder is allowed bidding in each part prescribed in ITB 1.2, bid evaluation is carried out with those respective parts of the bidder as prescribed in Section 6, Chapter III – Bid Proposal Evaluation criteria. 29.8. Principle of Bid proposal's evaluation: a) Vietsovpetro evaluate directly based on the bid proposals submitted by the bidder. In case the information committed, declared in the Bid proposal is not truthful, leading to false results of evaluating Bid proposal of the bidder, bidder shall be considered to have committed fraudulent; b) In case there is inconsistency between information of similar contract and supporting documents proving information of such similar contract, Vietsovpetro request bidder to clarify the Bid proposal. In case the contracts declared, enclosed in the Bid proposal that not meeting the requirements of Invitation to Bid or the Bidder does not declare or incompletely declares the similar contracts, Vietsovpetro request the bidder to clarify and supplement the another contract to meet the requirements of the Invitation to Bid within an appropriate period of time but not less than 03 working days. In case the bidder does not have a contract met the requirements of the Invitation to Bid, the bidder shall be disqualified; c) In case the key personnel and key equipment (if any) proposed by the contractor in the Bid proposal not meeting the requirements, Vietsovpetro allow the bidder to supplement or replace. Bidders are only allowed to add or replace each personnel position, equipment once within an appropriate period of time but not less than 03 working days. In case the Bidder does not have the replacement of personnel and equipment that meet the requirements of the Invitation to Bid, the bidder will be disqualified. Under any circumstances, on condition that the Bidder dishonestly declares personnel and equipment, the Bidder is not allowed to substitute other personnel or equipment, the Bidder's Bid proposal shall be rejected and the Bidder shall be considered having committed fraudulent according to regulations with legislation on bidding or other relevant legislation and shall be subject to be handled according to regulations; d) For the origin of the goods, in case there is any inconsistency between the declared information and attached documents, Vietsovpetro request clarification of the Bid proposal;



	e) For contents other than those mentioned in Points a, b, c and d of this Clause, in case there is inconsistency between the information in the original Bid proposal and the copy of the Bid proposal, the information in the original Bid proposal is the basis for review and evaluation; f) At the financial assessment step, in case the Bidder does not declare information in the bid preferences's form for domestically produced goods (for Goods procurement bidding packages) in order that Vietsovpetro have a basis for calculating bid preferences, then Bidder will not receive the bid preferences.
30. Contract negotiation	Contract negotiation shall be stipulated in BDS. 30.1. Contract negotiation shall be based on the followings: a) Report on evaluation of the Bid Proposal; b) Bid Proposal and bidder's records of clarification of bidding package (if any); c) Invitation to Bid. 30.2. Principles of the contract negotiation: a) Not negotiating on the contents the bidder offered in accordance with the requirements of the Invitation to Bid; b) While evaluating Bid Proposal and negotiating contract, if realizing the scope of supply/ work, workloads specified in Chapter V – Scope of Supply are insufficient compared with the design documentation, Vietsovpetro shall request bidder to add supplement scope for this insufficient part, on the basis of the quoted price; if the Bid Proposal has not provided the unit price, Vietsovpetro shall consider and decide on applying the unit price approved estimated price for these scope of work/ inadequate workloads compared to the design documentation or the unit price quoted by other bidders who have passed the technical evaluation if this unit price is lower than the approved unit price in the estimated bidding package; c) When negotiating a contract for the deficient deviation, if the Bidder's bid proposal does not have a unit price corresponding to the deviation, the lowest bid unit price among other bidders' bid proposals that meet the technical requirements must be taken or taking the unit price in the approved estimate if this is the only bidder who passes the technical evaluation step as a basis for negotiating that deficient deviation. 30.3. Contents of contract negotiation: a) Unspecified, inappropriate and inconsistent contents between Invitation to Bid and Bid Proposal, between different contents in the Invitation to Bid may lead to incidents, disputes or impact on the contractual obligations of contracting parties; b) Deviations that have been found by the Bidder and Bidder's recommendations (if any), including proposal of amendment or technical alternatives which Bidder is allowed to provide according to relevant bidding regulations;



	c) Any issue that arises during the selection of Bidder (if any) in the aim of completing detailed contents of the bidding package; d) Nonmaterial omissions specified in ITB 30; e) Other necessary issues. 30.4. During contract negotiation, negotiating parties must proceed to draft and complete the official agreement, detailed terms and conditions and annexes that determine detailed list of scope of supply, price list and progress of supply. 30.5. If the negotiation fails, Vietsovpetro shall consider, decide to invite the bidder who is ranked at the next positions for contract negotiation; if the successive negotiations also fail, Vietsovpetro shall report to the Investor to consider, decide the bidding cancellation as regulated in point a, ITB 32.1.
31. Conditions for recommendation as the awarded bidder	Bidder shall be considered for recommendation as the winning bidder upon satisfying the following conditions: 31.1. Having Eligibility Bid Proposal as prescribed in Section 1, Chapter III; 31.2. Having capacity and experiences satisfying requirements as prescribed in Section 2, Chapter III; 31.3. Having technical proposals satisfying requirements as prescribed in Section 3, Chapter III; 31.4. Having deficient deviation not exceeding 10% of bidding price; 31.5. Meeting requirements specified in the BDS; 31.6. The bidder has the proposed price award (including taxes, fees, charges (if any) not exceeding the approved bidding package price. If the approved estimated budget of bidding package is lower than or higher than the approved bidding package price, this estimate shall replace the bidding package price as basis for consideration for recommendation as the winning bidder.
32. Bidding cancellation	32.1. Vietsovpetro shall notify the bidding cancellation in following cases: a) All Bid Proposals fail to satisfy the requirements of the Invitation to Bid; b) Change of the objectives, scope of procurement resulting in changes in volume of work and evaluation criteria stated in the Invitation to Bid at Vietsovpetro's decision; c) The Invitation to Bid fails to comply with legislation on bidding or other relevant legislation that lead to the failure of the selected bidder to meet requirements for performing bidding package; d) The award bidder commits prohibited acts specified in section 4 prohibited acts - Chapter I Instructions to Bidders; e) Organizations and individuals other than the awarded bidder commit prohibited acts specified in section 4 prohibited acts - Chapter I Instructions to Bidders leading to deviations in bidder selection results.



	32.2. Organizations and individuals infringing law on bidding that lead to bidding cancellation as prescribed in point c, d, e in ITB 32.1 is undertaken to compensate expenses for related parties and be handled as prescribed by law. 32.3. In case of bidding cancellation specified in this section, Vietsovpetro shall return or release Bid Bond to bidders who has submitted the original Bid Bond within 05 working days, except the bidder violates the regulation as specified in point d and point e, ITB 32.1.
33. Notice of bidder selection result	33.1. Vietsovpetro shall publish notice of bidder selection results within 05 working days from the date of approval of bidder selection results. Notice of bidder selection result shall include following contents: a) Information of the bidding package: - Number of Invitation to Bidder; - Name of the bidding package; - Bidding package price or approved estimate (if any); - Name of Investor; - Form of bidder selection; - Type of contract; - Time to implement the bidding package; - Time of contract performance. b) Information of the awarded bidder: - Tax code; - Contractor name; - Bidding price; - Bidding price after discount (if any); - Technical scores (if any); - Evaluation price (if any); - Awarded bidding price; - Time to implement the bidding package. c) For each type of goods and equipment in the bidding package, the Investor must publish the following information: - Goods name; - Wattage; - Features and technical specifications; models, part numbers, labels; - Origin; - Awarded of bidding unit price. d) List of unselected bidders and brief reasons of each bidder for not being selected. 33.2. In case of bidding cancellation as prescribed in point a, ITB 32.1, in the notice of bidder selection results and on the national bidding network must be clearly stated the reason for cancellation of bidding.



34. Change in volume of goods and services	34.1. At the time of awarding contract, Vietsovpetro are entitled to increase or decrease the volume of services stated in Chapter IV provided that such change not exceeding the rate specified in the BDS and there is not any change in the unit price or other terms and conditions of the Bid Proposals and Invitation to Bid. The rate of increase and decrease in volume shall not exceed 10%. 34.2. Additional purchase option: Before the contract expires, the Investor has the right to purchase an additional volume of goods or services in the bidding package other than the volume stated in Chapter IV provided that not exceeding the rate specified in the BDS.
35. Notice of Bid Proposal acceptance and contract award	After publishing the notice of bidder selection results, Vietsovpetro send a notice of acceptance of the Bid proposals and award the contract, including requirements on measures of contract performance guarantee, completion time, and contract signing. VND according to the provisions in Form as prescribed in Part 4 for the awarded bidder. Notice of acceptance of bid proposals and contract award are part of the contract documentation. In case the awarded bidder fails to complete, sign the contract or submit the contract performance guarantee within the deadline stated in the notice of bid proposal's acceptance and contract award, the bidder shall be disqualified and shall not be refunded the value of Bid bond as prescribed in Section 18.5 ITB. The period of time stated in the notice of bid proposal acceptance is calculated from the date Vietsovpetro sending this acceptance notice to the awarded bidder on the nation bidding network.
36. Conditions for signing contract	36.1. At time of signing contract, Bid Proposal of the selected bidder are still valid. 36.2. At time of signing contract, the selected bidder must ensure to meet requirements on technical and financial capability for implementation as prescribed in the Invitation to Bid. If the bidder no longer meets basic requirements of technical and financial capability prescribed in the Invitation to Bid, Vietsovpetro shall refuse to sign contract with the bidder. Vietsovpetro shall therefore cancel previous decision on approval of bidder selection result and contract award, and shall invite the bidder who is ranked at the next position for comparing documentation and contract negotiation (if required). 36.3. Vietsovpetro shall ensure conditions on funding for advance payment, payment funding and other necessary conditions for carrying out the bidding package on the schedule.
37. Contract performance guarantee	37.1. Before signing a contract or before the contract comes into effect, the bidder shall provide contract performance guarantee as specified in Part 3. In case of applying a form of contract performance guarantee, the form specified in Part 3 or another form approved by Vietsovpetro shall be complied. 37.2. The bidder shall not be entitled for the returning of the contract performance guarantee in the following cases:



	a) The bidder refuses to perform the contract after the date the contract comes into force; b) The bidder violates agreements in contract; c) Performing the contract behind schedule due to bidder's fault but refusing to extend the validity of the contract performance guarantee.
38. Handling of complaints in bidding	38.1. When bidder's legal rights and interests are affected, the bidders, agencies and organizations may file any complaint to Vietsovpetro with respect to procurement process, bidder selection result according to the regulations of Vietsovpetro. 38.2. In case of petition to Vietsovpetro, the bidder shall send the petition to the address specified in the BDS.
39. Monitoring, supervising of Bidder selection process	When detecting violated behavior or content inconsistent with the provisions of bidding law, the bidder is responsible for notifying the organization, individual performing the monitoring task and supervision as prescribed in the BDS.



Chapter II. BID DATA SHEET

ITB 1.1	Employer: Vietsovpetro
ITB 1.2	Title of bidding package: Instruments and Detectors Package (VT-2965/25-XL-DA-HMH). Name of Project: RC-12 WellHead Platform. Quantity, reference numbers of parts under the bid package: Vietsovpetro will make evaluation and selection by Each group. + Group 1: Pressure Gauge, Differential Pressure Gauge, Temperature Gauge (item 1-24) + Group 2: Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter (item 25-62) + Group 3: Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator (item 63-71) + Group 4: Push Button (APS, ESD, MCP), Gas Detector, Flame Detector, Smoke Detector, Test Kit for Gas Detector, Test Kit for Flame Detector; Test Kit for Smoke Detector, Heat Detector (item 72-88) Year of production: See technical requirements attached. Scope of supply: See Attachment 01 of Part 4. Technical requirement: See Attachment 02 of Part 4. Technical evaluation criteria: See Attachment 03 of Part 4.
ITB 3	Source of funds: Block 09-1.
ITB 5 (d)	Competitiveness in the bidding must be ensured by following rules: - Bidders participating in bidding do not have a shareholding or equity contribution representing more than 30% with Vietsovpetro, except in the case of: (i) The bidder is an affiliate or subsidiary of a state-owned corporation or group whose main production and business lines are consistent with the nature of the bid package of that state-owned corporation or group. (ii) The bidder is a parent company, subsidiary, or affiliate of a state-owned corporation or group whose main production and business lines are suitable for products and services under the bid package, and this bid package belongs to its subsidiary or affiliate. - The bidder do not either have a shareholding or equity contribution relationship with consultants or have a shareholding or equity contribution representing more than 20% of equity owned by a third party being an entity or a natural person, specifically as follows: + Consulting on preparation for technical design: <i>Not applicable</i>; + Consulting on verification of bid price: <i>Not applicable</i>; + Consulting on supervision of contract execution and inspection: <i>Not applicable</i>; + Consulting on preparation for the ITB: <i>Not applicable</i>; + Consulting on appraisal of the ITB: <i>Not applicable</i>;



	+ Consulting on evaluation Bid Proposal: <i>Not applicable</i>; + Consulting on appraisal of bidder selection results: <i>Not applicable</i>; + Project management consulting, contract management, other consulting services whose work is directly related to the bid package: <i>Not applicable</i>; - The bidder does not belong to the same agency or organization directly managing the consultants (mentioned above)¹. - Public sector entities and employers, procuring entities that have the same direct governing authority, and equity contribution when participating in bidding for each other's bid packages shall not have to satisfy the regulations on legal and financial independence between the bidder and the employer and the procuring entity. - Public sector entities and enterprises that have the same direct governing authority, and equity contribution when participating in bidding for each other's bid packages shall not have to satisfy the regulations on legal and financial independence between the bidder and the employer and the procuring entity. - The ratio of shares, equity contributions between the parties is determined at the deadline for submission of bids and according to the ratio stated in the business registration certificate, establishment decision, and other documents of equivalent value. In case the bidder participates in the bidding as a joint venture or the consultant is selected as a joint venture, the equity ownership ratio of other organizations and individuals in the joint venture is determined according to the following formula: $\text{Ownership ratio} = \sum_{i=1}^n X_i \times Y_i$ Of which: X_i: Equity ownership ratio of other organizations and individuals in the i-th joint venture member; Y_i: Percentage (%) of the work volume of the i-th joint venture member in the joint venture agreement; n: Number of members participating in the joint venture.
ITB 5 (h)	Bidder's name is registered on National bidding network before the grant of approval for contractor selection result as prescribed: - Bidders have to register procurement information on the National bidding network: <u>To be applied</u> - Bidders are to provide confirmation of information registration on the national bidding network system in according to the Circular issued by Ministry of Planning & Investment for providing provisions on posting information about bidding, on the roadmap for applying online Contractor selection, and managing the use of the value of bidding guarantee, ensuring the performance of non-refundable contracts: <u>Detailed instructions of the National bidding network system are on the website: http://muasamcong.mpi.gov.vn</u>



ITB 7.1	The amendment of Invitation to Bid shall be published in National bidding network at least 03 working days prior to the Deadline for bid submission.
ITB 7.2	Requests for clarification should be received by Vietsovpetro at least 05 working days prior to the Deadline for bid submissions. Vietsovpetro shall clarify the request of clarification at least 03 working days prior to Deadline for bid submissions.
ITB 7.3	Pre-bidding conference: No.
ITB 8	Payment for the Invitation to Bid: Interested bidders can buy Invitation to Bid with non-refundable cost of VND 500,000.00/set (in word: Five hundred thousand Vietnam Dong/set) Payment for Invitation to Bid shall be made by Telegraphic Transfer to the following Vietsovpetro's account: Account No. 008.100.000001.1 Beneficiary: Vietsovpetro Vietcombank, Vung Tau Branch Please indicate: Bidder name, payment for Invitation to Bid Bidding package No. VT-2965/25-XL-DA-HMH.
ITB 10.10	The Bidder shall submit the following additional documents in its bid proposal: Scope of supply, Scope of work and Technical documentation as required in Technical requirement (Part 2 Chapter V – Scope of supply, Scope of work and Technical documents, etc. in Invitation to Bid)
ITB 12.1	Bidder is allowed to submit Technical alternative. The Bidder is required to clearly state the main offer and the alternative offer in the bidding proposal. Technical alternatives are only considered when main solution meets requirements and bidder is ranked first. In this case, bidder shall provide all information necessary for evaluation of the alternatives by Vietsovpetro, including notes, drawings, technical specifications, progress of supply and other relevant information.
ITB 13.5	In the detailed price quotation table, bidder shall offer prices according to the following requirements: For foreign bidders: The Bidders are requested to offer price on delivery term CFR Vietsovpetro port, Ho Chi Minh City, S.R. Vietnam in accordance with Incoterms accompanied with appropriate amendments – if necessary as Bidding form No. 12A, Chapter IV – Bidding form and provide “Incoterms 2020”. In case goods are accompanied with services, commissioning, ... Bidders have to clearly state that whether the offered price includes Foreign Contractor Withholding Tax (FCWT) as Bidding form No. 13. If the offered price has not included, Vietsovpetro will calculate and add FCWT into the offered price for comparison and evaluation (<i>FCWT tax rate is: 1.01% for goods</i>). Vietsovpetro shall do necessary procedures for tax exemption of goods. For Vietnamese Bidders: The Bidders are requested to offer price on delivery to Vietsovpetro warehouse, Rach Dua Ward, Ho Chi Minh City, S.R. Vietnam including all taxes, fees and charges (if any) arisen inside



	Vietnam and shall be taken into consideration exemption of import tax and VAT for imported goods from using List of exempted goods available for Vietsovpetro in Block 09-1 as Bidding forms No. 12A and 12B, Chapter IV – Bidding forms.																								
ITB 15.6	Expected operating duration of Goods (for the purpose of requirement of spare parts, specialized tools): Not applicable.																								
ITB 16.2	The documentary evidence of the Bidder’s capacity to perform the contract if the bidder win the bid including: Manufacturer’s License for sale or the Certificate of Partnership or similar documents: <i>as per Technical requirement, Chapter V in Invitation to Bid.</i>																								
ITB 17.1	The Bid proposal shall be valid for 90 days from the Deadline for bid submission.																								
ITB 18.1	The Bidder provides the Bid Bond through Deposit / Telegraphic Transfer to the following Vietsovpetro’s account: Account: 008.100.000001.1 (VND) 008.137.000002.9 (USD) Beneficiary: Vietsovpetro Vietcombank, Vung Tau Branch																								
ITB 18.2	Contents of Bid Bond: The amount and currency of the Bid Bond for Each group shall be: <table><tr><th>No.</th><th>Group</th><th>Bid Bond value (USD)</th><th>Bid Bond value (VND)</th></tr><tr><td>1</td><td>Group 1: Item 1-24</td><td>135.00</td><td>4,000,000.00</td></tr><tr><td>2</td><td>Group 2: Item 25-62</td><td>1,460.00</td><td>38,000,000.00</td></tr><tr><td>3</td><td>Group 3: Item 63-71</td><td>910.00</td><td>23,500,000.00</td></tr><tr><td>4</td><td>Group 4: Item 72-88</td><td>1,330.00</td><td>34,500,000.00</td></tr><tr><td colspan="2">For 04 groups</td><td>3,835.00</td><td>100,000,000.00</td></tr></table> If bidder attends the bid for one or more than one group, value of Bid Bond should be equal to sum of those above value with respective groups. The Bid Bond shall be valid for 120 days from the Deadline for bid submission. In case the Bidder provides the Bid Bond through Deposit/Telegraphic Transfer to the following Vietsovpetro’s account: Account: 008.100.000001.1 (VND) 008.137.000002.9 (USD) Beneficiary: Vietsovpetro. Vietcombank, Vung Tau Branch.	No.	Group	Bid Bond value (USD)	Bid Bond value (VND)	1	Group 1: Item 1-24	135.00	4,000,000.00	2	Group 2: Item 25-62	1,460.00	38,000,000.00	3	Group 3: Item 63-71	910.00	23,500,000.00	4	Group 4: Item 72-88	1,330.00	34,500,000.00	For 04 groups		3,835.00	100,000,000.00
No.	Group	Bid Bond value (USD)	Bid Bond value (VND)																						
1	Group 1: Item 1-24	135.00	4,000,000.00																						
2	Group 2: Item 25-62	1,460.00	38,000,000.00																						
3	Group 3: Item 63-71	910.00	23,500,000.00																						
4	Group 4: Item 72-88	1,330.00	34,500,000.00																						
For 04 groups		3,835.00	100,000,000.00																						
ITB 18.4	The Bid Bond of unsuccessful Bidders shall be returned or released in maximum 14 days from the date of Notification of Bidder selection Result.																								
ITB 19.1	The Deadline for bid submission at: 09h00 (local time) on ____/____/2025																								
ITB 20.1	In addition to original of Technical Proposal and Financial Proposal, the quantity of copies of Technical Proposal (as per required in Technical requirement), Financial Proposal (01 copy). In case of modification, substitution of Technical Proposal, Financial Proposal or technical																								

	alternative, the bidders must submit the equal number of copies of modification, substitution or Technical alternative. Notes: Quantity of Proposal: + Technical Proposal: 01 original and 02 copies; + Financial Proposal: 01 original; + Soft copy: 01 USB included scanned Technical Proposal; 01 USB Financial Proposal and native excel file of Financial Proposal. + All of the Proposals shall be sealing and marking as requirement in Chapter I Point 21.
ITB 20.7 (a)	Bidders shall submit their Bid Proposals to: Recipients: Vietsovpetro Address: 105 Le Loi Str., Vung Tau Ward, Ho Chi Minh City, S.R. Vietnam
ITB 21.1	The Bid proposal shall be opened publicly: At the following address: Vietsovpetro, 105 Le Loi Str., Vung Tau Ward, Ho Chi Minh City, S.R. Vietnam Time: at 09h30 (local time) on ____/____/2025
ITB 23.4	Bidders themselves can provide such evidence to Vietsovpetro within 03 days from the Deadline for submission of bids.
ITB 27.2	Total value of sub-contractor(s) shall not exceed: 0% of total value of Bid proposal. Specialized sub-contractor: Not applicable.
ITB 28.3	Calculation of preferential treatment: Goods that do not receive bid preferences must add a monetary amount accounting for 7.5% of bidding price after rectification of errors, adjustment of deviations and deduction of discounts (if any) of these goods to the bidding price after rectification of errors, adjustment of deviations and deduction of discounts (if any) of bidders for comparison and ranking.
ITB 29.1	Bid proposal evaluation methods: a. Evaluation of the bidder's capacity and experience: using Pass/Fail criteria. b. Technical evaluation: <i>to apply evaluation method calculating point criteria in accordance with evaluation criteria stipulated in Section III, Chapter III, Bid Proposal Evaluation Criteria.</i> c. The price evaluation: <i>to apply lowest price method for each group in accordance with evaluation criteria stipulated in Section V, Chapter III, Bid Proposal Evaluation Criteria.</i>
ITB 29.6	Ranking of bidders: <i>the bidder who has the lowest price for each group after rectification of errors, adjustment of deviation and deduction of discounts (if any) is ranked the first.</i>
ITB 30	Contract negotiation: <i>Not applicable.</i>
ITB 31.5	Having lowest bidding price for each group after rectification of errors, adjustment of discrepancies, taking into account discount (if any), conversion of bidding price into a single currency, addition preferential treatment value (if any), includes all taxes, fees and charges (if any).
ITB 34.1	The maximum percentage of work volume may be increased is: <i>Not applicable.</i>



	The maximum percentage of work volume may be decreased is: <i>Not applicable.</i>
ITB 34.2	Additional purchase option: <i>Not applicable.</i> The maximum of additional purchase option: <i>Not applicable.</i>
ITB 38.2	Vietsovpetro's address: 105 Le Loi Str., Vung Tau Ward, Ho Chi Minh City, S.R. Vietnam Tel: 84 254 3839 871 Fax: 84 254 3839 857
ITB 39	Address of organization, individual in charge of supervision: Mr. Vu Mai Khanh – General Director of Vietsovpetro 105 Le Loi Str., Vung Tau Ward, Ho Chi Minh City, S.R. Vietnam Fax: 84 254 3839 857



Chapter III. BID PROPOSAL EVALUATION CRITERIA

Section 1: Verification and evaluation the eligibility of Bid Proposal

1.1 Verification the Bid Proposal:

- a) Verify the number of original and copies of the bid proposal;
- b) Verify the documents comprising the original Bid proposal including: administrative documents, legal documents, Bidder's capacity and experience documents, technical proposal as stipulated in Invitation to Bid, in which there are: Application for Bidding, Consortium Agreement (if any), Power of Attorney for signing Application for Bidding (if any); Bid Bond/Deposit; documentary evidence establishing the Bidder's eligibility to bid; documentary evidence Bidder's capacity and experience; technical proposal; price proposal and any other relevant documents of Bid Proposal as stipulated in ITB 10;
- c) Verify the consistency of contents between the original and copies for detailed evaluation process of bidding package.

1.2 Evaluation the eligibility of Bid Proposal:

A. Bid proposal is considered eligibility when it fully meets the following requirements:

- a) The Bidder submits the original of Bid proposal.
- b) The Application for Bidding is signed and stamped (if any) by the legitimate representative of the bidder as required by Invitation to Bid. For consortium, the Application for Bidding is signed and stamped (if any) by the legitimate representatives of each member of the consortium or the authorized leader member of the consortium sign the Application for Bidding according to responsibilities in written agreement of consortium.
- c) Bidding prices in Application for Bidding must be detailed, fixed, indicated by numbers, words and in accordance with total bidding prices mentioned in Summary of bidding price table. Bidders are required not to propose different bidding prices or conditions that put Vietsovpetro in disadvantage.
- d) The validity period of the Bid proposal must meet the requirements stipulated in ITB 17.1.
- e) The Bid Bond/Deposit must satisfy all the requirements as stipulated in ITB 18.3.
- f) The bidder is not named in 02 or more Bid proposals as a main bidder (independent bidder or a member of consortium) in one bidding package. In case the bidding package is divided into many independent parts, the bidder is not named in 02 or more Bid proposals as the main bidder for the parts that bidder participates.
- g) For consortium, written agreement of consortium is signed and stamped (if any) by the legitimate representative of each member of the consortium and the consortium agreement must specify the detail scope of work and estimated respective percentage that each member will implement as Bidding Form 03, Chapter IV, Bidding Form.

If the scope of supply includes only one unit/one piece and no related service, bidder is not allowed to enter into a consortium; in case that Bidders is still in a consortium, agreement of consortium shall be considered invalid and Bidder shall be rejected.
- h) The bidder is eligible as stipulated ITB 5.

Bidders who submit eligible bid proposals shall be considered and evaluated on their capacity and experience.

Section 2: Capacity and experience evaluation criteria

Standards of competence and experience are mandated and listed in Table No. 01 (for bidders who are Non-manufacturers of goods within the scope of the bid package) or Table No. 02 (for bidders who are manufacturers of goods within the scope of the bid package). A bidder's evaluation of competence and experience is subjected to whether it meets all standards. A subcontractor's competence and experience will not be taken into consideration when evaluating a bid proposal. The contractor itself must meet the evaluation standards of competence and experience.

In case the currency used in similar contracts or one of the following – Investor's payment confirmation for past contracts for the supply of goods, tax declarations, documents proving the bidder's competence and experience – is not VND: in the bid proposal, the bidder must convert them to VND as a basis for evaluation. The conversion is subject to the exchange rate of Vietcombank's selling rate at the date of signing a similar contract.

In case the Bidder participating in bidding is the parent company (for example, Corporation) assigning a subsidiary to perform part of the work in the bid package, the contractor must declare specifically which part using Form 11C Chapter IV. The evaluation of experience in fulfilling similar contracts is based on the value and volume of work that the parent company and subsidiary delivered in the bidding package.

For Consortium, capacity and experience will be defined by the aggregated capacity and experience of each member of Consortium, but it must be assured that each member of Consortium must satisfy the requirement of capacity and experience for the volume of work implemented by him; if any of the members in Consortium do not satisfy the capacity and experience criteria, the Consortium will be evaluated as fail to meet the requirement on capacity and experience.

Sub-contractors' capacity and experience will not be considered in the evaluation of the Bid proposal of main Bidder (unless the Invitation to Bid allows to use specialized sub-contractor). The main bidders themselves must satisfy criteria on capacity and experience (not considered the sub-contractors' capacity and experience).

In case application of pre-qualification, if there are changes in capacity and experience when submitting the bid proposal in comparison with the information in the evaluated pre-qualification documents, the bidders must update their capacity and experience; in case there is no change in bidders' capacity and experience, the bidders must send a written commitment that they still satisfy the bidding package's requirements.

If there is no pre-qualification, the evaluation of capacity and experience will be carried out in accordance with the following evaluation criteria, the bidders are considered "pass" the capacity and experience requirements if they satisfy all the criteria.



2.1. Criteria for evaluation of capacity and experience

The evaluation of capacity and experience will be carried out as in following table:

CRITERIA TABLE FOR EVALUATION OF BIDDER'S CAPACITY AND EXPERIENCE

(For Bidders who are Non-manufacturers⁽¹⁾ of goods under the scope of the bid package)

Table No. 01

Capacity and experience criteria			Compliance requirements			Documents
No.	Description	Requirement	Single Entity	Consortium		Submission requirements
				All members combined	Each member	
1	Historical Contract Non-Performance ⁽¹⁾ due to Bidder's fault	From January 01, year 2022 to Deadline for bid submission, the contractor does not have a contract for the supply of goods, not fulfilled through fault of the bidder.	Must meet requirement	Not applicable	Must meet requirement	Form No. 09
2	Tax obligations fulfilment	Has fulfilled tax obligations of the last fiscal year before Deadline for bid submission.	Must meet requirement	Not applicable	Must meet requirement	Form No.10

Notes:

⁽¹⁾ Non performance contracts due to Bidder's fault shall include all contracts where:

- Non performance contracts, as concluded by employer, and were not objected by the Bidder,
- Non performance, as concluded by the employer, and were so objected by the Bidder but fully settled against the Bidder by Arbitration or Court.

Non performance shall not include contracts where employer decision was overruled by the dispute resolution mechanism. Non performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract or applicable law and where all appeal instances available to the Bidder have been exhausted.

Criteria on capacity and experience			Compliance Requirements			Documents
No.	Description	Requirement	Single Entity	Consortium		Submission Requirements
				All Members Combined	Each Member	
3	Financial capacity					
3.1	Financial performance	Submission of financial statements for the latest 03 fiscal years to demonstrate the current soundness of the Bidder’s financial position. The Bidder's net worth for the last fiscal year to the Deadline for bid submission (calculated as the difference between total assets and total liabilities) should be positive	Must meet requirement	Not applicable	Must meet requirement	Form No. 10
3.2	Average Annual business activities Turnove ⁽¹⁾ (excluding VAT)	Minimum average annual turnover of following value within the latest 03 fiscal years ⁽²⁾ . (In case Company of the Bidder established less than 03 years, the value of Average annual business activity turnover will be sum total value of business activity turnover and devide to total number of years have activities)	Must meet requirement	Must meet requirement	Not applicable	Form No.10

Notes:

⁽¹⁾ In case of Consortium, the evaluation of the turnover criteria will be total turnover of all members for compare and evaluation.

⁽²⁾ If bidder bids in one or more than one group, minimum average annual turnover within the last 03 fiscal years should be equal to sum of those below value with respective groups:

No.	Group	Description	Minimum average annual turnover value (USD)	Minimum average annual turnover value (VND)
1	Group 1	Item 1-24	19,605.00	508,562,260.00
2	Group 2	Items 25-62	218,340.00	5,663,738,043.00
3	Group 3	Items 63-71	135,202.00	3,507,138,065.00
4	Group 4	Items 72-88	199,132.00	5,165,483,432.00
	For 04 groups		572,279.00	14,844,921,800.00

(*) In case the bidder bids in one or more than one group, minimum revenue evaluation is based on the total average revenue required of those groups offered by bidder. In case the bidder bids in one group, it only needs to meet the revenue requirement of that group.

Criteria on capacity and experience			Compliance Requirements			Documents
No.	Description	Requirement	Single Entity	Consortium		Submission Requirements
				All Members Combined	Each Member	
4.	Experience on implementing Contracts of supplying similar goods	Requires at least 01 contract for supplying of goods and equipment for the Oil and Gas industry / other industries as described hereunder that has been successfully completed ⁽¹⁾ as main Contractor (individually or partner of Consortium) or sub-contractor ⁽²⁾ within the last 05 years to the Deadline for bid submission. Contract must have value equivalent to or greater than ⁽³⁾ .	must meet requirement	must meet requirement	must meet requirement (equivalent to the volume of work implemented)	Form 07A

Notes:

⁽¹⁾ “Successfully completed” means completion of all (100%) of contract scope of work. The contract is completed, ending the entire workload of such contract and the time of contract completion is the time of delivery / acceptance of the entire contract, regardless of the time of signing the contract.

⁽²⁾ For contract implemented by bidder as member of Consortium or sub-contractor, only the amount of work implemented by Bidder itself will be considered.

⁽³⁾ If bidder bids in one or more than one group, bidder’s similar contracts value within the latest 05 fiscal years should be equal to sum of those below value with respective groups:

No.	Group	Description	Minimum similar contracts value (USD)	Minimum similar contracts value (VND)
1	Group 1	Item 1-24	9,150.00	237,329,055.00
2	Group 2	Items 25-62	101,892.00	2,643,077,755.00
3	Group 3	Items 63-71	63,095.00	1,636,664,430.00
4	Group 4	Items 72-88	92,930.00	2,410,558,935.00

(*) In case the bidder bids one or more than one group, evaluation of similar contract is based on each respective group offered by bidder. The bidder does not have to comply with the size of total similar contract for all those groups bidder offers.

Criteria on capacity and experience			Compliance Requirements			Documents
No.	Description	Requirement	Single Entity	Consortium		Submission Requirements
				All Members Combined	Each Member	
5.	The ability of performing warranty, maintenance, repair, overhaul and provision of spare parts and other after-sale services <i>(To be evaluated in the Technical evaluation stage)</i>	The bidder must be represented by an Agent (or Representative) who is available to carry out the Bidders' obligations such as warranty, maintenance, repair and provision of spare parts by one of following: - The bidder commits its capability in fulfilling obligations of warranty, maintenance, repair, supply of spare parts or providing after-sales services as required by the Invitation to Bid. <i>(as per required in the Technical requirement)</i> - The bidder signs a principle contract with an entity capable of fulfilling the obligations of warranty, maintenance, repair, supply of spare parts or providing after-sales services as required by the Invitation to Bid. <i>(as per required in the Technical requirement)</i>	must meet requirement	must meet requirement	must meet requirement (equivalent to the volume of work implemented)	

CRITERIA TABLE FOR EVALUATION OF BIDDER'S CAPACITY AND EXPERIENCE

(For Bidders who are manufacturers⁽¹⁾ of goods under the scope of the bid package)

(NOT APPLICABLE)

Criteria on capacity and experience			Compliance Requirements			Documents
No.	Description	Requirement	Single Entity	Consortium		Submission Requirements
				All Members Combined	Each Member	
1.	Historical Contract Non-Performance ⁽²⁾ due to Bidder's fault	From January 01, year ... to Deadline for bid submission, the contractor does not have a contract for the supply of goods, not fulfilled through fault of the bidder.	Must meet requirement	not applicable	must meet requirement	Form 09
2.	Tax obligations fulfilment	Has fulfilled tax obligations of the last fiscal year before Deadline for bid submission.	Must meet requirement	not applicable	must meet requirement	Form 07B

Notes:

⁽¹⁾ Manufacturer is understood as an enterprise/manufacturing facility that produces goods itself or participates in the production process of goods or a subsidiary or parent company in charge of distributing and consuming products produced by the parent company and other subsidiaries within the Group or Corporation.

⁽²⁾ Non performance contracts due to Bidder's fault shall include all contracts where:

- Non performance contracts, as concluded by employer, and were not objected by the Bidder,
- Non performance, as concluded by the employer, and were so objected by the Bidder but fully settled against the Bidder by Arbitration or Court.

Non performance shall not include contracts where employer decision was overruled by the dispute resolution mechanism. Non performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract or applicable law and where all appeal instances available to the Bidder have been exhausted.



Criteria on capacity and experience			Compliance Requirements			Documents
No.	Description	Requirement	Single Entity	Consortium		Submission Requirements
				All Members Combined	Each Member	
3.	Financial Capacity					
3.1	Financial Performance	Submission of financial statements ... years (from year ... to year ... or from year ... to year ...) to demonstrate the current soundness of the Bidder's financial position. The Bidder's net worth for the last fiscal year, (calculated as the difference between total assets and total liabilities) should be positive.	Must meet requirement	not applicable	must meet requirement	Form 10
3.2	Average Annual business activities Turnover	Minimum average annual turnover of following value within the latest ... fiscal years⁽¹⁾ ≥ USD [...] / VND [...] (Incase Company of the Bidder established less than 03 years, the value of Average annual business activity turnover will be sum total value of business activity turnover and devide to total number of years have activities)	must meet requirement	must meet requirement	not applicable	Form 10

Notes:

⁽¹⁾ In case of Consortium, The Evaluation of the turnover criteria will be total turnover of all members for compare and evaluation.



Criteria on capacity and experience			Compliance Requirements			Documents
No.	Description	Requirement	Single Entity	Consortium		Submission Requirements
				All Members Combined	Each Member	
4.	Capacity of goods production	The bidder provides documents as proof of production capacity, including either: - The capacity of factories or production lines with minimum output of: ____ units/month; Or: - The highest output per month within the last ... years prior to the Deadline for bid submission: ____ units	must meet requirement	must meet requirement	must meet requirement (equivalent to the volume of work implemented)	Form 07B

Notes:

In case the goods are products produced domestically by a Vietnamese bidder (which may or may not have been sold in the market), the bidder must prove that the design capacity or production quantity complies with the requirements.

In case the bidder is both a manufacturer and a supplier (some goods or a part of the volume of goods offered by the bidder in the Bid proposal which are produced by the bidder, some other goods or a part of the volume of goods are purchased by the bidder from other manufacturers or suppliers to supply for the bidding package), in addition to declaring production capacity, the bidder shall also declare experience in performing similar contracts as prescribed in Section 4 – Table No. 01 of this Chapter. The evaluation of the bidder's experience will be done on the basis of providing the similar contract for supply of goods (in response to the part of goods bidder purchases from other manufacturers or suppliers) and the bidder's production capacity (in response to the part of goods that the bidder produces itself providing in the bidding package). Bidder may use documents such as sales invoices, inventory quantities, ... to prove the quantity produced in 01 month.



Criteria on capacity and experience			Compliance Requirements			Documents
No.	Description	Requirement	Single Entity	Consortium		Submission Requirements
				All Members Combined	Each Member	
5.	The ability of performing warranty, maintenance, repair, overhaul and provision of spare parts and other after-sale services <i>(To be evaluated in the Technical stage)</i>	The bidder must be represented by an Agent (or Representative) who is available to carry out the Bidders' obligations such as warranty, maintenance, repair and provision of spare parts by one of following: - The bidder commits its capability in fulfilling obligations of warranty, maintenance, repair, supply of spare parts or providing after-sales services as required by the Invitation to Bid. <i>(as per required in the Technical requirement)</i> - The bidder signs a principle contract with an entity capable of fulfilling the obligations of warranty, maintenance, repair, supply of spare parts or providing after-sales services as required by the Invitation to Bid. <i>(as per required in the Technical requirement)</i>	must meet requirement	must meet requirement	must meet requirement (equivalent to the volume of work implemented)	



2.2. Evaluation Criteria for Key personnel (*Not applicable*)

2.3. Sub-contractors and Specialized Sub-contractors (*Not applicable*)

Section 3: Technical evaluation criteria (see Part 2 – Chapter V)

Section 4: Price evaluation criteria (Lowest price method)

Determination of lowest price as following steps:

Step 1: Determination of bidding price including all taxes, fees, charges (if any) arisen inside Vietnam and shall be taken into consideration exemption of import tax and VAT for imported goods from using List of exempted goods available for Vietsovpetro in Block 09-1;

Step 2: Rectification of errors (apply in accordance with Note (1));

Step 3: Adjustment of deviations (apply in accordance with Note (2));

Step 4: Determination of bidding price after rectification of errors, adjustment of deviations, discount deduction (if any);

Step 5: Conversion of bidding price into a single currency (if any);

Step 6: Determination of preferential treatment value (if any) as stipulated in ITB 28;

Step 7: Ranking the bidders: the Bid proposal which has the **lowest bidding price for each group** after rectification of errors, adjustment of deviations, discount deduction (if any), conversion of bidding price into a single currency, addition preferential treatment value (if any), including all taxes, fees, charges (if any) arisen inside Vietnam and shall be taken into consideration exemption of import tax and VAT for imported goods from using List of exempted goods available for Vietsovpetro in Block 09-1 shall be ranked the first.

The following content will be considered in the evaluation and ranking stage of contractors:

During the Bid evaluation stage, for proposal of goods originating from countries affected by armed conflict, in state of war, sanctioned or embargoed, and the importation of those may be interrupted and affect the contract performance and delivery schedule, Bidder must provide explanations and commitments on the ability to deliver goods for Vietsovpetro to consider and evaluate.

Based on the actual situation at that time, Vietsovpetro has the sole and exclusive right to review and decide to reject the bids, or not to continue the evaluation, if in the opinion of Vietsovpetro there is any risk to the contract performance and delivery schedule. In that case, the Vietsovpetro at its sole and absolute discretion will have the right to consider and remove these Bidders from the ranking list.

Notes:

(1) Rectification of errors

Provided that the bid proposal substantially satisfies Invitation to Bid, Vietsovpetro shall rectify arithmetical errors and other errors on the following basis:

a) Arithmetical errors include mistakes from calculation such as: addition, subtraction, multiplication, division when calculating bidding price. If there is a discrepancy between the unit price and the total price, the unit price shall prevail and the total price shall be corrected; If there is unusual differences in unit price due to decimal errors (10 times, 100 times, 1000 times), the total price should be used as a legal basis for correction; when the bidder fills without price or “0” in the column of unit price and total price, price of this item shall be deemed to be allocated among the prices for the other items of work of the package and Bidder will not be paid for by Vietsovpetro during contract performance.

b) Other errors:

- If the Total price column is filled without the corresponding unit price, the unit price shall be determined by dividing the total price by the quantity; if the unit price is filled in, but the total price is missing, the total price shall be determined by multiplying the quantity by the unit price; if one of



the items has the unit price and total price filled in, but the quantity is missing, the quantity shall be determined by dividing the total price by the unit price of that particular item. In case the aforesaid quantity that has been additionally defined is different from the quantity mentioned in the Invitation to Bid, that value difference is the deviation in the scope of supply, which shall be adjusted under regulations specified in Step 3;

- Mistake in Unit must be corrected to meet the requirements specified in the Invitation to Bid;
- Mistakes in using comas (instead of periods) and vice versa shall also be corrected in accordance with the written in Vietnamese customary. If Vietsovpetro determines the obvious mistake in placing of comas and periods, the total price shall prevail and the unit price shall be corrected.
- If there is an error in a total corresponding to the addition of subtotals, the subtotals shall prevail and the total shall be corrected;
- If there is a discrepancy between words and numbers, the amount in words shall used as a legal basis for correction. If the amount expressed in words is incorrect, then the number after rectification of error as stipulated in this article should be used as a legal basis for correction.

(2) Adjustment of deviation

a) In case of deviation in the scope of supply compared to the Invitation to Bid, what is deficient shall be added, and what is redundant shall be subtracted according to respective unit price in the Bid proposal of bidder that has deviation;

In case of deficient deviation (lack of items of work in comparison with the scope of supply, lack of inland transportation cost to Vietsovpetro warehouse / Vietsovpetro port in case Bidder does not offer delivery term to Vietsovpetro warehouse / Vietsovpetro port), if there is no respective unit price in the Bid proposal with deficient deviation, the adjustment of deviation will be as follows:

- Lack of items of work in comparison with the scope of supply:

The highest unit price offered for such item of Bid proposals which pass the Technical evaluation shall be used as legal basis for adjustment of deviation. In case the Bid proposals passed the Technical evaluation has no unit price, unit price in the value of bidding package shall be used as legal basis for adjustment of deviation. In case not having value of bidding package, unit price for calculating price of bidding package shall be used as legal basis for adjustment of deviation.

In case only one bidder passes the Technical evaluation, adjustment of deviation shall be made based on respective unit price in the Bid proposal of this bidder; In case this Bid proposal has no respective unit price, unit price in value of bidding package shall be used. In case not having value of bidding package, unit price for calculating price of the bidding package shall be used as legal basis for adjustment of deviation.

- Lack of inland transportation cost to Vietsovpetro warehouse / Vietsovpetro port:

In case Bidder does not offer delivery term to Vietsovpetro warehouse / Vietsovpetro port and not having value / unit price for inland transportation cost to Vietsovpetro warehouse / Vietsovpetro port, unit price in the value of bidding package shall be used as legal basis for adjustment of deviation. In case of not having unit price in the value of bidding package, the following rates shall be used as legal basis for adjustment of deviation:

The inland transportation cost = 0.25% x total proposed bidding price.

b) In case bidder has discount letter, rectification of errors and adjustment of deviation shall be made based on bidding price without discount. Percentage (%) of deficient deviation shall be determined on basis of comparison of bidding price in Application for Bidding.

Section 5: Technical alternative

Bidder is allowed to submit Technical alternative and requested to identify clearly which is “The main offer” and which is “The alternative offer” in the Proposal.



Note: Technical alternatives are only considered when main solution meets requirements and bidder is ranked first. In this case, bidder shall provide all information necessary for evaluation of the alternatives by Vietsovpetro, including notes, drawings, technical specifications, progress of supply and other relevant information.

Section 6: Bidding package with multiple independent parts (Applicable)

If the bidding package is divided into multiple independent parts as stipulated in ITB 1.2, implement as follows:

1. The evaluation and approval of the winning of bid will be carried out on the basis that the total proposed bid winning prices of the bidding package are lowest (for lowest price method); the total evaluated prices are lowest (for evaluated price method); the total proposed bid winning prices shall not exceed the approved value of bidding package but are not compared to the estimated value of each part.
2. There is one contract if only one bidder wins all the parts of the bidding package. There are many contracts if many bidders win the different parts of the bidding package.

Section 7: The right to unilaterally terminate contract negotiations with the first-ranked contractor in in contract negotiation satge.

For the proposal of goods originating from countries affected by armed conflict, in state of war, sanctioned or embargoed, and the importation of the those may be interrupted and affect the contract performance and delivery schedule, explanations and commitments on the ability to deliver goods must be provided by the Bidder for Vietsovpetro to consider and evaluate.

Based on the actual situation at that time, Vietsovpetro will have the sole and exclusive right to review and decide to reject the proposals of those goods, or not to continue the evaluation, if in the opinion of Vietsovpetro there is any risk to the contract performance and delivery schedule. In that case, Vietsovpetro at its sole and absolute discretion will have the right to stop contract negotiation, and the next ranked bidder will be invited to negotiate the contract.



Chapter IV. BIDDING FORMS

No.	Bidding Form	Performance	Responsibility for performance	
			Vietsovpetro	Bidder
1	Form 01. Application for bidding form	Submission with Bid Proposal		X
2	Form 02. Power of Attorney			X
3	Form 03. Consortium Agreement			X
4	Form 04A. Guarantee for Bid Participation (<i>Bid Bond</i>), <i>applicable to independent bidders</i>			X
5	Form 04B. Guarantee for Bid Participation (<i>Bid Bond</i>), <i>applicable to consortium bidders</i>			X
6	Form 04C. Form of Deposit for bid participation	Submission with Bid Proposal		X
7	Form 05. Bidder's information form			X
8	Form 06. Information form for consortium bidders			X
9	Form 07A. Similar contract performed by bidder (<i>applicable to commercial bidders</i>)			X
10	Form 07B. Declaration of goods production capacity (<i>applicable to bidders who are manufacturers</i>)			X
11	Form 08A. Proposed Key Personnel			X
12	Form 08B. Profession skill curriculum vitae of key personnel			X
13	Form 08C. Professional Experience			X
14	Form 09. Historical Contract Non-Performance for the supply of goods due to fault of the bidder in the past.			X
15	Form 10. Bidder's Financial Status			X
16	Form 11A. Scope of work using sub-contractors			X
17	Form 11B. List of specialized sub-contractors			X
18	Form 11C. List of subsidiaries and member companies delivering work in the bidding package			X
19	Form 12. Summary of bidding prices			X



20	Form 12A. Bidding price schedule of goods (<i>manufactured, processed outside Vietnam</i>)			X
21	Form 12B. Bidding price schedule of goods (<i>domestically manufactured, processed or goods manufactured, processed outside Vietnam but already imported and being offered in Vietnam</i>)			X
22	Form 13. Bidding price schedule for related services			X
23	Form 14A. Spare parts for replacement (<i>Optional Scope</i>) for Goods manufactured, processed outside Vietnam)			X
24	Form 14B. Spare parts for replacement (<i>Optional Scope</i>) for Goods domestically manufactured, processed or goods manufactured, processed outside Vietnam, but already imported and being offered in Vietnam			X
25	Form 15A. Declaration of goods with bid preferential treatments			X
26	Form 15B. Costs of goods manufactured domestically with bid preferential treatments (<i>in case of declaration for cost of import</i>)			X
27	Form 15C. Costs of goods manufactured domestically with bid preferential treatments (<i>in case of declaration for cost of manufacturing in Vietnam</i>)			X



APPLICATION FOR BIDDING¹

Date: (Date of signing application for bidding)

Name of bidding package: (Name Package according to Bid Announcement)

Name of project: (Name project)

Bid invitation No.: (In case of limited tendering)

Attention to: (full name and address of Vietsovpetro)

After studying the Invitation to Bid and the documents for amendment of the Invitation to Bid [insert the code of the amendment documents, if any] that we have received, we [insert the name of the bidder] commit to execute [name of Bidding package] as required by the Invitation to Bid at the total amount of [specify in number, in words, and currency of bid proposal]² and the summary of bidding price.

In addition, we voluntarily offer a discount with amount: _____ [specify in number, in words, and currency of bid proposal].

The bidding price after application of discount is: _____ [specify in number, in words, and currency of bid proposal]³.

Validity of the Proposal⁴: _____ [write the validity period from the deadline for submission of bids in accordance with the BDS] days, from the deadline for submission of bids.

Bid Security: _____ [State the value in figures, in words and in currency of the bid security].

Validity of Bid Security: _____ [insert validity period from deadline for submission of bids].

Time for contract implementation: (Total time to perform all work required in Bidding package)⁵.

We commit:

1. We are not in the process of carrying out dissolution procedures or having its business registration certificate, cooperative registration certificate, cooperative union registration certificate, or cooperative group registration certificate revoked, not in a case of insolvency according to the provisions of the law on bankruptcy (not in the process of ceasing operations or having its business household registration certificate revoked for Bidders that are household businesses).
2. We do not violate regulations on ensuring fair competition in bidding.
3. We have fulfilled the tax liabilities of the most recent fiscal year prior to the deadline for submission of bids.
4. We are not being under suspension from participating in bidding according to the provisions of the law on bidding.
5. We are not being prosecuted for criminal liability (the household owner is not being prosecuted for criminal liability in case the bidder is a business household).
6. We do not proceed any practices of corruption, bribe, collusion, obstruction and other violated provisions of the law on procurement when participating this package.
7. The information declared in the bid is truthful.
8. In case of winning the bid, the Proposal and clarification, supplemental documents of the Proposal constitute the agreement of responsibilities between the two parties until the contract is signed.
9. If our bid is accepted, we shall furnish a performance security as specified in ITB 37.1 of the Bidding document.

Legal representative of bidder

(Name, position, signature and stamp)

Notes:

¹ Application for bidding must be filled with sufficient and accurate information of Vietsovpetro, Bidder, the validity duration of Bid proposal, signed and stamped by legitimate representative of the bidder.



² Bidding prices in Application for bidding must be specific, fixed, indicated by numbers, words and in accordance with total bidding prices mentioned in price list. Bidders are required not to propose different bidding prices or conditions that put Vietsovpetro in disadvantage. In case of multiple parts, the Bidder must write the total bidding price of each parts and total bidding price of all parts that bidder participates.

³ Specify discount for the whole bidding package or for one or many works, items (specify detailed discounted works, items).

⁴ The validity of Bid proposal shall be counted from the date of Deadline for bid submission to the last date of validity period as stipulated in the Invitation to Bid. From the time of Deadline for bid submission until 24:00 of the date which has the deadline for bid submission is considered as one day.

⁵ Duration of contract implementation in Application for bidding must be in accordance with Technical proposal and completion schedule specified in the Bid Proposal.

⁶ If legitimate representative of bidder authorizes the subordinate to sign the application for bidding, the bidder must submit Power of Attorney according to Form 02 of this Chapter; if the company's Charter/regulations or other related documents have the assignment of responsibilities to subordinates to sign application for bidding, the bid proposal must include these documents (no Power of Attorney is required in accordance with Form 02 of this Chapter).

For consortium, the application for bidding must be signed by the legitimate representative of each member of the consortium, except in Consortium agreement (as in Form 03 of this chapter), the members of Consortium agree to authorize the leader member of the consortium to sign the Application for bidding. If each member of consortium has its own authorization, apply as for independent bidders. If the bidder wins the bidding package, the bidder must present to the Employer the notarized/certified copy of these documents before signing the contract. If the information declared is not accurate, the bidder is considered violation of ITB 4.



POWER OF ATTORNEY¹

Date ____/____/20____ at (name of place)

I, ... [insert Name, ID/passport number, position of Legitimate representative of the bidder], the Legitimate representative of _____ [insert the bidder name] at _____ [insert address]

To issue this Power of Attorney to:

Mr/Mrs _____

ID/Passport number _____

Position _____

To do, execute and perform the following acts and things during the process of participating the Bidding package _____ (Name of Bidding Package) of Project _____ (Name of project) held by Vietsovpetro:

[- Sign the Application for bidding form;

- Sign the Consortium agreement (if any);

- Sign all documents, correspondences to Vietsovpetro during the bidding process, including the written requests to clarify Invitation to Bid, written clarification of Bid proposal, or written requests to withdraw, modify or substitute the bid proposal;

- Negotiate and finalize contract with Vietsovpetro;

- Sign the Bidder's arising claims (if any);

- Sign contract with Vietsovpetro (if awarded the Bidding package)]²;

The Attorney shall lawfully perform acts within the scope of Power of Attorney as the legitimate representative of _____ (name of bidder).

The Mandator, [name of Legitimate representative of the bidder] will be completely responsible for acts performed by the Attorney, _____ [name of the Attorney] in the scope of Power of Attorney.

This Power of Attorney is valid for the period from _____ to _____³ and will be made in _____ originals, _____ of which will be retained by Mandator; _____ of which will be retained by Attorney and the rest will be retained by Vietsovpetro. All original copies hereof are identical and legally equal.

Attorney

(Signature)

(Name, position and stamp (if any))

Mandator

(Signature)

(Name, position and stamp (if any)
of Legitimate representative of the bidder)

Notes:

¹ The original of this Power of Attorney must be submitted to Vietsovpetro together with the application for bidding as stipulated in ITB 20.3. Legitimate representative of bidder gives the power of attorney to the deputy, subordinate, branch's manager, chief of bidder's representative office to perform one or more above mentioned listed acts. The stamp used in case of power of attorney can belong to the bidder or to the entity of Attorney. The Attorney can not subsequently give this authorization to another.

² The scope of Power of Attorney may include one or more above mentioned listed acts.

³ Specify the date the power of attorney come into force and expiry date, in accordance with the bidding process



CONSORTIUM AGREEMENT¹

_____, day ____ month ____ year ____

Bidding package: _____ [name of bidding package]

Under the project: _____ [name of project]

Based on the Invitation to Bid _____ [name of bidding package] date ____ month ____ year ____
[date recorded on the Invitation to Bid]

We, the representatives of the parties sign the Consortium Agreement, including:

Names of Consortium members _____ [name of each consortium member]

Represented by Mr./Ms.: _____

Position: _____

Address: _____

Tel: _____

Fax: _____

E-mail: _____

Account: _____

Tax code: _____

Power of Attorney No. ____ date ____ month ____ year ____ (in case of authorization).

The parties (hereinafter referred to as members) agreed to sign this Consortium Agreement with the following contents:

Article 1. General principles

1. The members voluntarily establish a Consortium to participate in the bidding package _____ [name of bidding package] under the project _____ [name the project].

2. The members agree the name of the Consortium for any transactions related to this package as: _____ [name of the Consortium as Agreement].

3. The members commit that there is not any member to arbitrarily join independently in this bidding package or join consortium with other members to participate in this bidding package. In case of winning the bid, all members of the Consortium shall sign the Contract and there is not any member to have the right to refuse performance of the responsibilities and obligations stipulated in the Agreement. In case a member of the Consortium refuses to fulfill their own responsibilities as agreed or violates the provisions of the signed contract, such member shall be handled as follows:

- Compensating for damages to the parties in the consortium;
- Working with members of the Consortium to compensate for all damages to the Vietsovpetro in accordance with the provisions stipulated in the Contract (corresponding to the proportion of each member specified in Article 2 of this Agreement);
- Other forms of handling ____ [Specify other forms of handling].

Article 2. Assignment of responsibilities

Consortium members agree to assign responsibilities for implementation of the bidding package _____ [write name of bidding package] under the project _____ [write name of project], for each member as follows:

1. Leader of the consortium:



The parties agree to authorize to _____ [Write name of a party] as a leader of the consortium, representing the Consortium in the following part of work²:

- Signing the application of bidding;
- Signing all documents, correspondences to Vietsovpetro during the bidding process, including the written requests to clarify Invitation to Bid, written clarification of Bid proposal, or written requests to withdraw, modify or substitute the bid proposal;
- Performing Bid Bond on behalf of Consortium;
- Participating in the process of negotiation and finalization of the Contract;
- Performing Performance Bond for the entire Consortium in case the Consortium wins the bid;
- Signing the Bidder's arising claims (if any);
- Performing all obligations of the Consortium which are not specified in the Table of Responsibility between the Consortium members in item 2 as follows;
- Performing other works except for signing Contract _____ [specify the detail content of other jobs (if any)].

2. The members of the Consortium agree to assign the responsibility of members as following table³:

No.	Name	Content of assigned work	Respective percentage to total bidding price	Amount by percentage to total bidding price
(1)	(2)	(3)	(4)	(5)
1.	Name of the first member (Leader of the Consortium)	- Work 1: _____	_____ %	_____ VND/USD
		- Work 2: _____		
		- Work 3: _____		
				
2.	Name of the second member	- Work 1: _____	_____ %	_____ VND/USD
		- Work 2: _____		
		- Work 3: _____		
....				
Total		All work of bidding package	100%	_____ VND/USD

3. The payment method for the Consortium in case of winning the bid and signing a contract with Vietsovpetro is as follows:

- Vietsovpetro shall make direct payment to each member of the Consortium in accordance with the payment schedule specified in the Contract with the distributed amount corresponding to the proportion of workload agreed by the Consortium members and shown in column (4) of the Table of Responsibility in item 2 of this Consortium Agreement.
- Each member of the Consortium shall issue a Legal Invoice in accordance with the amount of the work performed by such Consortium member pursuant to the progress of each payment specified in the Contract.

Article 3. Validity of Consortium Agreement

1. This Consortium Agreement valid from its signing date.
2. This Consortium Agreement shall be determined to be invalid in the following cases:



- In case the Consortium wins the bid, this Consortium Agreement is an integral part of the contract signed with the Investor ...and shall only be terminated when the parties fulfill their responsibilities and obligations and complete the liquidation of the contract;
- The parties agree to terminate;
- The Consortium does not win the bid;
- Cancellation of bidding package under the project as notified by the Vietsovpetro.

Consortium Agreement is made in ____ copies, each party keeps ____ copy, each having equal legal force and authenticity.

LEGAL REPRESENTATIVE OF CONSORTIUM LEADER

[Full name, title, signature and stamp]

LEGAL REPRESENTATIVE OF CONSORTIUM MEMBERS

[Full name of each member, title, signature and stamp]

Notes:

¹ Depending on the size and nature of bidding package, the content of agreement as in this form can be amended appropriately. If the bidding package is divided into multiple independent parts, the consortium agreement must specify clearly the name, reference number of parts that the consortium participates, specify mutual responsibility and separate responsibility of each member in accordance with respective parts that bidder participates.

² The scope of authorization may include one or more above mentioned listed acts.

³ Bidder must specify the detail work and the estimated percentage of respective value that each member will implement, mutual responsibility and separate responsibility of each member, including head member of the Consortium.



GUARANTEE FOR BID PARTICIPATION¹**(BID BOND)*****(Applicable to independent bidder)*****Beneficiary:** **VIETSOVPETRO**

105 LE LOI STR, VUNG TAU WARD, HO CHI MINH CITY,

S.R. VIETNAM

(Hereinafter referred to as the employer)

Issue date of Guarantee: ____ *[insert date of issue]***BID SECURITY No:** ____ *[insert guarantee reference number]***Guarantor:** ____ *[insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[insert name of the Bidder.]* (hereinafter called "the Applicant") will participate bid for execution of the bidding package ____ *[name of the bidding package]* under project ____ *[name of the project]* according to Bid Invitation Letter No/Bid Announcement No. _____. *[insert No. of Bid Invitation letter/ Bid Announcement No].*

We *[name of the bank]*, hereinafter referred to as "the bank", pledge Beneficiary to guarantee for the bidder to participate in bidding for this bidding package with an amount of *[specify the value in number, in words, and the currency in use]*.

This guarantee is effective for ².days, from the date.....month.....year³

At the request of the Applicant, we, as Guarantor, hereby unconditionally and irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures, insert amount in words]* within 05 working days upon our receipt of written notice from Beneficiary stating without requiring proof that bidder violates the regulations as follows:

1. Bidder has withdrawn its Bid proposal after Deadline for bid submission and during the validity period of bid proposal;
2. Bidder violating Law on Bidding leads to cancellation of Bid in accordance with Point d, ITB 32.1;
3. Bidder fails or refuses to conduct contract negotiations within 07 days from the date receipt of notification for negotiation of contracts by Vietsovpetro; or Bidder conducts contract negotiations but withdraws its Bid proposal leading to failed contract negotiations, except for force majeure;
4. Bidder fails or refuses to conduct contract finalization within 20 days from the receipt date of Bid Award Notification from Vietsovpetro or bidder finalized contract but refuses to sign contract, except for force majeure; or the bidder refuses to sign the contract within ten (10) days from the date of completion of the contract, except in cases of force majeure;
5. Bidder does not conduct performance bond in accordance with ITB 37.

The said guarantee amount shall be paid by Guarantor forthwith to Beneficiary notwithstanding any contestation or protest by Guarantor or Applicant or by any third party, and irrespective of whether or not there is any dispute between Applicant and Beneficiary in respect of or relating to the Bidding package or in respect of any other matter and irrespective of whether or not such said dispute, if any, has been settled, resolved, litigated, or adjudicated upon otherwise howsoever.



If Applicant is selected as successful bidder: This guarantee will expire immediately if the Applicant signs contract and submit Performance Bond to Beneficiary in accordance with agreement in contract.

If Applicant is not selected as successful bidder: This Guarantee will expire immediately after we receive a copy of the Beneficiary's notification to the Applicant about the result of the Bidder selection; within 30 days after the validity period of bid proposal.

Any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

Legitimate representative of the bank
(Specify name, title, sign and stamp)

Notes:

¹ Apply if Bid Guarantee is in form of Letter of Guarantee from financial institution or foreign bank's branches which is legally operating in Vietnam.

² Insert as stipulated in BDS 18.2.

³ Insert Deadline for bid submission as stipulated in BDS 19.1.



GUARANTEE FOR BID PARTICIPATION¹
(BID BOND)
(Applicable to consortium bidders)

Beneficiary: VIETSOVPETRO

105 LE LOI STR, VUNG TAU WARD, HO CHI MINH CITY, S.R. VIETNAM
 (Hereinafter referred to as the employer)

Date: _____ *[Insert date of issue]*

BID GUARANTEE No.: _____ *[Insert guarantee reference number]*

Guarantor: _____ *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[insert name of the Bidder]*² (hereinafter called "the Applicant") will participate bid for execution of the bidding package _____ *[name of the bidding package]* under project *[name of the project]* according to Bid Invitation letter No. _____ *[name No. of Bid Invitation letter]*.

We *[name of the bank]*, hereinafter referred to as "the bank", pledge Beneficiary to guarantee for the bidder to participate in bidding for this bidding package with an amount of *[specify the value in number, in words, and the currency in use]*.

This guarantee is effective for ³ days, from the date month ... year⁴

At the request of the Applicant, we as Guarantor, hereby unconditionally and irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ *[insert amount in figures, insert amount in words]* within 05 working days upon our receipt of written notice from Beneficiary stating without requiring proof that bidder violates the regulations as follows:

- 1) Bidder has withdrawn its Bid proposal after bid submission deadline and _____ during the validity period of bid proposal;
- 2) Bidder violating Law on Bidding leads to cancellation of Bid in accordance with Point d, ITB 32.1;
- 3) Bidder fails or refuses to conduct contract negotiations within 07 days from the date receipt of notification for negotiation of contracts by Vietsovpetro; or Bidder conducts contract negotiations but withdraws its Bid proposal leading to failed contract negotiations, except for force majeure;
- 4) Bidder fails or refuses to conduct contract finalization within 20 days from the receipt date of Bid Award Notification from Vietsovpetro or bidder finalized contract but refuses to sign contract, except for force majeure; or the bidder refuses to sign the contract within ten (10) days from the date of completion of the contract, except in cases of force majeure;
- 5) Bidder does not conduct performance bond in accordance with ITB 37.

If any member of consortium _____ *[insert name of consortium]* violates the Law, that leads to the Bid Bond not to be returned as specified in Point b, ITB 18.5 of Invitation to Bid, then the Bid Bond of all consortium members shall not be returned.

The said guarantee amount shall be paid by Guarantor forthwith to Beneficiary notwithstanding any contestation or protest by Guarantor or Applicant or by any third party, and irrespective of whether or not there is any dispute between Applicant and Beneficiary in respect of or relating to the Bidding package or in respect of any other matter and irrespective of whether or not such said dispute, if any, has been settled, resolved, litigated, or adjudicated upon otherwise howsoever.



This guarantee will expire: (a) if the Applicant is the successful Bidder, upon our receipt of copies of the contract agreement signed by the Applicant and the performance security issued to the Beneficiary upon the instruction of the Applicant; or (b) if the Applicant is not the successful Bidder, upon the earlier of our receipt of a copy of the Beneficiary's notification to the Applicant of the name of the successful bidder within 30 days after the expiration of Bid Proposal.

Any demand for payment under this Bid Bond must be received by us at the office on or before that date.

Legitimate representative of the bank
(Specify name, title, sign and stamp)

Notes:

¹ Applying in case the bid security (bank security) is a letter of guarantee of credit institutions or foreign banks' branches which are established under Vietnamese law. The bank is recommended to use this Bid security (bid bond) form, in case of applying for other different forms that violates one of following regulations: bid security has lower value than required, the validity period of bid security is shorter than regulation prescribed in ITB 18.2, invalid name of Beneficiary, not original and without valid signature or with the disadvantageous conditions to Vietsovpetro, bid security shall be invalid.

² Bidders' name can be one of following cases:

- Name of consortium participates in bid, for instance consortium bidder A + B participates in bid, name of bidders shall be written "Consortium bidder A + B";
- Name of the member undertakes implementation of bid security for the entire consortium or for other partners in consortium, for instance consortium A + B + C participates in bid, case of the consortium agreement appointed bidder A performing bid security for whole consortium, the name of bidder shall be "Bidder A (on behalf of consortium bidder A + B + C), in case the consortium agreement appointed bidder B performing bid security for bidder B and C, then name of bidder shall be written as "Bidder B (for the behalf of bidder B and C)";
- Name of consortium's member perform separate the bid security;

³ Insert as prescribed in BDS 18.2.

⁴ Insert date deadline for bid submission in accordance with BDS 19.1.



FORM OF DEPOSIT FOR BID PARTICIPATION

Date: (Date of signing application for bidding)

Name of bidding package: (Name Package according to Bid Announcement)

Name of project: (Name project)

Bid invitation No.: (In case of limited tendering)

Attention to: (full name and address of employer)

With reference to the above mentioned bidding package, we *[insert the name of the bidder]* hereby would like to confirm as follows:

1. In lieu of the submission of Bid Bond issued by a bank, *[insert the name of the bidder]* shall implement bid guarantee for *[name of bidding package]* in the form of transfer to Vietsovpetro's bank account a deposit amount equivalent to the Bid Bond amount specified in the ITB, i.e *[specify in number, in words, and currency of deposit]*
2. Bidder confirm that Bidder shall comply all conditions as stipulated in Bid bond form of ITB. *(In the event that Bidder confirms not to comply all conditions in the Bid bond's form in ITB, Bidder's bidding proposal shall not be evaluated)*
3. After *[insert the required bid bond validity period]* days from the bid closing date, Vietsovpetro shall transfer deposit amount above to *[insert the name of the bidder]*'s account. *[insert the name of the bidder]* shall be responsible for all the bank fees in connection with this transfer.
4. Vietsovpetro's bank account:
Beneficiary's name: Vietsovpetro
Beneficiary's Bank: Joint Stock Commercial Bank for Foreign Trade of Vietnam – Vung Tau Branch
Account Number: 008.100.00000.11 (VND)
 008.137.00000.29 (USD)

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

Along with this letter, bidder must enclose the Payment order or appropriate document evidencing that bidder executed the payment to Vietsovpetro account



BIDDER'S INFORMATION FORM¹

Date: _____

NCB No. and title: _____

Bidder's name: _____ *[specify Bidder's name]*

In case of consortium, insert name of each partner in consortium

Place of business registration: _____ *(indicate province/city of Constitution)*

Year of business founding / incorporation ____ *[year of company founding]*

Bidder's legal address *(in country of registration)*

Bidder's legitimate representative information:

Name:

Address:

Telephone/fax numbers:

E-mail address:

- a. Attached are copies of original documents: Articles of Incorporation, Business Registration, Decision of Establishment or equivalent documents of constitution or association issued by authority of country where Bidder is operating.
- b. Included the organizational chart.

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

¹ *In case of consortium Bidder, each consortium member must declare this form.*



INFORMATION FORM FOR CONSORTIUM BIDDER'S MEMBERS¹

Date: _____

Bid package No. and titles: _____

Consortium Bidder's name:

Consortium member's name:

Consortium member's country of registration:

Consortium member's year of foundation:

Consortium member's legal address in country of registration:

Consortium member's legitimate representative information:

Name:

Address:

Telephone/fax numbers:

E-mail address:

1. Attached are copies of original documents of: Business Registration of Company, Certificate of Investment, Decision of Establishment, etc.
2. Included is the organizational chart.

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

¹ In case of consortium Bidder, each consortium member must declare this form.



SIMILAR CONTRACT PERFORMED BY BIDDER¹**(Applicable to commercial bidders)**

Date ____ month ____ year ____

Bidder's name: ____ [full name of bidder]

Descriptions of each contract should contain following information:

Name and contract number	[Full contract name and number]		
Contract signing date	[Date, month, year]		
Completion date	[Date, month, year]		
Contract Value ⁽³⁾	[Total signed contract value and the original currency]		Equivalent to ____ VND
If the bidder is a consortium member, provide a summary of the work undertaken and its value	[Summary of the work]	[Value of the work undertaken (amount in original currency and %)]	Equivalent to ____ VND
Project or Procurement name	[Full name of the project/procurement estimate whose contract is being declared]		
Name of Investor:	[Full name of the Investor in the contract being declared]		
Address:	[Full current address of the Investor]		
Telephone/fax:	[Phone number, fax number including country code, area code]		
Email:	[Email address]		
Describe similarities in accordance with Section 2.1 of Chapter III²			
1. Type of goods	[Correct type]		
2. Fulfilled contract value ³	[Actual contract value fulfilled based on acceptance value, contract liquidation]		
3. Scale	[Scale according to the contract]		
4. Other characteristics	[Other characteristics, if needed]		

Legal representative of bidder**(Name, position, signature and stamp)****Notes:**

The contractor shall carefully study the Invitation to Bid and proposes similar contracts to ensure the requirements of the Invitation to Bid are complied.

¹ In case of consortium, each member must declare according to this Form.

² Bidders only declare the similar content with the requirements of the bidding package.

³ In case the contract value is not in VND, it shall be converted to VND at the exchange rate specified in Section 2 of Chapter III as a basis for evaluation.



DECLARATION OF GOODS PRODUCTION CAPACITY
(Applicable to bidders who are manufacturers)

The number of factories and production facilities (collectively referred to as factories): ____
[Number of factories]

For each factory, the bidder declares the following information:

Factory Name:	<i>[Factory name]</i>
Address:	<i>[Factory address]</i>
Total investment:	<i>[Total investment]</i>
Design capacity:	<i>[Design capacity]</i>
Effective capacity:	<i>[Effective capacity of last year]</i>
Production standard:	<i>[Current production standard, if applicable]</i>
Number of employees:	<i>[Total number of employees working at the factory]</i>

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

For a consortium, each member of the consortium shall declare using this Form.



DECLARATION OF GOODS PRODUCTION CAPACITY
(Applicable to bidders who are manufacturers)

The number of factories and production facilities (collectively referred to as factories): ____
[Number of factories]

For each factory, the bidder declares the following information:

Factory Name:	<i>[Factory name]</i>
Address:	<i>[Factory address]</i>
Total investment:	<i>[Total investment]</i>
Design capacity:	<i>[Design capacity]</i>
Effective capacity:	<i>[Effective capacity of last year]</i>
Production standard:	<i>[Current production standard, if applicable]</i>
Number of employees:	<i>[Total number of employees working at the factory]</i>

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

For a consortium, each member of the consortium shall declare using this Form.



PROPOSED KEY PERSONEL

The Bidder shall declare its key personnel as required in Section 2 of Chapter III and shall demonstrate its capability to mobilize these people to deliver the bidding package. Key personnel may be on the contractor's payroll or mobilized by the bidder. In case the key personnel declared by the bidder in its bid proposal does not meet the requirements or the contractor cannot demonstrate mobilization capability (including cases where said personnel has been mobilized for another contract with overlapping execution timeline), Vietsovpetro shall allow the bidder to make addition or replacement. The bidder is allowed to make addition or replacement once for each position for a suitable period of time not less than 03 working days. In case the bidder does not have a replacement complying the Invitation to Bid's requirements, the contractor shall be disqualified. In all cases, if the bidder declares personnel in a dishonest manner, making replacement shall not be allowed, the bid proposal shall be disqualified and the bidder shall be considered fraudulent according to the provisions of legislation on bidding or other relevant legislation and penalized accordingly.

1.	Job position <i>[detailed job position in the bidding package]</i>
	Name <i>[name of key personnel]</i>
2.	Job position <i>[detailed job position in the bidding package]</i>
	Name <i>[name of key personnel]</i>
3.	Job position
	Name
4.	Job position
	Name
5.	Job position
	Name
—	Job position
	Name

Legal representative of bidder
(Name, position, signature and stamp)



PROFESSIONAL CURRICULUM VITAE OF KEY PERSONNEL

The Bidder must supply all required information below and attach certified copies of original related documents.

Position		
Personnel Information	Name	Date of Birth
	Professional Qualification	
Current Job	Employer's name	
	Employer's address	
	Telephone No:	Contact person (Deputy / HR officer)
	Fax	E-mail
	Title	Number of years of experience with the present employer

Legal representative of bidder
(Name, position, signature and stamp)



PROFESSIONAL EXPERIENCE

Summarize professional experience in reverse chronological order. Specify professional and management experience related to the bidding package

From	To	Company/Project/Position/Related professional and management experience

Legal representative of bidder
(Name, position, signature and stamp)



HISTORICAL CONTRACT NON-PERFORMANCE FOR THE SUPPLY OF GOODS NOT FULFILLED DUE TO FAULT OF THE CONTRACTOR IN THE PAST¹

Name of contractor: _____

Date: _____

Name of member of the consortium contractor (if any): _____

Contracts for the supply of goods not fulfilled due to fault of the contractor in the past in accordance with Clause 2.1 Section 2 Chapter III

- ☐ No contract Supply of goods not fulfilled through bidder's fault as of January 01, 2022 in accordance with Criterion 1 in the Evaluation Standards for Competence and Experience under Clause 2.1, Section 2, Chapter III.
- ☐ There is a contract Supply of goods not fulfilled through bidder's fault as of January 01, 2022 in accordance with the Evaluation Standards for Competence and Experience under Clause 2.1 Section 2 of Chapter III.

Year	Scope of work not fulfilled	Contract description	Total contract value (value, currency, exchange rate, equivalent value in VND)
		Contract Description: _____ Name of Investor: _____ Address: _____ Causes of non-fulfillment of the contract: _____	

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

¹ The Bidder must accurately and truthfully declare contracts for the supply of goods that were not fulfilled through fault of the Bidder in the past. In case Vietsovetro discovers that the bidder has a contract for the supply of goods that is not fulfilled due to fault of the bidder in the past which was not declared, the bidder is deemed to have committed fraud and its bid proposal shall be disqualified. For a consortium bidder, each member of the consortium must declare using this form.



FINANCIAL PERFORMANCE ⁽¹⁾
BIDDER'S HISTORICAL FINANCIAL PERFORMANCE¹

Bidder's name: _____

Date: _____

Name of Consortium member (if any): _____

Financial Data for Previous 03 Years ² [VND/USD]: 2022 ÷ 2024		
Year 01 (2022)	Year 02 (2023)	Year 03 (2024)

Information from balance sheet

Total assets			
Total liabilities			
Net worth			
Current assets			
Current liabilities			
Working capital			

Information from Income Statement

Total turnover			
Average annual turnover from business activities ³			
Profits before taxes			
Profits after taxes			

Attached are copies of financial statements (balance sheets, including all related notes and income statements) for the last **03 years**⁴, as indicated above, complying with the following conditions:

* All such documents reflect the financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries or affiliates.

* Historic financial statements must be audited in accordance with the applicable laws and regulations.

* Historic financial statements must be complete, including all notes to the financial statements.

* Historic financial statements must correspond to accounting periods already completed and audited. Attached with notarized copies one of following original documents:

- Tax finalization inspection report.

- Declaration form of self tax finalization report (VAT and CIT) confirmed by the Tax department/District tax department at the time of submitting the declaration form.

- Proper documentation in which the bidder has declared the electronic tax finalization.

- Confirmation in writing from tax department/ district tax department (confirmed the cumulative payment for full year) about complying paying tax duty.

- Audited report

- Other documents

Legal representative of bidder
(Name, position, signature and stamp)



Notes:

¹ In case of Consortium Bidder then each member of Consortium Bidder must declare according to this Form.

^{2, 4} The period stated here should be the same as the period indicated under Criterion 2.1 of Chapter III (Bid Evaluation Criteria).

In case Bidder has less than the number of years of establishment as required in ITB, the average annual turnover is calculated on the number of years that Bidder has been established.

³ To determine average annual turnover from business activities, the Bidder will divide total turnover from business activities in years to number of years based on supplied information.



SCOPE OF WORK USING SUB-CONTRACTORS¹

No.	Name of sub-contractor²	Scope of work³	Amount of work⁴	Value estimated⁵	Contract or agreement document with sub-contractor⁶
1.					
2.					
3.					
4.					
...					

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

¹ Applying this form in case of using sub-contractors.

² Bidder specifies the sub-contractor's names. In case at the moment at participating in bid, the sub contractors have not yet been identified, bidders do not have to provide information in this column, but it should be declared in the column "Scope of work". After that, if bidder is being successful, since the sub-contractors mobilized for implementing the work have to be approved by the Vietsovpetro.

³ Bidder specifies name and work description for the sub-contractor.

⁴ Bidder specifies the scope of work for the sub-contractor.

⁵ Bidder specifies the value of work percentage which the sub-contractor undertakes compared to the bidding price.

⁶ Bidder specifies the contracts number or agreement documents, the bidder should submit the original or notarized copy of these documents.



LIST OF SPECIALIZED SUB-CONTRACTORS¹

Bidder must provide the proof evidence which meets requirements prescribed at Point 2.3 Chapter III, Bid Proposal Evaluation criteria.

No.	Name of specialized subcontractor ²	Scope of work ³	Amount of work ⁴	Percentage value estimated ⁵	Contract or agreement document with specialized sub-contractor ⁶
1.					
2.					
3.					
4.					
...					

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

¹ Applying this form in case of using sub-contractor.

² Bidder specifies the specialized sub-contractor's name.

³ Vietsovetro specifies names and work description that are implemented by the specialized sub-contractor.

⁴ Bidder specifies the scope of work assigned to the specialized sub-contractor.

⁵ Bidder specifies the value of work in percentage which the specialized sub-contractor undertakes to perform, compared to the bidding price.

⁶ Bidder specifies the contract numbers or agreement documents, the bidder should submit the original or notarized copy of these documents.



**LIST OF SUBSIDIARIES AND MEMBER COMPANIES DELIVERING WORK IN
THE BID PACKAGE¹**

No.	Name of subsidiary/ member company ²	Scope of work ³	Value (% out of bid value) ⁴	Notes
1.				
2.				
...				

**Legal representative of bidder
(Name, position, signature and stamp)**

Notes:

¹ In the case the contractor participating in bidding, being a parent company (for example, the Corporation), mobilizes its subsidiary or member company to deliver part of the work in the bid package, it must be specifically declared in this table. The evaluation of experience and competence of the bidder is based on the value and volume of work delivered by the parent company, subsidiary and member company in the bidding package. In case the bidder participating in bidding is not the parent company, this Form shall not apply.

² Specify the name of the subsidiary or member company.

³ Specify the work delivered by the subsidiary or member company.

⁴ Specify how many % the value of work delivered by the subsidiary or member company accounts for in the total bid proposal value.



SUMMARY OF BID PRICE

No.	Content	Bid price
1.	Goods manufactured, processed outside Vietnam	(M ₁)
2.	Goods domestically manufactured, processed or goods manufactured, processed outside Vietnam, but already imported and being offered in Vietnam	(M ₂)
3.	Related services: Not applicable	(I)
	Total bidding price (Transfer to Application for Biding form)	(M₁) + (M₂) +(I)

Legal representative of bidder
(Name, position, signature and stamp)



**BIDDING PRICE SCHEDULE OF GOODS MANUFACTURED,
PROCESSED OUTSIDE VIETNAM**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Line item	Description of goods	Part number/ model of goods	MNF	CO	Unit	Required quantity	Unit price	Extended Price per line item (Col. 6x7)
I.	Group 1 (Item 1-24)							
1	...							
2								
II.	Group 2 (Items 25-62)							
25	...							
26	...							
III.	Group 3 (Items 63-71)							
63	...							
64	...							
IV.	Group 4 (Items 72-88)							
72	...							
73	...							
...	...							
Total bidding price of goods including taxes, fees, charges (if any) arisen inside Vietnam and shall be taken into consideration exemption of import tax and VAT for imported goods from using List of exempted goods available for Vietsovpetro in Block 09-1 (Transfer to the Summary of Bidding Price Form) <u>Note:</u> - Request to describe all the works and the Goods following requirements in Scope of supply indicated in Technical requirement (attached) - Request to breakdown value for each line item and for all items in Scope of supply								M1

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

Col. (1), (2), (6) and (7): In accordance with List of goods stipulated in Attachment 01: Scope of Supply in Part 4 – Appendices.

The bidder offers in Col. (3), (4), (5), (8) and (9).



For Vietnamese Bidders: The Bidders are requested to offer price on delivery to **Vietsovpetro warehouse, Rach Dua Ward, Ho Chi Minh City, S.R. Vietnam**, including taxes, fees, charges (if any) arisen inside Vietnam and shall be taken into consideration exemption of import tax and VAT for imported goods from using List of exempted goods available for Vietsovpetro in Block 09-1.

For Foreign Bidders: The Bidders are requested to offer price on delivery term: CFR Vietsovpetro Port, Ho Chi Minh City, S.R. Vietnam, Incoterm 2020. Bidders must clearly state in the offered price, as followings:

- Bidder intends to use inland transportation to delivery the goods from any discharge port in Vietnam to Vietsovpetro port: Yes/No.

- If Bidder declares its attention to use inland transportation to deliver the goods from discharge port in Vietnam to Vietsovpetro port, Vietsovpetro will calculate and add FCWT into the offered price for comparison and evaluation.

- If Bidder declares NOT to use inland transportation to transport the goods to Vietsovpetro port, or makes no statement in this regard, Vietsovpetro will not calculate and add FCWT into the offered price for comparison and evaluation. Bidder shall acknowledge that, if any inland transportation is used during performance of Contract (if awarded to Bidder), Bidder will be subject to FCWT according to the applicable regulations of S.R. Vietnam. FCWT incurred will be deducted from payment by Vietsovpetro.

When participating in bidding, all bidders have to take responsibility of researching, calculating and offering sufficient tax, fees, charges (if any) in response to tax rates, expenses, fees at the time 28 days prior to the stipulated deadline for bid submission.

In case the bidder announces the bidding price not including taxes, fees, charges then the Bid Proposal of the bidder will be rejected.



**BIDDING PRICE SCHEDULE OF GOODS DOMESTICALLY MANUFACTURED,
PROCESSED OR GOODS MANUFACTURED, PROCESSED OUTSIDE VIETNAM,
BUT ALREADY IMPORTED AND BEING OFFERED IN VIETNAM**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Line item	Description of goods	Unit	Required quantity	Manufacturer, Country of origin, Part number, model of goods	Unit price	Extended Price per line item (Col. 4x6)	Taxes, fees, charges (if any)
I.	Group 1 (Item 1-24)						
1	...					A1	T1
2							
II.	Group 2 (Items 25-62)						
25	...					A25	T25
26	...					A26	T26
III.	Group 3 (Items 63-71)						
63	...						
64	...						
IV.	Group 4 (Items 72-88)						
72	...						
73	...						
...	...						T...
88						A88	T88
Total bidding price of goods not including taxes, fees, charges (if any)						A=A1+A2 +...+A88	
Total value of taxes, fees, charges (if any)							T=T1+T2 +...+T88
Total bidding price of goods including taxes, fees, charges (if any) (Transfer to the Summary of Bidding Price Form)						M₂=A+T	

**Legal representative of bidder
(Name, position, signature and stamp)**

Notes:

Detailed T1, T2 and Tn (type, calculation).



Col. (1), (2), (3) and (4): In accordance with List of Goods as stipulated in Attachment 01: Scope of Supply in Part 4 – Appendices.

The bidder offers at Col. (5), (6), (7) and (8). The bidder offers unit price at col (6), including necessary expenses to supply goods in response to requirements of Vietsovpetro, not including tax, fees, charges (if any) offered at col (8).

Col. (8) includes all tax, fees, charges (if any). When participating in bidding, bidders have to take responsibility of researching, calculating and offering sufficient tax, fees, charges (if any) in response to tax rates, expenses, fees at the time 28 days prior to the stipulated deadline for bid submission. In case the bidder announces the bidding price not including taxes, fees, charges then the Bid Proposal of the bidder will be rejected.



BIDDING PRICE SCHEDULE OF RELATED SERVICES

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No.	Description of Services	Required quantity	Unit	Place where services will be performed	Final completion date	Unit price	Extended price per Service (Col. 3x7)
I.	Onshore technical service						
							
II.	Offshore technical service						
							
III.	Training (if any)						
							
IV.	Other services (if any)						
1.							
2.							
Total bidding price of related services not including taxes, fees, charges							
Taxes, fees, charges							
Total bidding price of related services including taxes, fees, charges (if any) (Transfer to the Summary of Bidding Price Form)							(I)

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

Col. (1), (2), (3), (4), (5) and (6): In accordance with Table of Related Services stipulated in Part 2 – The scope of supply's requirement.

The bidder offers Col. (7) and (8).

Foreign bidders have to clearly state that whether the offered price includes Foreign Contractor Withholding Tax (FCWT). If the offered price has not included, Vietsovpetro will calculate and add FCWT into the offered price for comparison and evaluation.



**BIDDING PRICE OF GOODS (OPTIONAL SCOPE)
FOR GOODS MANUFACTURED, PROCESSED
OUTSIDE VIETNAM**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Line item	Description of goods	Part number/ model of goods	MNF	CO	Unit	Required quantity	Unit price	Extended Price per line item (Col. 7x8)
	Priced list of recommended spare parts for 02 years' operation <i>(i.e.: as stated in Technical Requirement)</i> <i>Detailed list of spare parts and prices shall be provided:</i>							
1.								
2.								
...								
n								
*	<i>Total bidding price of goods including taxes, fees, charges (if any) arisen inside Vietnam and shall be taken into consideration exemption of import tax and VAT for imported goods from using List of exempted goods available for Vietsovpetro in Block 09-1</i> <i>(Transfer to the Summary of Bidding Price Form)</i> <u>Note:</u> - Request to describe all the works and the Goods following requirements in Scope of supply indicated in Technical requirement (attached) - Request to breakdown value for each line item and for all items in Scope of supply							M1

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

Refer to Notes in Form 12A.



BIDDING PRICE OF GOODS (OPTIONAL SCOPE)
FOR GOODS DOMESTICALLY MANUFACTURED, PROCESSED OR GOODS
MANUFACTURED, PROCESSED OUTSIDE VIETNAM, BUT ALREADY
IMPORTED AND BEING OFFERED IN VIETNAM

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Line item	Description of goods	Unit	Required quantity	Country of origin, Part number, model of goods	Unit price	Extended Price per line item (Col. 4x6)	Taxes, fees, charges (if any)
1.	Goods 1					A1	T1
2.	Goods 2					A2	T2
...	...						
n	Goods n					An	Tn
Total bidding price of goods not including taxes, fees, charges (if any)						A=A1+A2+...+An	
Total value of taxes, fees, charges (if any)							T=T1+T2+...+Tn
Total bidding price of goods including taxes, fees, charges (if any) (Transfer to the Summary of Bidding Price Form)						M₂=A+T	

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

Refer to Notes in Form 12B.



DECLARATION OF PREFERENTIAL GOODS¹

No.	Item	Origin <i>[name of country, origin, marks and numbers, model/PN, manufacturer]</i>	Goods with domestic production cost of 25% or higher		Domestic cost declaration	
			Yes	No	Form 15B	Form 15C
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1.	Goods 1		☐	☐	☐	☐
2.	Goods 2		☐	☐	☐	☐
...	...					
n	Goods n		☐	☐	☐	☐

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

(1) and (2): The bidder fills consistently with Form 15B or Form 15C.

(3) and (4): The bidder checks the correct box for each goods.

(5) and (6): For goods with a domestic production cost of 25% or higher, the contractor either declares the cost of domestic production using Form 15B (Declaration of cost of import) or Form 15C (Declaration of production cost in Vietnam).



**DECLARATION OF DOMESTIC PRODUCTION COSTS FOR
PREFERENTIAL GOODS**

(In the case of declaring cost of import)

No.	Item	Offered price in Bid proposal	Taxes	Cost of import	Cost of domestic production	Cost of domestic production (%)
		(I)	(II)	(III)	$G^* = (I) - (II) - (III)$	$D(\%) = G^*/G$ where đó $G = (I) - (II)$
	(1)	(2)	(3)	(4)	(5)	(6)
1.	Goods 1					
2.	Goods 2					
...	...					
n	Goods n					

Legal representative of bidder
(Name, position, signature and stamp)

Notes:

- (1) The bidder fills in the checked goods in column (3) and (5) of Form 15A.
- (2) The bidder fills in the unit price offered (including all taxes, fees, charges (if any)).
- (3) and (4) The bidder self-declares.
- (5) and (6) The bidder fills.



DECLARATION OF DOMESTIC PRODUCTION COST FOR PREFERENTIAL⁽¹⁾*(In the case of declaring production costs in Vietnam)*

No.	Item	Offered price in Bid proposal	Taxes ⁽²⁾	Cost of domestic production	Cost of domestic production (%)
		(I)	(II)	G*	$D(\%) = G^*/G$ where $G = (I) - (II)$
	(1)	(2)	(3)	(4)	(5)
1.	Goods 1				
2.	Goods 2				
...	...				
n	Goods n				

Legal representative of bidder**(Name, position, signature and stamp)****Notes:**

- (1) The bidder fills in the checked goods in column (3) and (6) of Form 15A.
 (2) The bidder fills in the unit price offered (including all taxes, fees, charges (if any)).
 (3) and (4) The bidder self-declares.
 (5) The bidder fills.



Part 2. TECHNICAL REQUIREMENTS

Chapter V. Technical Requirements

(Refers to attachment in Part 4 – Appendices)



Part 3. CONDITIONS OF CONTRACT AND CONTRACT FORMS

Form 16. Letter of Proposal Acceptance and Contract Award

Form 17. Contract form



LETTER OF PROPOSAL ACCEPTANCE AND CONTRACT AWARD

_____, day ____ month ____ year ____

To: _____ [*name and address of awarded Contractor, hereinafter referred to as "Contractor"*]

Subj: Notification of Proposal Acceptance and Contract Award

Dear Sir/Madam,

In accordance with the Letter of Invitation to Tender (ITB No.) regarding tender process, we would like to notify that you are the tender winner for the items listed hereunder (scope of supply) based on the following basic terms and conditions:

- Scope of Supply:
- Total price: – CFR Vietsovpetro port, Ho Chi Minh City, S.R. Vietnam
- Delivery time: days from the date of Letter of Award / contract signing
- Payment condition: TT / LC

As soon as possible but not later than 07 working days from the date signing this Purchase Order, you should open the Performance Bond which is issued by banks / branches legally operated in Vietnam with amount 08% (eight percent) of Purchase Order and send to Vietsovpetro. The validity of the Guarantee is equal to the delivery time plus 60 calendar days.

Please acknowledge the receipt of this letter and send us your acceptance / comments as soon as possible but not later than 02 working days from the date of this letter.

Looking forwards to receiving your favorable reply.

LEGAL REPRESENTATIVE OF THE EMPLOYER

[*Full name, title, signature and stamp*]



CONTRACT FORM
(For international contractor)

SOCIALIST REPUBLIC OF VIETNAM

Independence - Freedom – Happiness

Ho Chi Minh City, date/...../.....

PURCHASE ORDER

No.:/25/N-N3/XL-.....

FOR PROVISION OF INSTRUMENTS AND DETECTORS PACKAGE

(Package No. VT-2965/25-XL-DA-HMH)

BETWEEN

VIETSOVPETRO

AND

.....

Ho Chi Minh City, 2025



GENERAL CONDITIONS OF CONTRACT (GCC)

1. Definitions.

As used in this Contract:

- 1.1 Company means Vietsovpetro, as specified in the Purchase Order;
- 1.2 “Purchase Order” means the documented Agreement between the Company and the Contractor, including all attached appendices and documents; herein called PO.
- 1.3 “Contractor” means the bidder who has been awarded PO by the Company (either Independent or Consortium Contractor) and is specified in the PO;
- 1.4 “Subcontractor” means a person, or entity, Contractor whose name is proposed in the list of subcontractors by the Contractor in the Proposal or who carries out any part of work proposed by the Contractor in the Bid Proposal. Subcontractor enters into the PO with the Contractor to perform part of work, as specified in the Proposal and accepted by the Company;
- 1.5 “PO Documents” means the documents listed in the PO, including any amendments, addendums thereto;
- 1.6 “PO Price” means the total price as specified in the PO for supplying Goods (and Related Services). PO Price include all taxes, fees and charges (if any).
- 1.7 “Date” means calendar day; “Year” means 365 days;
- 1.8 “Goods” means all of the machinery, equipment, commodities, spare parts, raw materials, consumer goods, medical material used at medical facilities;
- 1.9 “Related Services” means the services such as warranty, maintenance, overhaul, repair, supply of spare parts and/or other after-sale services including training, technology transfer;
- 1.10 “Completion” means the fulfillment of the Related Services by the Contractor in accordance with the terms and conditions set forth in the Contract;
- 1.11 “The Project Site” means the place named in the PO.

2. Order of precedence

The documents forming the Contract is arranged in the following order of precedence:

- 2.1 PO, including all Appendix;
- 2.2 Letter of Proposal Acceptance and Contract Award;
- 2.3 Bidding Result Approval;
- 2.4 General Conditions of Contract (GCC);
- 2.5 Proposal and Clarifications (if any);
- 2.6 Invitation for Bid and Bulletins (if any);
- 2.7 Any other document listed in the PO.

3. Governing law and Language

The Contract shall be governed by and interpreted in accordance with the laws of the Socialist Republic of Vietnam. The Contract shall be written in English.

4. Notice

- 4.1 Any notice from one Party to another relating to the Contract shall be conducted in writing, to addresses specified in the PO.
- 4.2 A notice from one Party shall be considered as effective from the date the other Party receives it or from the effective date as specified in the notice, whichever comes later.



5. Performance Bond

5.1 Performance Bond shall be submitted to the Company no later than the date specified in Letter of Proposal Acceptance and Contract Award. Performance Bond shall be issued in one of following forms:

- a) Submit a performance bond issued by a legally domestic bank or foreign bank's branch established under Vietnamese law;
- b) Submit the certificate of guarantee insurance from a domestic non-life insurance enterprise or a branch of a foreign non-life insurance enterprise established under Vietnamese law.

The Performance Bond specified in Point a and b of this Clause is an unconditional guarantee (paid upon request), according to the form specified in the PO.

5.2 Validity and formality is specified in the PO.

5.3. The Performance Bond will be paid to the Company to compensate for any loss arising from the Contractor's failure to fulfill their contractual obligations.

5.4 The return of Performance Bond is specified in the PO.

6. Subcontractor

6.1 The Contractor is allowed to sign contracts with Subcontractors in the List of proposed subcontractors specified in the Contract to perform part of work stated in the Proposal. The use of subcontractors shall not relieve the Contractor from any of his obligations. The Contractor shall take full responsibilities for work load, quality, progress and other responsibilities for work performed by Subcontractors.

The changing, supplement of subcontractors onto List of subcontractors shall be only conducted with reasonable grounds and Company's approval.

6.2 Contractor is not allowed to use subcontractors for other work which are not stated in the Bid Proposal.

6.3 Other requirements for subcontractor are specified in the PO.

7. Settlement of Disputes

7.1 The Company and the Contractor shall make every effort to resolve amicably by negotiation any disagreement or dispute arising between them.

7.2 If the dispute has not been resolved by such mutual negotiation within the specified duration in the PO from the date on which dispute arose, then either party may ask to commence arbitration under the dispute resolution mechanism, as specified in the PO.

8. Scope of Supply

Goods (and Related Services) shall be supplied as specified in Appendix No. 01 – Scope of Supply, which is considered as an integral part of this PO, including types of goods (and Related Services) supplied by the Contractor and their unit prices.

9. Delivery Schedule of Goods, Completion Date of Related Services (if any) and Documentations

Delivery Schedule of Goods, Completion Date of Related Services (if any) must be performed according to the provisions of the PO. The Contractor must provide invoice and other documents as described in the PO.

10. Contractor's Responsibilities

Contractor shall supply all Goods (and Related Services) (if any) in accordance with the Scope of Supply in accordance with GCC Clause 9, and follow the Delivery Schedule of Goods (and Completion Date of Related Services), as per GCC Clause 10.



11. Type of Contract and Contract Price

Type of contract: is specified in the PO.

Contract Price specified in the PO covers all expenses for complete supplying Goods (and Related Services) stated in the Price schedule of the PO.

12. Tax Adjustment

12.1 The Contractor shall be responsible for all costs of taxes, fees and charges incurred until the goods are delivered to the Company.

12.2 In case the Contractor is eligible for tax, fee and charge exemption or reduction, the Company shall use its best efforts to enable the Contractor to apply tax, fee and charge exemption or reduction policies.

12.3 Tax adjustment are carried out in accordance with the PO.

13. Advance Payment

13.1 The Company shall make advance payment to the Contractor with an amount stated in the Contract upon provision of Advance Payment Guarantee by the Contractor, with the value equal to the advance payment. The Advance Payment Guarantee shall be issued by a bank or credit organizations legally operating in Vietnam and shall remain effective until the advance payment has been repaid; the value of the Advance Payment Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be applied on the advance payment.

13.2 The Contractor is to use the advance payment only for the purpose of executing the Contract. The Contractor has to prove that advance payment has been used for the right purpose by providing copies of invoices or other relevant documents to the Company. The Contractor shall be deprived of advance payment if advance payment is not used correctly.

14. Payment

14.1 Payments are made in accordance with the PO.

14.2 The payment currency shall be VND/USD/EUR in accordance with the PO.

15. Copyright

Contractor shall take full responsibility for all damages arising from a third party's appeal against copyright violation of intellectual property relating to Goods supplied by Contractor to Company.

16. Use of documentations and information relating to Contract

16.1. The Company and the Contractor shall keep confidential any documents, data or other information relating to the contract provided directly or indirectly by one party to the other party, and shall not disclose such documents, data or information to a third party without the prior written consent of the other party, whether such documents, data or information are provided before, during or after the fulfillment or termination of the contract. The Contractor may transfer to a subcontractor appropriate documents, data and information provided by the Company for the subcontractor to perform its work under the contract; in this case, the subcontractor shall have an undertaking to the Contractor to keep such documents, data or information confidential.

16.2. The Company shall not use the documents, data and other information received from the Contractor for any purpose other than the contract. The Contractor shall not use the



documents, data and other information received from the Company for any purpose other than the performance of the contract.

16.3. The obligations of the Company and the Contractor specified in under GCC Sub-Clauses 16.1 and 16.2 shall not apply to information that:

- a) Information that the Company or Contractor needs to provide to the competent authority;
- b) Information that has been or will be published through no fault of the Company or Contractor;
- c) Information owned by one party at the time of publication and not previously provided directly or indirectly by the other party;
- d) Information that a party lawfully receives from a third party that is not under an obligation to keep the information confidential.

16.4. The provisions of GCC Clause 16 shall not in any way modify any confidentiality commitments made by a party prior to the date of signing the contract relating to the provision of goods and services.

16.5. The provisions of GCC Clause 16 shall continue in effect after fulfillment or termination of the contract for any reason.

17. Technical Specifications and Standards

Goods (and Related Services) supplied under this Contract shall conform to the technical specifications and standards mentioned in Appendix No. 01 - Scope of Supply; and when no applicable specification or standard is mentioned, the applicable specification or standard shall be equivalent or superior to the official standards currently applied in the Goods' country of origin.

18. Packing

The Contractor shall provide such packing of the Goods as is required in the PO and is suitable with each type of transportation means during transit to their final destination. The packing shall be sufficient to prevent the Goods from damage or deterioration due to rough handling and other environmental impacts. Packing case size and weights shall take into consideration the conditions of transportation such as distance, type of transport mean, infrastructure, etc. from origin to specified destination.

19. Insurance

Goods supplied in the Contract shall be fully insured to cover losses or damages occurred in production process, transportation, stocking and delivery as described in the PO.

20. Transportation and Incidental Services

Conditions about Transportation and Incidental Services are specified in the PO.

21. Goods Inspections and Testing

The Contractor must test and take inspection of Goods and related services relevant to the provisions of the Contract and bear all testing and inspection costs according to the provisions of the Contract.

22. Damages

Damages are specified in the PO.

23. Warranty

The Contractor warrants that all the Goods supplied under Contract are new, unused, and the quality is in accordance with manufacture standard, unless otherwise provided in the Contract.



The Contractor further warrants that the Goods shall be free from defects that cause problems under normal use.

Warranty period and place for the Goods is specified in Article 9 of the PO.

24. Force Majeure

24.1 For purposes of this Clause, “Force Majeure” means events beyond the control and foreseeability of the parties, such as wars, revolutions, fires, natural disaster, floods, epidemics, quarantine restrictions.

If a Force Majeure situation arises, the affected party shall promptly notify the other party in writing of such condition and the cause thereof. The affected party also has to give given by authorised organisation in the place of event.

During the Force Majeure, Contractor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. In this case, the Company shall consider reimbursing the Contractor necessary and reasonable additional and necessary costs beared by the Contractor.

24.2 Neither the party shall be liable for forfeiture of its Performance, liquidated damages, or if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

In case dispute arising due to Force Majeure shall be resolved according to GCC Clause 7.

25. Amendment, Addendum of Contract

25.1 Amendments to the Contract shall be applied in the following cases:

- (a) Changes in drawings, designs, or technical requirements, where Goods to be furnished under the Contract are to be specifically manufactured for the Company;
- (b) Changes in method of goods transportation or packing;
- (c) The place of delivery;
- (d) Changes of related services;
- (e) The schedule of delivery.

25.2. In case the amendment, addendum to the work content of the contract specified in Clause 25.1 GCC change the cost or implement time of any terms in the contract, price or delivery time and the completion date of the relevant service must be make corresponding adjustments and the two parties will amend the contract. The Contractor's request to adjust the contract's price, delivery time or completion date must be made within 28 days from the date the Contractor receives the Company's request to amend the scope of work.

25.3. In case the Contractor provides goods with a new version of the same manufacturer, the same origin, with technical requirements, configuration, parameters... equivalent or better than the version that the Contractor proposed in their proposals, the Contractor must notify the Company in writing for the Company's consideration. In this case, based on usage needs, the Company could accept the Contractor's proposal provided that the unit price and other terms and conditions of the contract remain unchanged.

25.4. In case of performing related services that has not stated in the contract, the Company and Contractor will negotiate to ensure the unit price is consistent with the market price.

25.5. The Company and the Contractor will negotiate to sign a contract's amendment in case of amendments. All transactions during the implementation of the Contract are made in writing by the Parties and sent by post or by fax number to the registered address or fax



number of each Party specified in the Contract and email to the email address according to the form in Appendix 4 (A, B) attached.

In case the Contractor's proposal is accepted by the Company and it makes the reduce of the contract price, the Company shall pay the Contractor with the rate that specified in the Contract to the price reduction value. And if it makes the increase of the contract price, the Company shall pay the Contractor the arising value.

26. Amendment in Delivery Schedule

26.1. During the contract implementation time, in case of unfavorable conditions arise that prevents the Contractor or subcontractor from providing goods and performing related services as prescribed in Clause 8 GCC, The Contractor must promptly notify the Company in writing about the delay, reason, and duration of delay. Based on the Contractor's notice, the Company must quickly consider the situation and extend the contract. In case the Company agrees to extend the contract, the two parties will negotiate to sign amendments, supplement the contract.

26.2. Except the force majeure specified in Clause 24 GCC, if the Contractor delivers the Goods or completes related services lately, he is obliged to compensate the Company as prescribed in Clause 22 GCC.

27. Contract Termination

27.1. Contract Termination due to faults:

a) The Company may terminate partial or all of the Contract without prejudice to other remedies for breach of contract by informing the Contractor by letter about the breaches in the contract in the following cases:

(i) The Contractor cannot deliver the goods or part of the goods within the shipment time as specified in the contract, or within the extension period as specified in Clause 26 GCC;

(ii) The Contractor does not perform any other obligations under the contract;

(iii) The Company show that the Contractor violated one of the prohibited acts specified in Article 16 of the Bidding Law during the bidding process or contract implementation;

b) In case the Company terminates partial or all of the contract according to Point a of this Clause, the Company may purchase similar goods and related services that have not been performed according to the terms and conditions and methods. The Contractor shall be responsible for compensating the Company for arising costs from purchasing of such similar goods and services. However, the Contractor must continue to perform the part of the contract that was not terminated.

27.2. Contract Termination due to insolvency

In case the Contractor goes bankruptcy or becomes insolvency, the Company may terminate the contract at any time by sending notice to the Contractor. In such case, the Contract shall terminate and the Contractor shall not be entitled to compensation provided that termination shall not fact or prejudice any rights of action or remedy of the Company at any time.

28. Patent indemnity

28.1. The Contractor shall, subject to the Company's compliance with GCC Sub-Clause 28.2, indemnify and hold harmless the Company and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Company may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered



design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the contract by reason of:

- a) The installation of goods by the Contractor or the use of goods in Vietnam;
- b) The sale of the products produced by goods.

Such indemnity shall not cover any use of goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the contract, neither any infringement resulting from the use of goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the bidder, pursuant to the contract.

28.2. If any proceedings are brought or any claim is made against the Company arising out of the matters referred to in GCC Sub-Clause 28.1, the Company shall promptly give the Contractor a notice thereof, and the Contractor may at its own expense and in the Company's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

28.3. If the Contractor fails to notify the Company within 28 days after receipt of such notice, that it intends to conduct any such proceedings or claim, then the Company shall be free to conduct the same on its own behalf.

28.4. The Company shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.

28.5. The Company shall indemnify and hold harmless the Contractor and its employees, officers, and subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Contractor may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Company.

29. Change in laws and regulations

Unless otherwise specified in the contract, if after the date of 28 days prior to deadline for submission of bids, any law or regulation is promulgated, abrogated, or changed in Vietnam that subsequently affects the Delivery Date and/or the contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 11.

30. Export restriction

Any to provide deliveries or services, provided that the Contractor can declare to the satisfaction of the Company that it has completed all formalities in a timely manner, including applying for permits export restrictions which arise from trade regulations from a country supplying the goods or services, and which substantially impede the Contractor from meeting its obligations under the contract, shall release the Contractor from the obligation, authorizations, and licenses necessary for the export of the goods or services under the terms of the contract. Termination of the contract on this basis shall be for the Company's convenience.



PURCHASE ORDER

_____, day ____ month ____ year ____

FACSIMILE

PURCHASE ORDER No.

This Facsimile Transmission (Total ____ pages)

Company:

Country:

Fax:

From: **Vietsovpetro**

105 Le Loi Str., Vung Tau Ward, Ho Chi Minh City, S.R. Vietnam

Subj.: **Provision of (VSP's Inquiry No.)**

Dear Sirs,

Thank you for your offer No. ... dated for supply “**Instruments and Detectors Package**” - Block 09.1 under the Bid package №. VT-2965/25-XL-DA-HMH, we are pleased to confirm this Purchase Order on the terms and conditions as follows:

This transaction is made between:

VIETSOVPETRO

105 Le Loi Street, Ho Chi Minh City, Vietnam

Hereinafter referred to as the Buyer.

AND

.....

Hereinafter referred to as the Seller.

ARTICLE 1: OBJECT

The Seller agrees to sell and the Buyer agrees to buy “**Instruments and Detectors Package**” - Block 09.1 hereinafter referred to as “Goods”, with the quantity, specification, scope of supply as described in Appendix No. 01 (in.....pages), which is considered as an integral part of this Purchase Order.

ARTICLE 2: PRICE AND TOTAL VALUE

- 2.1 The unit prices for the Goods are specified in the Appendix No. 01 of this Purchase Order.
- 2.2 The total value of this Purchase Order is USD ..., CFR Vietsovpetro Port, S.R Vietnam (In words: US Dollars)
- 2.3 The price as mentioned above is understood CFR Vietsovpetro Port not subject to any alteration and includes value of the Goods, packing, marking, painting, assembling, testing, inspection, manufacturer's certificates, freight, export license if necessary, guarantee services if any etc... in accordance with terms and conditions of this Purchase Order as well as all duties, levied in connection with the performance of this Purchase Order outside the Buyer's country. FCWT (if any) shall be at Buyer's account.

ARTICLE 3: DELIVERY



3.1 Delivery time: not later than **135 calendar days** from the date of LOI / LOA to the date that the Goods arrival at Vietsovpetro's port (included navigation and transportation time).

Earlier shipment is allowed.

Partial shipment is allowed: max shipments.

Transshipment and multimodal transport are allowed at Seller's care and account.

3.2 Shipment to be made from port to Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam on the term CFR Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam – Incoterms 2020, except the otherwise stated in this Purchase Order.

For the mode of transport by sea or by air, in case the first import border gate (which is the port of discharge stated on the bill of lading or the customs declaration) is not Vietsovpetro port, Vungtau City, S.R. Vietnam (the port specified in the contract) incurring inland transportation to the port specified, the Seller will be subject to Foreign contractor with holding tax (FCWT) according to the current regulations of S.R Vietnam. Any extra transport, warehouse expenses, other charges and FCWT incurred will be deducted from payment by the Buyer.

3.3 The Delivery Date is understood as: The date that Goods arrival at Vietsovpetro port (included navigation and transportation time).

The date of arrival mention here will following the date of arrival of the Goods at Vietsovpetro port that indicated in "Arrival Notice" of Vessel Agent.

3.4. The carrying vessel must have ISM certificate.

ARTICLE 4: NOTICE OF SHIPMENT AND DOCUMENTATION

4.1 The Seller shall notify the Buyer by fax/cable/telex as soon as possible, but not later than 05 working days from the Bill of Lading date the following information regarding the shipment:

- Purchase Order number
- Name of Goods, quantity and value
- Number of cases, gross weight, measurement
- Bill of Lading number and date.
- Name of vessel, nationality, IMO number.
- Port of exit and destination, ETD/ETA
- Address, telephone, fax of the shipping agent in Vietnam.
- Any other special instructions which should call to the Buyer's attention.

The Seller shall be responsible for any losses, expenses which may be occurred due to incorrect information from the Seller to the Buyer.

4.2 Required shipping document for purchased goods.

4.2.1. By T/T:

Immediately but not later than 05 working days from the Bill of lading date the Seller shall send by Express courier or FEDEX or DHL at the Seller's expenses to "Vietsovpetro" - 105 Le Loi, Ho Chi Minh City, SR Vietnam the following shipment documents:

1. *03 originals and 02 (two) copies of clean on board Bill of Lading* evidencing shipment from port with destination Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam, consignee: Vietsovpetro, No.105 Le Loi Street, Ho Chi Minh City, S.R Vietnam, marked "Freight Prepaid".
2. *Detailed Packing List* showing the content of each case or lot, gross and net weight: covering Goods as specified in Appendix No. 1 to this Purchase Order: 03 originals.



3. *Signed Commercial Invoice* issued by the Seller for the respective shipment value indicating term of delivery (for example: CFR Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam) with itemized and total prices, stating the Seller's bank detail and account number: 03 originals and 01 copy.
4. *Certificate of Quality, Quantity* issued by the Manufacturer: 02 originals / Electronics with link to verify.
5. *Certificate of Origin* issued by the Competent authority of Manufacturer's / Exporter's country: 02 originals / Electronics with link to verify.
6. *Other certificates (as Technical Requirements)*: 02 originals and 01 copy.
7. *Certificates of Guarantee* issued by the Seller for the quality of Goods for 18 months from delivery date or 12 months after the goods have been put into service whichever comes first: 01 original.
8. *Export License or Letter of the Seller* stating that Export License is not necessary for export: 01 original.
9. *Seller's telex, fax* advising the shipment details (all documents in 4.2.1) to Vietsovpetro: 01 copy and via email: xndvcang.sd@vietsov.com.vn.
10. *Beneficiary's certificate* certifying that one set of the above mentioned documents (from 1 to 9 including one original of AWB / Bill of Lading) have been sent to the Buyer's address: 105 Le Loi Street, Ho Chi Minh City, S.R Vietnam within 03 working days from the Delivery Date by Courier's (courier's receipt must be enclosed thereto for negotiation): 01 originals and 02 copies.

4.2.2. By L/C:

Immediately but not later than 05 working days from the Bill of lading date the Seller shall send by Express courier or FEDEX at the Seller's expenses to Vietsovpetro - 105 Le Loi Str., Ho Chi Minh City, S.R. Vietnam the following shipment documents unless otherwise stated:

1. *02 originals and 02 (two) copies of clean on board Bill of Lading* evidencing shipment from port with destination Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam, consignee: Vietsovpetro, No.105 Le Loi Street, Ho Chi Minh City, S.R Vietnam, marked "Freight Prepaid".
2. *Detailed Packing List* showing the content of each case or lot, gross and net weight: covering Goods as specified in Appendix No. 1 to this Purchase Order: 03 originals.
3. *Signed Commercial Invoice* issued by the Seller for the respective shipment value indicating term of delivery (for example: CFR Vietsovpetro Port, Ho Chi Minh city, S.R.Vietnam) with itemized and total prices, stating the Seller's bank details and account number: 03 originals and 01 copy.
4. *Certificate of Quality, Quantity* issued by the Manufacturer: 02 originals / Electronics with link to verify.
5. *Certificate of Origin* issued by the Competent authority of Manufacturer's / Exporter's country: 02 originals / Electronics with link to verify.
6. *Other certificates (as Technical Requirements)*: 02 originals and 01 copy.
7. *Certificates of Guarantee* issued by the Seller for the quality of Goods for 18 months from delivery date or 12 months after the goods have been put into service whichever comes first: 01 original.
8. *Export License or Letter of the Seller* stating that Export License is not necessary for export: 01 original.
9. *Seller's telex, fax* advising the shipment details (Invoice value, Bill of lading/Airway Bill's number and date) to Vietsovpetro: 01 copy and via email: xndvcang.sd@vietsov.com.vn.



10. *Beneficiary's certificate* certifying that one set of the above mentioned documents (from 1 to 9 including one original of AWB / Bill of Lading) have been sent to the Buyer's address: 105 Le Loi Street, Ho Chi Minh City, S.R Vietnam within 03 working days from the Delivery Date by Courier's (courier's receipt must be enclosed): 01 copy.

All the copies of the documents shall be legible; otherwise the photocopy of the original shall be furnished.

- 4.3 Any storage demurrage or other charges due to non, late receipt of shipping advice and/or shipping documents by the Buyer from the Seller or the Seller's agent as well as due to incorrect shipping documents shall be at the Seller's account.
- 4.4 If shipment to be made through a FIATA Freight Forwarder, under Through or Combined Transport Bill of Lading, the Seller shall have to send the Buyer by fax the copy of the Local Bill of Lading of the last distance and inform the Buyer the name, contract address of the Transportation Agent in Vietnam.
- 4.5 From the date of Letter of Award (LOA), The Seller must provide the Buyer with a regular report once a month on the first day of the month, showing the process of manufacturing, manufacturing, testing and supplying the Goods.

This report please send to email:@vietsov.com.vn;@vietsov.com.vn; and c/c: hq@vietsov.com.vn.

The Seller must immediately report to Buyer the content of the report at least includes the following contents:

- a) Description of the work completed in the implementation stage;
- b) Highlighting delays or delays that are likely to occur and the causes of delays affecting production progress and providing measures to ensure progress;
- c) Change progress if any. During the implementation of the contract, all contacts of Seller send an official letter for VSP leader and send a copy by email:@vietsov.com.vn;@vietsov.com.vn; and c/c: hq@vietsov.com.vn.

Party B must ensure to provide all necessary documents as required in Article 4.2 of this Contract when delivering goods to Party A. In case Party B delivers goods to Party A's warehouse in Ho Chi Minh City but does not have all the required documents, Party A agrees to allow Party B to temporarily store the goods at the warehouse to wait for the complete collection of documents at no extra charge for first 5 calendar days. From the 6th day onwards, Party B will have to pay Party A the storage cost of the shipment according to the current storage unit price of Party A that is applied to Party A's customers. This storage cost that will be deducted directly from the invoice for this Contract or from any other payments of the Contract that duly signed by both parties.

ARTICLE 5: PACKING

- 5.1 Goods supplied under this Purchase Order shall be packed in accordance with international standard for export packing to ensure safety of Goods from damages and corrosion during transportation and suitable for crane operations and handling.
- 5.2 Before packing, all metal parts of Goods must be preserved with proper grease and wrapped in waterproof strong paper to ensure protection from any damage and corrosion during their transportation and storage in Buyer's country within the guarantee period.
- 5.3 The Seller shall provide for each package a detailed packing list in English indicating the Purchase Order number, description of items, gross and net weight. One copy of the packing list in a waterproof envelope shall be put into each case with the Goods, the other copy should be fastened to the outer side of the wooden case and shall be covered



with a metal plate nailed to the case. For steel cases, both copies of the packing list should be put into the cases.

- 5.4 The Seller shall be fully responsible for loss, damage of breakage of the Goods and/or rusting/corrosion resulting from defective or inadequate packing.

ARTICLE 6: MARKING

- 6.1 Marking shall be done in three sides of each case containing Goods, on the two opposite sides and on the top and contain the following information in the English language:
SHIPPED: (SELLER'S NAME)

CONSIGNEE : VIETSOVPETRO 105 LE LOI STREET, HO CHI MINH CITY,S.R.VIETNAM PURCHASE ORDER NUMBER No. CASE No. / DIMENSIONS: Length x Width x Height in cm GROSS WEIGHT (KGS); NET WEIGHT (KGS) AIRPORT/PORT OF DESTINATION

- 6.2 The marking must be clearly done by indelible paint and not less than 5 (five) cm high, unless restricted by the size of the case. Where necessary, the Seller shall conspicuously mark on the side of the case appropriate international marks according to the different characteristic, the special marking “Top”, “Bottom”, “Handle with care”, handling places for reloading.
- 6.3 For the oversized cases (more than 10M long), as well as for the case weighing 500 kgs and more, or if the height of the case exceeds one meter, the center of gravity shall be clearly shown with bright indelible paint with sign (+) on the end and side faces of the cases.
- 6.4 The case number shall be indicated by a fraction, the numerator shows the ordinal number of the cases, and the denominator indicates the overall quantity of the cases into which completely delivered Goods are packed.
- 6.5 The Seller shall be responsible for any kind of losses and/or damages of the Goods during loading and unloading as well as for its transportation as a consequence of improper or insufficient marking, as well as for any extra transportation and warehouse expenses, losses connected with misaddressed delivery of the Goods due to incomplete marking.

ARTICLE 7: PAYMENT CONDITIONS

By T/T:

- 7.1 One hundred percent (100%) of shipment value shall be paid by Telegraphic Transfer within thirty (30) days from the date of the Certificate of quantity and condition issued by Independent Inspection Company at Buyer's warehouse after receipt of the Goods and a full sets of documents above mentioned in Articles 4.2.
- 7.2 Transfer fee shall be on the Buyer's account.
- 7.3 All the banking fees, including bank commission and other charges associated with the advising and corresponding bank shall be on the Seller's account.
- 7.4 All charges in connection with the change of payment form / conditions (whether occurred inside or outside S.R.Vietnam), due to Seller's / Buyer's request, shall be at the Seller's / Buyer's account.



7.5 The Seller provides Seller's bank account number.

By L/C:

7.6 As soon as possible, but not later than fifteen (15) days after the date of Seller's reconfirmation the Buyer will open through the Bank for Foreign Trade of Vietnam, Vung Tau Branch, (Vietcombank Vung Tau) or other bank in Vietnam the Irrevocable and Unconfirmed Letter of Credit in favour of the Seller covering the total Purchase Order value with the content as per Appendix 1 which is to be considered as an integral part of this Purchase Order.

The validity of the Letter of Credit shall cover the Delivery Date plus 21 days.

7.7. Payment under this Letter of Credit shall be made for shipment and in the following installments to the Seller:

7.7.1. First Installment: 90% (Ninety percent) of the shipment value shall be made upon presentation of the following documents in English language by the Seller to the Bank:

1. *01/03 originals and 02 (two) copies of clean on board Bill of Lading* evidencing shipment from port with destination Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam, consignee: Vietsovpetro, No.105 Le Loi Street, Ho Chi Minh City, S.R Vietnam, marked "Freight Prepaid".
2. *Detailed Packing List* showing the content of each case or lot, gross and net weight: covering Goods as specified in Appendix No. 1 to this Purchase Order: 03 originals.
3. *Signed Commercial Invoice* issued by the Seller for the respective shipment value indicating term of delivery (for example: CFR Vietsovpetro Port, Ho Chi Minh city, S.R.Vietnam) with itemized and total prices, stating the Seller's bank detail and account number: 03 originals and 01 copy.
4. *Certificate of Quality, Quantity* issued by the Manufacturer: 02 originals / Electronics with link to verify.
5. *Certificate of Origin* issued by the Competent authority of Manufacturer's / Exporter's country: 02 originals / Electronics with link to verify.
6. *Other certificates (as Technical Requirements)*: 02 originals and 01 copy.
7. *Certificates of Guarantee* issued by the Seller for the quality of Goods for 18 months from delivery date or 12 months after the goods have been put into service whichever comes first: 01 original.
8. *Export License or Letter of the Seller* stating that Export License is not necessary for export: 01 original.
9. *Seller's telex, fax* advising the shipment details (all documents in 4.2.1) to Vietsovpetro: 01 copy and via email: xndvcang.sd@vietsov.com.vn.
10. *Beneficiary's certificate* certifying that one set of the above mentioned documents (from 1 to 10 including one original of AWB / Bill of Lading) have been sent to the Buyer's address: 105 Le Loi Street, Ho Chi Minh City, S.R Vietnam within 03 working days from the Delivery Date by Courier's (courier's receipt must be enclosed thereto for negotiation): 01 originals and 02 copies.

All the documents presented by the Seller to the Bank shall be duly certified by the Seller as correct, due and payable under the terms and conditions of the Letter of credit.

Payment for incomplete delivery will not be allowed.

7.7.2. Second Installment: Ten percent (10%) of shipment value shall be payable against confirmation of the Buyer to the Bank within 30 days after the date of the Certificate of



quantity and condition issued by Independent Inspection Company at Buyer's warehouse and Invoice.

- 7.8 The Letter of Credit shall be subject to the Uniform Customs and Practice for Documentary credit of International Chamber of Commerce (UCP No. 600), 2007 revision.
- 7.9 All the banking fees, including bank commission charges and other charges associated with the opening bank shall be on the Buyer's account.
- 7.10 All the banking fees, including bank commission charges and other charges associated with the advising and corresponding bank shall be on the Seller's account.
- 7.11 All charges in connection with the amendments of the Letter of Credit (whether occurred inside or outside S.R. Vietnam), due to Seller's/Buyer's request, shall be at the Seller's/Buyer's account.
- 7.12 All charges associated with any extension of the Letter of credit arising due to delay in delivery as stated in Article 3 of this Purchase Order shall be at the Seller's account.
- 7.13 The Letter of Credit is to be automatically cancelled within 15 days from the date of opening, if the Buyer does not receive the original Performance Bond in favour of the Buyer with the content as stated in Appendix 2 of this Purchase Order.

ARTICLE 8: GOODS'S SURVEY

- 8.1 The survey at Buyer's warehouse of the received Goods shall be made by Independent Inspection Company with issuing a Certificate of Quantity and Condition.
- 8.2 The Certificate of quantity and condition issued by Independent Inspection Company at Buyer's warehouse for the Goods supplied under this Purchase Order shall be legal document for Buyer to make claim to the Seller.

ARTICLE 9: GUARRANTEEE

- 9.1 The Seller guarantees that the Goods supplied under this Purchase Order shall be of the highest quality and designed standard as set in Manufacture's country for that type of Goods and shall meet current technological achievements as required, and shall be suitable for normal operation in tropical area condition regarding environment temperature up to 45 Deg. C, sea water temperature 25-30 Deg. C, humidity up to 100% and years of Production of the Goods in year 2025 or later.
- 9.2 Proper material of high quality shall be used for manufacturing the Goods to be supplied under this Purchase Order, and the Seller guarantees that the Goods and its quality, quantity shall be fully in compliance with the technical specifications and scope of supply as mentioned in Appendix No. 01 to this Purchase Order.
- 9.3 The Seller guarantees normal operation of all Goods to be supplied under this Purchase Order 18 months from the delivery date or 12 months after the Good have been put into service whichever comes first
- 9.4 Should the Buyer reveal any defect within the guarantee period or if the quality of Goods supplied under this Purchase Order is not in compliance with terms and conditions of this Purchase Order and its appendixes, the Buyer shall notify the Seller by telex/ fax of such defect. To substantiate the claims the Buyer shall submit to the Seller the official survey report issued by Independent Inspection Company. The survey report issued by Independent Inspection Company shall be legal document for Buyer to make claim to the Seller.

Any claim relating to defects or non-conformity, which occurred during the guarantee period of the Goods with the technical conditions as stated in the Appendix No. 01 shall



be submitted to the Seller not later than three months after expiration of the guarantee period.

- 9.5 The Seller shall inform the Buyer about the results of consideration of claim not later than 10 days after receipt of the Buyer's claim telex/fax and the Seller shall eliminate the revealed defects, at his own expenses, at the Buyer's first request without any delay, but not later than 15 days after receipt of the Buyer's claim telex/fax and/or replace the defective parts or the missing parts by the new ones of good quality on the condition-Vietsovpetro port, Ho Chi Minh City, (or- Tan Son Nhat airport), S.R.Vietnam. All charges associated with return of the defective Goods to the Seller and delivery the new one to Buyer shall be at the Seller's account.
- 9.6 Should the Seller fail to eliminate the defects as claimed, or fail to deliver new Goods within the stipulated time in Article 9.5, the Buyer shall charge to the Seller the agreed and liquidated damages at the rate as per Article 10, the period of the above penalty shall be counted from the date of which the Seller receives the Buyer's official claim to the date of elimination of the defects or to the delivery date of the new replacement Goods minus 15 days or the Buyer shall have the right to eliminate such defects at the Seller's expenses without prejudice to its right in respect of the guarantee, and the Seller undertakes to defray at first Buyer's request all actual expenses incurred in respect of such elimination and the agreed and liquidated damages at the rate 08% value of non used Goods due to defect found. Small defects not requiring the Seller's participation and/or permitting no delay will be eliminated by the Buyer and charged at normal costs to the Seller.
- 9.7 The guarantee period for replaced part shall be equal to that indicated in Article 9.3 and the guarantee period for Goods will be extended by the time during which it was not used due to defect found.
- 9.8 When the elimination and/or replacement is made and all related costs, expenses are settled, the claim is to be considered as finally settled.

All the claim amount, for which the Seller is to be responsible to the Buyer under this Purchase Order may be deducted by the Buyer from the payment of the Purchase Order value or may be covered by act of law or otherwise from the Seller to be agreed by both parties.

ARTICLE 10: AGREED AND LIQUIDATED DAMAGES

- 10.1. The Seller must deliver goods as specified in Appendix 01 and by the date as stipulated in the Purchase Order. If delayed in delivery the Seller shall pay to the Buyer the agreed and liquidated damages as follows:

- Delay in the first four weeks: 1.00% of breached contract value per week.
- Delay in each following week: 1.50% of breached contract value per week.

When calculating the amount of the agreed and liquidated damages: One week is to be defined as 07 days with 04 days or more than 04 days to be considered as one week, 03 days and less will not be counted. The agreed and liquidated damages calculated on the value of the whole contract having delayed items until the total amount of agreed and liquidated damages for delay shall not exceed 08% of breached contract value.

- 10.2. If The Seller does not deliver the sufficient quantity and types of goods as prescribed in Appendix 01 of this Contract, in that case:

- The Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the contract.

If The Seller does not deliver enough quantity and type of goods for the contract (as specified in Appendix 01 of this Contract):



- The Buyer has the right to refuse the entire contract. The Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the contract.

Or;

- The Buyer has the right to receive the rest of the contract, then, the Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the contract.

10.3. If the number of shipments exceeds the ones prescribed in Article 3, then the Seller is responsible for paying the extra costs for the exceeded shipments according to the prevailing prices which are applied by the Buyer to the current customers.

10.4. If the supplied goods do not conform to the quality as specified in Article 2 of the Purchase Order, the Buyer shall be entitled to refuse those Goods and payment of the Purchase Order, the Seller shall pay to the Buyer the agreed and liquidated damages as stipulated in Article.10.2. The Buyer shall be entitled to accept / not accept that the Seller will provide new goods to replace the defective ones.

10.5. Delay in delivery / insufficient quantity:

10.5.1. If delay in delivery exceeds 60 days against the stipulated date as in Article 3.1 of this Purchase Order, except the Force majeure circumstances, the Buyer shall be entitled to:

a) Appoint a third party capable of providing goods/ goods with services. In that case, The Seller is responsible for signing a contract with that appointed party to continue performing the work.

Or;

b) Directly enter into contract with that third party buying goods / goods and services to continue performing the contract work. In that case, The Seller must pay the difference amount and other related costs and charges (if any).

Or;

c) Unilaterally terminate the Purchase Order and in this case The Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the breached Purchase Order value.

10.5.2. If the Seller delayed in delivery of one portion more than 60 calendar days as specified in Article 3.1 of this Purchase Order except the Force majeure circumstances, the Buyer shall be entitled to:

a) Appoint a third party capable of providing goods / goods with services. In that case, The Seller is responsible for signing a contract with the designated party to continue performing the work.

Or;

b) Directly enter into contract with the third party buying goods / goods and services to continue performing the contract work. In that case, The Seller must pay the difference amount and other related costs and charges (if any).

c) Unilaterally terminate the Purchase Order and in this case The Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the breached PurchaseOrder value.

10.6. The total amount of the agreed and liquidated damages should not exceed 08% the Purchase Order value.

10.7. The amount of the agreed and liquidated damages stated in Article 10 of this Purchase Order is exclusive of VAT and import tax.

10.8. The Buyer shall be entitled to:



- 1) Deduct the amount of agreed and liquidated damages from the payment for this Purchase Order or from any payment for other Purchase Order (if any) between both sides.
 - 2) Request the Seller's issuing Bank to pay the amount equal to the Performance Bond's value;
 - 3) The Buyer shall make a written request to the Seller for the amount of agreed and liquidated damages payment. In all cases, The Seller should have to make commitment to the Buyer for the agreed and liquidated damages payment.
- 10.9 Any compensation for damage (if any) shall be made in accordance with the law of Vietnam.

ARTICLE 11: PERFORMANCE BOND

- 11.1 As soon as possible but not later than 07 days from the date of the Seller's reconfirmation of this Purchase Order, the Seller shall inform the Buyer by fax/telex of the issuance of the Performance Bond covering **eight percents (08%)** of the Purchase Order amount, **issued by the banks / branches legally operated in Vietnam**, acceptable to the Buyer, informing the number, date of issue and full content. In case the Performance Bond issued by the banks/branches legally operated in Vietnam, the Seller shall ensure that the issuing Bank will send to the Buyer the original Performance Bond through Vietcombank, Vung Tau Branch.

The content of the Performance Bond shall be in conformity with the Appendix 02 of this Purchase Order.

All costs relating to the Performance Bond shall be at Seller's account.

- 11.2 Should the Buyer not receive the valid, satisfactory Performance Bond within 30 days from the Purchase Order signing date, the Buyer has the right to cancel the Purchase Order any time and withdraw the Bid Bond without recourse to the law court or to arbitration.
- 11.3 Should the validity of the Performance Bond be required to be extended (due to delay or extension of Delivery Date of Goods), Seller shall immediately instruct the Issuing Bank to make amendment to the Performance Bond and submit to the Buyer the amended Performance Bond (original) at least 07 working days before the current Performance Bond expires.
- 11.4 Should the Buyer make use of Performance Bond, it will immediately send to the Seller copy of declaration to the bank.

ARTICLE 12: FORCE-MAJEURE

- 12.1 A force majeure event is an event that occurs objectively, which cannot be foreseen and cannot be overcome despite all necessary measures and permissible abilities such as war, riot, and Armed conflicts, embargoes, natural disasters (floods, hurricanes, tornadoes, earthquakes, tsunamis), fires, epidemics (Epidemic, Pandemic) announced by WHO / Country, Area / National lock down imposed by the host Government
- 12.2. The party that encounters a force majeure event that results in the failure to perform its obligations under the contract directly affected by the force majeure event is obliged to immediately notify the other party, including providing information and explanations about the direct impact of the force majeure event on the contract performance violation, accompanied by evidence to support, measures have been taken to overcome the problem and minimize the loss. The delay in notification, provision of information and explanation if it is more than 10 calendar days after the force majeure event occurred will make the party meeting the force majeure to lose the right of exemption later due to force majeure.



- 12.3. The written certification of the Vietnam Chamber of Commerce and Industry or the competent agency in the place where the force majeure event occurred is sufficient evidence to prove the event and the time of the force majeure.
- 12.4. In case, as a result of force majeure events, one Party in the Contract cannot perform all or a part of its obligations under this contract, the contract performance period will be extended accordingly by the time. that force majeure event took place.
- 12.5. If the force majeure event lasts more than 02 months, each party has the right to terminate this contract without having to compensate any amount of money for the other party.
- 12.6. The difficulties in production such as lack of materials, electricity, labor, strike ... are not considered force majeure and do not exempt Party B from the obligation of delivery or late delivery; Information from newspapers, the network and other media is for reference only.

ARTICLE 13: ARBITRATION

- 13.1 This Purchase order is governed by Vietnamese laws.
- 13.2 Any disputes or discrepancies which may arise out of this Purchase Order shall be settled smoothly, amicably, basing on mutual benefit and mutual understanding.
- 13.3 Any disputes or discrepancies in connection with this Purchase Order, which can not be settled amicably, shall be referred for final decision and settlement to the Vietnam International Arbitration Centre at the Chamber of Commerce and Industry of Vietnam, Hanoi, S.R.Vietnam under the Rules of this Centre.
- 13.4 The number of arbitrators shall be one.
- 13.5 Decision of the arbitration shall be final and binding upon both parties.

ARTICLE 14: OTHER CONDITIONS:

- 14.1. Any alternations or amendment to this Purchase Order must be made in writing and signed by both parties and sent by post or by Fax to the registered address or Fax number specified clearly in the Purchase Order and emailed to the email addresses as stated in Appendix No.4 (A, B) attached.
- 14.2. Neither party shall be entitled to transfer its rights and obligations under this Purchase Order to any third party without the prior consent of the other party.
- 14.3. All taxes, duties, custom fees in connection with the execution of this Purchase Order levied inside S.R. Vietnam but exception of Seller's personnel income tax shall be at Buyer's account.
All taxes, duties, custom fees in connection with the execution of this Purchase Order levied outside S.R. Vietnam to be at Seller's account.
- 14.4. This Purchase Order shall come into force from the date of Seller's reconfirmation, which should be received by the Buyer within 07 days of this Purchase Order date and the Purchase order will be terminated upon fulfillment by both parties all their obligations as stipulated in this Purchase Order.
- 14.5. This Purchase Order is made in English and consists of ____ pages, including Appendixes No. 1, 2, 3, 4 which are considered as integral parts of this Purchase Order (Appendix No. 01: Scope of supply, Appendix No. 02: Performance Bond, Appendix No. 03: Form Letter of Credit Specimen, Appendix No. 04 (A,B): Sample letter of transaction performance contract.
- 14.6. This Purchase Order is made in 05 originals of the same value, two of which retained by the Seller and three are retained by the Buyer.



14.7. Components of Purchase Order and legal order of precedence are as follows:

- Purchase Order (together with the Scope of Supply, Price schedule and other Appendices);
- Letter of Proposal Acceptance and Contract Award;
- Record of negotiation and finalization of the Contract;
- Decision on approving bidding results;
- Bid Proposal and Clarifications (if any);
- Invitation for Bid and Bulletins (if any);
- Other attached documents (if any).

We confirm that all of above mentioned terms and conditions of this Purchase Order are considered as terms and conditions of a Contract signed by and between two our Companies.

This is an operative instrument, no mail/airmail will be followed.

Best Regards,

FOR VIETSOVPETRO



Appendix No. 01 to the Purchase order No.....

(Attachment to Contract No.____, day __month __year__)

This appendix is based on requirements stated in the Invitation for Bid, Bid Proposal and agreements achieved during negotiations and finalizing contract including price (extended price) for each item and scope of supply. Price (extended price) for each item and scope of supply has included all tax, fees and charges (if any) in accordance with tax rate, fee and charge at the time of 28 days prior to deadline for submission of bid proposal.

PRICE SCHEDULE

No.	Content	Extended Price
1	Goods Price	(M)
Total Price of Contract		(M)

GOODS PRICE TABLE

1	2	3	4	5.1	5.2	6	7
No.	Description + P/N	Unit	Qty	MNF	CO	Unit Price	Extended Price (Column 4x6)
1	Item 1						M1
2	Item 2						M2
							...
n	Item n						Mn
Total price CFR VSP Port							$M=M1+M2+...+Mn$



Dated _____

PERFORMANCE BOND

TO: VIETSOVPETRO
105 Le Loi Str, Ho Chi Minh City, S.R. Vietnam
ATTN: Mr. Vu Mai Khanh - General Director

Dear Sir,

We, the undersigned (legal name and address of the Bank) have made due to note of Purchase Order No. _____/24/N-N3/XL-..... dated _____ (hereinafter referred to as the Purchase Order), concluded by yourselves **Vietsovpetro** (Hereinafter referred to as the Buyer) and (hereinafter referred to as the “Seller”), for **Provision of – Block 09-1** as described in Appendix No. 01 of the Purchase Order with the Purchase Order amount In accordance with the term of the Purchase Order, the Seller is obliged to execute and perform the Purchase Order as agreed.

Taking into consideration of the above mentioned, we (legal name and address of the issuing Bank) hereby **irrevocably and unconditionally** undertake to pay you any amount stated hereunder on your simple demand accompanied by the written declaration that the Seller has failed to fulfill the Purchase Order as per terms and condition agreed.

Simple declaration from the Buyer shall be accepted by us conclusive evidence that the amount claimed is due to the Buyer.

The claim, if any, must be made by fax message or registered letter to reach us not later than the expiry date of this Performance Bond.

The limit of our liabilities under this Performance Bond shall not exceed the amount of _____ USD (08%) eight percent of Purchase Order value.

Partial drawing under this Performance Bond is acceptable, provided that all claims should reach us not later than the expiry date of this Performance Bond. After each partial drawing, the amount of this Performance Bond will be deducted accordingly, and this Performance Bond remains in force up to its expiration of total amount under this Performance Bond is drawn.

The payment under this Performance Bond shall be made by ourselves without deductions for any fees of any taxes, imports, levies or duties present or future of any nature inside of S.R. Vietnam.

It is further guaranteed by us, that the payment under this Performance Bond shall be made by us within seven (07) days from the receipt of your written demand marking reference to this Performance Bond.

The Performance Bond comes into force and becomes valid from the date of issuance.

The validity of this Performance Bond shall cover the delivery period of the last shipment as stated in Article 3 of the above-mentioned Purchase Order plus 60 days i.e. _____.

When expired or implemented in full, this Performance Bond turns to be null and void.

Upon expiration of this Performance Bond, or on the settlement of all claims, this Performance Bond shall be returned to us without any request on our part.

Yours faithfully,

Authorized signature of the Bank



LETTER OF CREDIT SPECIMEN

SUBJECT:

KIND OF L/C: IRREVOCABLE UNCONFIRMED L/C, AT SIGHT.

APPLICANT: VIETSOVPETRO
(THE BUYER) 105 Le Loi Str., Ho Chi Minh City, S.R. Vietnam

BENEFICIARY:

(THE SELLER)

ADVISING BANK:

AMOUNT: _____ USD

(In words: United State Dollars _____) - CFR - Vietsovpetro port, Ho Chi Minh City, S.R. Vietnam.

VALIDITY: The validity of the Letter of Credit shall cover the Delivery Date plus 21 days.

PAYMENT CONDITIONS:

Payment under this Letter of Credit shall be made for shipment and in the following installments:
I. First Installment: 90% (Ninety percent) of the shipment value shall be made upon presentation of the following documents in English language by the Seller to the Bank:

1. *01/03 originals and 02 (two) copies of clean on board Bill of Lading* evidencing shipment from port with destination Vietsovpetro Port, Ho Chi Minh city, S.R.Vietnam, consignee: Vietsovpetro, No.105 Le Loi Street, Ho Chi Minh City, S.R Vietnam, marked "Freight Prepaid".
2. *Detailed Packing List* showing the content of each case or lot, gross and net weight: covering Goods as specified in Appendix No. 1 to this Purchase Order: 03 originals.
3. *Signed Commercial Invoice* issued by the Seller for the respective shipment value indicating term of delivery (for example: CFR Vietsovpetro Port, Ho Chi Minh city, S.R.Vietnam) with itemized and total prices, stating the Seller's bank detail and account number: 03 originals and 01 copy.
4. *Certificate of Quality, Quantity* issued by the Manufacturer: 02 originals / Electronics with link to verify.
5. *Certificate of Origin* issued by the Competent authority of Manufacturer's / Exporter's country: 02 originals / Electronics with link to verify.
6. *Other certificates (as Technical Requirements)*: 02 originals and 01 copy.
7. *Certificates of Guarantee* issued by the Seller for the quality of Goods for 18 months from delivery date or 12 months after the goods have been put into service whichever comes first: 01 original.
8. *Export License or Letter of the Seller* stating that Export License is not necessary for export: 01 original.
9. *Seller's telex, fax* advising the shipment details (all documents in 4.2.1) to Vietsovpetro: 01 copy and via email: xndvcang.sd@vietsov.com.vn
10. *Beneficiary's certificate* certifying that one set of the above mentioned documents (from 1 to 9 including one original of AWB / Bill of Lading) have been sent to the Buyer's address: 105 Le Loi Street, Ho Chi Minh City, S.R Vietnam within 03 working days



from the Delivery Date by Courier's (courier's receipt must be enclosed thereto for negotiation): 01 originals and 02 copies.

II. Second Installment: Ten percent (10%) of shipment value shall be payable against confirmation of the Buyer to the Bank within 30 days after the date of the Certificate of quantity and condition issued by Independent Inspection Company at Buyer's warehouse.

The Letter of Credit shall be subject to the Uniform Customs and Practice for Documentary credit of International Chamber of Commerce (UCP No. 600), 2007 revision.

All the banking fees, including bank commission charges and other charges associated with the opening bank shall be on the Buyer's account.

All the banking fees, including bank commission charges and other charges associated with the advising and corresponding bank shall be on the Seller's account.

All charges in connection with the amendments of the Letter of Credit (whether occurred inside or outside S.R. Vietnam), due to Seller's/Buyer's request, shall be at the Seller's / Buyer's account.

All charges associated with any extension of the Letter of credit arising due to delay in delivery as stated in Article 3 of this Contract shall be at the Seller's account.

COVERING:

Scope of supply, specifications, Quantity and Prices are in accordance to Appendix No. 01 of Purchase Order No. _____

SHIPMENT:

Shipment to be made from _____ Port to Vietsovpetro Port, Ho Chi Minh City, S.R. Vietnam on the terms of - Incoterms 2020.

Delivery Date: not later than 135 calendar days from the date of LOI / LOA to the date that the Goods arrival at Vietsovpetro's port (included navigation and transportation time). The date of arrival mentioned here will follow the date of arrival of the Goods at Vietsovpetro port that indicated in "Arrival Notice" of Vessel Agent (included navigation period and transportation time).

Earlier shipment is allowed

Partial shipment is allowed.

Total max: shipments.

Transshipment is allowed at Seller's care and account

The Delivery Date is understood as the date arrival Vietsovpetro Port, Ho Chi Minh City, S.R. Vietnam.

PACKING AND MARKING: As per Purchase Order No. __ dated _____

SPECIAL CONDITIONS:

Agreed and liquidated damages for delay of delivery:

Shipment after above stated delivery date is allowed but not exceeds two months. For Bill of Lading dated after delivery date, Buyer's Bank is authorized to deduct the agreed and liquidated damages amount following Group have item be delay as follows:

- Delay in the first four weeks: 1.00% of breached contract value per week.
- Delay in each following week: 1.50% of breached contract value per week.

One week is to be defined as 07 days, 04 days or more than 04 days to be considered as one week, 03 days and less will not be counted.

Total agreed and liquidated damage amount does not exceed 8% of breached contract value.



The Letter of Credit is to be automatically cancelled within 15 days from the date of opening, if the Buyer does not receive the original Performance Bond in favour of the Buyer with the content as stated in Appendix No. 02 of this Purchase Order.



APPENDIX No. 4 (A)

FORM OF CONTRACT PERFORMANCE TRANSACTION

Day month year 20..

To: Vietsovpetro

105 Le Loi St., Vung Tau Ward, Ho Chi Minh City, Vietnam.

Fax: 84-254-3839 857

Recipient: Mr. Tran Quoc Thang – Deputy General Director

Copy: Ms. Nguyen Thi Van Anh – Manager of Commercial Department

Email: vspadmin@vietsov.com.vn

 thanhq.hq@vietsov.com.vn

 huonghm.hq@vietsov.com.vn

(Insert the transaction content, including: Change of Goods/ Services, schedule, use of quota, contents regarding contract value, payment, etc.)

REPRESENTATIVE OF PARTY

(Signature and stamp)



APPENDIX No. 4 (B)

CORRESPONDENCE FORM FOR CONTRACT PERFORMANCE

Day month year 20..

To: Vietsovpetro
 105 Le Loi St., Vung Tau Ward, Ho Chi Minh City, Vietnam.

Fax: 84-254-3839 857

Recipient: Vietsovpetro Commercial Department/Vietsovpetro port & Logistics Division/
 Offshore Contruction Division

Email: vspadmin@vietsov.com.vn
 thanhng.hq@vietsov.com.vn
 huonghm.hq@vietsov.com.vn

(Insert the transaction content, including: *Delivery notice, Delivery of goods documents, notification of commencement of service/ construction, information on personnel/ equipment conducting service/ construction, etc.*)

REPRESENTATIVE OF PARTY
(Signature and stamp)



CONTRACT¹
(For Vietnamese contractor)

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Thành phố Hồ Chí Minh, ngày/...../.....

HỢP ĐỒNG

SỐ:/25/T-N3/XL-.....

**V/v: CUNG CẤP THIẾT BỊ HỆ THỐNG ĐIỀU KHIỂN VÀ THIẾT BỊ BẢO KHÍ,
BẢO CHÁY CHO GIÀN RC-12
(GÓI THẦU SỐ VT-2965/25-XL-DA-HMH)**

GIỮA
LIÊN DOANH VIỆT – NGÀ VIETSOVPETRO

VÀ

CÔNG TY

Thành phố Hồ Chí Minh, 2025



ĐIỀU KIỆN CHUNG CỦA HỢP ĐỒNG (ĐKC)

1. Định nghĩa

Trong hợp đồng này, các từ ngữ dưới đây được hiểu như sau:

- 1.1. “Chủ đầu tư” là Liên doanh Việt – Nga Vietsovpetro được quy định tại **Hợp đồng**;
- 1.2. “Hợp đồng” là thỏa thuận giữa Chủ đầu tư và Nhà thầu, thể hiện bằng văn bản, được hai bên ký kết, bao gồm cả phụ lục và tài liệu kèm theo;
- 1.3. “Nhà thầu” là nhà thầu trúng thầu (có thể là nhà thầu độc lập hoặc liên danh) và được quy định tại **Hợp đồng**;
- 1.4. “Nhà thầu phụ” là nhà thầu có tên trong danh sách các nhà thầu phụ do Nhà thầu đề xuất trong HSDT và được Nhà thầu ký hợp đồng để thực hiện dịch vụ liên quan;
- 1.5. “Tài liệu hợp đồng” là các tài liệu được liệt kê trong Hợp đồng, bao gồm bất kỳ bản sửa đổi, bổ sung nào của Hợp đồng;
- 1.6. “Giá hợp đồng” là tổng số tiền ghi trong hợp đồng cho việc cung cấp hàng hoá và dịch vụ liên quan. Giá hợp đồng đã bao gồm tất cả các chi phí về thuế, phí, lệ phí (nếu có);
- 1.7. “Ngày” là ngày dương lịch; “năm” là 365 ngày;
- 1.8. “Hàng hóa” bao gồm máy móc, thiết bị, nguyên liệu, nhiên liệu, vật liệu, vật tư, phụ tùng; hàng tiêu dùng; trang thiết bị y tế dùng cho các cơ sở y tế;
- 1.9. “Dịch vụ liên quan” bao gồm các dịch vụ như lắp đặt, duy tu, bảo dưỡng, sửa chữa ban đầu, bảo hiểm lắp đặt, bảo hiểm sửa chữa hoặc cung cấp các dịch vụ sau bán hàng khác như đào tạo, chuyển giao công nghệ...;
- 1.10. “Hoàn thành” là việc Nhà thầu hoàn tất các dịch vụ liên quan theo các điều khoản và điều kiện quy định tại Hợp đồng;
- 1.11. “Địa điểm dự án” là địa điểm được quy định tại **Hợp đồng**.

2. Tài liệu hợp đồng và thứ tự ưu tiên

- 2.1. Tất cả các tài liệu nêu tại Mục 2.2 ĐKC (bao gồm cả các phần của tài liệu) sẽ cấu thành Hợp đồng để tạo thành thể thống nhất, có tính tương hỗ, bổ sung và giải thích cho nhau.
- 2.2. Hợp đồng, các tài liệu và thứ tự ưu tiên pháp lý như sau:
 - a) Hợp đồng (kèm theo các Phụ lục hợp đồng);
 - b) Biên bản thương thảo, hoàn thiện hợp đồng;
 - c) Báo cáo phê duyệt kết quả lựa chọn nhà thầu;
 - d) Điều kiện chung của hợp đồng;
 - e) Hồ sơ dự thầu của Nhà thầu trúng thầu;
 - f) Hồ sơ mời thầu và các tài liệu sửa đổi hồ sơ mời thầu.

3. Luật và ngôn ngữ

Luật điều chỉnh hợp đồng là luật Việt Nam, ngôn ngữ của hợp đồng là tiếng Việt.

4. Thông báo

- 4.1. Bất cứ thông báo nào của một bên gửi cho bên kia liên quan đến hợp đồng phải được thể hiện bằng văn bản, theo địa chỉ quy định tại **Hợp đồng**. Thuật ngữ “bằng văn bản” có nghĩa là hình thức truyền đạt thông tin dưới dạng viết và có bằng chứng về việc tiếp nhận thông tin.



4.2. Thông báo của một bên sẽ được coi là có hiệu lực kể từ ngày bên kia nhận được hoặc theo ngày hiệu lực nêu trong thông báo, tùy theo ngày nào đến muộn hơn.

5. Bảo đảm thực hiện hợp đồng

5.1. Bảo đảm thực hiện hợp đồng phải được nộp lên Chủ đầu tư không muộn hơn ngày quy định tại Thư chấp thuận HSDT và trao hợp đồng. Bảo đảm thực hiện hợp đồng được thực hiện bằng một trong các hình thức sau:

a) Nộp thư bảo lãnh của tổ chức tín dụng trong nước, chi nhánh ngân hàng nước ngoài được thành lập theo pháp luật Việt Nam;

b) Nộp giấy chứng nhận bảo hiểm bảo lãnh của doanh nghiệp bảo hiểm phi nhân thọ trong nước, chi nhánh doanh nghiệp bảo hiểm phi nhân thọ nước ngoài được thành lập theo pháp luật Việt Nam.

Bảo đảm thực hiện hợp đồng theo quy định tại điểm a và điểm b khoản này là bảo đảm không có điều kiện (trả tiền khi có yêu cầu), theo mẫu quy định tại Phần 4 hoặc một mẫu khác được Chủ đầu tư chấp thuận.

c) Hình thức khác được Chủ đầu tư chấp thuận quy định tại **Hợp đồng**.

5.2. Bảo đảm thực hiện hợp đồng có giá trị và hiệu lực quy định tại **Hợp đồng**.

5.3. Bảo đảm thực hiện hợp đồng sẽ được trả cho Chủ đầu tư để bồi thường cho bất kỳ tổn thất nào phát sinh do Nhà thầu không hoàn thành các nghĩa vụ hợp đồng.

5.4. Thời hạn hoàn trả bảo đảm thực hiện hợp đồng theo quy định tại **Hợp đồng**.

6. Ký hợp đồng thầu phụ

6.1. Nhà thầu được ký kết hợp đồng với các nhà thầu phụ trong danh sách các nhà thầu phụ quy định tại **Hợp đồng** để thực hiện dịch vụ liên quan nêu trong HSDT. Việc sử dụng nhà thầu phụ sẽ không làm thay đổi các nghĩa vụ của nhà thầu. Nhà thầu phải chịu trách nhiệm trước Chủ đầu tư về khối lượng, chất lượng, tiến độ và các nghĩa vụ khác đối với phần việc do nhà thầu phụ thực hiện.

Việc thay thế, bổ sung nhà thầu phụ trong danh sách các nhà thầu phụ nêu trong HSDT hoặc thay đổi nội dung thầu phụ nêu trong HSDT chỉ được thực hiện khi được chủ đầu tư chấp thuận; việc sử dụng nhà thầu phụ phải phù hợp với nhu cầu của nhà thầu trong thực hiện hợp đồng, nhà thầu phụ phải đáp ứng về năng lực, kinh nghiệm theo yêu cầu của nhà thầu.

6.2. Nhà thầu có trách nhiệm thanh toán đầy đủ và đúng hạn cho nhà thầu phụ theo các điều khoản thỏa thuận giữa Nhà thầu và nhà thầu phụ.

7. Giải quyết tranh chấp

7.1. Chủ đầu tư và Nhà thầu có trách nhiệm giải quyết các tranh chấp phát sinh giữa hai bên thông qua thương lượng, hòa giải.

7.2. Nếu tranh chấp không thể giải quyết được bằng thương lượng, hòa giải trong thời gian quy định tại **Hợp đồng** kể từ ngày phát sinh tranh chấp thì bất kỳ bên nào cũng đều có thể yêu cầu đưa việc tranh chấp ra giải quyết theo cơ chế được quy định tại Hợp đồng.

8. Phạm vi cung cấp

Hàng hóa và dịch vụ liên quan phải được cung cấp theo quy định tại **Hợp đồng**.



9. Tiến độ giao hàng, lịch hoàn thành các dịch vụ liên quan (nếu có) và tài liệu chứng từ

Tiến độ giao hàng và lịch hoàn thành các dịch vụ liên quan (nếu có) phải được thực hiện theo quy định tại **Hợp đồng**. Nhà thầu phải cung cấp các hoá đơn, chứng từ tài liệu khác theo quy định tại **Hợp đồng**.

10. Trách nhiệm của Nhà thầu

Nhà thầu phải cung cấp toàn bộ hàng hóa và dịch vụ liên quan (nếu có) trong phạm vi cung cấp quy định tại Mục 8 ĐKC và theo tiến độ giao hàng, lịch hoàn thành các dịch vụ liên quan quy định tại Mục 9 ĐKC.

11. Loại hợp đồng và giá hợp đồng

11.1. Loại hợp đồng: theo quy định tại **Hợp đồng**.

11.2. Giá hợp đồng quy định tại **Hợp đồng** là toàn bộ chi phí để hoàn thành việc cung cấp hàng hoá và dịch vụ liên quan của gói thầu nêu trong Bảng giá hợp đồng trên cơ sở bảo đảm tiến độ, chất lượng theo đúng yêu cầu của gói thầu.

12. Thuế, phí, lệ phí

12.1. Nhà thầu chịu trách nhiệm đối với toàn bộ chi phí về thuế, phí, lệ phí phát sinh cho đến khi hàng hóa được giao cho Chủ đầu tư.

12.2. Trường hợp Nhà thầu thuộc đối tượng được miễn, giảm thuế, phí, lệ phí, Chủ đầu tư tạo điều kiện tối đa cho Nhà thầu áp dụng các chính sách miễn, giảm thuế, phí, lệ phí và được quy định tại **Hợp đồng**.

12.3. Việc điều chỉnh thuế thực hiện theo quy định tại **Hợp đồng**.

13. Tạm ứng

13.1. Chủ đầu tư phải cấp cho Nhà thầu khoản tiền tạm ứng theo quy định tại **Hợp đồng**, sau khi Nhà thầu nộp Bảo lãnh tạm ứng tương đương với khoản tiền tạm ứng. Bảo lãnh tạm ứng phải được phát hành bởi một tổ chức tín dụng hoặc chi nhánh ngân hàng nước ngoài được thành lập theo pháp luật Việt Nam.

13.2. Nhà thầu chỉ được sử dụng tiền tạm ứng cho việc thực hiện Hợp đồng. Nhà thầu phải chứng minh rằng khoản tiền tạm ứng đã được sử dụng đúng mục đích, đúng đối tượng bằng cách nộp bản sao các hóa đơn chứng từ hoặc tài liệu liên quan cho Chủ đầu tư.

14. Thanh toán

14.1. Yêu cầu thanh toán của Nhà thầu phải được gửi cho Chủ đầu tư bằng văn bản, kèm theo hóa đơn mô tả hàng hóa đã bàn giao và các dịch vụ liên quan đã thực hiện, cùng với chứng từ nộp theo quy định tại Điều 9 ĐKC và gửi yêu cầu thanh toán khi đã hoàn thành các nghĩa vụ khác quy định trong hợp đồng.

14.2. Việc thanh toán thực hiện theo quy định tại **Hợp đồng**.

14.3. Đồng tiền thanh toán là VND.

15. Quyền tác giả

Quyền tác giả đối với tất cả các bản vẽ, tài liệu và hồ sơ chứa đựng thông tin và dữ liệu mà Nhà thầu đã nộp cho Chủ đầu tư vẫn thuộc về Nhà thầu. Trường hợp các bản vẽ, tài liệu và hồ sơ đó được cung cấp cho Chủ đầu tư một cách trực tiếp hoặc thông qua Nhà thầu bởi một bên thứ ba thì quyền tác giả đối với các bản vẽ, tài liệu và hồ sơ thuộc về bên thứ ba đó.



16. Sử dụng các tài liệu và thông tin liên quan đến hợp đồng

16.1. Chủ đầu tư và Nhà thầu phải bảo mật bất kỳ tài liệu, dữ liệu hoặc thông tin nào khác liên quan đến hợp đồng do một bên cung cấp trực tiếp hoặc gián tiếp cho bên kia, không được tiết lộ tài liệu, dữ liệu hoặc thông tin đó cho bên thứ ba nếu không có văn bản đồng ý của bên kia cho dù tài liệu, dữ liệu hoặc thông tin đó được cung cấp trước, trong hoặc sau khi hoàn thành hoặc chấm dứt hợp đồng. Nhà thầu có thể chuyển cho nhà thầu phụ các tài liệu, dữ liệu và thông tin phù hợp do Chủ đầu tư cung cấp để nhà thầu phụ thực hiện công việc của mình theo hợp đồng; trong trường hợp này, nhà thầu phụ phải có cam kết với Nhà thầu về việc bảo mật các tài liệu, dữ liệu hoặc thông tin đó.

16.2. Chủ đầu tư không được sử dụng các tài liệu, dữ liệu và thông tin khác nhận được từ Nhà thầu cho bất kỳ mục đích nào khác không liên quan đến hợp đồng. Nhà thầu không được sử dụng các tài liệu, dữ liệu và thông tin khác nhận được từ Chủ đầu tư cho bất kỳ mục đích nào khác không liên quan đến việc thực hiện hợp đồng.

16.3. Nghĩa vụ của Chủ đầu tư và Nhà thầu quy định tại Mục 16.1 và Mục 16.2 ĐKC không áp dụng đối với các thông tin sau đây:

- a) Thông tin mà Chủ đầu tư hoặc Nhà thầu cần cung cấp cho cấp có thẩm quyền;
- b) Thông tin đã hoặc sẽ được công bố mà không phải do lỗi của Chủ đầu tư hoặc Nhà thầu;
- c) Thông tin thuộc sở hữu của một bên vào thời điểm công bố và trước đó không phải do bên kia cung cấp trực tiếp hoặc gián tiếp;
- d) Thông tin mà một bên nhận được một cách hợp pháp từ một bên thứ ba không có nghĩa vụ bảo mật thông tin.

16.4. Các quy định tại Mục 16 ĐKC không làm thay đổi bất kỳ cam kết bảo mật nào do một bên đưa ra trước ngày ký hợp đồng liên quan đến việc cung cấp hàng hóa, dịch vụ.

16.5. Các quy định tại Mục 16 ĐKC tiếp tục có hiệu lực sau khi hoàn thành hoặc chấm dứt hợp đồng vì bất cứ lý do gì.

17. Thông số kỹ thuật và tiêu chuẩn

Hàng hóa và các dịch vụ liên quan được cung cấp theo hợp đồng sẽ phải tuân theo các thông số kỹ thuật và tiêu chuẩn quy định tại Chương V; nếu tại Chương V không quy định đến một thông số hay tiêu chuẩn nào có thể áp dụng thì phải tuân thủ theo thông số và tiêu chuẩn tương đương hoặc cao hơn tiêu chuẩn hiện hành tại quốc gia hoặc vùng lãnh thổ mà hàng hóa có xuất xứ.

18. Đóng gói hàng hoá

18.1. Nhà thầu phải đóng gói hàng hóa đúng yêu cầu nhằm tránh hư hỏng trong quá trình vận chuyển đến địa điểm dự án theo quy định trong hợp đồng. Trong quá trình vận chuyển, bao gói hàng hóa phải đủ chắc chắn để chịu được những va chạm mạnh, nhiệt độ quá cao hoặc quá thấp, trong nước mặn, nước mưa và ở ngoài trời. Kích thước và trọng lượng của mỗi kiện hàng phải tính đến điều kiện vận chuyển như khoảng cách, phương tiện vận chuyển, điều kiện cơ sở hạ tầng... từ nơi xuất hàng đến địa điểm dự án.

18.2. Việc đóng gói, ghi chú đối với hàng hóa, các giấy tờ bên trong và bên ngoài kiện hàng phải tuân thủ các yêu cầu cụ thể trong hợp đồng, bao gồm cả các yêu cầu (nếu có) quy định ở **Hợp đồng** và các chỉ dẫn khác của Chủ đầu tư.

19. Bảo hiểm

Trừ trường hợp có quy định khác tại **Hợp đồng**, hàng hóa cung cấp theo hợp đồng phải được bảo hiểm đầy đủ cho các tổn thất, hư hại có thể xảy ra trong quá trình sản xuất hoặc tiếp nhận, vận chuyển, lưu kho và giao hàng theo quy định tại **Hợp đồng**.



20. Vận chuyển và các dịch vụ phát sinh

20.1. Yêu cầu về vận chuyển hàng hóa và các yêu cầu khác quy định tại **Hợp đồng**.

20.2. Chủ đầu tư có thể yêu cầu Nhà thầu cung cấp một hoặc một số dịch vụ sau đây, bao gồm cả các dịch vụ (nếu có) theo quy định tại **Hợp đồng**:

- a) Thực hiện việc lắp đặt hoặc giám sát việc lắp đặt tại hiện trường, chạy thử hàng hóa;
- b) Cung cấp các dụng cụ cần thiết để lắp ráp, bảo dưỡng hàng hóa;
- c) Cung cấp tài liệu chi tiết hướng dẫn vận hành và bảo dưỡng cho từng loại hàng hóa;
- d) Vận hành hoặc giám sát hoặc bảo dưỡng, sửa chữa hàng hóa trong khoảng thời gian đã được các bên thỏa thuận, với điều kiện là dịch vụ này sẽ không miễn trừ cho Nhà thầu khỏi bất kỳ nghĩa vụ bảo hành nào theo hợp đồng này;
- đ) Hướng dẫn nhân sự của Chủ đầu tư về cách lắp đặt, chạy thử, vận hành, bảo dưỡng, sửa chữa hàng hóa.

20.3. Trường hợp phát sinh dịch vụ ngoài hợp đồng, Chủ đầu tư và Nhà thầu thương thảo về chi phí thực hiện dịch vụ, bảo đảm không vượt quá mức giá mà Nhà thầu áp dụng cho dịch vụ tương tự trong các hợp đồng khác.

21. Kiểm tra và thử nghiệm hàng hóa

Nhà thầu phải tiến hành tất cả các thử nghiệm, kiểm tra đối với hàng hóa và dịch vụ liên quan theo quy định tại **Hợp đồng** và chịu toàn bộ chi phí thử nghiệm, kiểm tra theo quy định của Hợp đồng.

22. Phạt và bồi thường thiệt hại

Phạt vi phạm hợp đồng và bồi thường thiệt hại theo quy định tại **Hợp đồng**.

23. Bảo hành

23.1. Nhà thầu bảo đảm cung cấp hàng hóa mới, chưa qua sử dụng theo đúng đề xuất đã nêu.

23.2. Nhà thầu bảo đảm hàng hóa không phát sinh khiếm khuyết do bất kỳ hành động hay sơ suất nào từ phía Nhà thầu hoặc do thiết kế, vật liệu hoặc kỹ thuật chế tạo khi hàng hóa được sử dụng bình thường trong các điều kiện phổ biến tại Việt Nam.

23.3. Thời hạn bảo hành và địa điểm áp dụng bảo hành quy định tại **Hợp đồng**.

23.4. Trường hợp phát hiện khiếm khuyết của hàng hóa, Chủ đầu tư kịp thời thông báo cho Nhà thầu, kèm theo tài liệu chứng minh. Chủ đầu tư tạo điều kiện cho Nhà thầu tiến hành kiểm tra các khiếm khuyết đó.

23.5. Sau khi nhận được thông báo của Chủ đầu tư về việc hàng hóa có khiếm khuyết, Nhà thầu phải kịp thời sửa chữa hoặc thay thế hàng hóa có khiếm khuyết trong thời hạn quy định tại **Hợp đồng** và chịu toàn bộ chi phí sửa chữa, thay thế.

23.6. Trường hợp đã được thông báo nhưng Nhà thầu không tiến hành sửa chữa khiếm khuyết của hàng hóa trong thời hạn quy định tại **Hợp đồng**, Chủ đầu tư có thể tự sửa chữa (nếu cần thiết). Nhà thầu phải chịu tất cả rủi ro và chi phí liên quan. Việc Chủ đầu tư tự sửa chữa khiếm khuyết của hàng hóa không ảnh hưởng đến các quyền khác của Chủ đầu tư đối với Nhà thầu theo hợp đồng.

24. Bồi thường vi phạm sáng chế

24.1. Với điều kiện là Chủ đầu tư tuân thủ Mục 24.2 ĐKC, Nhà thầu có nghĩa vụ bồi thường, bảo đảm Chủ đầu tư và nhân sự của Chủ đầu tư không bị tổn hại bởi bất kỳ vụ kiện tụng, thủ



tục hành chính, khiếu nại, yêu cầu, tổn thất, thiệt hại, chi phí nào, bao gồm cả chi phí thuê luật sư vì có vi phạm hoặc cáo buộc vi phạm sáng chế, mẫu hữu ích, kiểu dáng công nghiệp, nhãn hiệu, quyền tác giả hoặc các quyền sở hữu trí tuệ khác đã đăng ký hoặc tồn tại vào ngày ký hợp đồng mà các vi phạm hoặc cáo buộc vi phạm đó liên quan tới:

- a) Việc lắp đặt hàng hóa do Nhà thầu thực hiện hoặc việc sử dụng hàng hóa tại Việt Nam;
- b) Việc bán các sản phẩm được sản xuất từ hàng hóa.

Việc bồi thường nêu trên không áp dụng đối với các trường hợp sau: sử dụng hàng hóa hoặc bất kỳ phần nào của hàng hóa ngoài mục đích nêu trong hợp đồng hoặc phát sinh hợp lý từ hợp đồng; có hành vi vi phạm do sử dụng hàng hóa hoặc bất kỳ phần nào của hàng hóa, hay bất kỳ sản phẩm nào được sản xuất từ hàng hóa có sự kết hợp các thiết bị, nhà xưởng hoặc vật tư khác không phải do Nhà thầu cung cấp theo hợp đồng.

24.2. Trường hợp xảy ra kiện tụng hoặc khiếu nại đối với Chủ đầu tư liên quan tới các vấn đề quy định tại Mục 24.1 ĐKC, Chủ đầu tư có nghĩa vụ thông báo kịp thời cho Nhà thầu. Nhà thầu có thể nhân danh Chủ đầu tư giải quyết kiện tụng hoặc khiếu nại đó hoặc thương thảo để giải quyết kiện tụng hoặc khiếu nại đó và chịu trách nhiệm đối với các chi phí liên quan.

24.3. Trong vòng 28 ngày kể từ khi nhận được thông báo của Chủ đầu tư, trường hợp Nhà thầu không thông báo cho Chủ đầu tư về ý định giải quyết kiện tụng hay khiếu nại đó, Chủ đầu tư sẽ tự giải quyết.

24.4. Trường hợp được yêu cầu, Chủ đầu tư hỗ trợ Nhà thầu giải quyết vụ kiện tụng hay khiếu nại đó và sẽ được Nhà thầu hoàn trả mọi chi phí hợp lý phát sinh.

24.5. Chủ đầu tư có nghĩa vụ bồi thường, đảm bảo Nhà thầu, nhà thầu phụ, nhân sự của Nhà thầu không bị tổn hại bởi bất kỳ vụ kiện tụng, thủ tục hành chính, khiếu nại, yêu cầu, tổn thất, thiệt hại, chi phí nào, bao gồm cả chi phí thuê luật sư vì có vi phạm hoặc cáo buộc vi phạm sáng chế, mẫu hữu ích, kiểu dáng công nghiệp, nhãn hiệu, quyền tác giả hoặc các quyền sở hữu trí tuệ khác đã đăng ký hoặc tồn tại vào ngày ký hợp đồng mà các vi phạm hoặc cáo buộc vi phạm đó phát sinh từ hoặc liên quan đến bất kỳ thiết kế, dữ liệu, bản vẽ, thông số kỹ thuật hoặc các tài liệu và hồ sơ nào được cung cấp hoặc thiết kế bởi Chủ đầu tư hoặc thay mặt Chủ đầu tư.

25. Thay đổi liên quan đến pháp lý

Trường hợp có quy định khác tại hợp đồng, kể từ 28 ngày trước ngày có thời điểm đóng thầu trở về sau, nếu có bất kỳ chính sách nào được ban hành, thay thế, sửa đổi hoặc tuyên bố hết hiệu lực tại Việt Nam gây ảnh hưởng đến ngày giao hàng và/hoặc giá hợp đồng thì ngày giao hàng hoặc giá hợp đồng phải được điều chỉnh tương ứng với mức độ ảnh hưởng của nhà thầu khi thực hiện các nghĩa vụ theo hợp đồng. Phần tăng hoặc giảm giá hợp đồng không được thanh toán riêng hay ghi nhận khoản phải trả riêng nếu việc tăng hoặc giảm giá hợp đồng này đã được quy định tại Mục 11 ĐKC.

26. Bất khả kháng

26.1. Nhà thầu không bị tịch thu bảo lãnh thực hiện hợp đồng, không phải chịu trách nhiệm bồi thường thiệt hại hay bị phạt hoặc bị chấm dứt hợp đồng nếu rơi vào các sự kiện bất khả kháng gây cản trở tiến độ thực hiện hợp đồng hoặc không thể thực hiện nghĩa vụ hợp đồng.

26.2. Khi xảy ra sự việc bất khả kháng, việc một bên không thực hiện được bất kỳ một nghĩa vụ nào của mình sẽ không bị coi là vi phạm hay phá vỡ Hợp đồng, với điều kiện nhà thầu bị ảnh hưởng bởi vụ việc này: (a) đã tiến hành những biện pháp ngăn ngừa hợp lý, cẩn trọng và các biện pháp thay thế cần thiết, tất cả với mục đích thực hiện được những điều khoản và điều kiện của Hợp đồng này, và (b) phải tiếp tục thực hiện các nghĩa vụ của mình trong phạm vi Hợp đồng chừng nào việc thực hiện này còn hợp lý và thực tế.



26.3. Trong hợp đồng này, bất khả kháng được hiểu là các sự kiện nằm ngoài tầm kiểm soát của các bên và không thể lường trước, không thể tránh được và khiến cho việc thực hiện hợp đồng là không khả thi mà nguyên nhân không phải do sơ suất hoặc thiếu chú ý của các bên. Sự kiện bất khả kháng có thể bao gồm nhưng không giới hạn bởi chiến tranh, bạo loạn, đình công, hỏa hoạn, lũ lụt, dịch bệnh, cách ly do kiểm dịch hoặc các chính sách, quy định của Nhà nước.

26.4. Khi xảy ra sự kiện bất khả kháng, nhà thầu bị ảnh hưởng bởi sự kiện bất khả kháng phải kịp thời thông báo bằng văn bản cho bên kia về sự kiện đó và nguyên nhân gây ra sự kiện trong vòng 14 ngày kể từ ngày xảy ra sự kiện bất khả kháng. Đồng thời, chuyển cho bên kia giấy xác nhận về sự kiện bất khả kháng đó được cấp bởi một tổ chức có thẩm quyền tại nơi xảy ra sự kiện bất khả kháng.

Nhà thầu bị ảnh hưởng bởi sự kiện bất khả kháng phải tiếp tục thực hiện các nghĩa vụ hợp đồng theo hoàn cảnh thực tế cho phép và phải tìm mọi biện pháp hợp lý để hạn chế hậu quả của sự việc bất khả kháng.

26.5. Thời hạn mà một bên phải hoàn thành một công việc theo Hợp đồng này được gia hạn thêm một khoảng thời gian bằng đúng thời gian bên đó không thể thực hiện được công việc do sự kiện bất khả kháng gây ra.

27. Sửa đổi hợp đồng

27.1. Chủ đầu tư có thể yêu cầu Nhà thầu sửa đổi, bổ sung các nội dung sau đây trong phạm vi công việc của hợp đồng:

- a) Thay đổi bản vẽ, thiết kế công nghệ hoặc yêu cầu kỹ thuật đối với trường hợp hàng hóa cung cấp theo hợp đồng được đặt hàng sản xuất cho riêng Chủ đầu tư;
- b) Thay đổi phương thức vận chuyển hoặc đóng gói;
- c) Thay đổi địa điểm giao hàng;
- d) Thay đổi dịch vụ liên quan.
- đ) Điều chỉnh tiến độ thực hiện hợp đồng theo quy định tại Mục 28 ĐKC.

27.2. Trường hợp việc sửa đổi, bổ sung các nội dung trong phạm vi công việc của hợp đồng quy định tại Mục 27.1 ĐKC làm thay đổi chi phí hoặc thời gian thực hiện bất kỳ điều khoản nào trong hợp đồng, giá hợp đồng hoặc ngày giao hàng, ngày hoàn thành dịch vụ liên quan phải được điều chỉnh tương ứng và hai bên tiến hành sửa đổi hợp đồng. Yêu cầu của Nhà thầu về việc điều chỉnh giá hợp đồng, ngày giao hàng hoặc ngày hoàn thành phải được tiến hành trong vòng 28 ngày, kể từ ngày Nhà thầu nhận được yêu cầu của Chủ đầu tư về việc sửa đổi, bổ sung nội dung công việc của hợp đồng.

27.3. Trường hợp Nhà thầu cung cấp hàng hóa với phiên bản mới của cùng hãng sản xuất, có cùng xuất xứ, có tính năng kỹ thuật, cấu hình, thông số... tương đương hoặc tốt hơn phiên bản hàng hóa Nhà thầu đề xuất trong HSDT và đáp ứng yêu cầu HSMT thì Nhà thầu phải thông báo trước bằng văn bản cho Chủ đầu tư để Chủ đầu tư xem xét. Trong trường hợp này, căn cứ nhu cầu sử dụng, Chủ đầu tư có thể chấp thuận đề xuất của Nhà thầu với điều kiện là đơn giá và các điều kiện khác của hợp đồng không thay đổi.

27.4. Trường hợp cần thực hiện các dịch vụ liên quan chưa nêu trong hợp đồng, Chủ đầu tư và Nhà thầu tiến hành thương thảo, bảo đảm đơn giá phù hợp giá cả thị trường.

27.5. Chủ đầu tư và Nhà thầu sẽ tiến hành thương thảo để làm cơ sở ký kết văn bản sửa đổi hợp đồng trong trường hợp sửa đổi hợp đồng. Mọi giao dịch trong quá trình thực hiện hợp đồng được các Bên thực hiện bằng văn bản và gửi theo đường bưu chính hoặc theo số Fax tới địa chỉ đăng ký hoặc số Fax của mỗi Bên ghi trong hợp đồng và email đến địa chỉ email theo mẫu quy định tại **Hợp đồng**.

27.6. Trong thời gian thực hiện hợp đồng, nhà thầu có thể đề xuất giải pháp tiết kiệm chi phí bao gồm ít nhất các nội dung sau đây:

- a) Nội dung giải pháp, giải thích sự khác biệt so với các yêu cầu theo hợp đồng đã ký kết;



b) Phân tích toàn diện chi phí và lợi ích của giải pháp bao gồm mô tả và ước tính các chi phí (bao gồm cả chi phí vòng đời) có thể phát sinh cho Chủ đầu tư trong trường hợp chấp thuận đề xuất của Nhà thầu;

c) Tác động của giải pháp đối với hiệu quả thực hiện hợp đồng.

27.7. Chủ đầu tư có thể chấp thuận đề xuất của Nhà thầu nếu đề xuất này chứng minh được một trong các lợi ích dưới đây mà không làm ảnh hưởng đến các chức năng cần thiết của hàng hóa:

a) Rút ngắn thời gian giao hàng;

b) Giảm giá hợp đồng hoặc chi phí vòng đời cho Chủ đầu tư;

c) Nâng cao chất lượng, hiệu quả hoặc tính bền vững của hàng hóa trong hợp đồng;

d) Bất kỳ lợi ích nào khác cho Chủ đầu tư.

Trường hợp đề xuất của Nhà thầu được Chủ đầu tư chấp thuận và làm giảm giá hợp đồng, Chủ đầu tư thanh toán cho Nhà thầu theo tỷ lệ quy định tại **Hợp đồng** đối với phần giá trị giảm giá hợp đồng.

Trường hợp đề xuất của Nhà thầu được Chủ đầu tư chấp thuận và làm tăng giá hợp đồng nhưng giảm chi phí vòng đời do tác động của các yếu tố quy định tại các điểm a, b, c và d khoản này, Chủ đầu tư thanh toán cho Nhà thầu theo phần giá trị tăng giá hợp đồng.

28. Điều chỉnh tiến độ thực hiện hợp đồng

28.1. Trong quá trình thực hiện hợp đồng, trường hợp phát sinh các điều kiện bất lợi, cản trở Nhà thầu hoặc nhà thầu phụ trong việc cung cấp hàng hóa và lịch thực hiện các dịch vụ liên quan quy định tại Mục 9 ĐKC, Nhà thầu phải kịp thời thông báo bằng văn bản cho Chủ đầu tư về việc chậm tiến độ, nguyên nhân, khoảng thời gian chậm tiến độ. Trên cơ sở thông báo của Nhà thầu, Chủ đầu tư phải nhanh chóng đánh giá tình hình và có thể xem xét gia hạn hợp đồng. Trường hợp Chủ đầu tư đồng ý gia hạn, các bên tiến hành thương thảo để làm cơ sở ký kết phụ lục sửa đổi, bổ sung hợp đồng.

28.2. Trừ trường hợp bất khả kháng quy định tại Mục 26 ĐKC, Nhà thầu giao hàng chậm hoặc hoàn thành dịch vụ liên quan chậm có nghĩa vụ bồi thường thiệt hại cho Chủ đầu tư theo quy định tại Mục 22 ĐKC.

29. Chấm dứt hợp đồng

29.1. Chấm dứt hợp đồng do sai phạm

a) Chủ đầu tư có thể chấm dứt một phần hoặc toàn bộ hợp đồng mà không gây tổn hại đến các biện pháp khắc phục vi phạm hợp đồng khác bằng cách thông báo bằng văn bản cho Nhà thầu về sai phạm trong hợp đồng trong các trường hợp sau:

(i) Nhà thầu không thể bàn giao hàng hóa hoặc một phần hàng hóa trong thời hạn quy định theo hợp đồng, hoặc trong thời gian gia hạn theo quy định tại Mục 28 ĐKC;

(ii) Nhà thầu không thực hiện bất kỳ nghĩa vụ nào khác theo hợp đồng;

(iii) Chủ đầu tư xác định Nhà thầu vi phạm một trong các hành vi bị cấm quy định tại HSMT trong quá trình đấu thầu hoặc thực hiện hợp đồng;

b) Trường hợp Chủ đầu tư chấm dứt một phần hoặc toàn bộ hợp đồng theo điểm a khoản này, Chủ đầu tư có thể mua sắm hàng hóa và dịch vụ liên quan tương tự như các hàng hóa và dịch vụ chưa được thực hiện theo các điều khoản và phương thức phù hợp. Nhà thầu phải chịu trách nhiệm bồi thường cho Chủ đầu tư các chi phí phát sinh từ việc mua hàng hóa và dịch vụ tương tự đó. Tuy nhiên, Nhà thầu vẫn phải tiếp tục thực hiện phần hợp đồng không bị chấm dứt.

29.2. Chấm dứt hợp đồng do mất khả năng thanh toán



Trường hợp Nhà thầu phá sản hoặc mất khả năng thanh toán, Chủ đầu tư có thể chấm dứt hợp đồng vào bất kỳ thời điểm nào bằng cách gửi thông báo cho Nhà thầu. Trong trường hợp đó, hợp đồng sẽ chấm dứt và Nhà thầu không được bồi thường với điều kiện là việc chấm dứt hợp đồng không gây tổn hại hoặc ảnh hưởng đến bất kỳ quyền khởi kiện hoặc biện pháp khắc phục của Chủ đầu tư trước đó hoặc sau đó.

30. Hạn chế xuất khẩu

Trường hợp quốc gia, vùng lãnh thổ cung cấp hàng hóa, dịch vụ có các quy định thương mại dẫn tới việc hạn chế xuất khẩu, gây khó khăn cho Nhà thầu trong việc thực hiện các nghĩa vụ hợp đồng, Nhà thầu không bắt buộc phải hoàn thành nghĩa vụ giao hàng, thực hiện dịch vụ với điều kiện là Nhà thầu cung cấp cho Chủ đầu tư các tài liệu chứng minh việc đã hoàn thành tất cả các thủ tục xuất khẩu cần thiết, bao gồm cả xin giấy phép hoặc ủy quyền để xuất khẩu hàng hóa, dịch vụ theo hợp đồng. Trong trường hợp này, Chủ đầu tư có thể chấm dứt hợp đồng với Nhà thầu.



CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

HỢP ĐỒNG SỐ:

V/v: Mua Thiết bị hệ thống điều khiển và thiết bị báo khí, báo cháy cho giàn RC-12, Lô 09-1

(Gói thầu số VT-2965/25-XL-DA-HMH)

Căn cứ vào nhu cầu của Liên doanh Việt - Nga Vietsovpetro và khả năng cung cấp của Công ty...,
Hôm nay, ngày ____ tháng ____ năm ____, các bên gồm

BÊN A: LIÊN DOANH VIỆT - NGA VIETSOVPETRO

Địa chỉ: 105 Lê Lợi, phường Vũng Tàu, Tp. Hồ Chí Minh, Việt Nam

Điện thoại: 0254 839 871, Fax: 0254 839 857

Tài khoản số: tại Ngân hàng Ngoại thương VN, CN Vũng Tàu

Mã số thuế:

Đại diện: Ông Trần Quốc Thắng – Phó Tổng Giám Đốc Thương mại
(Theo giấy ủy quyền số 77/UQ-PL ngày 18/03/2025)

BÊN B: CÔNG TY

Địa chỉ:

Điện thoại:

Fax:

Tài khoản:

Mã số thuế:

Đại diện: Ông, Giám đốc

Hai Bên thỏa thuận ký kết hợp đồng với các điều khoản như sau:

Điều 1: Đối tượng hợp đồng

Bên A đồng ý mua và Bên B đồng ý bán **Thiết bị hệ thống điều khiển và thiết bị báo khí, báo cháy cho giàn RC-12 (Lô 09.1)** (sau đây gọi tắt là “Hàng hóa”) với chủng loại, số lượng, đặc điểm kỹ thuật, đơn giá, giá trị hàng hóa theo Phụ lục 01 của hợp đồng và là một phần thống nhất và không tách rời của hợp đồng này.

Hàng hóa của hợp đồng được Vietsovpetro sử dụng cho hoạt động dầu khí tại Lô 09.1.

Điều 2: Giá trị hợp đồng

2.1 Giá trị hợp đồng là: ____ VNĐ (bằng chữ: ____)

Giá trị hợp đồng trên không bao gồm thuế nhập khẩu, không bao gồm thuế GTGT của giá trị hàng hóa nhập khẩu ghi trên Tờ khai Hải quan nhưng đã bao gồm các loại thuế, phí, lệ phí phát sinh trong lãnh thổ Việt Nam. Thuế nhập khẩu và thuế GTGT trên được miễn theo Hiệp định liên Chính phủ cho hàng hóa Lô 09.1. Bên B được sử dụng Hạn mức nhập khẩu Lô 09.1 của Bên A để làm thủ tục nhập khẩu hàng hóa và miễn thuế theo Hiệp định.

2.2 Giá trị hợp đồng nêu trên được tính trên cơ sở giao hàng tại kho Vietsovpetro tại thành phố Thành phố Hồ Chí Minh, bao gồm giá trị hàng hóa và các loại chi phí do Bên B chi trả như



phí vận chuyển, đóng gói, bốc xếp lên phương tiện vận chuyển và các chi phí khác liên quan đến việc thực hiện hợp đồng này. Giá trị hợp đồng là giá cố định và không thay đổi trong suốt thời gian hợp đồng có hiệu lực.

Điều 3: Quy cách, số lượng, chất lượng hàng hóa

- 3.1 Quy cách, số lượng, chất lượng, chủng loại, ký mã hiệu, hãng sản xuất, nước sản xuất, năm sản xuất và những thông số khác của hàng hóa do Bên B cung cấp phải phù hợp với quy định nêu trong Phụ lục số 01 của Hợp đồng này. Hàng hóa mới 100%, chưa qua sử dụng và trong tình trạng sử dụng tốt.

Năm sản xuất: sản xuất năm 2025 hoặc muộn hơn.

- 3.2 Hồ sơ kèm theo hàng hóa gồm:

- 02 Hóa đơn thuế GTGT (bản gốc);
- Chứng chỉ xuất xứ (CO) do cơ quan có thẩm quyền của nước sản xuất hoặc nước xuất khẩu cấp (bản gốc / bản điện tử có kèm đường link để kiểm tra);
- Chứng chỉ chất lượng và số lượng (CQQ) do nhà sản xuất cấp (bản gốc);
- Các Chứng chỉ khác (Theo YCKT của HSMT) (bản gốc);
- Chứng chỉ bảo hành của Bên B bảo hành 18 tháng kể từ ngày giao hàng hoặc 12 tháng kể từ ngày đưa hàng hóa vào vận hành tùy điều kiện nào đến trước (bản gốc);
- Tờ khai hải quan hàng hóa nhập khẩu (bản copy);
- Tài liệu kỹ thuật của hàng hóa (nếu có).

Hồ sơ mời thầu của Bên A và Hồ sơ dự thầu của Bên B cho gói thầu VT-2965/25-XL-DA-HMH là tài liệu tham chiếu về kỹ thuật cho hàng hóa của hợp đồng này.

Điều 4: Giao nhận và kiểm tra, giám định hàng hóa

- 4.1 Hàng hóa được giao phải phù hợp với yêu cầu quy định tại Điều 1 và Điều 3 của hợp đồng này trong thời hạn là: **không muộn hơn 135 ngày lịch kể từ ngày Vietsovpetro gửi thông báo trúng thầu (LOI / LOA)** đến ngày giao hàng tại kho của Bên A.

Ngày giao hàng của hợp đồng này được ghi trong Biên bản giao nhận hàng do đại diện hai bên ký như quy định tại mục 4.8 dưới đây.

- 4.2 Bên B tự chịu trách nhiệm làm thủ tục hải quan cho hàng hóa nhập khẩu. Bên A cho phép Bên B được sử dụng hạn mức nhập khẩu của Bên A đã đăng ký tại Hải quan Vũng Tàu để làm thủ tục nhập khẩu và hỗ trợ Bên B về mặt giấy tờ trong việc sử dụng hạn mức nhập khẩu của Bên A cho lô hàng nhập khẩu của Hợp đồng này để Bên B xin miễn thuế nhập khẩu và thuế giá trị gia tăng của giá trị hàng hóa nhập khẩu ghi trên Tờ khai Hải quan theo quy định cho Liên doanh Việt – Nga Vietsovpetro.
- 4.3 Để thuận tiện cho việc thông quan, làm các thủ tục miễn thuế nhập khẩu và miễn thuế giá trị gia tăng của giá trị hàng hóa nhập khẩu ghi trên Tờ khai Hải quan, hàng hóa Bên B nên nhập về cảng Tp. Hồ Chí Minh. Bên A không chịu trách nhiệm trả tiền thuế cho Bên B trong trường hợp nếu Bên B nhập hàng hóa về cảng khác mà không làm được thủ tục miễn thuế hoặc Bên B không sử dụng hạn mức nhập khẩu của Bên A.
- 4.4 Hàng hóa được giao lần vào kho của Bên A tại thành phố Hồ Chí Minh. Bên B cam kết giao hàng đúng số lần quy định. Trường hợp số lần giao hàng thực tế vượt quá số lần qui định tại Điều này, Bên A có thể đồng ý nhận hàng và Bên B phải chịu trách nhiệm thanh toán cho Bên A toàn bộ chi phí phát sinh từ việc Bên A tổ chức nhận hàng của các lần giao hàng vượt quá qui định trong Hợp đồng theo đơn giá hiện hành của Bên A đang áp dụng cho các khách hàng của Bên A.
- 4.5 Dỡ hàng từ phương tiện của Bên B do Bên A đảm nhận bằng phương tiện, nhân lực và chi phí của mình.
- 4.6 Trong vòng 02 ngày trước khi giao hàng, Bên B phải thông báo bằng văn bản cho Bên A biết về số lượng, quy cách đóng gói hàng hóa để Bên A bố trí nhân lực và phương tiện bốc



dở.

- 4.7 Người của Bên B đến giao hàng phải có giấy giới thiệu của người đại diện ký Hợp đồng của Bên B.
- 4.8 Đại diện của Liên Doanh Việt - Nga Vietsovpetro (là Xí nghiệp Dịch vụ và Đơn vị đặt hàng) và đại diện của Bên B tham gia giao nhận, kiểm tra hàng hóa của hợp đồng này và lập Biên bản giao nhận hàng (theo Phụ lục số 02 của hợp đồng này) sẽ ghi rõ số lượng, tình trạng, các hồ sơ giao kèm theo hàng hóa kể cả tờ khai Hải quan (nếu hàng hóa đó là hàng nhập khẩu). Biên bản giao nhận hàng phải được Lãnh đạo Xí nghiệp Dịch vụ và Lãnh đạo Đơn vị đặt hàng phê duyệt. Biên bản giao nhận hàng là căn cứ để Bên A thanh toán cho Bên B.
- 4.9 Trong trường hợp cần thiết, bằng chi phí của mình, Bên A (giao cho Xí nghiệp Dịch vụ) có quyền trưng cầu cơ quan giám định độc lập tham gia giám định hàng hóa. Trong vòng 03 ngày làm việc kể từ khi kết thúc giám định, cơ quan giám định độc lập cung cấp Chứng thư giám định tình trạng và số lượng hàng hóa. Chứng thư giám định hàng hóa là căn cứ pháp lý để Bên A khiếu nại Bên B.
- 4.10 Bên B phải đảm bảo khi giao Hàng hóa cho Bên A phải có kèm theo đầy đủ các chứng từ như quy định tại Điều 3 của Hợp đồng này. Trong trường hợp Bên B giao hàng tới kho của Bên A tại Thành phố Hồ Chí Minh nhưng chưa có đầy đủ các chứng từ theo quy định thì Bên A đồng ý cho Bên B tạm gửi hàng tại kho để chờ tập hợp đầy đủ các chứng từ cho việc giao nhận Hàng hóa chính thức.
- Bên A đồng ý miễn phí lưu kho đối với lô Hàng tạm gửi này của Bên B trong 05 ngày lịch đầu tiên. Kể từ ngày thứ 06 trở đi, Bên B sẽ phải trả cho Bên A chi phí lưu kho của lô Hàng theo mức đơn giá lưu kho hiện hành của Bên A đang áp dụng cho các khách hàng của Bên A. Chi phí lưu kho này sẽ được Bên A khấu trừ thẳng vào giá trị mà Bên A thanh toán cho Bên B theo quy định của Hợp đồng này hoặc những khoản thanh toán ở những Hợp đồng khác đã ký giữa Hai bên.
- 4.11 Bên A có quyền từ chối nhận Hàng nếu Hàng hoá khi giao không đảm bảo chất lượng, như đã quy định ở Điều 1, Phụ lục số 1 cũng như không có đầy đủ bộ chứng từ đi kèm như quy định tại Điều 3 của Hợp đồng này.
- 4.12 Kể từ ngày thông báo trúng thầu, Bên B phải cung cấp cho Bên A báo cáo thường xuyên 01 tháng/lần vào ngày làm việc đầu tiên của tháng, thể hiện tiến trình sản xuất, chế tạo, kiểm tra và cung cấp Hàng hóa của Bên B. Báo cáo này được gửi cho XN Xây lắp của Bên A bằng email theo địa chỉ:@vietsov.com.vn;@vietsov.com.vn; và c/c: hq@vietsov.com.vn.

Tại các thời điểm khẩn cấp hoặc có sự chậm trễ trong quá trình chế tạo, Bên B phải báo cáo ngay cho Bên A. Nội dung báo cáo tối thiểu bao gồm các nội dung sau:

- Mô tả các công việc đã hoàn thành trong giai đoạn thực hiện;
- Nêu bật những chậm trễ hoặc những chậm trễ có khả năng xảy ra và những nguyên nhân gây ra chậm trễ ảnh hưởng đến tiến độ sản xuất và đưa ra các biện pháp bảo đảm tiến độ;
- Thay đổi tiến độ nếu có. Trong quá trình thực hiện Hợp đồng, mọi liên hệ Bên B gửi công văn chính thức cho Lãnh đạo Liên doanh Việt-Nga Vietsovpetro, sao gửi cho Xí nghiệp Xây Lắp của Bên A và qua email bản scan công văn theo địa chỉ:@vietsov.com.vn;@vietsov.com.vn; và c/c: hq@vietsov.com.vn.

Điều 5: Bao bì, Đóng gói và Ký mã hiệu:

- 5.1 Hàng hoá giao theo Hợp đồng này sẽ được đóng trong bao bì thích hợp theo tiêu chuẩn xuất khẩu, bảo đảm cho hàng hoá không bị hư hại, ăn mòn trong quá trình vận chuyển và thuận tiện cho bốc xếp, bốc dỡ.
- 5.2 Bên B hoàn toàn chịu trách nhiệm trong trường hợp hàng hoá bị mất mát, hư hỏng do



thiếu sót trong việc đóng gói Hàng hoá.

- 5.3 Hàng hoá có thể được ghi rõ ràng bằng sơn không xóa được trên bề mặt hoặc in trên tấm ghi nhãn dính trên từng kiện với các thông tin sau bằng tiếng Anh hay tiếng Việt:
- Tên nhà sản xuất.
 - Tên Hàng.
 - Khối lượng (nếu có).
 - Số Hợp đồng (nếu có).
- 5.4 Bên B chịu toàn bộ phí tổn đối với mọi mất mát/ hư hại của Hàng hoá trong quá trình bốc xếp, bốc dỡ, vận chuyển do ghi ký mã hiệu không đúng, không đầy đủ cũng như chịu mọi chi phí vận chuyển, bảo quản, mất mát phát sinh thêm do Hàng hóa bị gửi nhầm địa chỉ do ghi ký mã hiệu sai.

Điều 6: Trách nhiệm do vi phạm hợp đồng

- 6.1. Bên B phải giao hàng đầy đủ cho Bên A được quy định tại Phụ lục số 01 và theo thời hạn quy định của hợp đồng. Nếu Bên B giao hàng bị chậm thì Bên B phải chịu phạt 0,2%/ngày cho 10 ngày lịch chậm đầu tiên; phạt 0,3%/ngày cho những ngày lịch tiếp theo tính trên giá trị của phần hợp đồng bị vi phạm cho đến mức tổng số tiền phạt không quá 08% phần giá trị hợp đồng bị vi phạm.

Nếu Bên B giao Hàng hoá quy định tại Phụ lục số 01 của hợp đồng này theo nhiều lần giao hàng thì thời gian giao nhận hàng của hợp đồng được tính là thời gian giao hàng theo lần giao cuối cùng. Hàng hoá của những lần giao trước chỉ được ghi nhận lưu kho tại kho của Bên A cho đến khi Bên B giao nhận đủ số hàng của cả hợp đồng.

- 6.2. Nếu Bên B không giao đủ số lượng, chủng loại hàng hóa (như quy định tại Phụ lục số 01 của hợp đồng này) thì:

- Bên B vi phạm nghĩa vụ giao hàng theo hợp đồng này và phải chịu phạt một khoản tiền bằng 08% giá trị của cả hợp đồng.
- Nếu Bên B không giao đủ số lượng, chủng loại hàng hóa theo hợp đồng (như quy định tại Phụ lục số 01 của hợp đồng này) thì:
- Bên A có quyền từ chối nhận hợp đồng đó. Bên B vi phạm nghĩa vụ giao hàng theo hợp đồng này và phải chịu phạt một khoản tiền bằng 08% giá trị của cả hợp đồng.

- 6.3. Nếu Bên B giao hàng hoá vượt số lần giao nhận như quy định tại Điều 4 của hợp đồng này thì:

- Bên B đã vi phạm điều kiện giao nhận hàng và phải chịu trách nhiệm thanh toán các chi phí liên quan tới giao nhận hàng hoá cho lần giao hàng vượt quá số lần giao hàng theo hợp đồng này theo mức đơn giá hiện hành của Bên A đang áp dụng cho các khách hàng của Bên A.

- 6.4. Nếu Bên B giao hàng không đảm bảo chất lượng như qui định tại Điều 2 của hợp đồng thì Bên A sẽ không nhận hàng và phạt Bên B theo mức phạt không giao đủ hàng như quy định tại mục 6.2 của hợp đồng này. Bên A có quyền chấp nhận/không chấp nhận việc Bên B sẽ cung cấp hàng mới thay thế cho hàng không đảm bảo chất lượng trên.

- 6.5 Vi phạm do cung cấp chậm/cung cấp không đủ hàng hoá:

- 6.5.1. Nếu Bên B giao hàng chậm quá 60 ngày lịch so với thời gian quy định tại mục 4.1 của hợp đồng này, ngoại trừ trường hợp bất khả kháng, thì Bên A có quyền:



- a) Chỉ định bên thứ 3 có khả năng cung cấp hàng hóa/hàng hoá kèm dịch vụ. Trong trường hợp đó Bên B có trách nhiệm ký hợp đồng với bên được chỉ định để tiếp tục thực hiện công việc cung cấp cho bên A.

Hoặc;

- b) Trực tiếp ký hợp đồng mua hàng/hàng hoá kèm dịch vụ của Bên thứ 3 để tiếp tục thực hiện công việc của hợp đồng. Trong trường hợp đó Bên B phải trả khoản tiền chênh lệch và các chi phí liên quan nếu có.

Hoặc;

- c) Đơn phương chấm dứt thực hiện hợp đồng và trong trường hợp này Bên B phải chịu phạt một khoản tiền bằng 08% giá trị của hợp đồng.

6.5.2. Nếu Bên B giao hàng chậm (một phần hàng hoá) quá 60 ngày lịch so với thời gian quy định tại mục 4.1 của hợp đồng này, ngoại trừ trường hợp bất khả kháng, thì Bên A có quyền:

- a) Chỉ định bên thứ 3 có khả năng cung cấp hàng hóa/hàng hoá kèm dịch vụ. Trong trường hợp đó Bên B có trách nhiệm ký hợp đồng với bên được chỉ định để tiếp tục thực hiện công việc cung cấp cho bên A.

Hoặc;

- b) Trực tiếp ký hợp đồng mua hàng/hàng hoá kèm dịch vụ của Bên thứ 3 để tiếp tục thực hiện công việc của hợp đồng. Trong trường hợp đó Bên B phải trả khoản tiền chênh lệch và các chi phí liên quan nếu có.

- c) Đơn phương chấm dứt thực hiện tiếp hợp đồng và trong trường hợp này Bên B phải chịu phạt một khoản tiền bằng 08% giá trị của phần hợp đồng.

6.6 Tổng các loại phạt không vượt quá 08% giá trị hợp đồng.

6.7 Giá trị hợp đồng bị vi phạm ghi ở Điều 6 của hợp đồng này là giá trị không có thuế GTGT và không bao gồm thuế nhập khẩu.

6.8 Do hàng hóa của hợp đồng này được lựa chọn trọn gói, nên trong trường hợp Bên B không giao bất kỳ một mục hàng hóa nào của hợp đồng thì:

- Bên A có quyền từ chối nhận các mục còn lại của hợp đồng đó và Bên B chịu phạt mức tối đa 08% giá trị hàng hóa của cả hợp đồng; hoặc:
- Bên A có thể vẫn nhận các mục hàng hóa còn lại của hợp đồng nhưng khi đó Bên B sẽ chịu phạt với mức phạt tối đa 08% giá trị hàng hóa của cả hợp đồng đó.

6.9 Nếu Bên B giao hàng chậm bất kỳ một mục hàng hóa nào của hợp đồng thì Bên A có quyền áp dụng mức phạt giao hàng chậm tương ứng đối với giá trị hàng hóa của cả hợp đồng.

6.10 Để thu hồi khoản tiền phạt vi phạm, Bên A sẽ toàn quyền: 1) khấu trừ khoản tiền phạt vi phạm từ các khoản tiền mà Bên A sẽ thanh toán cho Bên B tại Hợp đồng này hoặc theo các hợp đồng khác được ký kết giữa hai bên; 2) Yêu cầu Ngân hàng cấp Bảo đảm thực hiện hợp đồng thanh toán ngay khoản tiền Bên B mở bảo lãnh cho Bên A; 3) Bằng văn bản, yêu cầu Bên B thanh toán. Trong mọi trường hợp, Bên B cam kết nghiêm túc thực hiện nghĩa vụ thanh toán của mình cho Bên A.



6.11 Việc bồi thường thiệt hại (nếu có) được thực hiện theo quy định của pháp luật Việt Nam.

Điều 7: Bảo hành

- 7.1 Bên B chịu trách nhiệm bảo hành chất lượng của hàng hóa trong thời hạn 18 tháng kể từ ngày giao hàng hoặc 12 tháng kể từ ngày đưa hàng hóa vào vận hành tùy điều kiện nào đến trước. Điều kiện bảo hành theo đúng tiêu chuẩn bảo hành của nhà sản xuất.
- 7.2 Trong thời gian bảo hành nếu Bên A phát hiện có hư hỏng, sai sót về chất lượng hàng hóa thì Bên A sẽ thông báo kịp thời bằng fax/email cho Bên B biết để cùng nhau xác minh. Việc xác minh sai sót về chất lượng phải được Bên B tiến hành không chậm quá 15 ngày lịch kể từ ngày Bên B nhận được thông báo. Việc xác minh phải được lập thành biên bản, trong đó ghi rõ kết luận về nguyên nhân gây ra hư hỏng, xác định trách nhiệm thay thế cái mới/sửa chữa các hư hỏng đó thuộc về bên nào và thời hạn thay thế/sửa chữa làm căn cứ pháp lý trong thực hiện hợp đồng này.
- 7.3 Tùy mức độ hư hỏng, nhưng không quá 15 ngày lịch kể từ ngày có kết luận về nguyên nhân hư hỏng, sai sót về chất lượng hàng hóa do lỗi của Bên B thì Bên B phải tiến hành sửa chữa các sai sót về chất lượng hoặc đổi lại hàng mới cho Bên A.
- 7.4 Trong thời hạn 07 ngày lịch kể từ ngày nhận được thông báo của Bên A, nếu Bên B không trả lời thì coi như đã chấp nhận có sai sót về chất lượng hàng do lỗi của mình và có trách nhiệm phải sửa chữa các sai sót đó hoặc đổi lại hàng mới ngay trong vòng 15 ngày kể từ ngày nhận được thông báo của Bên A.
- 7.5 Nếu Bên B tiến hành sửa chữa hoặc đổi lại hàng mới bị chậm so với thời hạn qui định ở mục 7.3 và 7.4 của hợp đồng này thì Bên B phải chịu phạt theo mức phạt giao hàng chậm như qui định ở mục 6.1 của hợp đồng này.
- 7.6 Trong thời hạn quy định trên tại điều 7 của hợp đồng này, nếu Bên B không tiến hành khắc phục (sửa chữa các sai sót về chất lượng do lỗi của mình hoặc đổi lại hàng mới) thì Bên A có quyền tiến hành khắc phục (sửa chữa và/hoặc thay mới) và Bên B phải hoàn trả lại cho Bên A toàn bộ chi phí khắc phục, đồng thời phải chịu phạt 8% giá trị của mặt hàng này. Cách thức Bên A thu hồi tiền phạt từ Bên B quy định tại điều 6.10 của hợp đồng này.
- 7.7 Hàng hóa sau khi được Bên B sửa chữa và thay thế trong thời kỳ bảo hành sẽ được Bên B bảo hành lại 12 tháng kể từ ngày bàn giao (có biên bản giao nhận hàng như quy định tại Phụ lục 02 của hợp đồng này).

Điều 8: Thanh Toán

- 8.1 Bên A thanh toán cho Bên B 100% giá trị hóa đơn hàng đã giao bằng phương thức chuyển khoản qua ngân hàng trong vòng 30 ngày làm việc kể từ ngày nhận được bộ chứng từ thanh toán gồm:
 - 02 Hóa đơn thuế GTGT (02 bản gốc), đồng tiền ghi trên hóa đơn là Việt Nam Đồng, trong đó:
 - + Hóa đơn số 01: Cho giá trị hàng hóa nhập khẩu ghi trên Tờ khai hải quan và thuế GTGT cho hàng nhập khẩu ghi trên Tờ khai hải quan: tỷ giá qui đổi ra VNĐ là tỷ giá ghi trên Tờ khai hải quan; trên hóa đơn chỉ ghi dòng giá bán là giá không có thuế GTGT. Dòng thuế suất và giá trị thuế GTGT không ghi và được gạch bỏ hoặc theo các quy định hiện hành của pháp luật tại ngày xuất hóa đơn.
 - + Hóa đơn số 02: Cho phần phát sinh chênh lệch giữa giá trị hàng hóa đã khai báo tại khâu nhập khẩu và giá trị hàng hóa ghi trong Hợp đồng này, trên hóa đơn ghi thuế suất, số thuế GTGT phù hợp với quy định hiện hành.
 - 01 bản gốc Biên bản giao nhận hàng (Điều 4.8 của Hợp đồng này).
 - Chứng thư giám định (nếu có trung cầu quy định tại Điều 4.9 của Hợp đồng này).
 - Các chứng từ (theo quy định tại Điều 3.2 của Hợp đồng này).



- Bảo đảm thực hiện Hợp đồng (01 bản copy).
 - Tờ khai Hải quan hàng nhập khẩu (bản copy).
- 8.2 Bên A chỉ thanh toán cho Bên B đối với hàng hóa hoàn toàn phù hợp với yêu cầu nêu trong hợp đồng.
- 8.3 Số tài khoản giao dịch theo hợp đồng này của Bên B:
- Số tài khoản:
 - Tên NH:
 - Người thụ hưởng:
- 8.4 Phí chuyển tiền do Bên A chịu.

Điều 9: Bảo đảm thực hiện Hợp đồng

- 9.1 Trong vòng 07 ngày làm việc sau ngày ký hợp đồng (ghi tại trang 01 của hợp đồng), Bên B phải nộp giấy bảo lãnh thực hiện hợp đồng (Phụ lục số 03 của hợp đồng này) được cấp bởi Ngân hàng có uy tín. Giá trị Bảo đảm thực hiện hợp đồng bằng **08%** giá trị hợp đồng. Giấy bảo lãnh này có hiệu lực bằng thời hạn giao hàng quy định tại mục 4.1 hợp đồng này cộng thêm 60 ngày lịch.
- 9.2 Mọi chi phí liên quan đến việc phát hành giấy bảo lãnh thực hiện hợp đồng do Bên B chịu.
- 9.3 Trong thời gian quy định tại mục 9.1 nêu trên, Bên B phải nộp bản gốc bảo lãnh thực hiện hợp đồng cho Bên A. Nếu sau thời gian quy định nói trên, Bên A không nhận được bảo lãnh thực hiện Hợp đồng thì Bên A có quyền đơn phương chấm dứt Hợp đồng và thu hồi tiền bảo lãnh dự thầu của Bên B hoặc áp dụng quy định tại mục 6.8 của Hợp đồng này.
- 9.4 Bên B không được nhận lại Bảo đảm thực hiện hợp đồng trong trường hợp Bên B từ chối/không thực hiện hợp đồng sau khi ký hợp đồng.
- 9.5 Trong trường hợp Bên B vi phạm trách nhiệm thực hiện hợp đồng theo quy định tại hợp đồng này thì khoản tiền bảo đảm được Bên A dùng để khấu trừ tiền phạt.
- 9.6 Bên B phải ngay lập tức yêu cầu Ngân hàng phát hành giấy bảo lãnh thực hiện hợp đồng thực hiện sửa đổi giấy Bảo đảm thực hiện Hợp đồng trong trường hợp cần gia hạn thời gian hiệu lực của Bảo lãnh này vì lý do chậm giao hàng hoặc gia hạn thời hạn giao hàng, đồng thời gửi ngay cho Bên A giấy Bảo lãnh đã gia hạn hiệu lực (bản gốc) chậm nhất là 07 ngày làm việc trước khi Bảo lãnh cũ hết hiệu lực.

Trong vòng 03 ngày làm việc kể từ khi nhận được yêu cầu gia hạn bằng văn bản của Bên A, nếu Bên B không thực hiện hoặc chậm thực hiện gia hạn hiệu lực bảo lãnh thực hiện hợp đồng thì Bên B sẽ chịu phạt 0,2% giá trị bảo lãnh tương ứng/ mỗi ngày chậm. Tổng giá trị phạt này không vượt quá giá trị bảo lãnh tương ứng. Thu hồi khoản tiền phạt vi phạm này thực hiện theo quy định tại khoản 6.8 Điều 6 của Hợp đồng.

Điều 10: Bất khả kháng

- 10.1 Sự kiện bất khả kháng là sự kiện xảy ra một cách khách quan không thể lường trước được và không thể khắc phục được mặc dù đã áp dụng mọi biện pháp cần thiết và khả năng cho phép như: chiến tranh, bạo loạn, xung đột vũ trang, cấm vận, thiên tai (lũ lụt, bão, lốc xoáy, động đất, sóng thần), hỏa hoạn, dịch bệnh (Epidemic, Pandemic) được WHO/Quốc gia công bố, lệnh phong tỏa Vùng/Quốc gia do Chính quyền sở tại áp đặt....
- 10.2 Bên gặp sự kiện bất khả kháng dẫn đến việc không thực hiện được nghĩa vụ theo hợp đồng do ảnh hưởng trực tiếp bởi các sự kiện bất khả kháng có nghĩa vụ phải ngay lập tức thông báo cho bên kia biết, bao gồm cung cấp thông tin, giải trình về sự ảnh hưởng trực tiếp của sự kiện bất khả kháng đến việc vi phạm thực hiện hợp đồng kèm chứng cứ chứng minh, các biện pháp đã được thực hiện để khắc phục vấn đề và giảm thiểu tổn thất. Việc chậm thông báo, cung cấp thông tin và giải trình nếu trễ hơn 10 ngày lịch sau khi sự kiện bất



khả kháng xảy ra sẽ làm cho bên gặp bất khả kháng mất quyền miễn trách sau này vì lý do bất khả kháng.

- 10.3 Văn bản xác nhận của Phòng Thương mại và Công nghiệp Việt Nam hoặc cơ quan có thẩm quyền ở nơi xảy ra sự kiện bất khả kháng là bằng chứng đủ để chứng minh sự kiện và thời gian xảy ra bất khả kháng.
- 10.4 Trường hợp do hậu quả trực tiếp của sự kiện bất khả kháng mà một Bên trong Hợp Đồng không thể thực hiện toàn bộ hoặc một phần nghĩa vụ theo hợp đồng này thì thời gian thực hiện hợp đồng sẽ được kéo dài thêm bằng thời gian mà sự kiện bất khả kháng diễn ra.
- 10.5 Nếu sự kiện bất khả kháng kéo dài hơn 02 tháng, mỗi bên đều có quyền chấm dứt hợp đồng này mà không phải bồi thường bất cứ một khoản tiền nào cho bên kia.
- 10.6 Các khó khăn trong sản xuất như thiếu vật tư, điện, nhân công, đình công... không được coi là bất khả kháng và không miễn cho Bên B nghĩa vụ giao hàng hoặc giao hàng muộn; Các thông tin từ trang báo, mạng và các phương tiện truyền thông khác chỉ mang tính chất tham khảo.

Điều 11: Giải quyết tranh chấp

- 11.1 Bất kỳ tranh chấp nào phát sinh từ hợp đồng này sẽ được giải quyết bằng thương lượng giữa hai bên trên tinh thần hợp tác, hai bên cùng có lợi và tôn trọng lẫn nhau.
- 11.2 Trường hợp tranh chấp không thể giải quyết bằng thương lượng thì sẽ được giải quyết bằng trọng tài tại Trung tâm Trọng tài Quốc tế Việt Nam (VIAC) tại Hà Nội theo Quy tắc tổ tụng trọng tài của Trung tâm này. Số lượng trọng tài viên là 03 người. Luật áp dụng là Luật Việt Nam.

Phán quyết của Trung tâm trọng tài là cuối cùng và buộc hai bên phải tuân thủ.

Án phỉ do bên thua kiện chịu.

Điều 12: Các điều khoản khác

- 12.1 Bất kỳ sự sửa đổi, bổ sung nào đối với Hợp đồng này đều phải được lập thành văn bản và có chữ ký của cả hai bên. Mọi giao dịch trong quá trình thực hiện Hợp đồng được các Bên thực hiện bằng văn bản và gửi theo đường bưu chính hoặc theo số Fax tới địa chỉ đăng ký hoặc số Fax của mỗi Bên ghi trong hợp đồng và email đến địa chỉ email...theo mẫu thể hiện tại Phụ lục số 04 (A, B) kèm theo.
- 12.2 Những điều không quy định hoặc quy định không đầy đủ trong Hợp đồng này sẽ căn cứ vào luật pháp Việt Nam hiện hành.
- 12.3 Không bên nào được chuyển quyền và nghĩa vụ của mình theo hợp đồng này cho bên thứ ba mà không được sự đồng ý trước bằng văn bản của bên kia.
- 12.4 Trong quá trình thực hiện hợp đồng trường hợp xảy ra tranh chấp thì các văn bản dẫn chiếu được xem xét theo thứ tự ưu tiên xử lý theo mục Mục 2.2 ĐKC.
- 12.5 Hợp đồng này có hiệu lực kể từ ngày Ngân hàng Bên B mở bảo lãnh thực hiện Hợp đồng (ngày hiệu lực của bảo lãnh) và hoàn thành việc ký Hợp đồng nhưng không muộn hơn 07 ngày làm việc so với ngày được ghi trên Hợp đồng và tiếp tục cho đến khi hai bên thực hiện hết trách nhiệm của mình như quy định trong hợp đồng.
- 12.6 Hết thời hạn hiệu lực của hợp đồng, nếu hai bên không có khiếu nại gì coi như hợp đồng đã được thanh lý.



- 12.7 Hợp đồng gồm _____ trang và 04 Phụ lục (Phụ lục số 01: Phạm vi cung cấp, Phụ lục số 02: Biên bản giao nhận hàng, Phụ lục số 03: Mẫu Bảo lãnh Thực hiện Hợp đồng, Phụ lục số 04 (A, B): Mẫu Phương thức giao dịch) được lập thành 05 bản bằng tiếng Việt (có sử dụng tiếng Anh mô tả hàng hóa tại Phụ lục số 01), các bản có giá trị pháp lý như nhau, Bên A giữ 03 bản, Bên B giữ 02 bản.

ĐẠI DIỆN BÊN A

ĐẠI DIỆN BÊN B



PHỤ LỤC SỐ 01
BẢNG GIÁ TRỊ HỢP ĐỒNG
SỐ LƯỢNG, QUY CÁCH PHẨM CHẤT, GIÁ CẢ

Nº	Stt	Tên hàng hoá	Code / Part number	Nhà SX	Nước xuất xứ	ĐVT	Số lượng	Đơn giá (VND)	Thành Tiền (VND)
<i>Tổng giá trị hàng hoá (VND):</i> Theo điều kiện giao tại kho Vietsovpetro, tại Thành phố Hồ Chí Minh đã bao gồm thuế, phí, lệ phí phát sinh trên lãnh thổ Việt Nam nhưng không bao gồm thuế nhập khẩu và thuế GTGT của giá trị hàng hóa ghi trên tờ khai Hải quan. Thuế nhập khẩu và thuế GTGT trên được miễn theo Hiệp định (Lô 09-1). Bên B sẽ sử dụng Hạn mức nhập khẩu của Bên A để làm thủ tục nhập khẩu hàng hóa.									

ĐẠI DIỆN BÊN A

ĐẠI DIỆN BÊN B



PHỤ LỤC SỐ 02

Phê duyệt - Утверждаю

Phê duyệt - Утверждаю

Thủ trưởng đơn vị đặt hàng
Директор пред-я заказчика

Giám đốc XNDV Cảng & Cung ứng vật tư TB
Директор ПОСОМ

Ngày.....tháng.....năm 20....

Ngày.....tháng.....năm 20....

BIÊN BẢN GIAO NHẬN HÀNG АКТ О ПРИЁМЕ - ПЕРЕДАЧЕ ТОВАРОВ

Ngày.... tháng.... năm 20....

Căn cứ HĐ (biên bản) số:

ký ngày.... tháng....năm 20...

На основании Договора номер:

Chúng tôi, những người ký tên dưới đây - Мы. Нижеподписавшиеся:

1- Đại diện bên giao - Представители поставщика:

- Ông (Bà) Chức vụ:

- Ông (Bà): Chức vụ:

2- Đại diện bên nhận - Представители получателя:

2.1 XN dịch vụ cảng & cung ứng vật tư TB - ПОСОМ

- Ông (Bà): Chức vụ:

- Ông (Bà): Chức vụ:

2.2 Đơn vị đặt hàng - Представители предприятия - заказчика:

- Ông (Bà): Chức vụ:

- Ông (Bà): Chức vụ:

Cùng nhau tiến hành giao nhận hàng hóa, cụ thể như sau: - Произвели приём - передачу следующих товаров на складе:...

STT П/П	Tên hàng, Ký hiệu, Quy cách Наименование. Марка товаров	ĐVT ЕД	Thực nhập Фак. Получение		Bao bì Тара	Chất lượng hàng Качество
			Số lượng Кол	Trọng lượng Вес		

- Mẫu phân tích các mặt hàng No được lấy tại - Образец товара получен на складе:

.....Ngày.....tháng.....năm 20....

- Người lấy mẫu: - Лаборант:..... Chức vụ - Должность

- Người lấy mẫu: - Лаборант:..... Chức vụ - Должность

Đối với những mặt hàng lấy mẫu phân tích nêu trên thì hàng chỉ chuyển chủ từ bên giao sang bên nhận. Sau khi có kết quả phân tích mẫu đạt yêu cầu như mẫu chào hàng. Trong thời gian chờ kết quả phân tích mẫu, bên nhận (XNDV hoặc đơn vị đặt hàng) nhận giữ hộ.

CHỨNG TỪ KÈM THEO - Прилагаемые документы:

- Chứng chỉ phẩm chất - Сертификат:.....
- Hóa đơn (phiếu xuất kho) - Счет:
- Bản kê chi tiết danh điểm mặt hàng (Перечень товаров) gồm __bản __tờ
- Các chứng từ khác - Другие документы :

Biên bản này chỉ lập một bản và chỉ có giá trị để làm thủ tục thanh toán sau khi được Giám đốc XNDVCảng & Cung ứng vật tư TB và lãnh đạo đơn vị đặt hàng phê duyệt (trường hợp giao nhận thẳng cho đơn vị đặt hàng thì biên bản này phải được thủ trưởng đơn vị đặt hàng phê duyệt trước).

Ngày giao hàng của lô hàng này là ...

ĐẠI DIỆN BÊN GIAO

KÝ TÊN - Подписи

ĐẠI DIỆN BÊN NHẬN

Представители поставщика:

Представители получателя:

(Họ tên và chữ ký)

(Họ tên và chữ ký)

Xác nhận chất lượng của phòng thí nghiệm hoặc đơn vị đặt hàng (nếu có) - Справка лаборатории (заказчика) по качеству

.....
.....
.....

Đại diện phòng thí nghiệm (Hoặc đơn vị đặt hàng) - Представитель лаборатории (заказчика)

Họ và tên - Фамилия.....

Ký tên: Подпись

Ngày.....tháng.....năm 20....



Kiểm tra và xác nhận: Các mặt hàng nêu trên có số lượng, ký mã hiệu, xuất xứ hàng hóa, chứng chỉ chất lượng & được kiểm tra chất lượng v.v. phù hợp với các quy định của hợp đồng (Biên bản) Заключение:

Состояние товаров. Количество марки. Место происхождения. Сертификат по качеству и проверка качества....вышеуказанных товаров соответствуют условиям Договора:

T.P vật tư thiết bị - Начальник курирующего отделаю

Ký tên: Подпись

Ngày.....tháng.....năm 20....

Trưởng phòng TNHH - Начальник ОКД

Ký tên: Подпись

Ngày.....tháng.....năm 20....



PHỤ LỤC SỐ 03

MẪU BẢO LÃNH THỰC HIỆN HỢP ĐỒNG

Ngày tháng năm 20...

Kính gửi:

Liên quan tới Hợp đồng _____ về việc _____ (sau đây được gọi là “Hợp đồng”) được ký giữa _____ (sau đây gọi là “BÊN ĐƯỢC BẢO LÃNH”) và _____ (sau đây gọi là “BÊN THỤ HƯỞNG”), chúng tôi, _____ có trụ sở chính tại _____ (sau đây gọi là “BÊN BẢO LÃNH”) phát hành Thư bảo lãnh không hủy ngang và vô điều kiện cho bên thụ hưởng với số tiền là _____ (Bằng chữ: _____) (sau đây gọi là “THƯ BẢO LÃNH”).

With reference to Contract No. _____ entitled _____ (hereinafter referred to as "the Contract") entered into on the _____ by and between _____, having address at _____ (hereinafter referred to as "APPLICANT") and _____, we, _____, having registered office at _____ (hereinafter referred to as "GUARANTOR") hereby open in the favor of _____ (Hereinafter referred to as the "BENEFICIARY") an unconditional and irrevocable bank guarantee for the amount of _____ (In words: _____) (hereinafter referred to as "GUARANTEE").

THƯ BẢO LÃNH này có hiệu lực kể từ ngày phát hành và sẽ duy trì hiệu lực cho đến _____ sau đây gọi là "Ngày hết hiệu lực". Đối với bất cứ sự gia hạn, đổi mới hoặc chuyển nhượng Hợp đồng vượt quá thời gian được quy định trong THƯ BẢO LÃNH này, BÊN THỤ HƯỞNG sẽ không cần phải thông báo hoặc được sự đồng thuận của BÊN BẢO LÃNH. THƯ BẢO LÃNH này sẽ được gia hạn dựa trên yêu cầu bằng văn bản từ BÊN ĐƯỢC BẢO LÃNH để đảm bảo cho thời gian gia hạn, đổi mới hoặc chuyển nhượng của Hợp đồng.

*This GUARANTEE is effective from the issuance date and shall remain valid, binding and in force until _____, hereinafter referred to as "the **Expiry Date**". For any extensions, renewals, or assignments of the Contract beyond the time stated in this GUARANTEE, BENEFICIARY shall not be required to give notice to nor obtain the consent of GUARANTOR. This GUARANTEE would be extended upon written request of APPLICANT to cover the extension, renewal or assignment periods.*

BÊN BẢO LÃNH cam kết **không hủy ngang và vô điều kiện** thanh toán ngay cho BÊN THỤ HƯỞNG một khoản tiền hay những khoản tiền, theo chỉ thị của BÊN THỤ HƯỞNG, tổng không vượt quá số tiền bảo lãnh nêu trên trong vòng 05 ngày làm việc kể từ ngày nhận được văn bản yêu cầu của BÊN THỤ HƯỞNG ghi rõ BÊN ĐƯỢC BẢO LÃNH đã vi phạm nghĩa vụ theo Hợp đồng.

*GUARANTOR hereby **unconditionally and irrevocably** guarantees to promptly pay BENEFICIARY an amount or amounts, specified by BENEFICIARY, up to the amount stated above, within 05 working days upon our receipt of BENEFICIARY's written demand stating that APPLICANT has failed to fulfill its performance obligation(s) under the Contract.*

Sau Ngày hết hiệu lực, THƯ BẢO LÃNH này sẽ tự động không còn giá trị cho dù bản gốc THƯ BẢO LÃNH và các Thư sửa đổi liên quan (nếu có) có được gửi trả lại BÊN BẢO LÃNH hay không.

After the Expiry date, this GUARANTEE shall automatically become null and void, whatsoever and irrespective of whether this GUARANTEE is returned to GUARANTOR or not.

Số tiền bảo lãnh nêu trên sẽ được thanh toán ngay bởi BÊN BẢO LÃNH cho BÊN THỤ HƯỞNG cho dù có sự tranh cãi hoặc phản đối nào của BÊN ĐƯỢC BẢO LÃNH hoặc của BÊN BẢO LÃNH hoặc của bất kì bên thứ ba nào khác, và bất kể có hay không sự tranh chấp giữa BÊN ĐƯỢC BẢO LÃNH và BÊN THỤ HƯỞNG về hoặc liên quan tới Hợp đồng hoặc



về bất cứ vấn đề khác và cho dù những tranh chấp này, nếu có, đã được giải quyết, dàn xếp, kiện tụng hoặc phân xử bằng bất kỳ hình thức nào.

The said guarantee amount shall be paid by GUARANTOR forthwith to BENEFICIARY notwithstanding any contestation or protest by APPLICANT or by GUARANTOR or by any third party, and irrespective of whether or not there is any dispute between APPLICANT and BENEFICIARY in respect of or relating to the Contract or in respect of any other matter and irrespective of whether or not such said dispute, if any, has been settled, resolved, litigated, or adjudicated upon otherwise howsoever.

BÊN BẢO LÃNH hoặc BÊN ĐƯỢC BẢO LÃNH sẽ không được giải trừ bất cứ nghĩa vụ nào theo THƯ BẢO LÃNH này cho dù có bất cứ sự sửa đổi, thay đổi, thanh toán sai lệch, gia hạn nào liên quan tới Hợp đồng hay bất kỳ sự trì hoãn ân hạn nào của BÊN THỤ HƯỞNG trong hoặc liên quan đến bất cứ vấn đề gì của Hợp đồng.

Neither alteration, variation, incorrect payment, extension in terms of the Contract nor any forbearance of forgiveness in or in respect of any matter or thing concerning the Contract on the part of BENEFICIARY shall in any way release GUARANTOR or APPLICANT or from any liabilities under this GUARANTEE.

Việc đòi tiền nhiều lần theo bảo lãnh này là được phép và theo đó, Số tiền bảo lãnh nêu trên sẽ tự động giảm tương ứng với số tiền mà Ngân hàng đã thực hiện thanh toán cho Bên thụ hưởng theo Thư bảo lãnh.

Multiple demands under this Guarantee are allowed. In such event, the Guarantee Amount aforementioned shall automatically be reduced by the amount of each and any payment made by us under this Guarantee.

Thư bảo lãnh được điều chỉnh và giải thích theo pháp luật Việt Nam. Bất kỳ tranh chấp nào phát sinh từ hoặc liên quan đến Thư bảo lãnh sẽ [do Tòa án nhân dân có thẩm quyền của Việt Nam giải quyết theo quy định của pháp luật] / [sẽ được giải quyết tại Trung tâm Trọng tài quốc tế Việt Nam (VIAC) bên cạnh Phòng Thương mại và Công nghiệp Việt Nam theo quy tắc tố tụng trọng tài của VIAC].

The Guarantee shall be governed by and construed in accordance with the laws of Vietnam. Any dispute arising out of or relating to this Guarantee shall be submitted to [the jurisdiction of competent People's Court of Vietnam in accordance with the governing law] / [arbitration by the Vietnam Arbitration Center international (VIAC) at the Vietnam Chamber of Commerce and Industry in accordance with its rules of arbitration].

THƯ BẢO LÃNH này được phát hành duy nhất 01 (một) bản song ngữ (tiếng Việt và tiếng Anh) và không được phép chuyển nhượng. Trường hợp có sự khác nhau về cách hiểu giữa nội dung tiếng Việt và tiếng Anh thì nội dung tiếng Việt là căn cứ pháp lý.

This GUARANTEE is issued solely in 01 (one) bilingual original (Vietnamese and English) and is not transferrable. Should there be any inconsistency between the two languages of this GUARANTEE, the Vietnamese content shall prevail and be final.

Đại diện hợp pháp của ngân hàng
[ghi tên, chức danh, ký tên và đóng dấu]



PHỤ LỤC SỐ 04 (A)

MẪU THU' TÍN GIAO DỊCH THỰC HIỆN HỢP ĐỒNG

Ngày tháng năm 20..

Kính gửi: Liên doanh Việt - Nga Vietsovpetro/Nhà thầu.

105 Lê Lợi, phường Vũng Tàu, Tp. Hồ Chí Minh

Người nhận: **Ông Trần Quốc Thắng – Phó Tổng giám đốc Thương mại**

Sao gửi: **Bà Nguyễn Thị Vân Anh – Trưởng phòng Thương mại**

Email: vspadmin@vietsov.com.vn

thanhq.hq@vietsov.com.vn

huonghm.hq@vietsov.com.vn

(Ghi nội dung giao dịch về: Thay đổi về Hàng hoá/Dịch vụ, tiến độ, sử dụng Quota, các nội dung liên quan tới giá trị HĐ, thanh toán.....)

ĐẠI DIỆN BÊN
(Ký tên và đóng dấu)



PHỤ LỤC SỐ 04 (B)

MẪU THƯ TÍN GIAO DỊCH THỰC HIỆN HỢP ĐỒNG

Ngày tháng năm 20..

Kính gửi: Liên doanh Việt - Nga Vietsovpetro/Nhà thầu.

105 Lê Lợi, phường Vũng Tàu, Tp. Hồ Chí Minh

Người nhận: Phòng Thương mại VSP/ XN Dịch vụ Cảng và CUVTTB/ Đơn vị thực hiện
dịch vụ/xây lắp.

Email: vspadmin@vietsov.com.vn

thanhnhq.hq@vietsov.com.vn

huonghm.hq@vietsov.com.vn

(Ghi nội dung giao dịch về: Thông báo giao hàng, gửi chứng từ hàng hóa, thông báo bắt đầu thực hiện DV/XL, thông tin về nhân sự/thiết bị thực hiện DV/XL....)

ĐẠI DIỆN BÊN

(Ký tên và đóng dấu)



Part 4. APPENDICES

This Chapter includes:

1 - Attachment 01: SCOPE OF SUPPLY

2 - Attachment 02: TECHNICAL REQUIREMENT

3 - Attachment 03: TECHNICAL EVALUATION CRITERIA

And other Technical documents, ... with link for reference (if any).





DANH MỤC- СПЕЦИФИКАЦИЯ

Tên hàng hóa/Dịch vụ - На приобретение товаров/услуг: Thiết bị hệ thống điều khiển và thiết bị báo khí, báo cháy cho giàn RC-12/
Инструментальное оборудование и детекторы для проекта RC-12.

Scope of Supply: Instruments and Detectors Package (VT-2965/25-XL-DA-HMH)

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
I. VẬT TƯ THIẾT BỊ					
GROUP 1: Pressure Gauge, Differential Pressure Gauge, Temperature Gauge					
1	00.019.027.02363*	Pressure Gauge, Scale: 0 - 40 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-40 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC) Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Overpressure Protector, PISTON TYPE, 316 SS	set	5,00
2	00.019.027.02019	Pressure Gauge, Scale: 0 - 6 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; CASE	set	1,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
		Two-Valve Manifold (block and bleed) Манометр	Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-6 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed); Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Overpressure Protector, PISTON TYPE, 316 SS		
3	00.019.027.02013	Pressure Gauge, Scale: 0 - 40 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-40Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F;	set	4,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
			Instrument connections ½” NPT-F;		
4	00.019.027.02013	Pressure Gauge, Scale: 0 - 40 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-40Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	set	1,00
5	00.019.027.02014	Pressure Gauge, Scale: 0 - 160 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	PRESSURE GAUGE Service: Hydrocarbon Gas; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-160 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH	set	6,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
			Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC) Process connection: ½” NPT-F; Instrument connections ½” NPT-F;		
6	00.019.027.02015	Pressure Gauge, Scale: 0 - 400 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Манометр	PRESSURE GAUGE Service: Water; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-400 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON/ MONEL; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 6000 psig @200 degF (414 barg @ 93 degC) Process connection: ½” NPT-F; Instrument connections ½” NPT-F;	set	3,00
7	00.019.027.02364*	Pressure Gauge, Scale: 0 - 60 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Манометр	PRESSURE GAUGE Service: Water; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-60 Bar; Accuracy: 1 % FS;	set	1,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
			Element Type / Material: BOURDON / Monel; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES N/A		
8	00.019.027.02016	Pressure Gauge, Scale: 0 - 10 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	"PRESSURE GAUGE Service: Water; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-10 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / MONEL; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F;	set	1,00
9	00.019.027.02018	Pressure Gauge, Scale: 0 - 16 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Манометр	PRESSURE GAUGE Service: Instrument Air; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back;	set	2,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
			Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-16 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F;		
10	00.019.027.02365*	Pressure Gauge, Scale: 0 - 4 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2" NPT-M, With Two-Valve Manifold (block and bleed). Манометр	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-4 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Overpressure Protector: PISTON TYPE, 316 SS	set	2,00
11	00.019.027.02366*	Pressure Gauge, Scale: 0 - 4 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2" NPT-M, With	PRESSURE GAUGE Service: Diesel Fuel Oil; CASE	set	1,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
		Two-Valve Manifold (block and bleed). Манометр	Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-4 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS;Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F		
12	00.019.027.02367*	Pressure Gauge, Scale: 0 - 16 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2" NPT-M, With Two-Valve Manifold (block and bleed). Манометр	PRESSURE GAUGE Service: Diesel Fuel Oil; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min;Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-16 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C)	set	1,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
			Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F		
13	00.019.027.02368*	Pressure Gauge, Scale: 0 - 16 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2" NPT-M, With Two-Valve Manifold (block and bleed). Манометр	PRESSURE GAUGE Service: Fresh Water; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-16 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	set	1,00
14	00.019.027.02369*	Pressure Gauge (Diaphragm Seal), Scale: 0 - 160 Bar; Dial size:100mm, IP56; Process connection: 1/2" NPT-M, With 316SS 2-valve manifold and accessories. Манометр	Pressure Gauge (Diaphragm Seal) Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Scale: 0-160 Bar; Accuracy: 1 % FS; Mounting: 2" pole stand; Diaphragm Seal:- Design Type: Welded design; - Material: 316 SS; - Operating Temperature: Up to 752 degF (400 degC) - Process Connection: ½" NPT-M	set	2,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
			- Capillary Line/Length : Yes, 316 SS /Min 5 Feet (1.5m) - System Fill Fluids : High-temperature Silicone Oil Completed with 316SS 2-valve manifold and accessories		
15	00.019.027.02014	Pressure Gauge, Scale: 0 - 160 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	PRESSURE GAUGE Service: Hydrocarbon Gas; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-160 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC) Process connection: ½” NPT-F; Instrument connections ½” NPT-F;	set	1,00
16	00.019.027.02370*	Pressure Gauge, Scale: 0 - 400 Bar; Dial size:150mm, IP56, Lens: Shatterproof glass; Process connection: 1/2" NPT-M, With Two-Valve Manifold (block and bleed). Манометр	PRESSURE GAUGE Service: Water injection; CASE Dial: 150 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-400 Bar; Accuracy: 1 % FS;	set	1,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
			Element Type / Material: BOURDON / MONEL; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: MONEL; Rating: 6000 psig @ 200 °F (414 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F;		
17	00.019.027.02371*	Pressure Gauge, Scale: 0 - 40 Bar; Dial size:150mm, IP56, Lens: Shatterproof glass; Process connection: 1/2" NPT-M, With Two-Valve Manifold (block and bleed). Манометр	PRESSURE GAUGE Service: HC WATER-OIL LIQUID MIXTURE; CASE Dial: 150 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-40 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½” NPT-F; Instrument connections ½” NPT-F;	set	1,00
18	00.019.027.02372*	Differential Pressure Gauge, Scale: 0 - 2.5 Bar; Dial size:100mm, IP56, Lens: Shatterproof glass; Process connection: 1/2" NPT-M, With 5-Valves Manifold Integral to Instrument. Манометр	DIFFERENTIAL PRESSURE GAUGE Service: Oil, Gas, Water Mixture CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Silicon; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M;	set	1,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
			GAUGE Scale: 0-2.5 Bar; Accuracy: 1% FS; Element Type / Material: Diaphragm / 316 SS; COMPLETED WITH 5-Valves Manifold Integral to Instrument; Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC) Process connection: ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
19	00.019.005.00704*	Temperature Gauge, Scale: 0 - 60 degC; Dial:100mm, IP56, Lens: Shatterproof glass; Process connection: Flange 2", #1500, RTJ; Immersion length (dimension U): 225 mm. Датчик температуры	TEMPERATURE GAUGE Service: Hydrocarbon Gas; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½” NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-60 degC; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½” NPT-F; Material: 316 SS; Immersion length (dimension U): 225 mm;	set	1,00
20	00.019.027.02373*	Temperature Gauge, Scale: 0 - 100 degC; Dial:100mm, IP56, Lens: Shatterproof glass; Process connection: Flange 2", #150, RF; Immersion length (dimension U): 500 mm. Датчик температуры	TEMPERATURE GAUGE Service: Oil, Water; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½” NPT-M; CASE	set	2,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #150, RF; Instrument connection: ½” NPT-F; Material: 316 SS; Immersion length (dimension U): 500 mm;		
21	00.019.005.00705*	Temperature Gauge, Scale: 0 - 100 degC; Dial:100mm, IP56, Lens: Shatterproof glass; Process connection: Flange 2", #300, RF; Immersion length (dimension U): 500 mm. Датчик температуры	TEMPERATURE GAUGE Service: Oil, Water; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½” NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", 300, RF; Instrument connection: ½” NPT-F; Material: 316 SS;Immersion length (dimension U): 500 mm;	set	1,00
22	00.019.005.00706*	Temperature Gauge, Scale: 0 - 100 degC; Dial:100mm, IP56, Lens: Shatterproof glass; Process connection: Flange 2", #300, RF; Immersion length (dimension U): 220 mm. Датчик температуры	TEMPERATURE GAUGE Service: Oil, Water; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Process connection: ½” NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #300, RF; Instrument connection: ½” NPT-F; Material: 316 SS; Immersion length (dimension U): 220 mm;		
23	00.019.005.00707*	Temperature Gauge, Scale: 0 - 60 degC; Dial:150mm, IP56, Lens: Shatterproof glass; Process connection: Flange 2", #1500, RTJ; Immersion length (dimension U): 250 mm. Датчик температуры	TEMPERATURE GAUGE Service: Hydrocarbon Gas; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½” NPT-M; CASE Dial: 150 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-60 degC; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½” NPT-F; Material: 316 SS;Immersion length (dimension U): 250 mm;	set	1,00
24	00.019.005.00708*	Temperature Gauge, Scale: 0 - 100 degC; Dial:150mm, IP56, Lens: Shatterproof glass; Process connection: Flange 2", #300, RF; Immersion length (dimension U): 220 mm.	TEMPERATURE GAUGE Service: Oil, Water, Gas Mixture; SENSOR Type: Bi-Metal with silicone oil dampener;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
		Датчик температуры	Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½” NPT-M; CASE Dial: 150 mm; Case material: 316 SS;IP-56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #300, RF; Instrument connection: ½” NPT-F; Material: 316 SS; Immersion length (dimension U): 220 mm;		
GROUP 2: Level Gauge, Level Transmitter; Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter					
25	00.019.028.01343*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension:1850 mm; Transmitter Range: 0-2000 mm (VTA); Safety Level: N/A. Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension; 1850 mm; Process Connection: Flange 2-inch, #300 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 125 - 1975 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 2000 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire;Power supply: 24 V	set	1,00

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(1)	(2)	(3)	(4)	(5)	(6)
			DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block;		
26	00.019.028.01344*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension:1850 mm; Transmitter Range: 0-2000 mm (VTA); Safety Level: SIL 2. Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension; 1850 mm; Process Connection: Flange 2-inch, #300 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 125 - 1975 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 2000 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: SIL 2; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block;	set	1,00
27	00.019.028.01345*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension: 850 mm; Transmitter Range: 0-1000 mm (VTA); Safety Level: N/A. Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Center-Center Dimension; 850 mm; Process Connection: Flange 2-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 125 - 975 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1000 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block.		
28	00.019.028.01346*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension: 1200 mm; Transmitter Range: 0-1500 mm (VTA); Safety Level: N/A. Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension; 1200 mm; Process Connection: Flange 2-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 200 - 1400 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA); Probe Length: suite to chamber;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block.		
29	00.019.028.01347*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension: 850 mm; Transmitter Range: 0-1000 mm (VTA); Safety Level: SIL 2. Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension; 850 mm; Process Connection: Flange 2-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE N/A TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1000 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: SIL 2; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block.	set	1,00
30	00.019.027.02374*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension: 600 mm; Transmitter Range: 0-1200 mm (VTA); Safety Level: N/A. Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Mounting: Side-Side; Center-Center Dimension; 600 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 500 - 1100 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1200 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block.		
31	00.019.028.01348*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension: 1200 mm; Transmitter Range: 0-1500 mm (VTA); Safety Level: N/A. Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Fresh Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension; 1200 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 110 - 1310 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA);	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block;		
32	00.019.028.01350*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension: 1400 mm; Transmitter Range: 0-1500 mm (VTA); Safety Level: SIL 2. Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Diesel Fuel Oil; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension; 1400 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 100 - 1500 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS;Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: SIL 2; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block;	set	1,00
33	00.019.028.01349*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension: 1400 mm; Transmitter Range: 0-1500 mm (VTA); Safety Level: N/A.	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Diesel Fuel Oil; CHAMBER Type: Welded cap on Top, Flange connection at	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
		Преобразователь уровня	Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension; 1400 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 100 - 1500 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block;		
34	00.019.028.01351*	Level Gauge/ Level Transmitter Assembly. Chamber Size/ Material: 2"/ 316SS; Center-Center Dimension: 1400 mm; Transmitter Range: 0-1500 mm (VTA); Safety Level: N/A. GAUGE (N/A). Преобразователь уровня	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Diesel Fuel Oil; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension; 1400 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE N/A TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA);	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block;		
35	00.019.005.00384	Temperature Transmitter, Instrument range: 0-100 degC; Accuracy: At least 0.1 % FS; Process connection: Flange 2", #1500, RTJ; Immersion length (dimension U): 225 mm Передачик температуры	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½” NPT-M; TRANSMITTER Instrument range: 0-100 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½” NPT-F; Material: 316 SS;Immersion length (dimension U): 225 mm;	set	5,00
36	00.019.005.00590	Temperature Transmitter, Instrument range: 0-60 degC; Accuracy: At least 0.1 % FS; Process connection: Flange 2", #1500, RTJ; Immersion length (dimension U): 225 mm. Преобразователь температуры	TEMPERATURE TRANSMITTER Service: Hydrocarbon Gas; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½” NPT-M;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			TRANSMITTER Instrument range: 0-60 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½” NPT-F; Material: 316 SS;Immersion length (dimension U): 225 mm;		
37	00.019.005.00709*	Temperature Transmitter, Instrument range: 0-100 degC; Accuracy: At least 0.1 % FS; Process connection: Flange 2", #300, RF; Immersion length (dimension U): 220 mm. Передатчик температуры	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½” NPT-M; TRANSMITTER Instrument range: 0-100 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #300, RF; Instrument connection: ½” NPT-F; Material: 316 SS;Immersion length (dimension U): 220 mm;	set	1,00



STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	(2)	(3)	(4)	(5)	(6)
38	00.019.005.00710*	Temperature Transmitter, Instrument range: 0-60 degC; Accuracy: At least 0.25 % FS; Process connection: ½” NPT-M; Thermowell: N/A. Передатчик температуры	TEMPERATURE TRANSMITTER FOR HVAC SYSTEM Service: Clean Air; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem Material: 316 SS; Process connection: ½” NPT-M; TRANSMITTER Instrument range: 0-60 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: 0.25 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING IP-44 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block; THERMOWELL N/A ACCESSORIES Wall mounting bracket	set	4,00
39	00.019.005.00710*	Temperature Transmitter, Instrument range: 0-60 degC; Accuracy: At least 0.25 % FS; Process connection: ½” NPT-M; Thermowell: N/A. Передатчик температуры	TEMPERATURE TRANSMITTER FOR HVAC SYSTEM Service: Clean Air; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem Material: 316 SS; Process connection: ½” NPT-M; TRANSMITTER Instrument range: 0-60 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: 0.25 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIC, T3, IP-44 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			THERMOWELL N/A ACCESSORIES Wall mounting bracket		
40	00.019.005.00711*	Temperature Transmitter, Instrument range: 0-60 degC; Accuracy: At least 0.1 % FS; Process connection: Flange 2", #1500, RTJ; Immersion length (dimension U): 250 mm. Передачик температуры	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½" NPT-M; TRANSMITTER Instrument range: 0-60 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 %FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 250 mm.	set	1,00
41	00.019.005.00709*	Temperature Transmitter, Instrument range: 0-100 degC; Accuracy: At least 0.1 % FS; Process connection: Flange 2", #300, RF; Immersion length (dimension U): 220 mm. Передачик температуры	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½" NPT-M; TRANSMITTER Instrument range: 0-100 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #300, RF; Instrument connection: ½” NPT-F; Material: 316 SS;Immersion length (dimension U): 220 mm;		
42	00.019.027.02375*	Pressure Transmitter, Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed)Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	20,00
43	00.019.027.02377*	Pressure Transmitter, Pressure range: 0-40 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-40 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M;	set	4,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
44	00.019.027.02378*	Pressure Transmitter, Pressure range: 0-4 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-4 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	2,00
45	00.019.027.02376*	Pressure Transmitter, Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
46	00.019.027.02379*	Pressure Transmitter, Pressure range: 0-400 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	PRESSURE TRANSMITTER Service: Sea Water TRANSMITTER Pressure range: 0-400 Barg (VTA); Element type/material: Diaphragm / Monel; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 6000 psig @200 degF (414 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	1,00
47	00.019.027.02380*	Pressure Transmitter, Pressure range: 0-4 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	PRESSURE TRANSMITTER Service: Diesel Fuel Oil TRANSMITTER Pressure range: 0-4 Barg (VTA);	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
48	00.019.027.02381*	Pressure Transmitter, Pressure range: 0-40 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-40 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed)Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	5,00
49	00.019.027.02382*	Pressure Transmitter, Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M,	PRESSURE TRANSMITTER Service: Hydrocarbon Gas	set	6,00



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(1)	(2)	(3)	(4)	(5)	(6)
		With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	TRANSMITTER Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
50	00.019.027.02383*	Pressure Transmitter, Pressure range: 0-40 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-40 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed)Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	3,00

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(1)	(2)	(3)	(4)	(5)	(6)
51	00.019.027.02384*	Pressure Transmitter, Pressure range: 0-400 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Sea Water TRANSMITTER Pressure range: 0-400 Barg (VTA); Element type/material: Diaphragm / MONEL; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 6000 psig @ 200 °F (414 barg @ 93 °C); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	1,00
52	00.019.027.02385*	Pressure Transmitter, Pressure range: 0-16 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Instrument Air TRANSMITTER Pressure range: 0-16 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES	set	3,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
53	00.019.027.02386*	Pressure Transmitter (Diaphragm Seal), Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M, With 2-valve manifold and accessories. Датчик давления	Pressure Transmitter (Diaphragm Seal) TRANSMITTER Element type: Diaphragm; Pressure range: 0-160 Barg (VTA); Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Safety Integrity Level: N/A; Diaphragm Seal:- Design Type: Welded Design; - Material: 316 SS; - Operating Temperature: 752 DegF (400 DegC) - Connection: ½” NPT-M (Process side) - Capillary Line/ Length: Yes, 316 SS /Min 5 Feet (1.5m) - System Fill Fluids : High-Temperature Silicone OilCompleted with 2-valve manifold and accessories	set	1,00
54	00.019.027.02387*	Pressure Transmitter, Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: N/A. Датчик давления	PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure calibrated range: 0-160 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
55	00.019.027.02388*	Pressure Transmitter, Pressure range: 0-250 Barg; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: N/A. Датчик давления	PRESSURE TRANSMITTER Service: WATER INJECTION TRANSMITTER Pressure calibrated range: 0-250 Barg; Element type/material: Diaphragm / MONEL; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: MONEL; Rating: 6000 psig @200 degF (414 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	1,00
56	00.019.027.02389*	Pressure Transmitter, Pressure range: 0-25 Barg; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: N/A. Датчик давления	PRESSURE TRANSMITTER Service: HC WATER-OIL LIQUID MIXTURE TRANSMITTER Pressure calibrated range: 0-25 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
57	00.019.027.02382*	Pressure Transmitter, Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	1,00
58	00.019.027.02390*	Pressure Transmitter, Pressure range: 0-250 Barg; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: WATER INJECTION TRANSMITTER Pressure calibrated range: 0-250 Barg; Element type/material: Diaphragm / MONEL; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: MONEL; Rating: 6000 psig @200 degF (414 bar @ 93 degC); Process connection: ½” NPT-F;Instrument connections	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
59	00.019.027.02391*	Pressure Transmitter, Pressure range: 0-25 Barg; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURETRANSMITTER Service: HC WATER-OIL LIQUID MIXTURE TRANSMITTER Pressure calibrated range: 0-25 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	1,00
60	00.019.027.02392*	Differential Pressure Transmitter; Pressure range: 0-2.5 Barg; Process connection: 1/2 NPT-M, With 5-Valves Manifold Integral to the Transmitter; Safety Level: N/A. Датчик давления	DIFFERENTIAL PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure range: 0-2.5 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH 5-Valves Manifold Integral to the Transmitter; Material: 316 SS;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
61	00.019.027.02393*	HVAC. Differential Pressure Transmitter; Element type: Piezo-resistive; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP44 min; Explosion proof: N/A. Преобразователь перепада давления	HVAC. DIFFERENTIAL PRESSURE TRANSMITTER Service: Clean Air TRANSMITTER Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP44 min; Explosion proof: N/A; Housing material: 316SS; Completed with accessories.	set	2,00
62	00.019.027.02394*	HVAC. Differential Pressure Transmitter; Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC). Преобразователь перепада давления	HVAC. DIFFERENTIAL PRESSURE TRANSMITTER Service: Clean Air TRANSMITTER Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Housing material: 316SS; Completed with accessories.	set	8,00
GROUP 3: Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator					
63	00.019.031.00594*	D/P Flowmeter Primary Element; Process Connections: BW, 2” #900, Sch160, ASTM A216 WCB both ends; Two block valves on taps outlet. Диафрагменный расходомер	D/P FLOWMETER PRIMARY ELEMENT Service: Hydrocarbon Gas ORIFICE FITTING: Type: Single Chamber Orifice Fitting; Process Connections: BW, 2” #900, Sch160, ASTM A216 WCB both ends; ORIFICE: Type: Concentric, square edged; Material: 316 SS; Two (02) orifice plates shall be calculated and provided for overlapped flow ranges as follow: 5 000 - 16 000 Nm3/day (Range A)	set	5,00



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(1)	(2)	(3)	(4)	(5)	(6)
			15 000 - 45 000 Nm3/day (Range B) C/w Two block valves on taps outlet, 316 SS, ½” NPT, Rating 3000 psig @200 degF (207 bar @ 93 degC)		
64	00.019.031.00595*	D/P Flowmeter Primary Element; Process Connections: Flange 4-inch, #900 RTJ Both Ends; Two block valves on taps outlet. Диафрагменный расходомер	D/P FLOWMETER PRIMARY ELEMENT Service: Hydrocarbon Gas ORIFICE FITTING:Type: Single Chamber Orifice Fitting; Process Connections: Flange 4-inch, #900 RTJ Both Ends; Body Material: ASTM A216 WCB; ORIFICE:Type: Concentric, square edged; Material: 316 SS; Three (03) orifice plates shall be calculated and provided for overlapped flow ranges as follow: 10 000 - 35 000 Nm3/day (Range A) 30 000 - 100 000 Nm3/day (Range B) 80 000 - 250 000 Nm3/day (Range C) C/wTwo block valves on taps outlet, 316 SS, ½” NPT, Rating 3000 psig @200 degF (207 bar @ 93 degC)	set	1,00
65	00.019.031.00596*	D/P Flowmeter Differential Pressure Transmitter; Pressure range: 0 – 1.6 barg; With 5-Valves Manifold Integral to the Transmittie; Safety Level: N/A. Диафрагменный расходомер	D/P FLOWMETER DIFFERENTIAL PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Type: Differential Pressure Transmitter; Pressure range: 0 – 1.6 barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: 0.25 % of Span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IIA T3, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH 5-Valves (Block, Vent, Equalize) Manifold Integral to Instrument Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; ACCESSORIES	set	6,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts		
66	00.019.031.00597*	Coriolis Flowmeter Assembly; Type: Coriolis; Service: Crude Oil; Process connection: Flange 3" RF #300; Calibrated range: 0-25000 kg/hr (VTA). Кориолисовый расходомер	Coriolis Flowmeter Assembly General- Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; - Service: Crude Oil; Sensor - Type: Coriolis; - Measurement Function: Mass flow rate, Density; - Process connection: Flange 3" RF #300 - Sensor Housing: 316 SS - Expl. Protection: Ex d IIA T3 (IEC); Transmitter - Type: Advanced Multi-Variable - Instrument range: VTA; - Calibrated range: 0-25000 kg/hr (VTA); - Accuracy: ± 0.1% of Reading - Output: RS-485 Modbus RTU - Optional: Frequency Output, Pulse Output - Software Configuration: Net Oil measurement (NOC) functionality, Total Health Check, Tube Health Check with Dry Verification. - Ex-d, IP-56 as minimum; - Power supply: 24VDC External - Electronic housing: SS316. - Mounting: Remote Mounting. - C/w: interconnecting cable (5m length minimum c/w suitable cable glands for both ends) between sensor and transmitter and 2" stanchion mounting kit (SS316 material)	set	1,00
67	00.019.031.00598*	Coriolis Flowmeter Assembly; Type: Coriolis; Service: Gas; Process connection: Flange 3" RF #300; Calibrated range: 0-4000 Sm3/hr. Кориолисовый расходомер	Coriolis Flowmeter Assembly General - Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; - Service: Gas; Meter - Type: Coriolis; - Measurement Function: Mass flow rate, Density; - Process connection: Flange 3" RF #300 - Sensor Housing: 316 SS- Expl. Protection: Ex d IIA T3 (IEC) Transmitter	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			- Type: Advanced Multi-Variable - Instrument range: VTA; - Calibrated range: 0-4000 Sm3/hr - Accuracy: ± 0.35% of Reading - Output: RS-485 Modbus RTU; - Optional: Frequency Output, Pulse Output - Software Configuration: Total Health Check, Tube Health Check with Dry Verification; - Ex-d, IP-56 as minimum; - Power supply: 24VDC External - Electronic housing: SS316. - Mounting: Remote Mounting. C/w: interconnecting cable (5m length minimum c/w suitable cable glands for both ends) between sensor and transmitter and 2" stanchion mounting kit (SS316 material)		
68	00.019.031.00599*	Ultrasonic Flowmeter; TRANSMITTER: Calibrated Range: 0-1000 m3/d; With Sensor Cables 5 m length each, Safety Level: N/A. Ультразвуковой расходомер	ULTRASONIC FLOWMETER Service: Treated Sea Water TRANSDUCER / SENSOR Type: Single Channel, Clamp-On; Material: 316 SS; Housing: Ex-d, IIA T3, IP-56 min, 316 SS; Mounting base with adjustable and extractable transducer slots; TRANSMITTER Type: Ultrasonic. Transit time, correlation; Instrument Range: VTA; Calibrated Range: 0-1000 m3/d; Output: 4-20 mA HART (active), 2-wire; Accuracy: 4 % of Reading; Power supply: 24 V DC, Loop Powered; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Type: in Field, pole mounted; Ex-d, IIA T3, IP-56 min, 316 SS; Local LCD meter; COMPLETED WITH Sensor Cables 5 m length each, with interconnection accessories ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			bolts and nuts		
69	00.019.031.00600*	Ultrasonic Flowmeter; TRANSMITTER: Calibrated Range: 0-600 m3/d; With Sensor Cables 5 m length each, Safety Level: N/A. Ультразвуковой расходомер	ULTRASONIC FLOWMETER Service: Treated Sea Water TRANSDUCER / SENSOR Type: Single Channel, Clamp-On; Material: 316 SS; Housing: Ex-d, IIA T3, IP-56 min, 316 SS; Mounting base with adjustable and extractable transducer slots; TRANSMITTER Type: Ultrasonic. Transit time, correlation; Instrument Range: VTA; Calibrated Range: 0-600 m3/d; Output: 4-20 mA HART (active), 2-wire; Accuracy: 4 % of Reading; Power supply: 24 V DC, Loop Powered; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Type: in Field, pole mounted;Ex-d, IIA T3, IP-56 min, 316 SS; Local LCD meter; COMPLETED WITH Sensor Cables 5 m length each, with interconnection accessories ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts	set	1,00
70	00.019.031.00601*	Diesel Fuel Meter Assembly for Fuel Oil System Расходомеры	Diesel Fuel Meter Assembly for Fuel Oil System General - Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; Body: - Body material: SS316; - Process connection: Flange 3” #150 RF; - Meter Type: Oval gear mechanical; - Accuracy: ±0.25% of reading; - Indicator: Zero start; Large Dial register: min. 5 digit; - Meter scale: 1 L;	set	1,00
71	00.019.044.00459*	PIG INDICATOR Индикатор сигнализатора	PIG INDICATOR Service: Oil/Gas/Water; - Pipe size: 10” #300;	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
			- Type: Intrusive, Mechanical Trigger. - Process connection: Flanged 2, #300 RF - Housing Material: 316 SS - IP56 min. - Extendable/Retractable: Required - Online installation/Removal: Required - Isolation Valve: 2” Ball Valve Accessories: - 01 Portable jacking tool		
GROUP 4: Push Button (APS, ESD, MCP), Gas Detector, Flame Detector; Test Kit for Gas Detector, Test Kit For Hydrogen Gas Detectors, Test Kit for Flame Detector; Smoke Detector, Test Kit for Smoke Detector					
72	00.019.007.00113	GAS DETECTOR, Type: IR Point Detector Bộ cảm biến khí, gas detector, type: IR point detector/ газовый детектор, тип: IR	GAS DETECTOR Tropical, Marine, Offshore, Open-door. TRANSMITTER Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts;Sunshield / Water splashes protection	set	38,00
73	00.019.007.00138	GAS DETECTOR газовый детектор	GAS DETECTOR Tropical, Marine, Offshore, In-door, HVAC Duct TRANSMITTER Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires;Power supply: 24 V DC nominal; Local Status Indicator: LED;	set	4,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for Mounting bracket for HVAC Rectangular Duct, 316 SSSunshield / Water splashes protection		
74	00.019.007.00143*	GAS DETECTOR; Tropical, Marine, Offshore, In-door; Type: Catalytic Bed Detector, Point, for Hydrogen Gas; Range: 0-100 % LEL; Response Time: T50 ≤ 10 s, T90 ≤ 30 s; Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts. газовый детектор	GAS DETECTOR Tropical, Marine, Offshore, In-door TRANSMITTER Type: Catalytic Bed Detector, Point, for Hydrogen Gas; Range: 0-100 % LEL; Response Time: T50 ≤ 10 s, T90 ≤ 30 s; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts; Sunshield / Water splashes protection.	set	3,00
75	00.019.007.00144*	GAS DETECTOR; Tropical, Marine, Offshore, Open-door; IR Point Type Combustible Gas Detector for Hydrocarbon Gas;Range: 0-100 % LEL; Response Time: less 7 secs;; Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts. газовый детектор	GAS DETECTOR General Tropical, Marine, Offshore, Open-door. TRANSMITTER Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range: 0-100 % LEL; Response Time: less 7 secs; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL(@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F;	set	2,00



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(1)	(2)	(3)	(4)	(5)	(6)
			ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts; Sunshield / Water splashes protection.		
76	00.019.029.00275*	FLAME DETECTOR; Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis/ Bộ báo cháy. Детектор пламени	FLAME DETECTOR Tropical, Marine, Offshore, Open-door TRANSMITTER Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Sensitivity: 0.1 m2 n-Neptane pan fire at 30 m; Response Time: up to 5 secs; Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis; Analog output: 4- 20mA current source, 3 wires, HART; Power supply: 24 VDC nominal; Fault Monitored: Electronics circuitry, Sensors, Optic cleanness; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Bracket (Vertical / Horizontal Tilt) for 2-inch pipe stand, 316 SS, c/w bolts and nuts;	set	24,00
77	00.019.027.02395*	SMOKE DETECTOR; Tropical, Marine, Offshore, In-door; Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in. Дымовые аэрозоли	SMOKE DETECTOR Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Base	set	12,00
78	00.019.029.00276*	SMOKE DETECTOR; Tropical, Marine, Offshore, In-door; Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, REMOTE. Дымовые аэрозоли	SMOKE DETECTOR Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, REMOTE; Power supply: 24 V DC nominal;	set	3,00



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(1)	(2)	(3)	(4)	(5)	(6)
			Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Base; Remote Status Indicator.		
79	00.019.029.00277*	SMOKE DETECTOR; Tropical, Marine, Offshore, In-door; Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, REMOTE; Housing: Ex d IIC T3 (IEC), IP-44 min, Polycarbonate. Дымовые аэрозоли	SMOKE DETECTOR Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: Ex d IIC T3 (IEC), IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Base	set	3,00
80	00.019.005.00428	Heat detector детекторов тепла	HEAT DETECTOR Tropical, Marine, Offshore, In-door. Type: Rate of Rise; Ingress Protection: min IP 44; Sensitivity: minimum 01degC/min; Output: 2 wires, Current output; Power supply: 24 VDC; Detector material: Polycarbonate; Sensor life: Minimum 2 yearsSetting temperature: 60 degC Electrical connection: 1/2" NPT-F	set	3,00
81	00.019.029.00278*	TEST/CALIBRATION KIT FOR HYDROCARBON GAS DETECTORS Комплект для проверки/калибровки детекторов углеводородных газов	TEST/CALIBRATION KIT FOR HYDROCARBON GAS DETECTORS 6D Cylinder Type, Calibration Gas Methane, 103 liters, 1000psig, 50% LEL CH4 (2.5% CH4), balance in airc/w Veriflow Gas Regulator, 0.5L/m	set	1,00
82	00.019.029.00279*	TEST/CALIBRATION KIT FOR HYDROGEN GAS DETECTORS Комплект для проверки/калибровки детекторов углеводородных газов	TEST/CALIBRATION KIT FOR HYDROGEN GAS DETECTORS 6D Cylinder Type, Calibration Gas Hydrogen, 103 liters, 1000psig, 50% LEL H2 (2% H2), balance in airc/w Veriflow Gas Regulator, 0.5L/m	set	1,00



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(1)	(2)	(3)	(4)	(5)	(6)
83	00.019.029.00280*	TEST/CALIBRATION KIT FOR FLAME DETECTORS Комплект для проверки/калибровки детекторов пламени	TEST/CALIBRATION KIT FOR FLAME DETECTORS According to Manufacturer Standard	set	1,00
84	00.019.029.00281*	TEST/CALIBRATION KIT FOR SMOKE DETECTORS Комплект для проверки/калибровки дымовых извещателей	TEST/CALIBRATION KIT FOR SMOKE DETECTORS According to Manufacturer Standard	set	1,00
85	00.019.029.00282*	TEST/CALIBRATION KIT FOR HEAT DETECTORS Комплект для проверки/калибровки тепловых извещателей	TEST/CALIBRATION KIT FOR HEAT DETECTORS According to Manufacturer Standard	set	1,00
86	00.070.004.03617*	Abandon Platform Pushbuttons Отказаться от кнопки	Abandon Platform Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Push button latching key reset; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: SIL2; HOUSING Protection: Ex d IIA T3, IP 56 min; Material: 316 SS; Color: BLUE ACCESSORIES Wall Mounting Bracket, 316 SS	set	5,00
87	00.070.004.03618*	ESD Pushbuttons EDS кнопки	ESD Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Push button latching key reset; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: SIL2; HOUSING Protection: Ex d IIA T3, IP 56 min; Material: 316 SS; Color: YELLOW ACCESSORIES Wall Mounting Bracket.	set	8,00
88	00.070.004.03619*	Manual Call Point Pushbuttons кнопки	Manual Call Point Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Breaking glass lift flap press button latching type; Status Indicator: YES, LED;	set	8,00



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(1)	(2)	(3)	(4)	(5)	(6)
			End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: N/A; HOUSING Protection: Ex d IIA T3, IP 56 min; Material: 316 SS or GRP; Color: RED; ACCESSORIES Wall Mounting Bracket, 316 SS		
II. DỊCH VỤ					

(*) : New items





RC-12 WELLHEAD PLATFORM

Approved by
Deputy General Director
“VIETSOVPETRO”

Signed by: Đặng Đức Phong
Date: 25/06/2025 18:17:13
Certified by: Vietsovpetro CA

DANG DUC PHONG

TECHNICAL REQUIREMENT FOR INSTRUMENTS AND DETECTORS PACKAGE

DOC. NO : OCD-RC12-TR-16
REV : 0
DATE : 06/2025

ISSUED FOR BID



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Agreed by:

Manager of Capital Construction Department
- VSP

Signed by: Nguyễn Hồng Giang
Date: 24/06/2025 10:07:00
Certified by: Vietsovpetro CA

Nguyen Hong Giang

Manager of ME&A Department - VSP

Signed by: Trịnh Hoàng Linh
Date: 24/06/2025 16:46:32
Certified by: Vietsovpetro CA
Comment: Đ/n lưu ý sử...

Trinh Hoang Linh

Deputy Director of REI

Signed by: Trần Duy Hải
Date: 23/06/2025 09:17:37
Certified by: Vietsovpetro CA

Tran Duy Hai

Prepared by:

Deputy Director of Offshore Construction
Division

Signed by: Nguyễn Thế Văn
Date: 23/06/2025 08:36:33
Certified by: Vietsovpetro CA

Nguyen The Van

Expert of ME&A Department - VSP

Signed by: Huỳnh Lê Thiện Chinh
Date: 19/06/2025 15:13:32
Certified by: Vietsovpetro CA

Huynh Le Thien Chinh

Engineer of Capital Construction Department
- VSP

Signed by: Ngô Đình Minh
Date: 23/06/2025 08:23:33
Certified by: Vietsovpetro CA

Ngo Dinh Minh

Engineering Manager

Signed by: Bùi Hồng Dương
Date: 22/06/2025 12:46:09
Certified by: Vietsovpetro CA

Bui Hong Duong

Lead Instrument Engineer

Signed by: Trần Anh Nguyên
Date: 19/06/2025 13:41:03
Certified by: Vietsovpetro CA

Tran Anh Nguyen

Manager of Technical Dept. OCD

Signed by: Đồng Văn Nhường
Date: 19/06/2025 18:06:54
Certified by: Vietsovpetro CA

Dong Van Nhung

Engineer of Technical Dept. OCD

Signed by: Nguyễn Văn Thọ
Date: 20/06/2025 07:01:52
Certified by: Vietsovpetro CA

Nguyen Van Tho

Expert of Technical Dept.

Signed by: Nguyễn Mạnh Hoàng
Date: 20/06/2025 06:54:43
Certified by: Vietsovpetro CA

Nguyen Manh Hoang

Engineer of Technical Dept.

Signed by: Lưu Sùng Bá
Date: 19/06/2025 15:49:09
Certified by: Vietsovpetro CA

Luu Sung Ba

Engineer of Technical Dept.

Signed by: Mai Văn Trần Minh Quân
Date: 19/06/2025 15:56:17
Certified by: Vietsovpetro CA

Mai Van Tran Minh
Quân



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1. PURPOSE AND SCOPE OF USE

- This document covers the requirements for **Instrument and Detectors Package for RC-12** Wellhead Platform at Dragon Oil Field, hereinafter referred to as “Goods”.

2. GENERAL REQUIREMENTS FOR EQUIPMENT:

- **Year of manufacture:** Goods and All components of Goods must be brand new and unused, manufactured in **year 2025 or later**.
- **Warranty:** All of the goods shall be furnished with Warranty Certificate for **18** months from the delivery date or **12** months after the Goods have been put into service, whichever comes first.
- In the offer, it is necessary to clearly state the name, code, technical characteristics, manufacturer and origin of each item of materials.

3. TECHNICAL REQUIREMENT

- Bidder is required to offer Goods meet all requirements in the Scope of supply in Invitation to Bid and in the documents in Appendix 1.
- In the event of any conflict between this Technical Requirement, Specification, Datasheet, drawings and other documents, the order of the precedence of the documents is as follows:
 - This Technical requirement
 - Project Datasheets
 - Project Specifications.
 - Other documents and drawings in Appendix 1.

4. RECOMMENDED VENDOR LIST

- The Bidder is recommended to offer the manufacturer listed below. In case the manufacturer is not on the Vendor List, Bidder needs to provide information about the manufacturer's capacity (production capacity, experience, production process, facilities, certification system, similar contracts, documents proving production capacity...) for evaluation.



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Group	Description	Recommended manufacturer
Group 1	Pressure Gauge, Differential Pressure Gauge, Temperature Gauge	-Pressure Gauge, Differential Pressure Gauge: Wika, Bourdon, Nuova Fima, Ashcroft, McDaniel, Baumer, Badotherm, Excel, Midwest -Temperature Gauge: Wika, Bourdon, Nuova Fima, Ashcroft, Rototherm, Excel
Group 2	Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter	-Level Gauge: Magnetrol - Orion, K-Tek (ABB), KSR Kuebler (Wika), Fisher (Emerson), Masoneilan Dresser (GE), Mobrey, Jerguson - Level Transmitter: Magnetrol - Orion, Officine Orobiche, Jerguson, Seetru, K-Tek (ABB) - Pressure Transmitter, Differential Pressure Transmitter: Emerson, Yokogawa, Endress+Hauser, ABB, Siemens, Krohne - Temperature Transmitter: Yokogawa, Honeywell, Rosemount (Emerson), ABB, Endress + Hauser
Group 3	Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator	- Coriolis Flow Meter: Emerson, Yokogawa, Krohne, Endress + Hauser, Honeywell, Micromotion - Orifice Fitting/Flange: DHF, System Dynamics, Canalta, FMC, Daniel, ABB, Krohne, Cameron -DPT for D/P Flow Meter: Emerson, Yokogawa, Krohne, Endress + Hauser, ABB, Siemens - Ultrasonic Flow Meter: Krohne, Flexim, Siemens, Panametrics (GE), SICK, FMC, Daniel
Group 4	Push Button (APS, ESD, MCP), Gas Detector, Flame Detector, Smoke Detector, Test Kit for Gas Detector, Test Kit for Flame Detector, Test Kit for Smoke Detector, Heat Detector	- Push Button: Honeywell, MEDC, E2S, AMO Safety, Federal Signal - Gas Detector: Det-tronics, General Monitors, Simtronics (Teledyne Gas & Flame Detection), Spectrex, Honeywell, Crowcon, Autronica, Draeger - Flame Detector: Det-tronics, General Monitors, Simtronics (Teledyne Gas & Flame Detection), Spectrex, Honeywell, Crowcon, Autronica, Draeger - Smoke/ Heat Detector: Tyco, Apollo, Notifier, Hochiki, Autronica



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5. RECOMMENDED ORIGIN OF GOODS

- The Bidder is recommended to offer the country of origin listed below. Other countries of origin will also be evaluated.

Group	Description	Recommended Country of Origin
Group 1	Pressure Gauge, Differential Pressure Gauge, Temperature Gauge	G7, Russia, EU, Singapore, Australia, Korea, Thailand, Malaysia, Indonesia, China, India
Group 2	Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter	
Group 3	Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator	
Group 4	Push Button (APS, ESD, MCP), Gas Detector, Flame Detector, Smoke Detector, Test Kit for Gas Detector, Test Kit for Flame Detector, Test Kit for Smoke Detector, Heat Detector	

- In the offer, the origin of each item of goods shall be clearly identify.
- In case the bidder offers many origins for one item, Vietsovpetro will evaluate the item according to the origin with the lowest score.

6. TIME AND LOCATION OF DELIVERY

- All GOODS shall be delivered at Vietsovpetro warehouse/ Vietsovpetro port.
- Delivery time of GOODS, including vendor data review, packing/handling, shipping, transportation, delivery time shall be not later than **135 calendar days** after LOI (Letter of Intent)/LOA (Letter of Award).

7. QUANTITY AND PACKAGING

- Detail requirements of Goods to be referred to all documents and drawings in the Appendix 1.



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- Vendor's scope of supply for **Instrument and Detectors Package** shall be as per scope of supply in ITB (Invitation to Bid).
- Bidder can quote each Group or all Groups but Bidder must quote enough quantity of all items in each Group. Detail of Groups as below:

GROUP	DESCRIPTION	REMARK
Group 1.	Pressure Gauge, Differential Pressure Gauge, Temperature Gauge	More detail to be referred to documents in the Appendix 1.
Group 2.	Level Gauge, Level Transmitter; Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter	
Group 3.	Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator	
Group 4.	Push Button (APS, ESD, MCP), Gas Detector, Flame Detector, Smoke/ Heat Detector, Test Kit for Gas Detector, Test Kit for Flame Detector, Test Kit for Smoke/ Heat Detector	

- Packaging shall be as per Manufacturer's standard.



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8. REQUIREMENTS FOR OCCUPATIONAL SAFETY, INDUSTRIAL HYGIENE, AND ENVIRONMENTAL SAFETY:

- Bidder has to follow Vietsovpetro's HSE policy when delivery goods to Vietsovpetro site.



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9. TECHNICAL DOCUMENTATION REQUIREMENTS

BIDDER is requested to submit a complete of Technical Documentations as a part of its bid document and the minimum requirements as below:

Item	Documents	Group 1	Group 2	Group 3	Group 4	With BID	After purchase order (for Review/ Information)	Final with Equipment Data book
1.	Scope of supply with detailed model or part number, manufacturer, Origin and quantity (No information or any information such as “or equal”, “or equivalent” is not acceptable).	X	X	X	X	Yes		
2.	Manufacturer datasheet, specification or full filled datasheet (as VSP’s form) that shown the detailed specification, model and Part number stamped and signed by manufacturer.	X	X	X	X	Yes	R	Yes
3.	Equipment Catalog with highlight specification, model, part number	X	X	X	X	Yes	I	Yes
4.	Equipment General Arrangement drawing (dimension of equipment)	X	X	X	X	Yes	R	Yes





5.	Sizing, Calculation stamped and signed by manufacturer.			X		Yes	R	Yes
6.	Certificates of Explosion protection, Ingress Protection issued by third party (Where applicable) (copy)		X	X	X	Yes	I	Yes
7.	SIL certificate issued by third party (Where applicable) (copy)		X		X	Yes	I	Yes

Note:

- *The symbol (X) in the table above is “Yes” required submission for Bidding*
- *All documents and drawings in tender proposal shall be provided with: one (1) original and three (03) copies and one (1) set of electronic copies on USB.*
- *All final documents for Installation, Operation and Maintenance shall be provided with: one (01) original and three (03) copies and one (01) set of electronic copies on USB.*

10. REQUIREMENTS FOR CERTIFICATES OF THE GOODS

All relevant certificates must be confirmed or committed to provide and to be submitted before delivery, but not limited to the



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following:

Item	Certificates	Group 1	Group 2	Group 3	Group 4
1.	Certificate of quality, quantity issued by Manufacturer	Original	Original	Original	Original (Except: accept Certified copy for Test Kit)
2.	Certificate of Origin issued by the competent authority of Manufacturer's country or exporter's country	Original/ Electronic	Original/ Electronic	Original/ Electronic	Original/ Electronic (Except: accept Certified copy for Test Kit)
3.	Test report issued by manufacturer	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer (does not apply to test kits)
4.	Pressure Test report issued by manufacturer (for Thermowell, Chambers)	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer	



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5.	Certificates of Explosion protection, Ingress Protection issued by third party (Where applicable)		Certified copy by Manufacturer	Certified copy by Manufacturer	Certified copy by Manufacturer
6.	Material certificate issued by Manufacturer	Certified copy by Manufacturer (wetted parts)	Certified copy by Manufacturer (wetted parts)	Certified copy by Manufacturer (wetted parts)	
7.	SIL certificate issued by third party (Where applicable)		Certified copy by Manufacturer		Certified copy by Manufacturer
8.	Warranty Certificate issued by Bidder	Original	Original	Original	Original

Note:

- Certified copy: Certified copy by manufacturer or final fabricator/authorized distributor/ Vendor.
- Electronic: Copy shall be provided with web-link to check.



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11. METHODS FOR EVALUATION OF TECHNICAL PROPOSALS

Technical offers will be evaluated for each group of the package according to the attached Technical Evaluation Criteria/ Technical Scoring Table Doc. No. OCD-RC12-TE-16.

12. APPENDIX

Appendix 1: Technical Documents.

Note: *All documents and drawings in Appendix 1 can be updated during bidding stage.*



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APPENDIX 1 – TECHNICAL DOCUMENTS

ITEM	DOCUMENT NO.	DOCUMENT TITLE	NOTE
1.	RC12-002-TS-IA2-RQ-003	PURCHASE REQUISITION FOR INSTRUMENTS AND DETECTORS	
2.	RP1-233-TS-IA2-RQ-001	PURCHASE REQUISITION FOR INSTRUMENTS AND DETECTORS	
3.	RC12-002-TS-IA2-DS-002	DATASHEET FOR PUSH BUTTONS	
4.	RC12-002-TS-IA2-DS-003	DATASHEET FOR GAS DETECTORS	
5.	RC12-002-TS-IA2-DS-004	DATASHEET FOR FLAME DETECTORS	
6.	RC12-002-TS-IA2-DS-005	DATASHEET FOR SMOKE DETECTORS	
7.	RC12-002-TS-IA2-DS-006	DATASHEET FOR HEAT DETECTOR	
8.	RC12-002-TS-IA2-DS-007	DATASHEET FOR PRESSURE INSTRUMENTS	
9.	RC12-002-TS-IA2-DS-008	DATASHEET FOR TEMPERATURE INSTRUMENTS	
10.	RC12-002-TS-IA2-DS-009	DATASHEET FOR LEVEL INSTRUMENTS	
11.	RC12-002-TS-IA2-DS-010	DATASHEET FOR FLOW INSTRUMENTS	
12.	RC12-002-TS-IA2-DS-012	DATA SHEET FOR PIG INDICATOR	
13.	RC12-002-TS-IA2-SP-003	GENERAL INSTRUMENT SPECIFICATION	
14.	RC12-002-TS-IA2-SP-006	SPECIFICATION FOR PACKAGE EQUIPMENT INSTRUMENTATION	
15.	RP1-233-TS-IA2-DS-001	DATA SHEET FOR PRESSURE INSTRUMENTS	



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16.	RP1-233-TS-IA2-DS-002	DATA SHEET FOR TEMPERATURE INSTRUMENTS	
17.	RP1-233-TS-IA2-DS-004	DATASHEET FOR GAS DETECTOR	

Note: Attachment documents may be updated and complemented during bidding stage.





RC-12 WELLHEAD PLATFORM

Approved by
Deputy General Director
“VIETSOVPETRO”

Signed by: Đặng Đức Phong
Date: 25/06/2025 18:17:11
Certified by: Vietsovpetro CA

DANG DUC PHONG

TECHNICAL EVALUATION CRITERIA FOR INSTRUMENTS AND DETECTORS PACKAGE

DOC.NO	OCD-RC12-TE-16
DATE	06/2025
REV	0

ISSUE FOR BID



 TECHNICAL EVALUATION CRITERIA INSTRUMENT AND DETECTOR PACKAGE	DOC. NO.	OCD-RC12-TE-16
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	PAGE	2 of 3

Agreed by:

Manager of Capital Construction Department - VSP	Signed by: Nguyễn Hồng Giang Date: 24/06/2025 10:06:58 Certified by: Vietsovpetro CA	Nguyen Hong Giang
Manager of ME&A Department - VSP	Signed by: Trịnh Hoàng Linh Date: 24/06/2025 16:46:30 Certified by: Vietsovpetro CA Comment: Đ/n lưu ý sử...	Trinh Hoang Linh
Deputy Director of REI - VSP	Signed by: Trần Duy Hải Date: 23/06/2025 09:17:36 Certified by: Vietsovpetro CA	Tran Duy Hai

Prepared by:

Deputy Director of Offshore Construction Division	Signed by: Nguyễn Thế Văn Date: 23/06/2025 08:36:31 Certified by: Vietsovpetro CA	Nguyen The Van
Expert of ME&A Department - VSP	Signed by: Huỳnh Lê Thiện Chính Date: 19/06/2025 15:13:30 Certified by: Vietsovpetro CA	Huynh Le Thien Chinh
Expert of Capital Construction Department - VSP	Signed by: Ngô Đình Minh Date: 23/06/2025 08:23:32 Certified by: Vietsovpetro CA	Ngo Dinh Minh
Engineering Manager	Signed by: Bùi Hồng Dương Date: 22/06/2025 12:46:04 Certified by: Vietsovpetro CA	Bui Hong Duong
Lead Instrument Engineer	Signed by: Trần Anh Nguyên Date: 19/06/2025 13:41:03 Certified by: Vietsovpetro CA	Tran Anh Nguyen
Manager of Technical Dept. OCD	Signed by: Đồng Văn Nhường Date: 19/06/2025 18:06:53 Certified by: Vietsovpetro CA	Dong Van Nhuong
Engineer of Technical Dept.	Signed by: Nguyễn Văn Thọ Date: 20/06/2025 07:01:46 Certified by: Vietsovpetro CA	Nguyen Van Tho
Expert of Technical Dept.	Signed by: Nguyễn Mạnh Hoàng Date: 20/06/2025 06:54:41 Certified by: Vietsovpetro CA	Nguyen Manh Hoang
Engineer of Technical Dept.	Signed by: Lưu Sùng Bá Date: 19/06/2025 15:49:08 Certified by: Vietsovpetro CA	Luu Sung Ba
Engineer of Technical Dept.	Signed by: Mai Văn Trần Minh Quân Date: 19/06/2025 15:56:15 Certified by: Vietsovpetro CA	Mai Van Tran Minh Quan



	TECHNICAL EVALUATION CRITERIA INSTRUMENT AND DETECTOR PACKAGE	DOC. NO.		OCD-RC12-TE-16
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Tender technical proposal shall be evaluated through 2 steps for each Group, detailed as below:

Step 1 : Technical proposal shall be passed step 1 if it meet all the condition as below:

- 1. Year of Manufacture (Section 2 of Technical Requirement):** Comply as required in Technical Requirement.
- 2. Warranty (Section 2 of Technical Requirement):** Comply as required in Technical Requirement.
- 3. Certificates (Section 9 of Technical Requirement):** Comply as required in Technical Requirement.

Step 2: Step 2 shall be evaluated in case the Technical proposal passed prerequisites in step 1

Item according to rating levels			Evaluation Criteria	Offer content	Score			Reject point	Reasons for score reduction for each item	Note
Level I	Level II	Level III			Level I	Level II	Level III			
					Point	%	%			
1	2	3	4	5	6	7	8	9	10	11
1			Technical Requirements (Section 3 of Technical Requirement)		55					Note 1,3
	1.1			Fully comply as required in Technical Requirement.		100				
	1.2			Comply with minor concern but acceptable		60 - 90				
	1.3			Not comply		0		R		
2			Manufacturer (Section 4 of Technical Requirement)		10					Note 2 Note 4
	2.1			Comply as required in Recommended Vendor List		100				
	2.2			Manufacturer is not belongs to Recommended Vendor List but Bidder provides full information about Manufacturer's capacity, catalogs, profiles providing materials meets the requirement		70				
	2.3			Not belong to the cases above		0				
3			Country of Origin (Section 5 of Technical Requirement)		15					Note 2 Note 4
	3.1			G7/ Russia/ Europe		100				
	3.2			Australia, Korea, Singapore, Thailand, Malaysia, Indonesia, China, India		70				
	3.3			Other countries		20				
4			Time and location of delivery (Section 6 of Technical Requirement)		10					
	4.1			Comply as required in Technical Requirement		100				
	4.2			No later than 15 calendar days and delivery at Vietsovpetro Port/warehouse as required in Technical Requirement Document		50				
	4.3			Later than 15 calendar days or Not delivery at Vietsovpetro Port/warehouse as required in Technical Requirement Document		0		R		
5			Technical Documentation (Section 8 of Technical Requirement)		10					
☐	5.1		Provide documents along with bid			60				



		5.1.1		Provide full documentation as required			100			
		5.1.2		Providing incomplete documents as requested but not affecting the assessment			10 - 90			
		5.1.3		Not provide documents as requested			0			
	5.2		Providing technical documentation upon delivery			40				
		5.2.1		The Bidder commits to provide all documents as requested			100			
		5.2.2		Commit to provide documents, not fully as requested but does not affect the use of goods			10 - 90			
		5.2.3		Not commit to provide documents as requested			0			
6			Total scores (100 as maximum)		100					

Notes:

1. For this item is subject to evaluate in range of 0-100% that correspond to bidder's technical proposal
2. Fully meet the requirements will be evaluated as 100% and 0% if not.
3. For this item is picked from each stated case that correspond to bidder's technical proposal. In case the bidder offers many origins for one item, Vietsovetro will evaluate the item according to the origin with the lowest score.
4. a. Each "minor concern" shall be minus 10%. "Minor concern" is defined as not fully comply as required in Technical Requirement Document but acceptable (check for each statement of requirement).
b. Each "Fully not comply" shall be minus 20%. "Fully not comply" is defined as completely not comply as required in Technical Requirement Document (check for each statement of requirement).
5. Technical Requirement for Instrument and Detectors Package is referred to Doc.No. OCD-RC12-TR-16

Passed Conditions: All of the below conditions:

- Passed in "Step 1"
- No Item in Step 2 that score at Level II is equal 0 point
- And total score of Item "6" of Step 2 is equal or higher than 80 points

Disqualified Conditions: One of the below conditions:

- Disqualified in "Step 1"
- Passed in "Step 1" but Total score of Item "6" of Step 2 is below 80 points
- Any Item in Step 2 that score at Level II is equal 0 point.





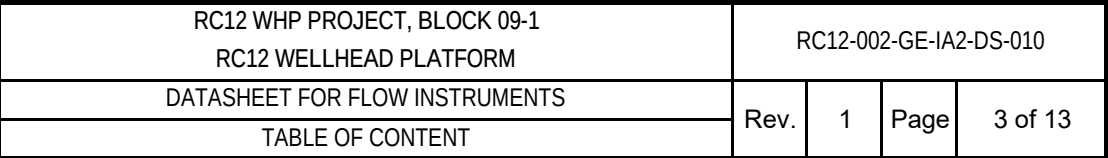
RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS



PROJECT : RC12 WHP PROJECT, BLOCK 09-1
SUB-PROJECT : RC12 WELLHEAD PLATFORM
DOCUMENT TITLE : DATASHEET FOR FLOW INSTRUMENTS
DOCUMENT NO. : RC12-002-GE-IA2-DS-010
PHASE : DETAILED ENGINEERING

			AGREED	Signed by: Lương Thuỳ Dương Date: 04/08/2025 13:43:58 Certified by: Vietsovpetro CA	Signed by: Bùi Quang Thuận Date: 04/08/2025 15:24:34 Certified by: Vietsovpetro CA
				PIPING: L.T.DUONG	PROCESS: B.Q.THUAN
			Signed by: Nguyễn Thị Thu Trang Date: 04/08/2025 13:42:00 Certified by: Vietsovpetro CA	Signed by: Bùi Hồng Dương Date: 04/08/2025 16:01:54 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 04/08/2025 16:37:54 Certified by: Vietsovpetro CA
			DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
1	IFA	08.2025	Signed by: Đỗ Quốc Huy Date: 04/08/2025 10:35:48 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 04/08/2025 10:36:55 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 04.08.2025 11:10:12 Certified by: Vietsovpetro CA
0	IFA	05.2025			
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.





NO	Equipment Tag No.	Page No.
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5	RC12-FT-0813	6,7
6	RC12-FT-0814	6,7
7	RC12-FT-0815	6,7
8	RC12-FT-0810	6,7
9	RC12-FE-0811	8,9
10	RC12-FE-0812	8,9
11	RC12-FE-0813	8,9
12	RC12-FE-0814	8,9
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14	RC12-FE-0810	10
15	RC12-FT-0903	11
16	RC12-FT-1111	12
17	RC12-FI-6701	13



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-010			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	1	Page	4 of 13
CORIOLIS FLOWMETER								
GENERAL DATA	1	Tag Number	Qty.	RC12-FT-1411				1
	2	P&ID No.	Pipe class	RC12-002-PR1-PID-004				#300
	3	Line No.	Line size	PG-BC1-4"-1402-N				4-inch Sch.80
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid	State	HC gas		Gas		
	7	Design Press.	Design Temp.	45 barg		0-80 degC		
	8	Maximum Allowable Press. Drop (ΔP)		0.2 bar (VTC)				
	9			Minimal	Nominal		Maximal	
	10	Flow Rate	Sm ³ /hr	324	2507		3235	
	11	Inlet Pressure	barg	9.8	9.8		9.8	
	12	Oper. Temperature	degC	58.3	58.3		58.3	
	13	Density at Oper. Cond.	kg/m ³	8.92	8.92		8.92	
	14	Viscosity at Oper. Cond.	cP	0.01	0.01		0.01	
	15	Molecular Weight		22.02	22.02		22.02	
	16	Compressibility		0.97	0.97		0.97	
	17							
	18							
FLOWMETER SENSOR	19	Type	Configuration	Coriolis		U-shape, self-drain		
	20	Sensor Material	Housing Material	316 SS		316 SS		
	21	Process Connection		Flanged, 3-inch #300, RF WN				
	22	Mounting		Inline				
	23	Electronics Interface		Remote standard connecting cable terminated				
TRANSMITTER	24	Type		Advanced Multi-Variable, Remote Mount				
	25	Instr. range	Calibrated range	VTA		0-4000 Sm ³ /hr		
	26	Accuracy		± 0.35 % of Reading				
	27	Output signal		1 x RS-485 ModbusRTU; 1 x Pulse (passive);				
	28	Input Signal		N/A				
	29	Housing material	Power supply	316 SS, (NOTE 1)		24 V DC		
	30	Signal Cable	Electrical Conn.	5 m		1/2" FNPT		
	31	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	32	Safety Integrity Level		N/A				
	33	Software Configuration		Smart meter Verification/ Enhanced Verification				
ACCESSORIES	34	Integral Meter		YES (LCD), Metric Units				
	35	Transmitter Mounting Kit		YES, for 2-inch Pole Stand				
	36	Cable Glands		YES				
PURCHASE	37	Manufacturer	VTA					
	38	Model	VTA					
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for unused cable entry.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-010			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	1	Page	5 of 13
CORIOLIS FLOWMETER								
GENERAL DATA	1	Tag Number	Qty.	RC12-FT-1401				1
	2	P&ID No.	Pipe class	RC12-002-PR1-PID-004				#300
	3	Line No.	Line size	PL-BC1-4"-1401-IE				4-inch
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid	State	Crude Oil		Liquid		
	7	Design Press.	Design Temp.	45 barg		0-80 degC		
	8	Maximum Allowable Press. Drop (ΔP)		0.1 bar (VTC)				
	9			Minimal	Nominal	Maximal		
	10	Flow Rate	kg/hr	2301	17833	23010		
	11	Inlet Pressure	barg	9.8	9.8	9.8		
	12	Oper. Temperature	degC	58.3	58.3	58.3		
	13	Density at Oper. Cond.	kg/m ³		820-1011			
	14	Viscosity at Oper. Cond.	cP		0.6-10			
	15							
FLOWMETER SENSOR	17	Type	Configuration	Coriolis		U-shape, self-drain		
	18	Sensor Material	Housing Material	316 SS		316 SS		
	19	Process Connection		Flanged, 3-inch #300, RF WN				
	20	Mounting		Inline, Vertical				
	21	Electronics Interface		Remote standard connecting cable terminated				
TRANSMITTER	22	Type		Advanced Multi-Variable, Remote Mount				
	23	Instr. range	Calibrated range	VTA		0-25 000 kg/hr		
	24	Accuracy		± 0.1 % of Reading				
	25	Output signal		1 x RS-485 ModbusRTU; 1 x Pulse (passive);				
	26	Input Signal		1 x 4-20mA (Passive)				
	27	Housing material	Power supply	316 SS, (NOTE 1)		24 V DC		
	28	Signal Cable	Electrical Conn.	5 m		1/2" FNPT		
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	30	Safety Integrity Level		N/A				
	31	Software Configuration		Smart meter Verification/ Enhanced Verification , Net Oil Calculation				
ACCESSORIES	32	Integral Meter		YES (LCD), Metric Units				
	33	Transmitter Mounting Kit		YES, for 2-inch Pole Stand				
	34	Cable Glands		YES				
PURCHASE	35	Manufacturer	VTA					
	36	Model	VTA					
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for unused cable entry.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-010			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	1	Page	6 of 13
DP FLOW TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				6
	2	P&ID No.	Pipe class	See Next Page				See Next Page
	3	Line No.	Line size	See Next Page				See Next Page
	4	Location		See Next Page				
	5	Hazardous Area Classification		Zone 2 IIA T3				
OPERATING CONDITIONS	6	Fluid		Hydrocarbon Gas				
	7	Oper. Press. Min/Op/Max	barg	90	95-105	110		
	8	Oper. Temp. Min/Op/Max	degC	20	ambient	35		
	9	Design Press.	Design Temp.	130 barg		0-45 degC		
	10	Oper. Diff Pressure		50 - 550 mbar (VTC according FE calc.)				
	11							
TRANSMITTER	12	Type		Differential Pressure Transmitter				
	13	Instr. range	Calibrated range	0-1600 mbar (VTA)		0-600 mbar		
	14	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	15	Adjustable Zero	Adjustable Span	YES		YES		
	16	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	17	Element type	Material	Diaphragm		316 SS		
	18	Fill Fluid		MfrStd				
	19	Housing material		316 SS NOTE 1				
	20	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F		
	21	Cable Gland		cable entry plugged				
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	23	Safety Integrity Level		N/A				
	24							
MANIFOLD (NOTE 2)	25	Type		5-Valves (Block, Vent, Equalize), Coplanar Style, Integral to Transmitter, c/w 316 SS Plug for Vent Port				
	26	Size		1/2" NPT-F				
	27	Rating		3000 psig @200 degF (207 barg @ 93 degC)				
	28	Body material		316 SS				
	29	Diaphragm Seal		N/A				
	30							
ACCESSORIES	31	Integral Meter		YES (LCD)				
	32	Mounting bracket		YES, for 2-inch pipe stand, 316 SS				
	33							
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Transmitter and Manifold shall be assembled and tested by Manufacturer. 3. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-010			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	1	Page	7 of 13
ORIFICE PLATE AND FITTING								

No	TAG	P&ID No. (RC12-002-___)	PIPE CLASS	LINE No	LOCATION	NOTE
1	RC12-FT-0811	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0811-N	Gaslift Distribution.	
2	RC12-FT-0812	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0812-N	Gaslift Distribution.	
3	RC12-FT-0813	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0813-N	Gaslift Distribution.	
4	RC12-FT-0814	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0814-N	Gaslift Distribution.	
5	RC12-FT-0815	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0815-N	Gaslift Distribution.	
6	RC12-FT-0810	TS-PR1-PID-005	#900	GL-DC1-4"-0824-N	Gaslift Header	
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NOTES



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-010			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	1	Page	8 of 13
ORIFICE PLATE AND FITTING								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				5
	2	P&ID No.	Pipe class	See Next Page				See Next Page
	3	Line No.	Line size	See Next Page				2" Sch.160
	4	Location	See Next Page					
	5	Hazardous Area Classification	Zone 2 IIA T3					
OPERATING CONDITIONS	6	Fluid	State	Hydrocarbon Gas		GAS		
	7	Design Press.	Design Temp.	130 barg		0-45 degC		
	8	Maximum Allowable Diff. Press.	550 mbar					
	9			Minimal	Nominal	Maximal		
	10	Flow	Sm3/day	5,000	35000	45,000		
	11	Inlet Pressure	barg	98	98	98		
	12	Differential Pressure	barg	VTC	VTC	VTC		
	13	Oper. Temperature	degC		25			
	14	Molecular Weight			20.8			
	15	Density at operating Cond.	kg/m3		120.29			
	16	Compressibility	-		0.69			
	17	Viscosity at Oper. Cond.	cP		0.010-0.02			
	18	Cp / Cv	-		1.95			
	19	Isentropic Exponent	-					
ORIFICE PLATE (NOTE 1)	20	Type	Concentric, square edged					
	21	Material	Min. Thickness	316 SS		0.125-inch		
	22	Bore Size	Beta Ratio	VTC		VTC		
	23	Drain or Vent Hole	N/A					
	24	Differ. Pressure @ Full Scale	VTC					
	25							
ORIFICE HOLDER (NOTE 5)	26	Type	Single Chamber Orifice Fitting					
	27	Size	Rating	Conn. Type	2-inch	#900	Welded Both Ends (2" S-160)	
	28	Material	Painting as per:	ASTM A216 WCB or equal		RC12-002-GE-AC7-SP-001		
	29	Taps Size	Quantity	1/2" NPT-F		2		
	30	Taps Orientation	VTA					
ACCESSORIES (NOTE 2)	31	Block valves	Quantity	YES, required		2		
	32	Size	Material	1/2" NPT		316 SS		
	33	Rating	3000 psig @200 degF (207 barg @ 93 degC)					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

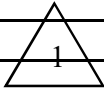
NOTES

- Two (02) orifice plates shall be calculated and provided for overlapped flow ranges as follow:
 - 5 000 - 16 000 Sm3/day (Range A)
 - 15 000 - 45 000 Sm3/day (Range B)
- Block Valves shall be assembled and tested by Manufacturer.
- Permanent fitted SS Name Plate shall be provided with standard specifications.
- One spare orifice plate for each flow range shall be provided
- Orifice Seal & Carrier Assembly shall by MfrStd and suitable to process condition. Orifice Seal shall be provided for each Orifice Plate.



	RC12 WHP PROJECT, BLOCK 09-1					RC12-002-GE-IA2-DS-010		
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLOW INSTRUMENTS					Rev.	1	Page
ORIFICE PLATE AND FITTING					9 of 13			
No	TAG	P&ID No. (RC12-002-___)	PIPE CLASS	LINE No	LINE SIZE	LOCATION	NOTE	
1	RC12-FE-0811	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0811-N	2" Sch.160	Gaslift Distribution.		
2	RC12-FE-0812	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0812-N	2" Sch.160	Gaslift Distribution.		
3	RC12-FE-0813	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0813-N	2" Sch.160	Gaslift Distribution.		
4	RC12-FE-0814	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0814-N	2" Sch.160	Gaslift Distribution.		
5	RC12-FE-0815	TS-PR1-PID-005	#900	GL-DC1-1-1/2"-0815-N	2" Sch.160	Gaslift Distribution.		
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NOTES								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-010				
	RC12 WELLHEAD PLATFORM								
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	1	Page	10 of 13	
	ORIFICE PLATE AND FITTING								
GENERAL DATA	1	Tag Number		Qty.	RC12-FE-0810			set	1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-005			#900		
	3	Line No.	Line size	GL-DC1-4"-0824-N			4" Sch.120		
	4	Hazardous Area Classification		Zone 2 IIA T3					
	5								
OPERATING CONDITIONS	6	Fluid	State	Hydrocarbon Gas		GAS			
	7	Design Press.	Design Temp.	130 barg		0-45 degC			
	8	Maximum Allowable Diff. Press.		550 mbar					
	9			Minimal	Nominal		Maximal		
	10	Flow	Sm3/day	20,000	10000		250,000		
	11	Inlet Pressure	barg	98	98		98		
	12	Differential Pressure	barg	VTC	VTC		VTC		
	13	Oper. Temperature	degC		25				
	14	Molecular Weight			20.8				
	15	Density at operating Cond.	kg/m3		120.29				
	16	Compressibility	-		0.69				
	17	Viscosity at Oper. Cond.	cP		0.010-0.02				
	18	Cp / Cv	-		1.95				
	19	Isentropic Exponent	-						
ORIFICE PLATE (NOTE 1)	20	Type		Concentric, square edged					
	21	Material	Min. Thickness	316 SS		0.125-inch			
	22	Bore Size	Beta Ratio	VTC		VTC			
	23	Drain or Vent Hole		N/A					
	24	Differ. Pressure @ Full Scale		VTC					
	25								
ORIFICE HOLDER (NOTE 5)	26	Type		Single Chamber Orifice Fitting					
	27	Size	Rating	Conn. Type	4-inch	#900	Flanged, RTJ, Both Ends		
	28	Material	Painting as per:	ASTM A216 WCB or equal		RC12-002-GE-AC7-SP-001			
	29	Taps Size	Quantity	1/2" NPT-F		2			
	30	Taps Orientation		VTA					
ACCESSORIES (NOTE 2)	31	Block valves	Quantity	YES, required		2			
	32	Size	Material	1/2" NPT		316 SS			
	33	Rating	3000 psig @200 degF (207 barg @ 93 degC)						
PURCHASE	34	Manufacturer		VTA					
	35	Model		VTA					
	36								

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

- Three (03) orifice plates shall be calculated and provided for overlaped flow ranges as follow:
 - 10 000 - 35 000 Sm3/day (Range A) (VTA)
 - 30 000 - 100 000 Sm3/day (Range B)
 - 80 000 - 250 000 Sm3/day (Range C)
- Block Valves shall be assembled and tested by Manufacturer.
- Permanent fitted SS Name Plate shall be provided with standard specifications.
- One spare orifice plate for each flow range shall be provided
- Orifice Seal & Carrier Assembly shall by MfrStd and suitable to process condition. Orifice Seal shall be provided for each Orifice Plate.



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-010			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	1	Page	11 of 13
ULTRASONIC FLOWMETER (CLAMP-ON)								
GENERAL DATA	1	Tag Number	Qty.	RC12-FT-0903			set	1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-006			#2500	
	3	Line No.	Line size	WI-FC1-6"-0903-N			6" Sch.160	
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid	State	INJECTION WATER		Liquid		
	7	Design Press.	Design Temp.	275 barg		0-45 degC		
	8	Maximum Allowable Diff. Press.		N/A				
	9			Minimal	Nominal	Maximal		
	10	Flow	m3/d	20	200-500		1,000	
	11	Inlet Pressure	barg			250		
	12	Oper. Temperature	degC			ambient		
	13	Molecular Weight				18.02		
	14	Density at Oper. Cond.	kg/m3			1011		
	15	Compressibility	-			-		
	16	Viscosity at Oper. Cond.	cP			0.89		
	17	Cp / Cv	-					
	18	Isentropic Exponent	-					
TRANSDUCER, SENSOR	19	Type	Configuration	CLAMP-ON		Single Channel		
	20	Sensor Material	Housing Material	316 SS		316 SS		
	21	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	22	Mounting		Mounting base with adjustable and extractable transducer slots				
	23							
TRANSMITTER, COMPUTING PANEL	24	Type	Ultrasonic. Transit time, correlation.					
	25	Instr. range	Calibrated range	VTA		0-1100 m3/d		
	26	Accuracy		± 4 % of Reading				
	27	Output signal		4-20 mA HART (active), 2-wire				
	28	Power supply		24 V DC				
	29	Housing: Type	Material	in Field, pole mounted		316 SS, (NOTE 1)		
	30	Sensor Cables	Electrical Conn.	YES, 5 m, MfrStd NOTE 3		1/2" NPT-F		
	31	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	32	Safety Integrity Level		N/A				
	33	Software Configuration						
ACCESSORIES	34	Integral Meter		YES (LCD)				
	35	Mounting Kit		YES, for 2-inch pole stand, 316 SS				
	36							
PURCHASE	37	Manufacturer		VTA				
	38	Model		VTA				
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Permanent fitted SS Name Plate shall be provided with standard specifications. - All interconnection within of instrument set shall be complete with Ex d, IP 56 min Nickel plated Brass Cable Glands by Manufacturer.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-010			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	1	Page	12 of 13
ULTRASONIC FLOWMETER (CLAMP-ON)								
GENERAL DATA	1	Tag Number	Qty.	RC12-FT-1111			set	1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-006			#2500	
	3	Line No.	Line size	WI-FS1-3"-1111-N			3" Sch.160	
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid	State	INJECTION WATER		Liquid		
	7	Design Press.	Design Temp.	275 barg		0-45 degC		
	8	Maximum Allowable Diff. Press.		N/A				
	9			Minimal	Nominal		Maximal	
	10	Flow	m3/d	20	150-300		500	
	11	Inlet Pressure	barg		250			
	12	Oper. Temperature	degC		ambient			
	13	Molecular Weight			18.02			
	14	Density at Oper. Cond.	kg/m3		1011			
	15	Compressibility	-		-			
	16	Viscosity at Oper. Cond.	cP		0.89			
	17	Cp / Cv	-					
	18	Isentropic Exponent	-					
TRANSDUCER, SENSOR	19	Type	Configuration	CLAMP-ON		Single Channel		
	20	Sensor Material	Housing Material	316 SS		316 SS		
	21	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	22	Mounting		Mounting base with adjustable and extractable transducer slots				
	23							
TRANSMITTER, COMPUTING PANEL	24	Type	Ultrasonic. Transit time, correlation.					
	25	Instr. range	Calibrated range	VTA		0-600 m3/d		
	26	Accuracy		± 4 % of Reading				
	27	Output signal		4-20 mA HART (active), 2-wire				
	28	Power supply		24 V DC				
	29	Housing: Type	Material	in Field, pole mounted		316 SS, (NOTE 1)		
	30	Sensor Cables	Electrical Conn.	YES, 5 m, MfrStd NOTE 3		1/2" NPT-F		
	31	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	32	Safety Integrity Level		N/A				
	33	Software Configuration						
ACCESSORIES	34	Integral Meter		YES (LCD)				
	35	Mounting Kit		YES, for 2-inch pole stand, 316 SS				
	36							
PURCHASE	37	Manufacturer		VTA				
	38	Model		VTA				
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Permanent fitted SS Name Plate shall be provided with standard specifications. - All interconnection within of instrument set shall be complete with Ex d, IP 56 min Nickel plated Brass Cable Glands by Manufacturer.								



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-GE-IA2-DS-010			
	DATASHEETS FOR FLOW INSTRUMENTS				Rev	1	Page	13 of 13
General Data	1	Tag Number		RC12-FI-6701				
	2	Service		Fuel Oil System				
	3	P.I.D. No.	Pipe Class	RC12-002-TS-PR6-PID-001		#150		
	4	Line Size	Line Number	3"		FO-AC1-3"-6711-N		
	5	Line Internal Diameter	Line Material			Carbon Steel		
	6	Envirement Conditions		Marine Tropical Climate				
Process Conditions	7	Fluid	State	Diesel Fuel Oil		Liquid		
	8			Minimum	Normal	Maximum	Unit	
	9	Working Temperature		21		40	°C	
	10	Working Pressure		0.5		7	Barg	
	11	Diesel Fuel Kinematic Vicosity		1.5		6	cSt	
	12	Flow rate		5		25	m3/h	
	13							
	14							
Diesel Fuel Meter	15	Process Connection	Material	Flange 3" RF #150		SS316		
	16	Body material		SS316				
	17	Meter type		Oval gear Mechanical (VTA)				
	18	Accuracy		±0.25% of reading				
	19	Meter scale		1 L				
	20	Indicator		Zero start; Large Dial register: min. 5 digit				
	21	Gear material		SS316				
	22	Reset		YES				
	23	Recording		NA				
Purchase	24							
	25	Manufacturer		VTA				
	26	Model No		VTA				
Notes: VTC - Vendor To Calculate. VTA- Vendor To Advise.								





RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS



PROJECT NAME : RC12 WHP PROJECT, BLOCK 09-1

SUB PROJECT : RC12 WELLHEAD PLATFORM

**DOCUMENT TITLE : PURCHASE REQUISITION FOR
INSTRUMENTS AND DETECTORS**

DOCUMENT NO. : RC12-002-TS-IA2-RQ-003

PHASE : DETAILED ENGINEERING

			CONTROLLED		
			Signed by: Nguyễn Thị Thu Trang Date: 04/08/2025 13:42:00 Certified by: Vietsovpetro CA	Signed by: Bùi Hồng Dương Date: 04/08/2025 16:01:55 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 04/08/2025 16:37:55 Certified by: Vietsovpetro CA
3	IFA	04.08.25	DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG	PRO. MGR: T.D.HAI
2	IFA	29.05.25	Signed by: Đỗ Quốc Huy Date: 04/08/2025 10:35:48 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 04/08/2025 10:36:56 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 04.08.2025 11:10:12 Certified by: Vietsovpetro CA
1	IFA	22.05.25			
0	IFA	25.04.25			
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.





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NO	DESCRIPTION	TAG NUMBER	UNIT	QTY	NOTE
1.	PRESSURE GAUGE Datasheet : RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS				
1.1	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: 1/2" NPT-M; <u>GAUGE</u> Scale: 0-40 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC) Process connection: 1/2" NPT-F; Instrument connections 1/2" NPT-F; <u>ACCESSORIES</u> Overpressure Protector, PISTON TYPE, 316 SS	RC12-PG-0051 RC12-PG-0052 RC12-PG-0053 RC12-PG-0054 RC12-PG-0055	set	05	
1.2	Ditto item 1.1, but <u>GAUGE</u> Scale: 0-6 Bar; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> Overpressure Protector, PISTON TYPE, 316 SS	RC12-PG-1006	set	01	
1.3	Ditto item 1.1, but <u>GAUGE</u> Scale: 0-40 Bar; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> N/A	RC12-PG-1001 RC12-PG-1401 RC12-PG-0902A RC12-PG-0902B	set	04	





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1.4	Ditto item 1.1, but <u>GAUGE</u> Scale: 0-40 Bar; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	RC12-PG-0220	set	01	
1.5	Ditto item 1.1, but Service: Hydrocarbon Gas <u>GAUGE</u> Scale: 0-160 Bar; <u>ACCESSORIES:</u> N/A	RC12-PG-0811 RC12-PG-0812 RC12-PG-0813 RC12-PG-0814 RC12-PG-0815 RC12-PG-0901	set	06	
1.6	Ditto item 1.1, but Service: Water <u>GAUGE</u> Scale: 0-400 Bar; Element Type / Material: BOURDON / Monel; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 6000 psig @200 degF (414 barg @ 93 degC) <u>ACCESSORIES:</u> N/A	RC12-PG-0903 RC12-PG-1102 RC12-PG-1111	set	03	
1.7	Ditto item 1.1, but Service: Water <u>GAUGE</u> Scale: 0-60 Bar; Element Type / Material: BOURDON / Monel; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> N/A	RC12-PG-1101	set	01	
1.8	Ditto item 1.1, but Service: Water <u>GAUGE</u> Scale: 0-10 Bar; Element Type / Material: BOURDON / Monel; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> N/A	RC12-PG-1103	set	01	
1.9	Ditto item 1.1, but Service: Instrument Air	RC12-PG-0501 RC12-PG-0502	set	02	





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	<u>GAUGE</u> Scale: 0-16 Bar; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> N/A				
1.10	Ditto item 1.1, but <u>GAUGE</u> Scale: 0-4 Bar; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> Overpressure Protector: PISTON TYPE, 316 SS	RC12-PG-0201 RC12-PG-0301	set	02	
1.11	Ditto item 1.1, but Service: Diesel Fuel Oil <u>GAUGE</u> Scale: 0-4 Bar; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	RC12-PG-6702	set	01	
1.12	Ditto item 1.1, but Service: Diesel Fuel Oil <u>GAUGE</u> Scale: 0-16 Bar; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	RC12-PG-6703	set	01	
1.13	Ditto item 1.1, but Service: Fresh Water; <u>GAUGE</u> Scale: 0-16 Barg; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed):	RC12-PG-5202	set	01	



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	- Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) <u>ACCESSORIES:</u> Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F				
1.14	Pressure Gauge (Diaphragm Seal): Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Scale: 0-160 Bar; Accuracy: 1 % FS; Mounting: 2" pole stand; Diaphragm Seal: - Design Type: Welded design; - Material: 316 SS; - Operating Temperature: Up to 752 degF (400 degC) - Process Connection: ½" NPT-M - Capillary Line/Length : Yes, 316 SS /Min 5 Feet (1.5m) - System Fill Fluids : High-temperature Silicone Oil Completed with 316SS 2-valve manifold and accessories	RC12-PG-1501 RC12-PG-1502	set	02	
2.	PRESSURE TRANSMITTER Datasheet : RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS				
2.1	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture <u>TRANSMITTER</u> Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; <u>HOUSING</u> Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	RC12-PT-0001 RC12-PT-0002 RC12-PT-0003 RC12-PT-0004 RC12-PT-0005 RC12-PT-0021 RC12-PT-0022 RC12-PT-0023 RC12-PT-0024 RC12-PT-0025 RC12-PT-0031 RC12-PT-0032 RC12-PT-0033 RC12-PT-0034 RC12-PT-0035 RC12-PT-0041 RC12-PT-0042 RC12-PT-0043 RC12-PT-0044 RC12-PT-0045	set	20	



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2.2	Ditto item 2.1, but Service: Oil, Gas, Water Mixture <u>TRANSMITTER</u> Pressure range: 0-40 Barg (VTA); <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC);	RC12-PT-1011 RC12-PT-1012 RC12-PT-1401 RC12-PT-0902	set	04	
2.3	Ditto item 2.1, but Service: Oil, Gas, Water Mixture <u>TRANSMITTER</u> Pressure range: 0-4 Barg (VTA); <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC);	RC12-PT-0201 RC12-PT-1006	set	02	
2.4	Ditto item 2.1, but Service: Hydrocarbon Gas <u>TRANSMITTER</u> Pressure range: 0-160 Barg (VTA); <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC);	RC12-PT-0802	set	01	
2.5	Ditto item 2.1, but Service: Sea Water <u>TRANSMITTER</u> Element type/material: Diaphragm / Monel; Pressure range: 0-400 Barg (VTA); <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 6000 psig @ 200 °F (414 barg @ 93 °C)	RC12-PT-0903	set	01	
2.6	Ditto item 2.1, but Service: Diesel Fuel Oil; <u>TRANSMITTER</u> Pressure range: 0-4 Barg (VTA); <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC);	RC12-PT-6701	set	01	
2.7	Ditto item 2.1, but Service: Oil, Gas, Water Mixture	RC12-PZT-1001 RC12-PZT-1002 RC12-PZT-1003	set	05	



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	<u>TRANSMITTER</u> Pressure range: 0-40 Barg (VTA); Safety Level: SIL 2;	RC12-PZT-1004 RC12-PZT-1005			
2.8	Ditto item 2.1, but Service: Hydrocarbon Gas <u>TRANSMITTER</u> Pressure range: 0-160 Barg (VTA); Safety Level: SIL 2;	RC12-PZT-0811 RC12-PZT-0812 RC12-PZT-0813 RC12-PZT-0814 RC12-PZT-0815 RC12-PZT-0901	set	06	
2.9	Ditto item 2.1, but Service: Oil, Gas, Water Mixture <u>TRANSMITTER</u> Pressure range: 0-40 Barg (VTA); Safety Level: SIL 2; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @200 degF (103 barg @ 93 degC)	RC12-PZT-1401 RC12-PZT-0902 RC12-PZT-0220	set	03	
2.10	Ditto item 2.1, but Service: Sea Water <u>TRANSMITTER</u> Pressure range: 0-400 Barg (VTA); Safety Level: SIL 2; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 6000 psig @ 200 °F (414 barg @ 93 °C)	RC12-PZT-0903	set	01	
2.11	Ditto item 2.1, but Service: Instrument Air <u>TRANSMITTER</u> Pressure range: 0-16 Barg (VTA); Safety Level: SIL 2; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @200 degF (103 barg @ 93 degC)	RC12-PZT-0501A RC12-PZT-0501B RC12-PZT-0501C	set	03	
2.12	Pressure Transmitter (Diaphragm Seal): TRANSMITTER Element type: Diaphragm; Pressure range: 0-160 Barg (VTA); Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Safety Integrity Level: N/A; Diaphragm Seal: - Design Type: Welded Design; - Material: 316 SS; - Operating Temperature: 752 DegF (400 DegC)	RC12-PT-1501	set	01	





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	- Connection: ½" NPT-M (Process side) - Capillary Line/ Length: Yes, 316 SS /Min 5 Feet (1.5m) - System Fill Fluids : High –Temperature Silicone Oil Completed with 2-valve manifold and accessories				
3.0	DIFFERENTIAL PRESSURE TRANSMITTER Datasheet: RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS				
3.1	DIFFERENTIAL PRESSURE TRANSMITTER Service: Hydrocarbon Gas <u>TRANSMITTER</u> Pressure range: 0-2.5 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; <u>HOUSING</u> Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; <u>COMPLETED WITH</u> 5-Valves Manifold Integral to the Transmitter; Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; <u>ACCESSORIES</u> Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	RC12-PDT-0801	set	01	
3.2	DIFFERENTIAL PRESSURE GAUGE Service: Oil, Gas, Water Mixture <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Silicon; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-2.5 Bar; Accuracy: 1% FS; Element Type / Material: Diaphragm / 316 SS; <u>COMPLETED WITH</u> 5-Valves Manifold Integral to Instrument; Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC)	RC12-PDG-1001	set	01	



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	Process connection: ½" NPT-F; <u>ACCESSORIES</u> Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;				
3.3	HVAC. DIFFERENTIAL PRESSURE TRANSMITTER Service: Clean Air <u>TRANSMITTER</u> Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP44 min; Explosion proof: N/A; Housing material: 316SS; Completed with accessories.	RC12-PDT-8501 RC12-PDT-8502	set	02	
3.4	HVAC. DIFFERENTIAL PRESSURE TRANSMITTER Service: Clean Air <u>TRANSMITTER</u> Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Housing material: 316SS; Completed with accessories.	RC12-PDT-8503 RC12-PDT-8504 RC12-PDT-8505 RC12-PDT-8506 RC12-PDT-8507 RC12-PDT-8508 RC12-PDT-8509 RC12-PDT-8510	set	08	
4.	TEMPERATURE INSTRUMENT Datasheet : RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS				
4.1	TEMPERATURE GAUGE Service: Hydrocarbon Gas; <u>SENSOR</u> Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg <u>GAUGE</u> Scale: 0-60 degC ; Accuracy: 1 % FS;	RC12-TG-0801	set	01	





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	<u>THERMOWELL</u> Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: 1/2" NPT-F; Material: 316 SS; Immersion length (dimension U): 225 mm;				
4.2	Ditto item 4.1, but Service: Oil, Water; <u>GAUGE</u> Scale: 0-100 degC; <u>THERMOWELL</u> Process connection: Flange 2", #150, RF; Immersion length (dimension U): 500 mm;	RC12-TG-0201 RC12-TG-0301	set	02	
4.3	Ditto item 4.1, but Service: Oil, Water; <u>GAUGE</u> Scale: 0-100 degC; <u>THERMOWELL</u> Process connection: Flange 2", #300, RF; Immersion length (dimension U): 500 mm;	RC12-TG-1401	set	01	
4.4	Ditto item 4.1, but Service: Oil, Water; <u>GAUGE</u> Scale: 0-100 degC; <u>THERMOWELL</u> Process connection: Flange 2", #300, RF; Immersion length (dimension U): 220 mm;	RC12-TG-0902	set	01	
4.5	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; <u>SENSOR</u> Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: 1/2" NPT-M; <u>TRANSMITTER</u> Instrument range: 0-100 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; <u>HOUSING</u> Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: 1/2" NPT-F, standard terminal block; <u>THERMOWELL</u> Type: Flange with Tapered drilled bar stock;	RC12-TT-1001 RC12-TT-1002 RC12-TT-1003 RC12-TT-1004 RC12-TT-1005	set	05	



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	Datasheet : RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS				
5.1	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; <u>CHAMBER</u> Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS ; Mounting: Side-Side; Center-Center Dimension: 1850 mm ; Process Connection: Flange 2-inch, #300 RF ; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; <u>GAUGE</u> Type: Magnetic flags; Scale: 0-100% / 125 - 1975 mm ; Housing: IP 56 min, 316 SS; <u>TRANSMITTER</u> Type: Magnetostrictive, externally mount on chamber; Range: 0- 2000 mm (VTA) ; Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: 1/2" NPT-F, standard terminal block;	RC12-LG/LT-1401	set	01	
5.2	Ditto item 5.1, but <u>TRANSMITTER</u> Safety Level: SIL 2;	RC12-LG/LZT-1402	set	01	
5.3	Ditto item 5.1, but <u>CHAMBER</u> Process Connection: Flange 2-inch, #150 RF ; Center-Center Dimension: 850 mm ; <u>GAUGE</u> Scale: 0-100% / 125 - 975 mm ; <u>TRANSMITTER</u> Range: 0- 1000 mm (VTA) ;	RC12-LG/LT-0201	set	01	
5.4	Ditto item 5.1, but <u>CHAMBER</u> Process Connection: Flange 2-inch, #150 RF ;	RC12-LG/LT-0301	set	01	



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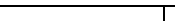
	Center-Center Dimension; 1200 mm ; <u>GAUGE</u> Scale: 0-100% / 200 - 1400 mm ; <u>TRANSMITTER</u> Range: 0- 1500 mm (VTA) ;				
5.5	Ditto item 5.1, but <u>CHAMBER</u> Process Connection: Flange 2-inch, #150 RF ; Center-Center Dimension; 850 mm ; <u>GAUGE</u> N/A <u>TRANSMITTER</u> Range: 0- 1000 mm (VTA) ; Safety Level: SIL 2;	RC12-LZT-0201	set	01	
5.6	Ditto item 5.1, but <u>CHAMBER</u> Size / Material: 2-inch / 316 SS ; Process Connection: Flange 1-inch, #150 RF ; Center-Center Dimension; 600 mm ; <u>GAUGE</u> Scale: 0-100% / 500 - 1100 mm ; <u>TRANSMITTER</u> Range: 0- 1200 mm (VTA) ;	RC12-LG/LT-0210	set	01	
5.7	Ditto item 5.1, but Service: Fresh Water; <u>CHAMBER</u> Size / Material: 2-inch / 316 SS ; Process Connection: Flange 1-inch, #150 RF ; Center-Center Dimension; 1200 mm ; <u>GAUGE</u> Scale: 0-100% / 110 - 1310 mm ; <u>TRANSMITTER</u> Range: 0- 1500 mm (VTA) ;	RC12-LG/LT-5201	set	01	
5.8	Ditto item 5.1, but Service: Diesel Fuel Oil; <u>CHAMBER</u> Size / Material: 2-inch / 316 SS ; Process Connection: Flange 1-inch, #150 RF ; Center-Center Dimension; 1400 mm ; <u>GAUGE</u> Scale: 0-100% / 100 - 1500 mm ; <u>TRANSMITTER</u>	RC12-LG/LZT-6701	set	01	

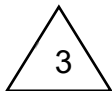


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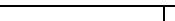
	Range: 0- 1500 mm (VTA) ; Safety Level: SIL 2;				
5.9	Ditto item 5.1, but Service: Diesel Fuel Oil; <u>CHAMBER</u> Size / Material: 2-inch / 316 SS; Process Connection; Flange 1-inch, #150 RF; Center-Center Dimension; 1400 mm ; <u>GAUGE</u> Scale: 0-100% / 100 - 1500 mm ; <u>TRANSMITTER</u> Range: 0- 1500 mm (VTA) ;	RC12-LG/LT-6703	set	01	
5.10	Ditto item 5.1, but Service: Diesel Fuel Oil; <u>CHAMBER</u> Size / Material: 2-inch / 316 SS; Process Connection; Flange 1-inch, #150 RF; Center-Center Dimension; 1400 mm ; <u>GAUGE</u> N/A; <u>TRANSMITTER</u> Range: 0- 1500 mm (VTA) ;	RC12-LZT-6702	set	01	
6.	FLOW INSTRUMENT Datasheet : RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS				
6.1	D/P FLOWMETER PRIMARY ELEMENT Service: Hydrocarbon Gas ORIFICE FITTING: Type: Single Chamber Orifice Fitting; Process Connections: BW, 2" #900, Sch160, ASTM A216 WCB both ends; ORIFICE: Type: Concentric, square edged; Material: 316 SS; Two (02) orifice plates shall be calculated and provided for overlapped flow ranges as follow: 5 000 - 16 000 Nm3/day (Range A) 15 000 - 45 000 Nm3/day (Range B) <u>C/w</u> Two block valves on taps outlet, 316 SS, ½" NPT, Rating 3000 psig @200 degF (207 bar @ 93 degC)	RC12-FE-0811A,B RC12-FE-0812A,B RC12-FE-0813A,B RC12-FE-0814A,B RC12-FE-0815A,B	set	05	



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6.2	D/P FLOWMETER PRIMARY ELEMENT Service: Hydrocarbon Gas  <u>ORIFICE FITTING:</u> Type: Single Chamber Orifice Fitting; Process Connections: Flange 4-inch, #900 RTJ Both Ends; Body Material: ASTM A216 WCB; <u>ORIFICE:</u> Type: Concentric, square edged; Material: 316 SS; Three (03) orifice plates shall be calculated and provided for overlapped flow ranges as follow: 10 000 - 35 000 Nm3/day (Range A) 30 000 - 100 000 Nm3/day (Range B) 80 000 - 250 000 Nm3/day (Range C) <u>C/w</u> Two block valves on taps outlet, 316 SS, ½" NPT, Rating 3000 psig @200 degF (207 bar @ 93 degC)	RC12-FE-0810 A,B,C	set	01	
6.3	D/P FLOWMETER DIFFERENTIAL PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Type: Differential Pressure Transmitter; Pressure range: 0 – 1.6 barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: 0.25 % of Span; Process connection: ½" NPT-M; Safety Level: N/A; <u>HOUSING</u> Ex-d, IIA T3, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; <u>COMPLETED WITH</u> 5-Valves (Block, Vent, Equalize) Manifold Integral to Instrument; Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; <u>ACCESSORIES</u> Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts	RC12-FT-0811 RC12-FT-0812 RC12-FT-0813 RC12-FT-0814 RC12-FT-0815 RC12-FT-0810	set	06	
6.4	Coriolis Flowmeter Assembly General - Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; - Service: Crude Oil;	RC12-FT/FE-1401	Set	01	



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	Sensor - Type: Coriolis; - Measurement Function: Mass flow rate, Density; - Process connection: Flange 3" RF #300 - Sensor Housing: 316 SS - Expl. Protection: Ex d IIA T3 (IEC); Transmitter - Type: Advanced Multi-Variable - Instrument range: VTA; - Calibrated range: 0-25000 kg/hr; - Accuracy: $\pm 0.1\%$ of Reading - Output: RS-485 Modbus RTU - Optional: Frequency Output, Pulse Output - Software Configuration: Net Oil measurement (NOC) functionality, Total Health Check, Tube Health Check with Dry Verification. - Ex-d, IP-56 as minimum; - Power supply: 24VDC External - Electronic housing: SS316. - Mounting: Remote Mounting. - C/w: interconnecting cable (5m length minimum c/w suitable cable glands for both ends) between sensor and transmitter and 2" stanchion mounting kit (SS316 material).				
6.5	Coriolis Flowmeter Assembly General - Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; - Service: Gas; Meter - Type: Coriolis; - Measurement Function: Mass flow rate, Density; - Process connection: Flange 3" RF #300 - Sensor Housing: 316 SS - Expl. Protection: Ex d IIA T3 (IEC); Transmitter - Type: Advanced Multi-Variable - Instrument range: VTA; - Calibrated range: 0-4000 Sm³/hr; - Accuracy: $\pm 0.35\%$ of Reading - Output: RS-485 Modbus RTU; - Optional: Frequency Output, Pulse Output - Software Configuration: Total Health Check, Tube Health Check with Dry Verification; - Ex-d, IP-56 as minimum; - Power supply: 24VDC External - Electronic housing: SS316. - Mounting: Remote Mounting.	RC12-FT/FE-1411	Set	01	





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	C/w: interconnecting cable (5m length minimum c/w suitable cable glands for both ends) between sensor and transmitter and 2" stanchion mounting kit (SS316 material)				
6.6	ULTRASONIC FLOWMETER Service: Treated Sea Water <u>TRANSDUCER / SENSOR</u> Type: Single Channel, Clamp-On; Material: 316 SS; Housing: Ex-d, IIA T3, IP-56 min, 316 SS; Mounting base with adjustable and extractable transducer slots; <u>TRANSMITTER</u> Type: Ultrasonic. Transit time, correlation; Instrument Range: VTA; Calibrated Range: 0-1000 m3/d; Output: 4-20 mA HART (active), 2-wire; Accuracy: 4 % of Reading; Power supply: 24 V DC, Loop Powered; Process connection: ½" NPT-M; Safety Level: N/A; <u>HOUSING</u> Type: in Field, pole mounted; Ex-d, IIA T3, IP-56 min, 316 SS; Local LCD meter; <u>COMPLETED WITH</u> Sensor Cables 5 m length each, with interconnection accessories <u>ACCESSORIES</u> Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts	RC12-FT-0903	Set	01	
6.7	Ditto item 6.6, but Calibrated Range: 0-600 m3/d;	RC12-FT-1111	Set	01	
6.8	Diesel Fuel Meter Assembly for Fuel Oil System General - Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; Body: - Body material: SS316; - Process connection: Flange 3" #150 RF; - Meter Type: Oval gear mechanical; - Accuracy: ±0.25% of reading; - Indicator: Zero start; Large Dial register: min. 5 digit; - Meter scale: 1 L;	RC12-FI-6701	Set	01	
7.	PIG INDICATOR	RC12-ZI-0901	Set	01	



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	Datasheet: RC12-002-TS-IA2-DS-012_0_DATA SHEET FOR PIG INDICATOR Service: Oil/Gas/Water; - Pipe size: 10" #300; - Type: Intrusive, Mechanical Trigger. - Process connection: Flanged 2, #300 RF - Housing Material: 316 SS - IP56 min. - Extendable/Retractable: Required - Online installation/Removal: Required - Isolation Valve: 2" Ball Valve Accessories: - 01 Portable jacking tool				
8.	FIRE AND GAS DETECTORS				
8.1	GAS DETECTOR Datasheet: RC12-002-TS-IA2-DS-003_0_Datasheet for Gas Detector Tropical, Marine, Offshore, Open-door. TRANSMITTER Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: $\pm 3\%$ LEL (@ 0-50 % LEL), $\pm 5\%$ LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts; Sunshield / Water splashes protection	RC12-GD-1001 RC12-GD-1002 RC12-GD-1003 RC12-GD-1004 RC12-GD-2001 RC12-GD-2002 RC12-GD-2003 RC12-GD-2004 RC12-GD-2005 RC12-GD-2006 RC12-GD-2007 RC12-GD-2008 RC12-GD-2009 RC12-GD-2010 RC12-GD-2011 RC12-GD-2012 RC12-GD-2013 RC12-GD-2101 RC12-GD-2102 RC12-GD-2103 RC12-GD-2104 RC12-GD-2105 RC12-GD-2106 RC12-GD-3001 RC12-GD-3002 RC12-GD-3003 RC12-GD-3004 RC12-GD-3005 RC12-GD-3006 RC12-GD-3007 RC12-GD-3008 RC12-GD-3009 RC12-GD-3010 RC12-GD-3104 RC12-GD-3105 RC12-GD-xxxx RC12-GD-xxxx	Set	38	



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		RC12-GD-xxxx			
8.2	Ditto item 8.1, but Tropical, Marine, Offshore, In-door, HVAC Duct ACCESSORIES Mounting bracket for HVAC Rectangular Duct, 316 SS	RC12-GD-3101 RC12-GD-3102 RC12-GD-3103 RC12-GD-xxxx	Set	4	
8.3	Ditto item 8.1, but Tropical, Marine, Offshore, In-door TRANSMITTER Type: Catalytic Bed Detector, Point, for Hydrogen Gas; Range; 0-100 % LEL; Response Time: T50 ≤ 10 s, T90 ≤ 30 s; ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts;	RC12-GD-3106 RC12-GD-3106 RC12-GD-xxxx	Set	3	
8.4	FLAME DETECTOR Datasheet: RC12-002-TS-IA2-DS-004_0_Datasheet for Flame Detector. Tropical, Marine, Offshore, Open-door TRANSMITTER Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Sensitivity: 0.1 m2 n-Neptane pan fire at 30 m; Response Time: up to 5 secs; Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis; Analog output: 4- 20mA current source, 3 wires, HART; Power supply: 24 VDC nominal; Fault Monitored: Electronics circuitry, Sensors, Optic cleanliness; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Bracket (Vertical / Horizontal Tilt) for 2-inch pipe stand, 316 SS, c/w bolts and nuts;	RC12-FD-1001 RC12-FD-1002 RC12-FD-1003 RC12-FD-2001 RC12-FD-2002 RC12-FD-2003 RC12-FD-2004 RC12-FD-2005 RC12-FD-2006 RC12-FD-2007 RC12-FD-2008 RC12-FD-2009 RC12-FD-2010 RC12-FD-2011 RC12-FD-3001 RC12-FD-3002 RC12-FD-3003 RC12-FD-3004 RC12-FD-3005 RC12-FD-3006 RC12-FD-3007 RC12-FD-3008 RC12-FD-xxxx RC12-FD-xxxx	Set	24	



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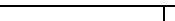
8.5	SMOKE DETECTOR Datasheet: RC12-002-TS-IA2-DS-005_0_Datasheet for Smoke Detector Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; <u>ACCESSORIES</u> Mounting Base	RC12-SD-2101 RC12-SD-2102 RC12-SD-2103 RC12-SD-2104 RC12-SD-2105 RC12-SD-2108 RC12-SD-2109 RC12-SD-2110 RC12-SD-2111 RC12-SD-4101 RC12-SD-xxx RC12-SD-xxx	Set	12	
8.6	Ditto item 8.5, but Status Indicator: YES, LED, REMOTE. <u>ACCESSORIES</u> Mounting Base; Remote Status Indicator;	RC12-SD-2106 RC12-SD-2107 RC12-SD-xxx	Set	3	
8.7	Ditto item 8.5, but Housing: Ex d IIC T3 (IEC), IP-44 min, Polycarbonate;	RC12-SD-3101 RC12-SD-3102 RC12-SD-xxx	Set	3	
8.8	HEAT DETECTOR Datasheet: RC12-002-TS-IA2-DS-006_0_Datasheet for Heat Detector Tropical, Marine, Offshore, In-door. Type: Rate of Rise ; Ingress Protection: min IP 44 ; Sensitivity: minimum 01degC/min; Output: 2 wires, Current output; Power supply: 24 VDC; Detector material: Polycarbonate; Sensor life: Minimum 2 years Setting temperature: 60 degC Electrical connection: 1/2" NPT-F	RC12-HD-2101 RC12-HD-2102 RC12-HD-xxx	Set	3	
8.9	TEST/CALIBRATION KIT FOR HYDROCARBON GAS DETECTORS 6D Cylinder Type, Calibration Gas Methane, 103 liters, 1000psig, 50% LEL CH4 (2.5% CH4), balance in air c/w Veriflow Gas Regulator, 0.5L/m		Set	1	
8.10	TEST/CALIBRATION KIT FOR HYDROGEN GAS DETECTORS 6D Cylinder Type, Calibration Gas Hydrogen, 103 liters, 1000psig, 50% LEL H2 (2% H2), balance in air c/w Veriflow Gas Regulator, 0.5L/m		Set	1	



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8.11	TEST/CALIBRATION KIT FOR FLAME DETECTORS According to Manufacturer Standard		Set	1	
8.12	TEST/CALIBRATION KIT FOR SMOKE DETECTORS According to Manufacturer Standard		Set	1	
8.13	TEST/CALIBRATION KIT FOR HEAT DETECTORS According to Manufacturer Standard		Set	1	
9.	PUSHBUTTONS Datasheet: RC12-002-TS-IA2-DS-002_0_Datasheet for Pushbuttons				
9.1	Abandon Platform Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Push button latching key reset; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: SIL2; <u>HOUSING</u> Protection: Ex d IIA T3, IP 56 min; Material: 316 SS; Color: BLUE <u>ACCESSORIES</u> Wall Mounting Bracket, 316 SS	RC12-APS-1001 RC12-APS-1002 RC12-APS-3001 RC12-APS-4001 RC12-APS-xxxx	Set	5	
9.2	ESD Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Push button latching key reset; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: SIL2; <u>HOUSING</u> Protection: Ex d IIA T3, IP 56 min; Material: 316 SS; Color: YELLOW <u>ACCESSORIES</u> Wall Mounting Bracket, 316 SS	RC12-ESD-1001 RC12-ESD-1002 RC12-ESD-2001 RC12-ESD-2002 RC12-ESD-2003 RC12-ESD-3001 RC12-ESD-4001 RC12-ESD-xxxx	Set	8	
9.3	Manual Call Point Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Breaking glass lift flap press button latching type; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: N/A; <u>HOUSING</u> Protection: Ex d IIA T3, IP 56 min; Material: 316 SS or GRP; Color: RED; <u>ACCESSORIES</u> Wall Mounting Bracket, 316 SS	RC12-MCP-1001 RC12-MCP-1002 RC12-MCP-2001 RC12-MCP-2002 RC12-MCP-2003 RC12-MCP-3001 RC12-MCP-4001 RC12-MCP-xxxx	Set	8	



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Notes: - The PR is based on Doc. No.: - RC12-002-TS-PR1-PID-001 -> 011 - RC12-002-TS-PR6-PID-001 -> 002 - RC12-002-TS-VC6-PID-001 - RC12-002-TS-IA2-LD-002_ FIRE & GAS LAYOUT - Refer to specification No. "RC12-002-TS-IA2-SP-003_ General Instrument Specification" for more detailed requirements. - This purchase requisition shall be read in conjunction with Datasheet No. "RC12-002-TS-IA2-DS-003 ~012".



		RC12 WELLHEAD PLATFORM		Document No.:		RC12-OCD-RQ-16		RC12-002-TS-IA2-RQ-003_2	RP1-233-TS-IA2-RQ-001_0
		Purchase requisition for Instruments & Detectors		Rev. No.:		0			
				Page No.:					
ITEM No.	DESCRIPTION			TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET		
GROUP 1 : Pressure Gauge, Differential Pressure Gauge, Temperature Gauge									
1	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-40 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Overpressure Protector, PISTON TYPE, 316 SS			5	SET	RC12-PG-0051; RC12-PG-0052; RC12-PG-0053; RC12-PG-0054; RC12-PG-0055	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	5	
2	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-6 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Overpressure Protector, PISTON TYPE, 316 SS			1	SET	RC12-PG-1006	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	



3	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-40 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> N/A	4	SET	RC12-PG-1001; RC12-PG-1401; RC12-PG-0902A; RC12-PG-0902B	RC12-002-TS-1A2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	4	
4	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-40 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	1	SET	RC12-PG-0220	RC12-002-TS-1A2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	



7	PRESSURE GAUGE Service: Water; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-60 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / Monel; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> N/A	1	SET	RC12-PG-1101	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	
8	PRESSURE GAUGE Service: Water; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-10 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / Monel; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> N/A	1	SET	RC12-PG-1103	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	



9	PRESSURE GAUGE Service: Instrument Air; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-16 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES N/A	2	SET	RC12-PG-0501; RC12-PG-0502	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	2	
10	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-4 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Overpressure Protector: PISTON TYPE, 316 SS	2	SET	RC12-PG-0201; RC12-PG-0301	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	2	



11	PRESSURE GAUGE Service: Diesel Fuel Oil; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-4 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	1	SET	RC12-PG-6702	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	
12	PRESSURE GAUGE Service: Diesel Fuel Oil; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-16 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	1	SET	RC12-PG-6703	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	



13	PRESSURE GAUGE Service: Fresh Water; <u>CASE</u> Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-16 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F	1	SET	RC12-PG-5202	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	
14	Pressure Gauge (Diaphragm Seal): Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Scale: 0-160 Bar; Accuracy: 1 % FS; Mounting: 2" pole stand; Diaphragm Seal: - Design Type: Welded design; - Material: 316 SS; - Operating Temperature: Up to 752 degF (400 degC) - Process Connection: ½" NPT-M - Capillary Line/Length : Yes, 316 SS /Min 5 Feet (1.5m) - System Fill Fluids : High-temperature Silicone Oil Completed with 316SS 2-valve manifold and accessories	2	SET	RC12-PG-1501; RC12-PG-1502	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	2	
15	PRESSURE GAUGE Service: Hydrocarbon Gas; <u>CASE</u> Dial: 150 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-160 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC) Process connection: ½" NPT-F; Instrument connections ½" NPT-F;	1	SET	RP1-PG-0911	RP1-233-TS-IA2-DS-001_0_DATA SHEETFOR PRESSURE INSTRUMENTS	1	



19	TEMPERATURE GAUGE Service: Hydrocarbon Gas; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-60 degC ; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 225 mm;	1	SET	RC12-TG-0801	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	1	
20	TEMPERATURE GAUGE Service: Oil, Water; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC ; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #150, RF; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 500 mm;	2	SET	RC12-TG-0201; RC12-TG-0301	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	2	
21	TEMPERATURE GAUGE Service: Oil, Water; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC ; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", 300, RF; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 500 mm;	1	SET	RC12-TG-1401	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	1	



22	TEMPERATURE GAUGE Service: Oil, Water; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC ; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #300, RF; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 220 mm;	1	SET	RC12-TG-0902	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	1	
23	TEMPERATURE GAUGE Service: Hydrocarbon Gas; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; CASE Dial: 150 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-60 degC ; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 250 mm;	1	SET	RP1-TG-0911	RP1-233-TS-IA2-DS-002_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS		1
24	TEMPERATURE GAUGE Service: Oil, Water, Gas Mixture; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; CASE Dial: 150 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC ; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #300, RF; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 220 mm;	1	SET	RP1-TG-0909	RP1-233-TS-IA2-DS-002_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS		1



GROUP 2 : Level Gauge, Level Transmitter; Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter							
25	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension: 1850 mm; Process Connection: Flange 2-inch, #300 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 125 - 1975 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 2000 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LG/LT-1401	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	
26	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension: 1850 mm; Process Connection: Flange 2-inch, #300 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 125 - 1975 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 2000 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: SIL 2; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LG/LZT-1402	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	



27	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS ; Mounting: Side-Side; Center-Center Dimension: 850 mm ; Process Connection: Flange 2-inch, #150 RF ; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 125 - 975 mm ; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1000 mm (VTA) ; Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LG/LT-0201	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	
28	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS ; Mounting: Side-Side; Center-Center Dimension: 1200 mm ; Process Connection: Flange 2-inch, #150 RF ; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 200 - 1400 mm ; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA) ; Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LG/LT-0301	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	



29	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS ; Mounting: Side-Side; Center-Center Dimension; 850 mm ; Process Connection: Flange 2-inch, #150 RF ; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE N/A TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1000 mm (VTA) ; Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: SIL 2; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LZT-0201	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	
30	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Oil, Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS ; Mounting: Side-Side; Center-Center Dimension; 600 mm ; Process Connection: Flange 1-inch, #150 RF ; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 500 - 1100 mm ; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1200 mm (VTA) ; Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LG/LT-0210	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	



31	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Fresh Water; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension: 1200 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 110 - 1310 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LG/LT-5201	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	
32	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Diesel Fuel Oil; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension: 1400 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 100 - 1500 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: SIL 2; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LG/LZT-6701	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	



33	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Diesel Fuel Oil; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension: 1400 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE Type: Magnetic flags; Scale: 0-100% / 100 - 1500 mm; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LG/LT-6703	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	
34	LEVEL GAUGE / LEVEL TRANSMITTER ASSEMBLY Service: Diesel Fuel Oil; CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Center-Center Dimension: 1400 mm; Process Connection: Flange 1-inch, #150 RF; Vent Connection: 3/4" NPT c/w 3/4" NPT Ball Valve Drain Connection: 3/4" NPT c/w 3/4" NPT Ball Valve; Float Material: 316 SS; GAUGE N/A TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Range: 0- 1500 mm (VTA); Probe Length: suite to chamber; Configuration: Bottom Mount Offset; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Safety Level: N/A; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block;	1	SET	RC12-LZT-6702	RC12-002-TS-IA2-DS-009_0_DATA SHEET FOR LEVEL INSTRUMENTS	1	



35	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½" NPT-M; TRANSMITTER Instrument range: 0-100 degC ; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 225 mm;	5	SET	RC12-TT-1001; RC12-TT-1002; RC12-TT-1003; RC12-TT-1004; RC12-TT-1005	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	5	
36	TEMPERATURE TRANSMITTER Service: Hydrocarbon Gas; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½" NPT-M; TRANSMITTER Instrument range: 0-60 degC ; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 225 mm;	1	SET	RC12-TT-0801	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	1	



37	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½" NPT-M; TRANSMITTER Instrument range: 0-100 degC ; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #300, RF; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 220 mm;	1	SET	RC12-TT-0902	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	1	
38	TEMPERATURE TRANSMITTER FOR HVAC SYSTEM Service: Clean Air; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem Material: 316 SS; Process connection: ½" NPT-M; TRANSMITTER Instrument range: 0-60 degC ; Output: 4-20 mA, HART, 2-wire; Accuracy: 0.25 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING IP-44 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; THERMOWELL N/A ACCESSORIES Wall mounting bracket	4	SET	RC12-TT-8501; RC12-TT-8502; RC12-TT-8503; RC12-TT-8505	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	4	
39	TEMPERATURE TRANSMITTER FOR HVAC SYSTEM Service: Clean Air; SENSOR Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem Material: 316 SS; Process connection: ½" NPT-M; TRANSMITTER Instrument range: 0-60 degC ; Output: 4-20 mA, HART, 2-wire; Accuracy: 0.25 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIC, T3, IP-44 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; THERMOWELL N/A ACCESSORIES Wall mounting bracket	1	SET	RC12-TT-8504	RC12-002-TS-IA2-DS-008_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	1	



40	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; <u>SENSOR</u> Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½" NPT-M; <u>TRANSMITTER</u> Instrument range: 0-60 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 %FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; <u>HOUSING</u> Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; <u>THERMOWELL</u> Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 250 mm;	1	SET	RP1-TT-0911	RP1-233-TS-IA2-DS-002_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	1
41	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; <u>SENSOR</u> Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½" NPT-M; <u>TRANSMITTER</u> Instrument range: 0-100 degC; Output: 4-20 mA, HART, 2- wire; Accuracy: At least 0.1 %FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; <u>HOUSING</u> Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; <u>THERMOWELL</u> Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #300, RF; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 220 mm;	1	SET	RP1-TT-0909	RP1-233-TS-IA2-DS-002_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS	1
42	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture <u>TRANSMITTER</u> Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; <u>HOUSING</u> Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	20	SET	RC12-PT-0001; RC12-PT-0002; RC12-PT-0003; RC12-PT-0004; RC12-PT-0005; RC12-PT-0021; RC12-PT-0022; RC12-PT-0023; RC12-PT-0024; RC12-PT-0025; RC12-PT-0031; RC12-PT-0032; RC12-PT-0033; RC12-PT-0034; RC12-PT-0035; RC12-PT-0041; RC12-PT-0042; RC12-PT-0043; RC12-PT-0044; RC12-PT-0045	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	20



43	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-40 Barg (VTA) ; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	4	SET	RC12-PT-1011; RC12-PT-1012; RC12-PT-1401; RC12-PT-0902	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	4	
44	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-4 Barg (VTA) ; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	2	SET	RC12-PT-0201; RC12-PT-1006	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	2	
45	PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure range: 0-160 Barg (VTA) ; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RC12-PT-0802	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	



46	PRESSURE TRANSMITTER Service: Sea Water TRANSMITTER Pressure range: 0-400 Barg (VTA); Element type/material: Diaphragm / Monel; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 6000 psig @200 degF (414 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RC12-PT-0903	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	
47	PRESSURE TRANSMITTER Service: Diesel Fuel Oil TRANSMITTER Pressure range: 0-4 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RC12-PT-6701	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	
48	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-40 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	5	SET	RC12-PZT-1001; RC12-PZT-1002; RC12-PZT-1003; RC12-PZT-1004; RC12-PZT-1005	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	5	



49	PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	6	SET	RC12-PZT-0811; RC12-PZT-0812; RC12-PZT-0813; RC12-PZT-0814; RC12-PZT-0815; RC12-PZT-0901	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	6	
50	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-40 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	3	SET	RC12-PZT-1401; RC12-PZT-0902; RC12-PZT-0220	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	3	
51	PRESSURE TRANSMITTER Service: Sea Water TRANSMITTER Pressure range: 0-400 Barg (VTA); Element type/material: Diaphragm / MONEL; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 6000 psig @ 200 °F (414 barg @ 93 °C); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RC12-PZT-0903	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	



52	PRESSURE TRANSMITTER Service: Instrument Air TRANSMITTER Pressure range: 0-16 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	3	SET	RC12-PZT-0501A; RC12-PZT-0501B; RC12-PZT-0501C	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	3	
53	Pressure Transmitter (Diaphragm Seal): TRANSMITTER Element type: Diaphragm; Pressure range: 0-160 Barg (VTA); Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Safety Integrity Level: N/A; Diaphragm Seal: - Design Type: Welded Design; - Material: 316 SS; - Operating Temperature: 752 DegF (400 DegC) - Connection: ½" NPT-M (Process side) - Capillary Line/ Length: Yes, 316 SS /Min 5 Feet (1.5m) - System Fill Fluids : High –Temperature Silicone Oil Completed with 2-valve manifold and accessories	1	SET	RC12-PT-1501	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1	
54	PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure calibrated range: 0-160 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RP1-PT-0911	RP1-233-TS-IA2-DS-001_0_DATA SHEET FOR PRESSURE INSTRUMENTS		1



55	PRESSURE TRANSMITTER Service: WATER INJECTION TRANSMITTER Pressure calibrated range: 0-250 Barg ; Element type/material: Diaphragm / MONEL; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered: Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: MONEL; Rating: 6000 psig @200 degF (414 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RP1-PT-0910	RP1-233-TS-1A2-DS-001_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1
56	PRESSURE TRANSMITTER Service: HC WATER-OIL LIQUID MIXTURE TRANSMITTER Pressure calibrated range: 0-25 Barg ; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered: Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RP1-PT-0909	RP1-233-TS-1A2-DS-001_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1
57	PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure calibrated range: 0-160 Barg ; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered: Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RP1-PZT-9011	RP1-233-TS-1A2-DS-001_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1



58	PRESSURE TRANSMITTER Service: WATER INJECTION TRANSMITTER Pressure calibrated range: 0-250 Barg ; Element type/material: Diaphragm / MONEL; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: MONEL; Rating: 6000 psig @200 degF (414 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RP1-PZT-0910	RP1-233-TS-1A2-DS-001_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1
59	PRESSURE TRANSMITTER Service: HC WATER-OIL LIQUID MIXTURE TRANSMITTER Pressure calibrated range: 0-25 Barg ; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	1	SET	RP1-PZT-0909	RP1-233-TS-1A2-DS-001_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1
60	DIFFERENTIAL PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure range: 0-2.5 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH 5-Valves Manifold Integral to the Transmitter; Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts; TAG NAME: Datasheet:	1	SET	RC12-PDT-0801	RC12-002-TS-1A2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	1



61	HVAC. DIFFERENTIAL PRESSURE TRANSMITTER Service: Clean Air TRANSMITTER Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP44 min; Explosion proof: N/A; Housing material: 316SS; Completed with accessories.	2	SET	RC12-PDT-8501; RC12-PDT-8502	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	2	
62	HVAC. DIFFERENTIAL PRESSURE TRANSMITTER Service: Clean Air TRANSMITTER Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Housing material: 316SS; Completed with accessories.	8	SET	RC12-PDT-8503; RC12-PDT-8504; RC12-PDT-8505; RC12-PDT-8506; RC12-PDT-8507; RC12-PDT-8508; RC12-PDT-8509; RC12-PDT-8510	RC12-002-TS-IA2-DS-007_0_DATA SHEET FOR PRESSURE INSTRUMENTS	8	
GROUP 3 : Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter ,Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator							
63	D/P FLOWMETER PRIMARY ELEMENT Service: Hydrocarbon Gas ORIFICE FITTING: Type: Single Chamber Orifice Fitting; Process Connections: BW, 2" #900, Sch160, ASTM A216 WCB both ends; ORIFICE: Type: Concentric, square edged; Material: 316 SS; Two (02) orifice plates shall be calculated and provided for overlapped flow ranges as follow: 5 000 - 16 000 Nm3/day (Range A) 15 000 - 45 000 Nm3/day (Range B) <u>C/w</u> Two block valves on taps outlet, 316 SS, ½" NPT, Rating 3000 psig @200 degF (207 bar @ 93 degC)	5	SET	RC12-FE-0811A,B; RC12-FE-0812A,B; RC12-FE-0813A,B; RC12-FE-0814A,B; RC12-FE-0815A,B	RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS	5	
64	D/P FLOWMETER PRIMARY ELEMENT Service: Hydrocarbon Gas ORIFICE FITTING: Type: Dual Chamber Orifice Fitting; Process Connections: Flange 4-inch, #900 RTJ Both Ends; Body Material: ASTM A216 WCB; ORIFICE: Type: Concentric, square edged; Material: 316 SS; Three (03) orifice plates shall be calculated and provided for overlapped flow ranges as follow: 10 000 - 35 000 Nm3/day (Range A) 30 000 - 100 000 Nm3/day (Range B) 80 000 - 250 000 Nm3/day (Range C) <u>C/w</u> Two block valves on taps outlet, 316 SS, ½" NPT, Rating 3000 psig @200 degF (207 bar @ 93 degC)	1	SET	RC12-FE-0810 A,B,C	RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS	1	



65	D/P FLOWMETER DIFFERENTIAL PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Type: Differential Pressure Transmitter; Pressure range: 0 – 1.6 barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: 0.25 % of Span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IIA T3, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH 5-Valves (Block, Vent, Equalize) Manifold Integral to Instrument; Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts	6	SET	RC12-FT-0811; RC12-FT-0812; RC12-FT-0813; RC12-FT-0814; RC12-FT-0815; RC12-FT-0810	RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS	6	
66	Coriolis Flowmeter Assembly General - Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; - Service: Crude Oil; Sensor - Type: Coriolis; - Measurement Function: Mass flow rate, Density; - Process connection: Flange 3" RF #300 - Sensor Housing: 316 SS - Expl. Protection: Ex d IIA T3 (IEC); Transmitter - Type: Advanced Multi-Variable - Instrument range: VTA; - Calibrated range: 0-25000 kg/hr (VTA); - Accuracy: ± 0.1% of Reading - Output: RS-485 Modbus RTU - Optional: Frequency Output, Pulse Output - Software Configuration: Net Oil measurement (NOC) functionality, Total Health Check, Tube Health Check with Dry Verification. - Ex-d, IP-56 as minimum; - Power supply: 24VDC External - Electronic housing: SS316. - Mounting: Remote Mounting. - C/w: interconnecting cable (5m length minimum c/w suitable cable glands for both ends) between sensor and transmitter and 2" stanchion mounting kit (SS316 material)	1	SET	RC12-FT/FE-1401	RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS	1	



67	Coriolis Flowmeter Assembly <u>General</u> - Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; - Service: Gas; <u>Meter</u> - Type: Coriolis; - Measurement Function: Mass flow rate, Density; - Process connection: Flange 3" RF #300 - Sensor Housing: 316 SS - Expl. Protection: Ex d IIA T3 (IEC); <u>Transmitter</u> - Type: Advanced Multi-Variable - Instrument range: VTA; - Calibrated range: 0-4000 Sm3/hr - Accuracy: ± 0.35% of Reading - Output: RS-485 Modbus RTU; - Optional: Frequency Output, Pulse Output - Software Configuration: Total Health Check, Tube Health Check with Dry Verification; - Ex-d, IP-56 as minimum; - Power supply: 24VDC External - Electronic housing: SS316. - Mounting: Remote Mounting. C/w: interconnecting cable (5m length minimum c/w suitable cable glands for both ends) between sensor and transmitter and 2" stanchion mounting kit (SS316 material)	1	SET	RC12-FT/FE-1411	RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS	1	
68	ULTRASONIC FLOWMETER Service: Treated Sea Water <u>TRANSDUCER / SENSOR</u> Type: Single Channel, Clamp-On; Material: 316 SS; Housing: Ex-d, IIA T3, IP-56 min, 316 SS; Mounting base with adjustable and extractable transducer slots; <u>TRANSMITTER</u> Type: Ultrasonic. Transit time, correlation; Instrument Range: VTA; Calibrated Range: 0-1000 m3/d; Output: 4-20 mA HART (active), 2-wire; Accuracy: 4 % of Reading; Power supply: 24 V DC, Loop Powered; Process connection: ½" NPT-M; Safety Level: N/A; <u>HOUSING</u> Type: in Field, pole mounted; Ex-d, IIA T3, IP-56 min, 316 SS; Local LCD meter; <u>COMPLETED WITH</u> Sensor Cables 5 m length each, with interconnection accessories <u>ACCESSORIES</u> Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts	1	SET	RC12-FT-0903	RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS	1	



69	ULTRASONIC FLOWMETER Service: Treated Sea Water TRANSDUCER / SENSOR Type: Single Channel, Clamp-On; Material: 316 SS; Housing: Ex-d, IIA T3, IP-56 min, 316 SS; Mounting base with adjustable and extractable transducer slots; TRANSMITTER Type: Ultrasonic. Transit time, correlation; Instrument Range: VTA; Calibrated Range: 0-600 m3/d;; Output: 4-20 mA HART (active), 2-wire; Accuracy: 4 % of Reading; Power supply: 24 V DC, Loop Powered; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Type: in Field, pole mounted; Ex-d, IIA T3, IP-56 min, 316 SS; Local LCD meter; COMPLETED WITH Sensor Cables 5 m length each, with interconnection accessories ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts	1	SET	RC12-FT-1111	RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS	1	
70	Diesel Fuel Meter Assembly for Fuel Oil System General - Marine tropical environment: Class 1, Zone 2, IIA T3, IP56 as minimum for outdoor area; Body: - Body material: SS316 ; - Process connection: Flange 3" #150 RF; - Meter Type: Oval gear mechanical; - Accuracy: ±0.25% of reading; - Indicator: Zero start; Large Dial register: min. 5 digit; - Meter scale: 1 L;	1	SET	RC12-FI-6701	RC12-002-TS-IA2-DS-010_0_DATA SHEET FOR FLOW INSTRUMENTS	1	
71	PIG INDICATOR Service: Oil/Gas/Water; - Pipe size: 10" #300; - Type: Intrusive, Mechanical Trigger. - Process connection: Flanged 2, #300 RF - Housing Material: 316 SS - IP56 min. - Extendable/Retractable: Required - Online installation/Removal: Required - Isolation Valve: 2" Ball Valve Accessories: - 01 Portable jacking tool	1	SET	RC12-ZI-0901	RC12-002-TS-IA2-DS-012_0_DATA SHEET FOR PIG INDICATOR	1	



75	GAS DETECTOR <u>General</u> Tropical, Marine, Offshore, Open-door. TRANSMITTER Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range: 0-100 % LEL; Response Time: less 7 secs; Accuracy: $\pm 3\%$ LEL (@ 0-50 % LEL), $\pm 5\%$ LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts; Sunshield / Water splashes protection	2	SET	RP1-GD-04-21; RP1-GD-04-22	RP1-233-TS-IA2-DS-004_0_Datasheet for Gas Detector	2
76	FLAME DETECTOR Tropical, Marine, Offshore, Open-door TRANSMITTER Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Sensitivity: 0.1 m2 n-Neptane pan fire at 30 m; Response Time: up to 5 secs; Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis; Analog output: 4- 20mA current source, 3 wires, HART; Power supply: 24 VDC nominal; Fault Monitored: Electronics circuitry, Sensors, Optic cleanness; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Bracket (Vertical / Horizontal Tilt) for 2-inch pipe stand, 316 SS, c/w bolts and nuts;	24	SET	RC12-FD-1001; RC12-FD-1002; RC12-FD-1003; RC12-FD-2001; RC12-FD-2002; RC12-FD-2003; RC12-FD-2004; RC12-FD-2005; RC12-FD-2006; RC12-FD-2007; RC12-FD-2008; RC12-FD-2009; RC12-FD-2010; RC12-FD-2011; RC12-FD-3001; RC12-FD-3002; RC12-FD-3003; RC12-FD-3004; RC12-FD-3005; RC12-FD-3006; RC12-FD-3007; RC12-FD-3008; RC12-FD-xxxx; RC12-FD-xxxx	RC12-002-TS-IA2-DS-004_0_Datasheet for Flame Detector.	24
77	SMOKE DETECTOR Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Base	12	SET	RC12-SD-2101; RC12-SD-2102; RC12-SD-2103; RC12-SD-2104; RC12-SD-2105; RC12-SD-2108; RC12-SD-2109; RC12-SD-2110; RC12-SD-2111; RC12-SD-4101; RC12-SD-xxx; RC12-SD-xxx	RC12-002-TS-IA2-DS-005_0_Datasheet for Smoke Detector	12
78	SMOKE DETECTOR Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, REMOTE; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Base; Remote Status Indicator;	3	SET	RC12-SD-2106; RC12-SD-2107; RC12-SD-xxx	RC12-002-TS-IA2-DS-005_0_Datasheet for Smoke Detector	3



79	SMOKE DETECTOR Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: Ex d IIC T3 (IEC), IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; <u>ACCESSORIES</u> Mounting Base	3	SET	RC12-SD-3101; RC12-SD-3102; RC12-SD-xxx	RC12-002-TS-IA2-DS-005_0_Datasheet for Smoke Detector	3	
80	HEAT DETECTOR Tropical, Marine, Offshore, In-door. Type: Rate of Rise ; Ingress Protection: min IP 44 ; Sensitivity: minimum 01degC/min; Output: 2 wires, Current output; Power supply: 24 VDC; Detector material: Polycarbonate; Sensor life: Minimum 2 years Setting temperature: 60 degC Electrical connection: 1/2" NPT-F	3	SET	RC12-HD-2101; RC12-HD-2102; RC12-HD-xxx	RC12-002-TS-IA2-DS-006_0_Datasheet for Heat Detector	3	
81	TEST/CALIBRATION KIT FOR HYDROCARBON GAS DETECTORS 6D Cylinder Type, Calibration Gas Methane, 103 liters, 1000psig, 50% LEL CH4 (2.5% CH4), balance in air c/w Veriflow Gas Regulator, 0.5L/m	1	SET			1	
82	TEST/CALIBRATION KIT FOR HYDROGEN GAS DETECTORS 6D Cylinder Type, Calibration Gas Hydrogen, 103 liters, 1000psig, 50% LEL H2 (2% H2), balance in air c/w Veriflow Gas Regulator, 0.5L/m	1	SET			1	
83	TEST/CALIBRATION KIT FOR FLAME DETECTORS According to Manufacturer Standard	1	SET			1	
84	TEST/CALIBRATION KIT FOR SMOKE DETECTORS According to Manufacturer Standard	1	SET			1	
85	TEST/CALIBRATION KIT FOR HEAT DETECTORS According to Manufacturer Standard	1	SET			1	
86	Abandon Platform Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Push button latching key reset; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: SIL2; <u>HOUSING</u> Protection: Ex d IIA T3, IP 56 min; Material: 316 SS; Color: BLUE <u>ACCESSORIES</u> Wall Mounting Bracket, 316 SS	5	SET	RC12-APS-1001; RC12-APS-1002; RC12-APS-3001; RC12-APS-4001; RC12-APS-xxxx	RC12-002-TS-IA2-DS-002_0_Datasheet for Pushbuttons	5	



87	ESD Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Push button latching key reset; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: SIL2; HOUSING Protection: Ex d IIA T3, IP 56 min; Material: 316 SS; Color: YELLOW ACCESSORIES Wall Mounting Bracket,	8	SET	RC12-ESD-1001; RC12-ESD-1002; RC12-ESD-2001; RC12-ESD-2002; RC12-ESD-2003; RC12-ESD-3001; RC12-ESD-4001; RC12-ESD-xxxx	RC12-002-TS-IA2-DS-002_0_Datasheet for Pushbuttons	8	
88	Manual Call Point Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Breaking glass lift flap press button latching type; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: N/A; HOUSING Protection: Ex d IIA T3, IP 56 min; Material: 316 SS or GRP; Color: RED; ACCESSORIES Wall Mounting Bracket, 316 SS	8	SET	RC12-MCP-1001; RC12-MCP-1002; RC12-MCP-2001; RC12-MCP-2002; RC12-MCP-2003; RC12-MCP-3001; RC12-MCP-4001; RC12-MCP-xxxx	RC12-002-TS-IA2-DS-002_0_Datasheet for Pushbuttons	8	

NOTES:
This document is summarized from: RC12-002-TS-IA2-RQ-003 và RP1-233-TS-IA2-RQ-001

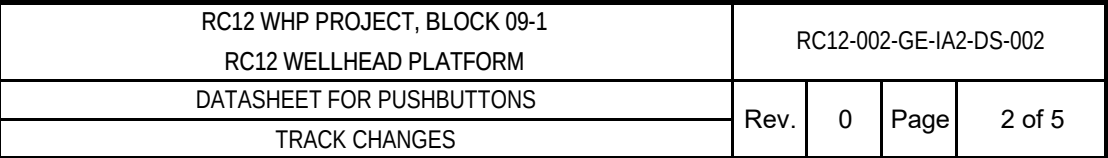




PHASE : DETAILED ENGINEERING

			CONTROLLED		
				Signed by: Nguyễn Thị Thu Trang Date: 22/05/2025 15:13:09 Certified by: Vietsovpetro CA	Signed by: Bùi Hồng Dương Date: 23/05/2025 07:19:16 Certified by: Vietsovpetro CA
			DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
			Signed by: Đỗ Quốc Huy Date: 22/05/2025 14:12:20 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 22/05/2025 14:13:19 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.05.2025 15:07:55 Certified by: Vietsovpetro CA
0	IFA	05.2025			
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.



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	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-002			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PUSHBUTTONS				Rev.	0	Page	3 of 5
ABANDON PUSHBUTTONS								
OPERATING CONDITIONS	1	Environment			Tropical, Marine, Offshore			
	2	Area			Open-door, exposed to sun, wind, rainfall, water splashes			
	3	Ambient Temp.	Rel. Humidity	21 - 39 degC	Aver. 80 % (MAX 100 %)			
	4	Wind Velocity	Rainfall	Aver. 8.5 m/s (MAX 45.6 m/s)	up to 50 mm/hr			
	5	Hazardous Area Classification			Zone 2 IIA T3			
PUSHBUTTON	6	Type	Qty	Emergency Pushbutton with latching key, lift flap			5	
	7	EOL Resistor	Status Indicator	YES			YES, LED NOTE 2	
	8	Switch Form	Rating	2 x SPDT			2 A (min), 24 V DC / 230 V AC	
	9	Terminals Size	Type	Qty	2.5 mm2	Screw	MfrStd	
	10	Safety Integrity Level			N/A			
	11							
HOUSING	12	Housing material	Color	316 SS or GRP			BLUE	
	13	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F			plugged NOTE 3	
	14	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)			IP 56 min	
	15							
ACCESSORIES	16	Mounting			YES, Wall Mounting, 316 SS			
	17							
PURCHASE	18	Manufacturer			VTA			
	19	Model			VTA			
No	TAG NUMBER		LAYOUT DWG. (RC12-002-__)		LOCATION		COLOR	NOTE
1	RC12-APS-1001		TS-IA2-LD-002		Sub-Main Deck. Muster Area		BLUE	
2	RC12-APS-1002		TS-IA2-LD-002		Sub-Main Deck. Muster Area		BLUE	
3	RC12-APS-3001		TS-IA2-LD-002		Platform Deck. Escape Route. Staircase to Helideck		BLUE	
4	RC12-APS-4001		TS-IA2-LD-002		Upper Deck		BLUE	
5	RC12-APS-xxxx		-		-		BLUE	
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Preferred Option. Not mandatory. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-002			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PUSHBUTTONS				Rev.	0	Page	4 of 5
EMERGENCY SHUTDOWN PUSHBUTTONS								
OPERATING CONDITIONS	1	Environment			Tropical, Marine, Offshore			
	2	Area			Open-door, exposed to sun, wind, rainfall, water splashes			
	3	Ambient Temp.	Rel. Humidity	21 - 39 degC	Aver. 80 % (MAX 100 %)			
	4	Wind Velocity	Rainfall	Aver. 8.5 m/s (MAX 45.6 m/s)	up to 50 mm/hr			
	5	Hazardous Area Classification			Zone 2 IIA T3			
PUSHBUTTON	6	Type	Qty	Emergency Pushbutton with latching key, lift flap			8	
	7	EOL Resistor	Status Indicator	YES		YES, LED NOTE 2		
	8	Switch Form	Rating	2 x SPDT		2 A (min), 24 V DC / 230 V AC		
	9	Terminals Size	Type	Qty	2.5 mm2	Screw	MfrStd	
	10	Safety Integrity Level			N/A			
	11							
HOUSING	12	Housing material	Color	316 SS or GRP		YELLOW		
	13	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F		plugged NOTE 3		
	14	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	15							
ACCESSORIES	16	Mounting			YES, Wall Mounting, 316 SS			
	17							
PURCHASE	18	Manufacturer			VTA			
	19	Model			VTA			
No	TAG NUMBER		LAYOUT DWG. (RC12-002-___)		LOCATION		COLOR	NOTE
1	RC12-ESD-1001		TS-IA2-LD-002		Cellar Deck		YELLOW	
2	RC12-ESD-1002		TS-IA2-LD-002		Cellar Deck		YELLOW	
3	RC12-ESD-2001		TS-IA2-LD-002		Main Deck		YELLOW	
4	RC12-ESD-2002		TS-IA2-LD-002		Main Deck		YELLOW	
5	RC12-ESD-2003		TS-IA2-LD-002		Main Deck		YELLOW	
6	RC12-ESD-3001		TS-IA2-LD-002		Platform Deck		YELLOW	
7	RC12-ESD-4001		TS-IA2-LD-002		Upper Deck		YELLOW	
8	RC12-ESD-xxxx		-		-		YELLOW	
9								
10								
11								
12								
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15								
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17								
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Preferred Option. Not mandatory. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-002			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PUSHBUTTONS				Rev.	0	Page	5 of 5
MANUAL CALL POINT PUSHBUTTONS								
OPERATING CONDITIONS	1	Environment			Tropical, Marine, Offshore			
	2	Area			Open-door, exposed to sun, wind, rainfall, water splashes			
	3	Ambient Temp.	Rel. Humidity	21 - 39 degC	Aver. 80 % (MAX 100 %)			
	4	Wind Velocity	Rainfall	Aver. 8.5 m/s (MAX 45.6 m/s)	up to 50 mm/hr			
	5	Hazardous Area Classification			Zone 2 IIA T3			
PUSHBUTTON	6	Type	Qty	Emergency Pushbutton, latching type, lift flap			8	
	7	EOL Resistor	Status Indicator	YES			YES, LED NOTE 2	
	8	Switch Form	Rating	2 x SPDT			2 A (min), 24 V DC / 230 V AC	
	9	Terminals Size	Type	Qty	2.5 mm2	Screw	MfrStd	
	10	Safety Integrity Level			N/A			
	11							
HOUSING	12	Housing material	Color	316 SS or GRP			RED	
	13	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F			plugged NOTE 3	
	14	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)			IP 56 min	
	15							
ACCESSORIES	16	Mounting			YES, Wall Mounting, 316 SS			
	17							
PURCHASE	18	Manufacturer			VTA			
	19	Model			VTA			
No	TAG NUMBER		LAYOUT DWG. (RC12-002-___)		LOCATION		COLOR	NOTE
1	RC12-MCP-1001		TS-IA2-LD-002		Cellar Deck		RED	
2	RC12-MCP-1002		TS-IA2-LD-002		Cellar Deck		RED	
3	RC12-MCP-2001		TS-IA2-LD-002		Main Deck		RED	
4	RC12-MCP-2002		TS-IA2-LD-002		Main Deck		RED	
5	RC12-MCP-2003		TS-IA2-LD-002		Main Deck		RED	
6	RC12-MCP-3001		TS-IA2-LD-002		Platform Deck		RED	
7	RC12-MCP-4001		TS-IA2-LD-002		Upper Deck		RED	
8	RC12-MCP-xxxx		-		-		RED	
9								
10								
11								
12								
13								
14								
15								
16								
17								
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Preferred Option. Not mandatory. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								





RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS



PROJECT : RC12 WHP PROJECT, BLOCK 09-1

SUB-PROJECT : RC12 WELLHEAD PLATFORM

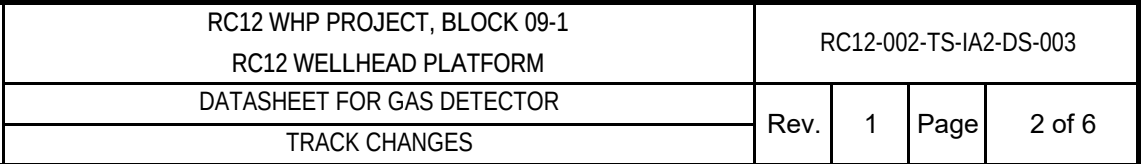
DOCUMENT TITLE : DATASHEET FOR GAS DETECTOR

DOCUMENT NO. : RC12-002-TS-IA2-DS-003

PHASE : DETAILED ENGINEERING

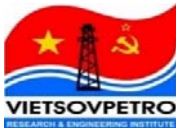
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			DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
1	IFA	29.05.25	Signed by: Đỗ Quốc Huy Date: 30/05/2025 10:56:33 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 30/05/2025 11:16:27 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 30.05.2025 13:40:35 Certified by: Vietsovpetro CA
0	IFA	22.05.25			
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.



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	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-003				
	RC12 WELLHEAD PLATFORM								
	DATASHEET FOR GAS DETECTOR				Rev.	1	Page	3 of 6	
HYDROCARBON GAS DETECTORS									
GENERAL DATA	1	Tag Number	Qty.	See NEXT PAGE					38
	2	Plan / Layout DWG.	See NEXT PAGE						
	3	Location	See NEXT PAGE						
	4	Hazardous Area Classification	Class 1, Zone 1 IIA T3						
	5								
OPERATING CONDITIONS	6	Environment	Tropical, Marine, Offshore						
	7	Area	Open-door, exposed to sun, wind, rainfall, water splashes						
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC		Aver. 80 % (MAX 100 %)			
	9	Wind Velocity	Rainfall	Aver. 8.5 m/s (MAX 45.6 m/s)		up to 50 mm/hr			
	10								
SENSOR AND TRANSMITTER	13	Accuracy	± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL)						
	14	Power Supply	24 V DC nominal (± 10 % floating)						
	15	Output Signal	4-20 mA (stepped) ,source mode, HART, 3-wires						
	16	Output Relays	Quantity	N/A					
	17	Relays	Form	Rating					
	18	Electrical Terminals	MfrStd according Output Signal						
	19	Wiring Size	up to 2.5 mm2						
	20	Optics	Self-compensated or Heated (preferred)						
	21	Status Indicator	Sensor Life	YES (LED)		5 years and more			
	22	Safety Integrity Level	SIL2						
HOUSING	25	Housing material	316 SS						
	26	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F		plugged			
	27	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min			
	28								
	29								
	30								
ACCESSORIES	31	Weather Protector	YES, (Sunshield / Water splashes protection)						
	32	Junction Box	MfrStd (if need to meet above listed requirements)						
	33	Mounting bracket	YES, for 2-inch pole stand, 316 SS						
PURCHASE	34	Manufacturer	VTA						
	35	Model	VTA						
	36								
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice									
NOTES 1. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. One (01) hydrocarbon gas calibration and test Kit shall be supplied.									



		RC12 WHP PROJECT, BLOCK 09-1			RC12-002-TS-IA2-DS-003			
		RC12 WELLHEAD PLATFORM			Rev.	1	Page	4 of 6
		DATASHEET FOR GAS DETECTOR						
		LIST OF HYDROCARBON GAS DETECTORS						
No	TAG	Layout DWG (RC12-002-___)	LOCATION				NOTE	
1	RC12-GD-1001	TS-IA2-LD-002	Cellar Deck					
2	RC12-GD-1002	TS-IA2-LD-002	Cellar Deck					
3	RC12-GD-1003	TS-IA2-LD-002	Cellar Deck					
4	RC12-GD-1004	TS-IA2-LD-002	Cellar Deck					
5	RC12-GD-2001	TS-IA2-LD-002	Main Deck					
6	RC12-GD-2002	TS-IA2-LD-002	Main Deck					
7	RC12-GD-2003	TS-IA2-LD-002	Main Deck					
8	RC12-GD-2004	TS-IA2-LD-002	Main Deck					
9	RC12-GD-2005	TS-IA2-LD-002	Main Deck					
10	RC12-GD-2006	TS-IA2-LD-002	Main Deck					
11	RC12-GD-2007	TS-IA2-LD-002	Main Deck					
12	RC12-GD-2008	TS-IA2-LD-002	Main Deck					
13	RC12-GD-2009	TS-IA2-LD-002	Main Deck					
14	RC12-GD-2010	TS-IA2-LD-002	Main Deck					
15	RC12-GD-2011	TS-IA2-LD-002	Main Deck					
16	RC12-GD-2012	TS-IA2-LD-002	Main Deck					
17	RC12-GD-2013	TS-IA2-LD-002	Main Deck					
18	RC12-GD-2101	TS-IA2-LD-002	Shelter. E&I Room				1,2	
19	RC12-GD-2102	TS-IA2-LD-002	Shelter. E&I Room				1,2	
20	RC12-GD-2103	TS-IA2-LD-002	Shelter. Transformer Room				1	
21	RC12-GD-2104	TS-IA2-LD-002	Shelter. Transformer Room				1	
22	RC12-GD-2105	TS-IA2-LD-002	Compressor Room. Air Intake				1	
23	RC12-GD-2106	TS-IA2-LD-002	Compressor Room. Air Intake				1	
24	RC12-GD-3001	TS-IA2-LD-002	Platform Deck					
25	RC12-GD-3002	TS-IA2-LD-002	Platform Deck					
26	RC12-GD-3003	TS-IA2-LD-002	Platform Deck					
27	RC12-GD-3004	TS-IA2-LD-002	Platform Deck					
28	RC12-GD-3005	TS-IA2-LD-002	Platform Deck					
29	RC12-GD-3006	TS-IA2-LD-002	Platform Deck					
30	RC12-GD-3007	TS-IA2-LD-002	Platform Deck					
31	RC12-GD-3008	TS-IA2-LD-002	Platform Deck					
32	RC12-GD-3009	TS-IA2-LD-002	Platform Deck					
33	RC12-GD-3010	TS-IA2-LD-002	Platform Deck					
34	RC12-GD-3104	TS-IA2-LD-002	Shelter. Battery Room. Air Intake				1	
35	RC12-GD-3105	TS-IA2-LD-002	Shelter. Battery Room. Air Intake				1	
36	RC12-GD-SPARE							
37	RC12-GD-SPARE							
38	RC12-GD-SPARE							
39								

NOTES

1. Safe Area

2. In-door with HVAC controlled enviroment.



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-003			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR GAS DETECTOR				Rev.	1	Page	5 of 6
GAS DETECTORS FOR HVAC AIR INTAKE								

GENERAL DATA	1	Tag Number	Qty.	See Table Below	4
	2	Plan / Layout DWG.	See Table Below		
	3	Location	See Table Below		
	4	Hazardous Area Classification	Safe Area		
	5				
OPERATING CONDITIONS	6	Environment	Tropical, Marine, Offshore		
	7	Area	HVAC Duct		
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC	Aver. 80 % (MAX 100 %)
	9	Wind Velocity	Rainfall	up to 2 m/s	
	10				
SENSOR AND TRANSMITTER	13	Accuracy	± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL)		
	14	Power Supply	24 V DC nominal (± 10 % floating)		
	15	Output Signal	4-20 mA (stepped) ,source mode, HART, 3-wires		
	16	Output Relays	Quantity	N/A	
	17	Relays Form	Rating		
	18	Electrical Terminals	MfrStd according Output Signal		
	19	Wiring Size	up to 2.5 mm2		
	20	Optics	Self-compensated or Heated (preferred)		
	21	Status Indicator	Sensor Life	YES (LED)	5 years and more
	22	Safety Integrity Level	SIL2		
HOUSING	25	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F	plugged
	26	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min
	27				
ACCESSORIES	28	Weather Protector	N/A		
	29	Junction Box	MfrStd (if need to meet above listed requirements)		
	30	Mounting bracket	YES, for HVAC Rectangular Duct, 316 SS		
PURCHASE	31	Manufacturer	VTA		
	32	Model	VTA		
	33				

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

No	TAG	Layout DWG (RC12-002-___)	LOCATION	NOTE
1	RC12-GD-3101	TS-IA2-LD-002	Shelter. HVAC Air Intake.	
2	RC12-GD-3102	TS-IA2-LD-002	Shelter. HVAC Air Intake.	
3	RC12-GD-3103	TS-IA2-LD-002	Shelter. HVAC Air Intake.	
4	RC12-GD-xxxx	-	-	

NOTES

- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
- Permanent fitted SS Name Plate shall be provided with standard specifications.



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-003			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR GAS DETECTOR				Rev.	1	Page	6 of 6
HYDROGEN GAS DETECTORS								
GENERAL DATA	1	Tag Number	Qty.	RC12-GD-3106, RC12-GD-3107, RC12-GD-xxxx				3
	2	Plan / Layout DWG.	RC12-002-TS-IA2-LD-002					
	3	Location	PlatformDeck. Battery Room.					
	4	Hazardous Area Classification	Class 1, Zone 2 IIC T3					
	5							
OPERATING CONDITIONS	6	Environment	Tropical, Marine, Offshore					
	7	Area	In-door					
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC		Aver. 80 % (MAX 100 %)		
	9	Wind Velocity	Rainfall					
	10							
SENSOR AND TRANSMITTER	13	Accuracy	± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL)					
	14	Power Supply	24 V DC nominal (± 10 % floating)					
	15	Output Signal	4-20 mA (stepped) ,source mode, HART, 3-wires					
	16	Output Relays	Quantity	N/A				
	17	Relays	Form	Rating				
	18	Electrical Terminals	MfrStd according Output Signal					
	19	Wiring Size	up to 2.5 mm2					
	20	Optics	Self-compensated or Heated (preferred)					
	21	Status Indicator	Sensor Life	YES (LED)		5 years and more		
	22	Safety Integrity Level	SIL2					
HOUSING	25	Housing material	316 SS					
	26	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F		plugged		
	27	Expl. Protection	Ingress Protec.	Ex d IIC T3 (IEC)		IP 56 min		
	28							
ACCESSORIES	29	Weather Protector	N/A					
	30	Junction Box	MfrStd (if need to meet above listed requirements)					
	31	Mounting bracket	YES, for 2-inch pole stand, 316 SS					
PURCHASE	32	Manufacturer	VTA					
	33	Model	VTA					
	34							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIC T3 hazardous area for spare cable entry. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. One (01) hydrogen gas calibration and test Kit shall be supplied.								





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PROJECT : RC12 WHP PROJECT, BLOCK 09-1

SUB-PROJECT : RC12 WELLHEAD PLATFORM

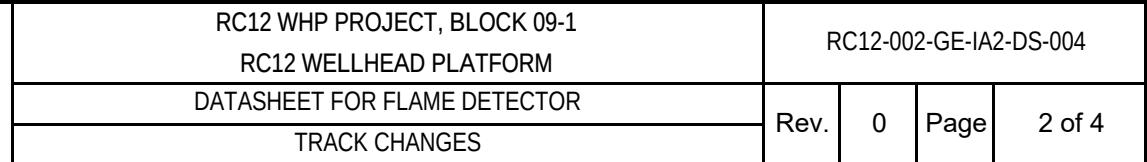
DOCUMENT TITLE : DATASHEET FOR FLAME DETECTOR

DOCUMENT NO. : RC12-002-GE-IA2-DS-004

PHASE : DETAILED ENGINEERING

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			Signed by: Nguyễn Thị Thu Trang Date: 22/05/2025 15:13:11 Certified by: Vietsovpetro CA DC: N.T.T.TRANG	Signed by: Bùi Hồng Dương Date: 23/05/2025 07:19:18 Certified by: Vietsovpetro CA ENG.MGR: B.H.DUONG	Signed by: Trần Duy Hải Date: 23/05/2025 10:54:56 Certified by: Vietsovpetro CA PRO.MGR: T.D.HAI
			Signed by: Đỗ Quốc Huy Date: 22/05/2025 14:12:22 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 22/05/2025 14:13:20 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.05.2025 15:07:57 Certified by: Vietsovpetro CA
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REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.





	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-004			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR FLAME DETECTOR				Rev.	0	Page	3 of 4
GENERAL DATA	1	Tag Number	Qty.	See NEXT PAGE				24
	2	Plan / Layout DWG.		See NEXT PAGE				
	3	Location		See NEXT PAGE				
	4	Hazardous Area Classification		Class 1, Zone 1 IIA T3				
	5							
OPERATING CONDITIONS	6	Environment		Tropical, Marine, Offshore				
	7	Area		Open-door, exposed to sun, wind, rainfall, water splashes				
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC		Aver. 80 % (MAX 100 %)		
	9	Wind Velocity	Rainfall	Aver. 8.5 m/s (MAX 45.6 m/s)		up to 50 mm/hr		
	10							
SENSOR AND TRANSMITTER	11	Sensor Type		Triple Infrared (3IR) / Multispectrum Infrared (MSIR)				
	12	Sensitivity	Response Time	0.1 m2 n-Neptane pan fire at 30 m		up to 5 sec		
	13	Field of View		Horizontally ≥ 90 deg. Vertically ≥ 75 deg				
	14	Power Supply		24 V DC nominal (± 10 % floating)				
	15	Output Signal		0-20 mA (stepped) ,source mode, HART, 3-wires				
	16	Output Relays	Quantity	N/A				
	17	Relays Form	Rating					
	18	Electrical Terminals		MfrStd according Output Signal / Relay configuration				
	19	Wiring Size		up to 2.5 mm2				
	20	Built-in-Test		Automatic and Manual				
	21	Status Indicator		YES (LED)				
	22	Safety Integrity Level		SIL2				
	23							
	HOUSING	25	Housing material		316 SS NOTE 1			
26		Electrical Conn.	Cable Gland	2 x 1/2" NPT-F (VTA)		plugged NOTE 2		
27		Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
28								
29								
30								
ACCESSORIES	31	Weather Protector		YES, (Shield / Cover)				
	32	Air Shield		NO				
	33	Mounting bracket		YES, for 2-inch pole-stand, Vertical / Horizontal Tilt, 316 SS				
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. 3. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1		RC12-002-GE-IA2-DS-004		
	RC12 WELLHEAD PLATFORM		Rev.	0	Page
	DATASHEET FOR FLAME DETECTOR				
	LIST OF FLAME DETECTORS		4 of 4		

No	TAG	Layout DWG (RC12-002-___)	LOCATION	NOTE
1	RC12-FD-1001	TS-IA2-LD-002	Sub Main Deck	
2	RC12-FD-1002	TS-IA2-LD-002	Sub Main Deck	
3	RC12-FD-1003	TS-IA2-LD-002	Sub Main Deck	
4	RC12-FD-2001	TS-IA2-LD-002	Main Deck	
5	RC12-FD-2002	TS-IA2-LD-002	Main Deck	
6	RC12-FD-2003	TS-IA2-LD-002	Main Deck	
7	RC12-FD-2004	TS-IA2-LD-002	Main Deck	
8	RC12-FD-2005	TS-IA2-LD-002	Main Deck	
9	RC12-FD-2006	TS-IA2-LD-002	Main Deck	
10	RC12-FD-2007	TS-IA2-LD-002	Main Deck	
11	RC12-FD-2008	TS-IA2-LD-002	Main Deck	
12	RC12-FD-2009	TS-IA2-LD-002	Main Deck	
13	RC12-FD-2010	TS-IA2-LD-002	Main Deck	
14	RC12-FD-2011	TS-IA2-LD-002	Main Deck	
15	RC12-FD-3001	TS-IA2-LD-002	Platform Deck	
16	RC12-FD-3002	TS-IA2-LD-002	Platform Deck	
17	RC12-FD-3003	TS-IA2-LD-002	Platform Deck	
18	RC12-FD-3004	TS-IA2-LD-002	Platform Deck	
19	RC12-FD-3005	TS-IA2-LD-002	Platform Deck	
20	RC12-FD-3006	TS-IA2-LD-002	Platform Deck	
21	RC12-FD-3007	TS-IA2-LD-002	Upper Deck	
22	RC12-FD-3008	TS-IA2-LD-002	Upper Deck	
23	RC12-FD-SPARE			
24	RC12-FD-SPARE			
25				
26				
27				
28				

NOTES





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PROJECT : RC12 WHP PROJECT, BLOCK 09-1

SUB-PROJECT : RC12 WELLHEAD PLATFORM

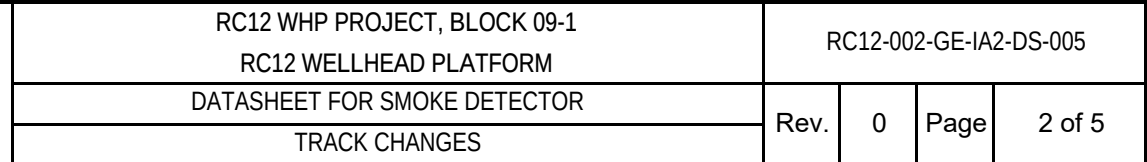
DOCUMENT TITLE : DATASHEET FOR SMOKE DETECTOR

DOCUMENT NO. : RC12-002-GE-IA2-DS-005

PHASE : DETAILED ENGINEERING

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			DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
			Signed by: Đỗ Quốc Huy Date: 22/05/2025 14:12:21 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 22/05/2025 14:13:20 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.05.2025 15:07:56 Certified by: Vietsovpetro CA
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REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.





	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-005				
	RC12 WELLHEAD PLATFORM								
DATASHEET FOR SMOKE DETECTOR						Rev.	0	Page	3 of 5

OPERATING CONDITIONS	1	Environment		Tropical, Marine, Offshore					
	2	Area		In-door, HVAC controlled					
	3	Ambient Temp.	Rel. Humidity	21 - 24 degC			45-55 % NOTE 2		
	4	Wind Velocity	Rainfall						
	5	Hazardous Area Classification		Safe Area					
DETECTOR	6	Type	Qty	Optical, Photoelectric				12	
	7	Sampling Frequency		Once every 4 second or Better					
	8	Status Indicator	Type	YES, LED			Built-in, MfrStd		
	9	Supply	Wiring	24 V DC			Two-wire, polarity insensitive		
	10	Sensor Life		Minimum 2 years					
	11	Safety Integrity Level		N/A					
HOUSING	12	Housing material	Color	Polycarbonate			WHITE or MfrStd		
	13	Electrical Conn.	Cable Gland	1/2" NPT-F or MfrStd			YES		
	14	Expl. Protection	Ingress Protec.	N/A			IP 44 min		
	15								
ACCESSORIES	16	Mounting Base		YES					
	17	Remote Status Indicator		N/A					
PURCHASE	18	Manufacturer		VTA					
	19	Model		VTA					

No	TAG NUMBER	LAYOUT DWG. (RC12-002-__)	LOCATION	NOTE
1	RC12-SD-2101	TS-IA2-LD-002	Shelter. Sanitary Room	
2	RC12-SD-2102	TS-IA2-LD-002	Shelter. Living Room	
3	RC12-SD-2103	TS-IA2-LD-002	Shelter. Living Room	
4	RC12-SD-2104	TS-IA2-LD-002	Shelter. EIR Room	
5	RC12-SD-2105	TS-IA2-LD-002	Shelter. EIR Room	
6	RC12-SD-2108	TS-IA2-LD-002	Shelter. Transformer Room	
7	RC12-SD-2109	TS-IA2-LD-002	Shelter. Transformer Room	
8	RC12-SD-2110	TS-IA2-LD-002	Shelter. Air Compressor Room	
9	RC12-SD-2111	TS-IA2-LD-002	Shelter. Air Compressor Room	
10	RC12-SD-4101	TS-IA2-LD-002	Crane's Cabin	
11	RC12-SD-xxxx			
12	RC12-SD-xxxx			
13				
14				
15				

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

- Permanent fitted SS Name Plate shall be provided with standard specifications.
- Shall be able to operate at 40 degC, humidity 80% in Case of HVAC failure



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-005			
	RC12 WELLHEAD PLATFORM							
DATASHEET FOR SMOKE DETECTOR					Rev.	0	Page	4 of 5

OPERATING CONDITIONS	1	Environment		Tropical, Marine, Offshore				
	2	Area		In-door, HVAC controlled				
	3	Ambient Temp.	Rel. Humidity	21 - 24 degC		45-55 %		NOTE 2
	4	Wind Velocity	Rainfall					
	5	Hazardous Area Classification		Safe Area				
DETECTOR	6	Type	Qty	Optical, Photoelectric				3
	7	Sampling Frequency		Once every 4 second or Better				
	8	Status Indicator	Type	YES, LED		REMOTE, MfrStd		
	9	Supply	Wiring	24 V DC		Two-wire, polarity insensitive		
	10	Sensor Life		Minimum 2 years				
	11	Safety Integrity Level		N/A				
HOUSING	12	Housing material	Color	Polycarbonate		WHITE or MfrStd		
	13	Electrical Conn.	Cable Gland	1/2" NPT-F or MfrStd		YES		
	14	Expl. Protection	Ingress Protec.	N/A		IP 44 min		
	15							
ACCESSORIES	16	Mounting Base		YES				
	17	Remote Status Indicator		YES				
PURCHASE	18	Manufacturer		VTA				
	19	Model		VTA				

No	TAG NUMBER	LAYOUT DWG. (RC12-002-__)	LOCATION	NOTE
1	RC12-SD-2106	# TS-IA2-LD-002	Shelter. Electrical & Instrumentation Room. Raised Floor	
2	RC12-SD-2107	#TS-IA2-LD-002	Shelter. Electrical & Instrumentation Room. Raised Floor	
3	RC12-SD-xxxx			
4				
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16				

VTC - Vendor to Conform / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

- Permanent fitted SS Name Plate shall be provided with standard specifications.
- Shall be able to operate at 40 degC, humidity 80% in Case of HVAC failure



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-005				
	RC12 WELLHEAD PLATFORM								
DATASHEET FOR SMOKE DETECTOR						Rev.	0	Page	5 of 5

OPERATING CONDITIONS	1	Environment		Tropical, Marine, Offshore					
	2	Area		In-door, HVAC controlled					
	3	Ambient Temp.	Rel. Humidity	21 - 24 degC			45-55 % NOTE 2		
	4	Wind Velocity	Rainfall						
	5	Hazardous Area Classification		Zone 2, IIC T3					
DETECTOR	6	Type	Qty	Optical, Photoelectric				3	
	7	Sampling Frequency		Once every 4 second or Better					
	8	Status Indicator	Type	YES, LED			Built-in, MfrStd		
	9	Supply	Wiring	24 V DC			Two-wire, polarity insensitive		
	10	Sensor Life		Minimum 2 years					
	11	Safety Integrity Level		N/A					
HOUSING	12	Housing material	Color	MfrStd			MfrStd		
	13	Electrical Conn.	Cable Gland	1/2" NPT-F or MfrStd			YES		
	14	Expl. Protection	Ingress Protec.	Ex ia IIC T3 (IEC) (NOTE 3)			IP 44 min		
	15								
ACCESSORIES	16	Mounting Base		YES					
	17	Remote Status Indicator		N/A					
PURCHASE	18	Manufacturer		VTA					
	19	Model		VTA					

No	TAG NUMBER	LAYOUT DWG. (RC12-002-___)	LOCATION	NOTE
1	RC12-SD-3101	TS-IA2-LD-002	Shelter. Battery Room	
2	RC12-SD-3102	TS-IA2-LD-002	Shelter. Battery Room	
3	RC12-SD-xxxx			
4				
5				
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14				
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16				

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)
MfrStd - According to Manufacturer Standard or Practice

NOTES
1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Shall be able to operate at 40 degC, humidity 80% in Case of HVAC failure
3. "Ex ia" type protection shall be completed with an appropriate IS Safety Barrier.





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PROJECT : RC12 WHP PROJECT, BLOCK 09-1

SUB-PROJECT : RC12 WELLHEAD PLATFORM

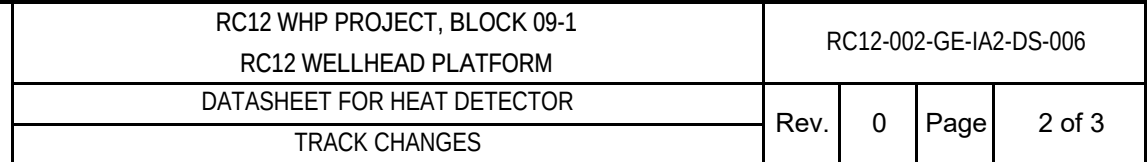
DOCUMENT TITLE : DATASHEET FOR HEAT DETECTOR

DOCUMENT NO. : RC12-002-GE-IA2-DS-006

PHASE : DETAILED ENGINEERING

			Signed by: Nguyễn Thị Thu Trang Date: 22/05/2025 15:13:08 Certified by: Vietsovpetro CA	Signed by: Bùi Hồng Dương Date: 23/05/2025 07:19:14 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 23/05/2025 10:54:51 Certified by: Vietsovpetro CA
			DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
			Signed by: Đỗ Quốc Huy Date: 22/05/2025 14:12:20 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 22/05/2025 14:13:18 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.05.2025 15:07:54 Certified by: Vietsovpetro CA
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REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.





	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-GE-IA2-DS-006				
	RC12 WELLHEAD PLATFORM								
DATASHEET FOR HEAT DETECTOR						Rev.	0	Page	3 of 3
OPERATING CONDITIONS	1	Environment			Tropical, Marine, Offshore				
	2	Area			In-door				
	3	Ambient Temp.	Rel. Humidity	19 ~ 35 degC		5% to 95% RH, non-condensing			
	4	Wind Velocity	Rainfall						
	5	Hazardous Area Classification			Safe Area				
DETECTOR	6	Type	Qty	Rate of Rise		3			
	7	Sampling Frequency			Once every 4 second or Better				
	8	Status Indicator	Type	YES, LED		Built-in, MfrStd			
	9	Power Supply			24 VDC				
	10	Output Signal			CURRENT OUTPUT, 2 WIRES				
	11	Setting Temperature			60 degC				
	11	Sensitivity			Adjustable, at least 1oC / minute				
	12	Sensor Life			Minimum 2 years				
	13	Safety Integrity Level			N/A				
	14								
HOUSING	15	Housing material	Color	Polycarbonate		WHITE or MfrStd			
	16	Electrical Conn.	Cable Gland	1/2" NPT-F		YES			
	17	Expl. Protection	Ingress Protec.	N/A		IP 44 min			
	18								
ACCESSORIES	19	Mounting Base			YES				
	20	Remote Status Indicator			N/A				
	21								
PURCHASE	22	Manufacturer			VTA				
	23	Model			VTA				
	24								
No	TAG NUMBER	LAYOUT DWG.		LOCATION				NOTE	
1	HD-2101	RC12-002-TS-IA2-LD-002		Kitchen					
2	HD-2102	RC12-002-TS-IA2-LD-002		Kitchen					
3	HD-xxxx	SPARE							
VTC - Vendor to Conform / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice									
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. C/w test kit, one set of test kit for all the heat detectors.									





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PROJECT : RC12 WHP PROJECT, BLOCK 09-1

SUB-PROJECT : RC12 WELLHEAD PLATFORM

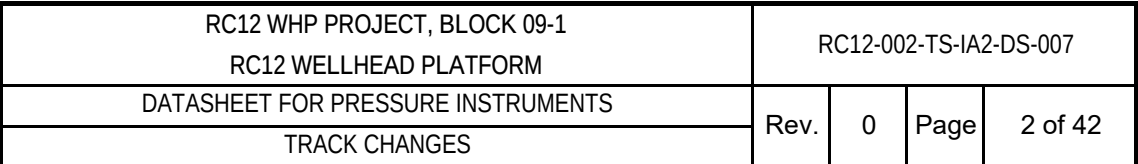
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DOCUMENT NO. : RC12-002-TS-IA2-DS-007

PHASE : DETAILED ENGINEERING

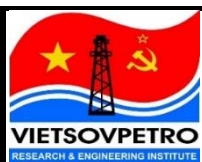
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			B.Q.THUAN		
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			DC: N.T.T.TRANG		
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REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.



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	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	4 of 42
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				5
	2	P&ID No.	Pipe class	See Next Page				See Next Page
	3	Line No.	Line size	See Next Page				See Next Page
	4	Location		See Next Page				
	5							
OPERATING CONDITIONS	6	Fluid	State	PROCESS MIX		GAS & LIQ.		
	7	Oper. Press. Min/Op/Max	barg			9.5-15		
	8	Oper. Temp. Min/Op/Max	degC			25 ÷ 65		
	9	Design Press.	Design Temp.	130 barg		0 ÷ 80 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 40 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size		100 mm				
	15	Dial Color		Black Letters on White Background				
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out		YES, Solidfront and blow-out back				
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection		IP 56 min				
	22	Mounting		Direct mount				
	23							
	MANIFOLD	24	Type		2-Valves (Block and Bleed)			
25		Size		1/2" NPT-F x 1/2" NPT-F				
26		Rating		3000 psig @200 degF (207 barg @ 93 degC)				
27		Body material		316 SS				
DIAPHRAGM SEAL	28	Type		N/A				
	29	Process Connection		N/A				
	30							
ACCESSORIES	31	Overpressure Protector		YES, PISTON TYPE, 316SS				
	32	Mounting bracket		N/A				
	33	Snubber		N/A				
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								





RC12 WHP PROJECT, BLOCK 09-1

RC12 WELLHEAD PLATFORM

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No	TAG	P&ID No.	PIPE CLASS	LINE No	Line Size	LOCATION	NOTE
1	RC12-PG-0051	RC12-002-TS-PR1-PID-002	#900	CO-DC1-4"-0001-N	4"	WH-01 Flowline	
2	RC12-PG-0052	RC12-002-TS-PR1-PID-002	#900	CO-DC1-4"-0002-N	4"	WH-02 Flowline	
3	RC12-PG-0053	RC12-002-TS-PR1-PID-002	#900	CO-DC1-4"-0003-N	4"	WH-03 Flowline	
4	RC12-PG-0054	RC12-002-TS-PR1-PID-002	#900	CO-DC1-4"-0004-N	4"	WH-04 Flowline	
5	RC12-PG-0055	RC12-002-TS-PR1-PID-002	#900	CO-DC1-4"-0005-N	4"	WH-05 Flowline	
6							
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RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM	RC12-002-TS-IA2-DS-007			
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PRESSURE GAUGE				

GENERAL DATA	1	Tag Number		Qty.	RC12-PG-1006			1
	2	P&ID No.	Pipe class		RC12-002-TS-PR1-PID-003			#150
	3	Line No.	Line size		VT-AC6-6"-1008-IE			6"
	4							
	5							
OPERATING CONDITIONS	6	Fluid			Oil, Gas, Water Mixture			
	7	Oper. Press. Min/Op/Max		barg	1	2-3		5
	8	Oper. Temp. Min/Op/Max		degC		AMBIENT		
	9	Design Press.	Design Temp.	12 barg		0-45 degC		
	10							
	11							
GAUGE	12	Type	Range		Direct Reading		0-6 barg	
	13	Accuracy	Overpress. Limit		± 1 % FS		1.3 x Design Pressure	
	14	Dial Size			100 mm			
	15	Dial Color			Black Letters on White Background			
	16	Case Material	Window		316 SS		Shatterproof glass	
	17	Liqued Filled	Adjustable Zero		YES, Glycerine		YES	
	18	Blow-out			YES, Solidfront and blow-out back			
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection			IP 56 min			
	22	Mounting			Direct mount			
	23							
	MANIFOLD	24	Type			2-Valves (Block and Bleed)		
25		Size			1/2" NPT-F x 1/2" NPT-F			
26		Rating			1500 psig @200 degF (103 barg @ 93 degC)			
27		Body material			316 SS			
DIAPHRAGM SEAL	28	Type			N/A			
	29	Process Connection			N/A			
	30							
ACCESSORIES	31	Overpressure Protector			YES, PISTON TYPE, 316SS			
	32	Mounting bracket			N/A			
	33							
PURCHASE	34	Manufacturer			VTA			
	35	Model			VTA			
	36							

VTC - Vendor to Confirm / Calculate

VTA - Vendor to Advise

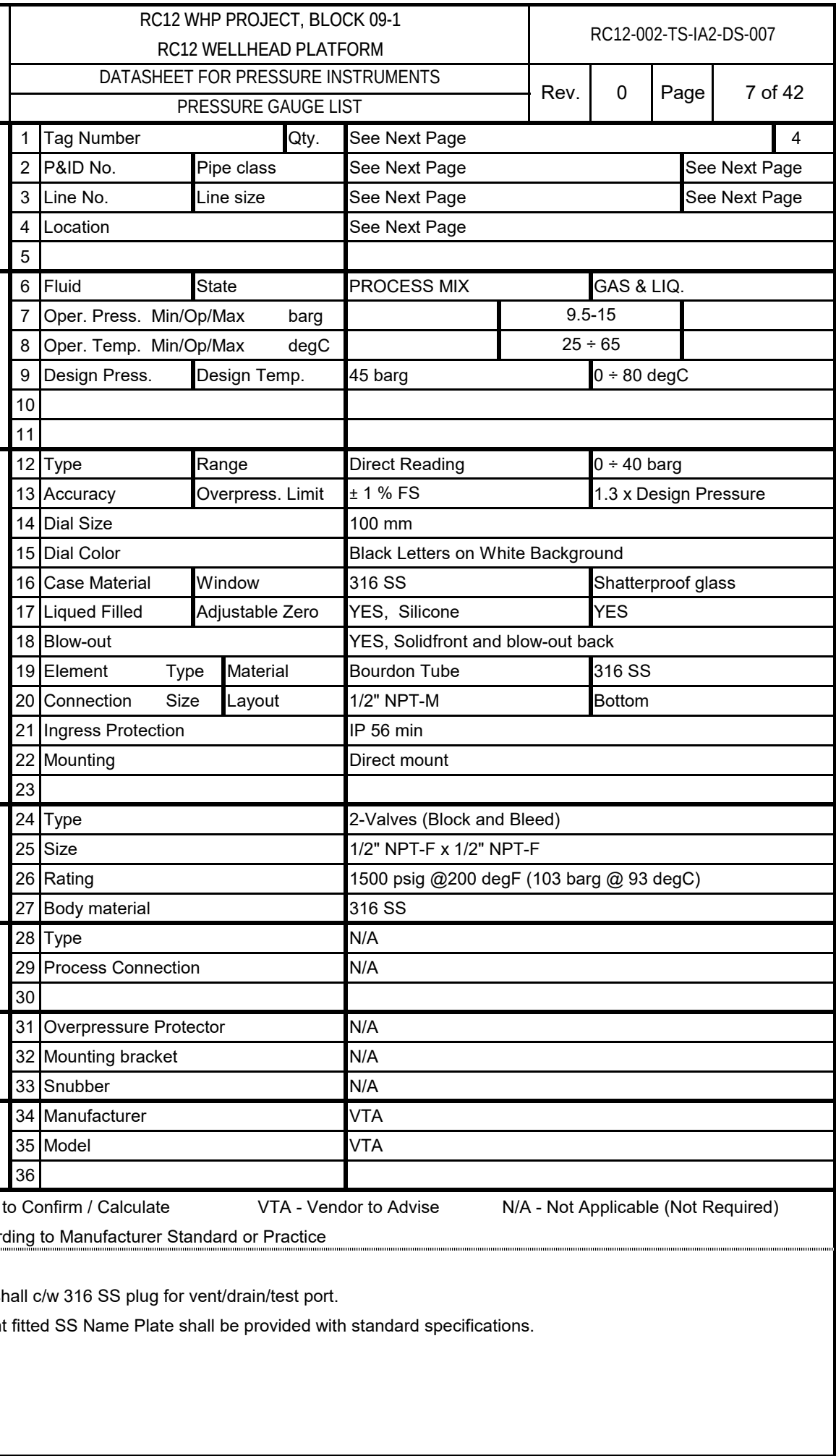
N/A - Not Applicable (Not Required)

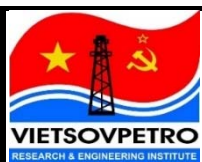
MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.







RC12 WHP PROJECT, BLOCK 09-1

RC12 WELLHEAD PLATFORM

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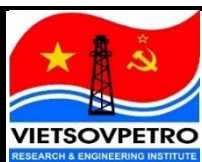
No	TAG	P&ID No.	PIPE CLASS	LINE No	Line Size	LOCATION	NOTE
1	RC12-PG-1001	RC12-002-TS-PR1-PID-004	#300	F-1001	-	Main Deck	
2	RC12-PG-1401	RC12-002-TS-PR1-PID-004	#300	V-1401	-	Main Deck	
3	RC12-PG-0902A	RC12-002-TS-PR1-PID-004	#300	CO-BC1-8"-1210-IE	8"	Cellar Deck	
4	RC12-PG-0902B	RC12-002-TS-PR1-PID-004	#300	CO-BX1-10"-0903-IE	10"	Cellar Deck	
5							
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7							
8							
9							
10							
11							
12							
13							
14							
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	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
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PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				6
	2	P&ID No.	Pipe class	See Next Page				See Next Page
	3	Line No.	Line size	See Next Page				See Next Page
	4	Location		See Next Page				
	5							
OPERATING CONDITIONS	6	Fluid	State	GASLIFT		GAS		
	7	Oper. Press. Min/Op/Max	barg			90-110		
	8	Oper. Temp. Min/Op/Max	degC			20 ÷ 35		
	9	Design Press.	Design Temp.	130 barg		-29 ÷ 80 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 160 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size		100 mm				
	15	Dial Color		Black Letters on White Background				
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out		YES, Solidfront and blow-out back				
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection		IP 56 min				
	22	Mounting		Direct mount				
	23							
	MANIFOLD	24	Type		2-Valves (Block and Bleed)			
25		Size		1/2" NPT-F x 1/2" NPT-F				
26		Rating		3000 psig @200 degF (207 barg @ 93 degC)				
27		Body material		316 SS				
DIAPHRAGM SEAL	28	Type		N/A				
	29	Process Connection		N/A				
	30							
ACCESSORIES	31	Overpressure Protector		N/A				
	32	Mounting bracket		N/A				
	33	Snubber		N/A				
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								





RC12 WHP PROJECT, BLOCK 09-1

RC12 WELLHEAD PLATFORM

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PRESSURE GAUGE LIST- 3

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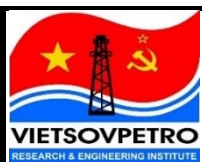
No	TAG	P&ID No.	PIPE CLASS	LINE No	Line Size	LOCATION	NOTE
1	RC12-PG-0811	RC12-002-TS-PR1-PID-005	#900	GL-DC1-1 1/2"-0821-N	1 1/2"	Gaslift Distribution	
2	RC12-PG-0812	RC12-002-TS-PR1-PID-005	#900	GL-DC1-1 1/2"-0822-N	1 1/2"	Gaslift Distribution	
3	RC12-PG-0813	RC12-002-TS-PR1-PID-005	#900	GL-DC1-1 1/2"-0823-N	1 1/2"	Gaslift Distribution	
4	RC12-PG-0814	RC12-002-TS-PR1-PID-005	#900	GL-DC1-1 1/2"-0824-N	1 1/2"	Gaslift Distribution	
5	RC12-PG-0815	RC12-002-TS-PR1-PID-005	#900	GL-DC1-1 1/2"-0825-N	1 1/2"	Gaslift Distribution	
6	RC12-PG-0901	RC12-002-TS-PR1-PID-005	#900	GL-DX1-6"-0901-N	6"	Gaslift Filter	
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	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
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PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				3
	2	P&ID No.	Pipe class	See Next Page				See Next Page
	3	Line No.	Line size	See Next Page				See Next Page
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	SEA WATER		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			220-250		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	275 barg		0 ÷ 45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 400 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element Type	Material	Bourdon Tube		Monel		
	20	Connection Size	Layout	1/2" NPT-M		Bottom		
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	MANIFOLD	24	Type	2-Valves (Block and Bleed)				
25		Size	1/2" NPT-F x 1/2" NPT-F					
26		Rating	6000 psig @200 degF (414 barg @ 93 degC)					
27		Body material	Monel					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33	Snubber	N/A					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								





RC12 WHP PROJECT, BLOCK 09-1

RC12 WELLHEAD PLATFORM

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DATASHEETS FOR PRESSURE INSTRUMENTS

PRESSURE GAUGE LIST - 4

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No	TAG	P&ID No.	PIPE CLASS	LINE No	Line Size	LOCATION	NOTE
1	RC12-PG-0903	RC12-002-TS-PR1-PID-006	#2500	WI-FC1-6"-0903-N	6"	Cellar Deck	
2	RC12-PG-1102	RC12-002-TS-PR1-PID-006	#2500	WI-FC3-3"-1108-N	3"	Main Deck	
3	RC12-PG-1111	RC12-002-TS-PR1-PID-006	#2500	WI-FC3-3"-1112-N	3"	Main Deck	
4							
5							
6							
7							
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31							
32							
33							
34							
35							

NOTES



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
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PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-PG-1101				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-006				#300
	3	Line No.	Line size	WI-BC1-6"-1105-N				6"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	SEA WATER		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			5-30		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	45 barg		0 ÷ 45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 60 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		Monel	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
	MANIFOLD	24	Type	2-Valves (Block and Bleed)				
25		Size	1/2" NPT-F x 1/2" NPT-F					
26		Rating	1500 psig @200 degF (103 barg @ 93 degC)					
27		Body material	Monel					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33	Snubber	N/A					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	14 of 42
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-PG-1103				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-006				#150
	3	Line No.	Line size	WI-AC1-2"-1104-N				2"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	SEA WATER		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			5-10		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	13 barg		0 ÷ 45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 10 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element Type	Material	Bourdon Tube		Monel		
	20	Connection Size	Layout	1/2" NPT-M		Bottom		
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
	MANIFOLD	24	Type	2-Valves (Block and Bleed)				
25		Size	1/2" NPT-F x 1/2" NPT-F					
26		Rating	1500 psig @200 degF (103 barg @ 93 degC)					
27		Body material	Monel					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33	Snubber	N/A					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	15 of 42
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-PG-0501, RC12-PG-0502				2
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-007				#150
	3	Line No.	Line size	V-500 /AU-AS1-2"-0511-N				- / 2"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	Instrument Air		Air		
	7	Oper. Press. Min/Op/Max	barg			5-10		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	13 barg		0 ÷ 45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 16 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
	MANIFOLD	24	Type	2-Valves (Block and Bleed)				
25		Size	1/2" NPT-F x 1/2" NPT-F					
26		Rating	1500 psig @200 degF (103 barg @ 93 degC)					
27		Body material	316 SS					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33	Snubber	N/A					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	16 of 42
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-PG-0201, RC12-PG-0301				2
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-008				#150
	3	Line No.	Line size	V-200/ V-300				-
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	Oil, Gas, Water Mixture		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			0-2		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	12 barg		-29 ÷ 120 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 4 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
MANIFOLD	24	Type	2-Valves (Block and Bleed)					
	25	Size	1/2" NPT-F x 1/2" NPT-F					
	26	Rating	1500 psig @200 degF (103 barg @ 93 degC)					
	27	Body material	316 SS					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	YES, PISTON TYPE, 316 SS					
	32	Mounting bracket	N/A					
	33	Snubber	N/A					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
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PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-PG-6702				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR6-PID-001				#150
	3	Line No.	Line size	FO-AC1-1"-6704-N				1"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	Fuel Oil		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			1-3		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	5 barg		0 ÷ 45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 4 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
MANIFOLD	24	Type	2-Valves (Block and Bleed)					
	25	Size	1/2" NPT-F x 1/2" NPT-F					
	26	Rating	1500 psig @200 degF (103 barg @ 93 degC)					
	27	Body material	316 SS					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33	Snubber	YES, 316 SS, 1/2"NPT-M x 1/2"NPT-F					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	18 of 42
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-PG-6703				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR6-PID-001				#150
	3	Line No.	Line size	FO-AC1-2"-6713-N				2"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	Fuel Oil		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			0-8		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	12 barg		0 ÷ 45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 16 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
	MANIFOLD	24	Type	2-Valves (Block and Bleed)				
25		Size	1/2" NPT-F x 1/2" NPT-F					
26		Rating	1500 psig @200 degF (103 barg @ 93 degC)					
27		Body material	316 SS					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33	Snubber	YES, 316 SS, 1/2"NPT-M x 1/2"NPT-F					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	19 of 42
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-PG-5202				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR6-PID-002				#150
	3	Line No.	Line size	WP-AC5-2"-5217-N				2"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	Fresh Water		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			0-8		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	12 barg		0 ÷ 45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 16 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
	MANIFOLD	24	Type	2-Valves (Block and Bleed)				
25		Size	1/2" NPT-F x 1/2" NPT-F					
26		Rating	1500 psig @200 degF (103 barg @ 93 degC)					
27		Body material	316 SS					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33	Snubber	YES, 316 SS, 1/2"NPT-M x 1/2"NPT-F					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	20 of 42
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-PG-0220				1
	2	P&ID No.	Pipe class	RC12-002-TS- PR1-PID-008				#300
	3	Line No.	Line size	DC-BC1-2"-0206-IE				2"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	State	Oil, Gas, Water Mixture		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			10-26		
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.	Design Temp.	35 barg		0 ÷ 45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0 ÷ 40 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Silicone		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
MANIFOLD	24	Type	2-Valves (Block and Bleed)					
	25	Size	1/2" NPT-F x 1/2" NPT-F					
	26	Rating	1500 psig @200 degF (103 barg @ 93 degC)					
	27	Body material	316 SS					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33	Snubber	YES, 316 SS, 1/2"NPT-M x 1/2"NPT-F					
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
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	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	21 of 42
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number		Qty.	RC12-PG-1501, RC12-PG-1502			2
	2	P&ID No.	Pipe class		RC12-TS-PR1-PID-002			#1500
	3	Line No.	Line size		ST-DC2-2"-1506-IH			2"
	4							
	5							
OPERATING CONDITIONS	6	Fluid		Steam				
	7	Oper. Press. Min/Op/Max		barg	0-100			
	8	Oper. Temp. Min/Op/Max		degC	20-310			
	9	Design Press.	Design Temp.		125 barg		0-325 degC	
	10							
GAUGE	11	Type	Range		Direct Reading		0-160 barg	
	12	Accuracy	Overpress. Limit		± 1 % FS		1.3 x Design Pressure	
	13	Dial Size		100 mm				
	14	Dial Color		Black Letters on White Background				
	15	Case Material	Window		316 SS		Shatterproof glass	
	16	Liqued Filled	Adjustable Zero		YES, Silicone		YES	
	17	Blow-out		YES, Solidfront and blow-out back				
	18	Element	Type	Material		Bourdon Tube		316 SS
	19	Connection	Size	Layout		1/2" NPT-M		Bottom
	20	Ingress Protection		IP 56 min				
	21	Mounting		Remote mounting				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Connection	Instr.	Process		1/2" NPT-F x 1/2" NPT-F		
	25	Rating		3000 psig @750 degF (207 barg @ 400 degC)				
	26	Body material		316 SS				
	27							
Diaphragm Seal	28	Design Type		Welded design				
	29	Material		316 SS				
	30	Operating temperature		Up to 752 degF (400 degC)				
	31	Process connection		1/2" NPT-M				
	32	Capillary Line	Length		Yes, 316 SS		Min 5 feet (1.5 m)	
	33	System Fill Fluids		High-temperature silicone oil				
ACCESSORIES	34	Overpressure Protector		N/A				
	35	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	36							
PURCHASE	37	Manufacturer		VTA				
	38	Model		VTA				
	39							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



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PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				20
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-002				API 5000
	3	Line No.	Line size	See Next Page				-
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid		See Next Page				
	7	Oper. Press. Min/Op/Max	barg	See Next Page				
	8	Oper. Temp. Min/Op/Max	degC			AMB		
	9	Design Press.		API 5000				
	10	Design Temp.		80 degC				
	11							
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 160 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F		NOTE 2
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		N/A				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Size		1/2" NPT-F x 1/2" NPT-F				
	25	Rating		3000 psig @200 degF (207 barg @ 93 degC)				
	26	Body material		316 SS				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								

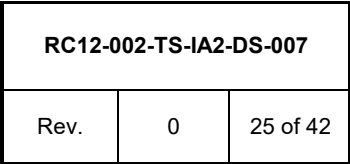


		RC12 WHP PROJECT, BLOCK 09-1					RC12-002-TS-IA2-DS-007			
		RC12 WELLHEAD PLATFORM								
		DATASHEET FOR PRESSURE INSTRUMENTS					Rev.	0	Page	23 of 42
PRESSURE TRANSMITTER LIST - 1										
NO.	TAG NO.	SERVICE / LINE NO.	LINE NO./ EQUIPMENT NO.	FLUID/STATE		PRESSURE (Barg)	TEMPERATU RE (Deg. C)	REMARK		
				FLUID	STATE	OPER.	OPER.			
1	RC12- PT-0001	WELLHEAD WH-0001	WH-0001	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
2	RC12- PT-0002	WELLHEAD WH-0002	WH-0002	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
3	RC12- PT-0003	WELLHEAD WH-0003	WH-0003	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
4	RC12- PT-0004	WELLHEAD WH-0004	WH-0004	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
5	RC12- PT-0005	WELLHEAD WH-0005	WH-0005	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
6	RC12- PT-0021	WELLHEAD WH-0001 - ANNULUS	WH-0001	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
7	RC12- PT-0022	WELLHEAD WH-0002 - ANNULUS	WH-0002	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
8	RC12- PT-0023	WELLHEAD WH-0003 - ANNULUS	WH-0003	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
9	RC12- PT-0024	WELLHEAD WH-0004 - ANNULUS	WH-0004	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
10	RC12- PT-0025	WELLHEAD WH-0005 - ANNULUS	WH-0005	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
11	RC12- PT-0031	WELLHEAD WH-0001 - WELL CASING	WH-0001	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
12	RC12- PT-0032	WELLHEAD WH-0002 - WELL CASING	WH-0002	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
13	RC12- PT-0033	WELLHEAD WH-0003 - WELL CASING	WH-0003	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
14	RC12- PT-0034	WELLHEAD WH-0004 - WELL CASING	WH-0004	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
15	RC12- PT-0035	WELLHEAD WH-0005 - WELL CASING	WH-0005	Oil, Gas, Water Mixture	GAS & LIQ.	10-80	25-65			
16	RC12- PT-0041	WELLHEAD WH-0001 - GASLIFT	WH-0001	GASLIFT GAS	GAS	55-110	20-35			
17	RC12- PT-0042	WELLHEAD WH-0002 - GASLIFT	WH-0002	GASLIFT GAS	GAS	55-110	20-35			
18	RC12- PT-0043	WELLHEAD WH-0003 - GASLIFT	WH-0003	GASLIFT GAS	GAS	55-110	20-35			
19	RC12- PT-0044	WELLHEAD WH-0004 - GASLIFT	WH-0004	GASLIFT GAS	GAS	55-110	20-35			
20	RC12- PT-0045	WELLHEAD WH-0005 - GASLIFT	WH-0005	GASLIFT GAS	GAS	55-110	20-35			



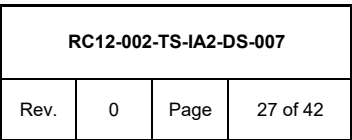
	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
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PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				4
	2	P&ID No.	Pipe class	See Next Page				See Next Page
	3	Line No.	Line size	See Next Page				See Next Page
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid	State	Oil, Gas, Water Mixture		GAS & LIQ.		
	7	Oper. Press. Min/Op/Max	barg			9.5-15		
	8	Oper. Temp. Min/Op/Max	degC			25-65		
	9	Design Press.		45 barg				
	10	Design Temp.		0 ÷ 80 degC				
	11							
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 40 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		N/A				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Size		1/2" NPT-F x 1/2" NPT-F				
	25	Rating		3000 psig @200 degF (207 barg @ 93 degC)				
	26	Body material		316 SS				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								





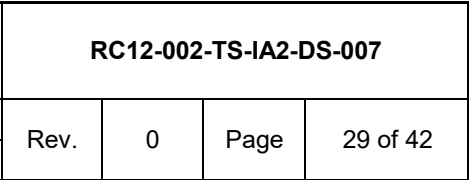
	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	26 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				5
	2	P&ID No.	Pipe class	See Next Page				#900
	3	Line No.	Line size	See Next Page				4"
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid	State	Oil, Gas, Water Mixture		GAS & LIQ.		
	7	Oper. Press. Min/Op/Max	barg			9.5-15		
	8	Oper. Temp. Min/Op/Max	degC			25-65		
	9	Design Press.		130 barg				
	10	Design Temp.		0 ÷ 80 degC				
	11							
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 40 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		SIL 2				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Size		1/2" NPT-F x 1/2" NPT-F				
	25	Rating		3000 psig @200 degF (207 barg @ 93 degC)				
	26	Body material		316 SS				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							
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	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	28 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				6
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-005				#900
	3	Line No.	Line size	See Next Page				1 1/2"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid	State	GASLIFT GAS		GAS		
	7	Oper. Press. Min/Op/Max	barg			95-110		
	8	Oper. Temp. Min/Op/Max	degC			20-35		
	9	Design Press.		130 barg				
	10	Design Temp.		0 ÷ 45 degC				
	11							
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 160 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		SIL 2				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Size		1/2" NPT-F x 1/2" NPT-F				
	25	Rating		3000 psig @200 degF (207 barg @ 93 degC)				
	26	Body material		316 SS				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								



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	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	30 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RC12-PT-0802				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-005				#900
	3	Line No.	Line size	GL-DC1-4"-0825-N				4"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid	State	GASLIFT GAS		GAS		
	7	Oper. Press. Min/Op/Max	barg			95-110		
	8	Oper. Temp. Min/Op/Max	degC			20-35		
	9	Design Press.			130 barg			
	10	Design Temp.			0 ÷ 45 degC			
	11							
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 160 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid			MfrStd			
	17	Housing material			316 SS NOTE 1			
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland			cable entry plugged			
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level			N/A			
	22							
MANIFOLD	23	Type			2-Valves (Block and Bleed)			
	24	Size			1/2" NPT-F x 1/2" NPT-F			
	25	Rating			3000 psig @200 degF (207 barg @ 93 degC)			
	26	Body material			316 SS			
DIAPHRAGM SEAL	27	Type			N/A			
	28	Process Connection			N/A			
	29							
ACCESSORIES	30	Integral Meter			YES (LCD)			
	31	Mounting bracket			YES, for 2-inch pole stand, 316 SS			
	32							
PURCHASE	33	Manufacturer			VTA			
	34	Model			VTA			
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	31 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RC12-PT-1006, RC12-PT-0201				2
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-003/008				#150
	3	Line No.	Line size	VT-AC1-6"-1006-IE/ V-200				6"/ -
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid	State	Oil, Gas, Water Mixture		GAS & LIQ.		
	7	Oper. Press. Min/Op/Max	barg			0-2		
	8	Oper. Temp. Min/Op/Max	degC			0-40		
	9	Design Press.			13 barg			
	10	Design Temp.			(-29)-80 degC			
	11							
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 4 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid			MfrStd			
	17	Housing material			316 SS NOTE 1			
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland			cable entry plugged			
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level			N/A			
	22							
MANIFOLD	23	Type			2-Valves (Block and Bleed)			
	24	Size			1/2" NPT-F x 1/2" NPT-F			
	25	Rating			1500 psig @200 degF (103 barg @ 93 degC)			
	26	Body material			316 SS			
DIAPHRAGM SEAL	27	Type			N/A			
	28	Process Connection			N/A			
	29							
ACCESSORIES	30	Integral Meter			YES (LCD)			
	31	Mounting bracket			YES, for 2-inch pole stand, 316 SS			
	32							
PURCHASE	33	Manufacturer			VTA			
	34	Model			VTA			
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	32 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				3
	2	P&ID No.	Pipe class	See Next Page				#300
	3	Line No.	Line size	See Next Page				See Next Page
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid	State	Oil, Gas, Water Mixture		GAS & LIQ.		
	7	Oper. Press. Min/Op/Max	barg			9.5-15		
	8	Oper. Temp. Min/Op/Max	degC			25-65		
	9	Design Press.		45 barg				
	10	Design Temp.		0-80 degC				
	11							
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 40 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		SIL 2				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Size		1/2" NPT-F x 1/2" NPT-F				
	25	Rating		1500 psig @200 degF (103 barg @ 93 degC)				
	26	Body material		316 SS				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007				
	RC12 WELLHEAD PLATFORM								
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	34 of 42	
PRESSURE TRANSMITTER									
GENERAL DATA	1	Tag Number	Qty.	RC12-PZT-0501A/ RC12-PZT-0501B/ RC12-PZT-0501C				3	
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-007				#150	
	3	Line No.	Line size	AU-AS1-2"-0511-N				2"	
	4	Hazardous Area Classification		Zone 2 IIA T3					
	5								
OPERATING CONDITIONS	6	Fluid	State	INSTRUMENT AIR		AIR			
	7	Oper. Press. Min/Op/Max	barg			5-10			
	8	Oper. Temp. Min/Op/Max	degC			25			
	9	Design Press.		13 barg					
	10	Design Temp.		0-80 degC					
	11								
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 16 barg			
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure			
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered			
	15	Element type	Material	Diaphragm		316 SS			
	16	Fill Fluid		MfrStd					
	17	Housing material		316 SS NOTE 1					
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2			
	19	Cable Gland		cable entry plugged					
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min			
	21	Safety Integrity Level		SIL 2					
	22								
MANIFOLD	23	Type		2-Valves (Block and Bleed)					
	24	Size		1/2" NPT-F x 1/2" NPT-F					
	25	Rating		1500 psig @200 degF (103 barg @ 93 degC)					
	26	Body material		316 SS					
DIAPHRAGM SEAL	27	Type		N/A					
	28	Process Connection		N/A					
	29								
ACCESSORIES	30	Integral Meter		YES (LCD)					
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS					
	32								
PURCHASE	33	Manufacturer		VTA					
	34	Model		VTA					
	35								
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.									



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	35 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RC12-PT-6701				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR6-PID-001				#150
	3	Line No.	Line size	FO-AC1-1"-6704-N				1"
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid	State	Fuel Oil		LIQUID		
	7	Oper. Press. Min/Op/Max	barg			1-3		
	8	Oper. Temp. Min/Op/Max	degC			25		
	9	Design Press.		12 barg				
	10	Design Temp.		0-45 degC				
	11							
TRANSMITTER	12	Instr. range	Calibrated range	VTA		0 ÷ 4 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		N/A				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Size		1/2" NPT-F x 1/2" NPT-F				
	25	Rating		1500 psig @200 degF (103 barg @ 93 degC)				
	26	Body material		316 SS				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	36 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RC12-PT-0903				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-006				#2500
	3	Line No.	Line size	WI-FC1-6"-0903-N				6"
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid		Injection Water				
	7	Oper. Press. Min/Op/Max	barg	220	-		250	
	8	Oper. Temp. Min/Op/Max	degC			Ambient		
	9	Design Press.	Design Temp.	275barg		0-45		
	10							
	11							
TRANSMITTER	12	Instr. range	Calibrated range	0-400 barg (VTA)		0-300 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		MONEL		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		N/A				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Size		1/2" NPT-F x 1/2" NPT-F				
	25	Rating		6000 psig @200 degF (414 bar @ 93 degC)				
	26	Body material		Monel				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	37 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RC12-PZT-0903				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-006				#2500
	3	Line No.	Line size	WI-FC1-6"-0903-N				6"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid		Injection Water				
	7	Oper. Press. Min/Op/Max	barg	220	-		250	
	8	Oper. Temp. Min/Op/Max	degC			Ambient		
	9	Design Press.	Design Temp.	275barg		0-45		
	10							
	11							
TRANSMITTER	12	Instr. range	Calibrated range	0-400 barg (VTA)		0-300 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		MONEL		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		SIL 2				
	22							
MANIFOLD	23	Type		2-Valves (Block and Bleed)				
	24	Size		1/2" NPT-F x 1/2" NPT-F				
	25	Rating		6000 psig @200 degF (414 bar @ 93 degC)				
	26	Body material		Monel				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES - Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. - Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. - Manifold shall c/w 316 SS plug for vent/drain/test port. - Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	38 of 42
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RC12-PT-1501				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-002				#900
	3	Line No.	Line size	ST-DC2-2"-1506-IH				2"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid		Steam				
	7	Oper. Press. Min/Op/Max	barg			0-100		
	8	Oper. Temp. Min/Op/Max	degC	20		-		310
	9	Design Press.	Design Temp.	115 barg		0-325degC		
	10							
TRANSMITTER	11	Instr. range	Calibrated range	0-160 barg (VTA)		0-160 barg		
	12	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	13	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	14	Element type	Material	Diaphragm		316 SS		
	15	Fill Fluid		MfrStd				
	16	Housing material		316 SS NOTE 1				
	17	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	18	Cable Gland		cable entry plugged				
	19	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	20	Safety Integrity Level		N/A				
MANIFOLD	21	Type		2-Valves (Block and Bleed) NOTE 3				
	22	Size		1/2" NPT-F x 1/2" NPT-F				
	23	Rating		3000 psig @752 degF (207 barg @ 400 degC)				
	24	Body material		316 SS				
	25							
Diaphragm Seal	26	Design Type		Welded design				
	27	Material		316 SS				
	28	Operating temperature		Up to 752 degF (400 degC) at 3000 psig (207 barg)				
	29	Process connection		1/2" NPT-M				
	30	Capillary Line	Length	Yes, 316 SS		Min 5 feet (1.5 m)		
	31	System Fill Fluids		High-temperature silicone oil				
ACCESSORIES	32	Integral Meter		YES (LCD)				
	33	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	34							
PURCHASE	35	Manufacturer		VTA				
	36	Model		VTA				
	37							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. 3. Manifold shall c/w 316 SS plug for vent/drain/test port. 4. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-007			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PRESSURE INSTRUMENTS				Rev.	0	Page	39 of 42
DIFF. PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty	RC12-PDT-0801				1
	2	P&ID No.	Pipe Class	RC12-002-TS-PR1-PID-005				#900
	3	Line No.	Line Size	SFS-0801				
	4	Location	Gaslift Filter					
	5							
OPERATING CONDITIONS	6	Fluid	Hydrocarbon Gas					
	7		Minimum	Normal	Maximum			
	8	Oper. Press. Min/Op/Max	barg	90	95-105		110	
	9	Oper. Temp. Min/Op/Max	degC	20	AMBIENT		35	
	10	Design Press.	Design Temp.	130 barg		0-45 °C		
	11							
TRANSMITTER	12	Type	Differential Pressure Transmitter					
	13	Instr. range	Calibrated range	0-2.5 barg (VTA)		0-2.5 barg		
	14	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	15	Adjustable Zero	Adjustable Span	YES		YES		
	16	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	17	Element type	Material	Diaphragm		316 SS		
	18	Fill Fluid	Manufacturer Standard					
	19	Housing material	316 SS					
	20	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F		
	21	Cable Gland	cable entry plugged (Note 1)					
	22	Expl. Protection	Ingress Protec.	Ex 'd' IIA T3 (IEC)		IP 56 min		
	23	Hazardous Area Classification	Zone 2 IIA T3					
	24	Safety Integrity Level	N/A					
MANIFOLD	25	Type	5-Valves Manifold Integral to the Transmitter					
	26	Size	1/2" NPT-F					
	27	Rating	3000 psig @ 200 °F (207 barg @ 93 °C)					
	28	Body material	316 SS					
ACCESSORIES	29	Integral Meter	YES (LCD)					
	30	Mounting bracket	YES, for 2-inch pole stand, 316 SS					
	31	Over pressure Protector	VTA					
PURCHASE	32	Manufacturer	VTA					
	33	Model	VTA					
	34							

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

NOTES

- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
- Manifold shall c/w 316 SS plug for vent/drain/test port.
- Permanent fitted SS Name Plate shall be provided with standard specifications.





RC12 WHP PROJECT, BLOCK 09-1

RC12 WELLHEAD PLATFORM

RC12-002-TS-IA2-DS-007

DATASHEET FOR PRESSURE INSTRUMENTS

LIST OF HVAC DIFF. PRESSURE TRANSMITTER

Rev.

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NO	TAG	P&ID No. (RC12-002-___)	SERVICE	HAZARDOUS AREA CLASSIFICATION	Explosion Protection	Ingress Protection	Design Press. Range (Pa)	REMARK
1	RC12-PDT-8501	TS-VC6-PID-001	E&I Room Diff. Pressure	Indoor, Safe Area	N/A	IP44 min	0-100	
2	RC12-PDT-8502	TS-VC6-PID-001	Transformer Room Diff. Pressure	Indoor, Safe Area	N/A	IP44 min	0-100	
3	RC12-PDT-8503	TS-VC6-PID-001	Filter FC-8501 Diff. Pressure	Outdoor, Safe Area	Ex d IIA T3 (IEC)	IP56 min	0-400	
4	RC12-PDT-8504	TS-VC6-PID-001	SHD-8501A Diff. Pressure	Outdoor, Safe Area	Ex d IIA T3 (IEC)	IP56 min	0-400	
5	RC12-PDT-8505	TS-VC6-PID-001	SHD-8501B Diff. Pressure	Outdoor, Safe Area	Ex d IIA T3 (IEC)	IP56 min	0-400	
6	RC12-PDT-8506	TS-VC6-PID-001	NRD-8501A Diff. Pressure	Outdoor, Safe Area	Ex d IIA T3 (IEC)	IP56 min	0-400	
7	RC12-PDT-8507	TS-VC6-PID-001	NRD-8501B Diff. Pressure	Outdoor, Safe Area	Ex d IIA T3 (IEC)	IP56 min	0-400	
8	RC12-PDT-8508	TS-VC6-PID-001	EA-935 Diff. Pressure	Outdoor, Safe Area	Ex d IIA T3 (IEC)	IP56 min	0-400	
9	RC12-PDT-8509	TS-VC6-PID-001	EA-1850 Diff. Pressure	Outdoor, Safe Area	Ex d IIA T3 (IEC)	IP56 min	0-400	
10	RC12-PDT-8510	TS-VC6-PID-001	EA-935 Diff. Pressure	Outdoor, Safe Area	Ex d IIA T3 (IEC)	IP56 min	0-400	





RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS



PROJECT : RC12 WHP PROJECT, BLOCK 09-1

SUB-PROJECT : RC12 WELLHEAD PLATFORM

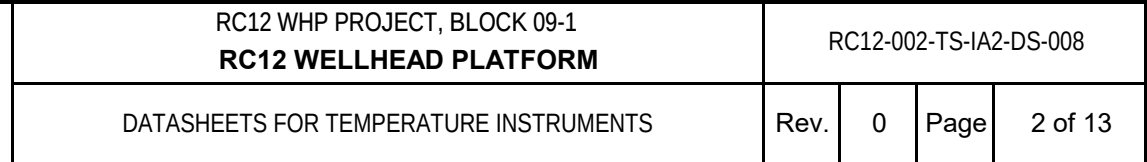
DOCUMENT TITLE : DATASHEETS FOR TEMPERATURE INSTRUMENTS

DOCUMENT NO. : RC12-002-TS-IA2-DS-008

PHASE : DETAILED ENGINEERING

AGREED WITH PIPING			Signed by: Lương Thủy Dương Date: 30/05/2025 14:59:39 Certified by: Vietsovpetro CA		
			L.T.DUONG		
AGREED WITH PROCESS			Signed by: Bùi Quang Thuận Date: 03/06/2025 13:45:45 Certified by: Vietsovpetro CA		
			B.Q.THUAN		
			Signed by: Nguyễn Thị Thu Trang Date: 03/06/2025 11:47:12 Certified by: Vietsovpetro CA	Signed by: Bùi Hồng Dương Date: 04/06/2025 09:22:13 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 04/06/2025 18:08:03 Certified by: Vietsovpetro CA
				ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
			Signed by: Đỗ Quốc Huy Date: 30/05/2025 10:56:32 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 30/05/2025 11:16:22 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 30.05.2025 13:37:59 Certified by: Vietsovpetro CA
0	IFA	05.2025			
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.



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NO	Equipment Tag No.	Page No.
1	RC12-TG-1401	4
2	RC12-TG-0801	5
3	RC12-TG-0201	6
4	RC12-TG-0301	6
5	RC12-TG-0902	7
6	RC12-TT-1001	8,9
7	RC12-TT-1002	8,9
8	RC12-TT-1003	8,9
9	RC12-TT-1004	8,9
10	RC12-TT-1005	8,9
11	RC12-TT-0801	10
12	RC12-TT-0902	11
13	RC12-TT-8501	12,13
14	RC12-TT-8502	12,13
15	RC12-TT-8503	12,13
16	RC12-TT-8504	12,13
17	RC12-TT-8505	12,13



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-008			
	RC12 WELLHEAD PLATFORM							
	DATASHEETS FOR TEMPERATURE INSTRUMENTS				Rev.	0	Page	4 of 13
TEMPERATURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-TG-1401				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-004				-
	3	Line No.	Line size	V-1401				-
	4							
	5							
OPERATING CONDITIONS	6	Fluid	Oil, Water					
	7	Oper. Press. Min/Op/Max	barg	9.5			15	
	8	Oper. Temp. Min/Op/Max	degC	25			65	
	9	Design Press.	Design Temp.	45 barg		0-80 degC		
	10	Fluid Density	Fluid Viscosity	800-1011 kg/m3 @OperCond.		0.6-10 cP		
	11	Fluid Velocity	Nozzle Dim. (mm)			42.8 (ID) x 250 (Length)		
GAUGE	12	Type	Option	Bi-metal		with Silicone oil dampener		
	13	Range	Accuracy	0-100 degC		± 1 % FS		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Window	Shatterproof glass					
	17	Adjustable Pointer	YES					
	18	Case Orientation	Rotatable on stem 360 deg					
	19	Case Material	Ingress Protec.	316 SS		IP 56 min		
	20	Stem Material	Stem Length	316 SS		to suit Thermowell		
	21	Process conn.	1/2" NPT-M					
	22							
THERMOWELL	23	Type	Flanged with Tapered drilled bar stock					
	24	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF		1/2" NPT-F		
	25	Body material	316 SS					
	26	Connection Length (H)	minimal by MfrStd					
	27	Insertion Length (U)	500 mm					
	28	Plug & Chain, Material	YES, Required, 316 SS					
	29							
PURCHASE	30	Manufacturer	VTA					
	31	Model	VTA					
	32							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-008			
	RC12 WELLHEAD PLATFORM							
	DATASHEETS FOR TEMPERATURE INSTRUMENTS				Rev.	0	Page	5 of 13
TEMPERATURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-TG-0801				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-005				#900
	3	Line No.	Line size	GL-DC1-1-4"-0825-N				4" Sch.120
	4							
	5							
OPERATING CONDITIONS	6	Fluid	Hydrocarbon Gas					
	7	Oper. Press. Min/Op/Max	barg	90	95-105	110		
	8	Oper. Temp. Min/Op/Max	degC	20	25	35		
	9	Design Press.	Design Temp.	130 barg		0-45 degC		
	10	Fluid Density	Fluid Viscosity	120-135 kg/m3 @OperCond.		0.013 cP		
	11	Fluid Velocity	Nozzle Dim. (mm)	5 m/s (max)		42.8 (ID) x 165.5 (Length)		
GAUGE	12	Type	Option	Bi-metal		with Silicone oil dampener		
	13	Range	Accuracy	0-60 degC		± 1 % FS		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Window	Shatterproof glass					
	17	Adjustable Pointer	YES					
	18	Case Orientation	Rotatable on stem 360 deg					
	19	Case Material	Ingress Protec.	316 SS		IP 56 min		
	20	Stem Material	Stem Length	316 SS		to suit Thermowell		
	21	Process conn.	1/2" NPT-M					
THERMOWELL NOTE 2	24							
	25	Type	Flanged with Tapered drilled bar stock					
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #1500, RTJ		1/2" NPT-F		
	27	Body material	316 SS					
	28	Connection Length (H)	minimal by MfrStd					
	29	Insertion Length (U)	225 mm					
	30	Plug & Chain, Material	YES, Required, 316 SS					
PURCHASE	31							
	34	Manufacturer	VTA					
	35	Model	VTA					
36								
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Wake Frequency Calculation shall be provided.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-008			
	RC12 WELLHEAD PLATFORM				Rev.	0	Page	6 of 13
	DATASHEETS FOR TEMPERATURE INSTRUMENTS							
TEMPERATURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-TG-0201, -0301				2
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-008				
	3	Line No.	Line size	DRAIN TANK V-200 / V-300				
	4							
	5							
OPERATING CONDITIONS	6	Fluid	Oil, Water					
	7	Oper. Press. Min/Op/Max	barg	0	1	2		
	8	Oper. Temp. Min/Op/Max	degC	25	45	65		
	9	Design Press.	Design Temp.	7 barg		0-80 degC		
	10	Fluid Density	Fluid Viscosity	800-1011 kg/m3 @OperCond.		0.6-10 cP		
	11	Fluid Velocity	Nozzle Dim. (mm)			42.8 (ID) x 250 (Length)		
GAUGE	12	Type	Option	Bi-metal		with Silicone oil dampener		
	13	Range	Accuracy	0-100 degC		± 1 % FS		
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Window	Shatterproof glass					
	17	Adjustable Pointer	YES					
	18	Case Orientation	Rotatable on stem 360 deg					
	19	Case Material	Ingress Protec.	316 SS		IP 56 min		
	20	Stem Material	Stem Length	316 SS		to suit Thermowell		
	21	Process conn.	1/2" NPT-M					
THERMOWELL	25	Type	Flanged with Tapered drilled bar stock					
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #150, RF		1/2" NPT-F		
	27	Body material	316 SS					
	28	Connection Length (H)	minimal by MfrStd					
	29	Insertion Length (U)	500 mm					
	30	Plug & Chain, Material	YES, Required, 316 SS					
	31							
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-008			
	RC12 WELLHEAD PLATFORM							
	DATASHEETS FOR TEMPERATURE INSTRUMENTS				Rev.	0	Page	7 of 13
TEMPERATURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RC12-TG-0902				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-011				#300
	3	Line No.	Line size	CO-BC1-8"-1210-IE				8" Sch.40
	4							
	5							
OPERATING CONDITIONS	6	Fluid	Oil, Water, Gas Mixture					
	7	Oper. Press. Min/Op/Max	barg	9.5			15	
	8	Oper. Temp. Min/Op/Max	degC	25			65	
	9	Design Press.	Design Temp.	45	0-80 degC			
	10	Fluid Density	Fluid Viscosity	800-1011 kg/m3	0.6-10 cP			
	11	Fluid Velocity	Nozzle Dim. (mm)		49.2 (ID) x 108.1 (Length)			
GAUGE	12	Type	Option	Bi-metal	with Silicone oil dampener			
	13	Range	Accuracy	0-100 degC	± 1 % FS			
	14	Dial Size	100 mm					
	15	Dial Color	Black Letters on White Background					
	16	Window	Shatterproof glass					
	17	Adjustable Pointer	YES					
	18	Case Orientation	Rotatable on stem 360 deg					
	19	Case Material	Ingress Protec.	316 SS	IP 56 min			
	20	Stem Material	Stem Length	316 SS	to suit Thermowell			
	21	Process conn.	1/2" NPT-M					
	24							
	THERMOWELL NOTE 2	25	Type	Flanged with Tapered drilled bar stock				
26		Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF	1/2" NPT-F			
27		Body material	316 SS					
28		Connection Length (H)	minimal by MfrStd					
29		Insertion Length (U)	220 mm					
30		Plug & Chain, Material	YES, Required, 316 SS					
31								
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Wake Frequency Calculation shall be provided.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-008			
	RC12 WELLHEAD PLATFORM				Rev.	0	Page	8 of 13
	DATASHEETS FOR TEMPERATURE INSTRUMENTS							
TEMPERATURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				5
	2	P&ID No.	Pipe class	See Next Page				See Next Page
	3	Line No.	Line size	See Next Page				See Next Page
	4	Location		See Next Page				
	5	Hazardous Area Classification		Zone 2 IIA T3				
OPERATING CONDITIONS	6	Fluid		Oil Water Gas Mixture				
	7	Oper. Press. Min/Op/Max	barg	9.5			15	
	8	Oper. Temp. Min/Op/Max	degC	25			65	
	9	Design Press.	Design Temp.	45	0-80 degC			
	10	Fluid Density	Fluid Viscosity	800-1011 kg/m3	0.6-10 cP			
	11	Fluid Velocity	Nozzle Dim. (mm)		42.8 (ID) x 165.5 (Length)			
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 ($\alpha=0.00385$)			Mineral Insulated	
	13	Sensor Dimension	Material	to suit Thermowell			316 SS	
	14	Mounting of Transmitter		Direct on sensor				
	15	Instr. Range	Calibrated range	0-100 degC (VTA)			0-70 degC	
	16	Accuracy	Linearization	± 0.1 % FS			YES, REQUIRED	
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire			24 V DC, loop powered	
	18	Burn-out Protection		YES				
	19	Housing material		316 SS, NOTE 1				
	20	Process conn.	Electrical Conn.	1/2" NPT-M	1/2" NPT-F	NOTE 4		
	21	Cable Gland		cable entry plugged				
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)			IP 56 min	
	23	Safety Integrity Level		N/A				
	THERMOWELL NOTE 3	25	Type		Flanged with Tapered drilled bar stock			
26		Process conn.	Instrum. Conn.	Flange 2-inch, #1500, RTJ			1/2" NPT-F	
27		Body material		316 SS				
28		Connection Length (H)		minimal by MfrStd				
29		Insertion Length (U)		225 mm				
30		Plug & Chain, Material		YES, Required, 316 SS				
ACCESSORIES	31	Integral Meter		YES (LCD), Side View				
	32	Mounting bracket		N/A				
	33							
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. Wake Frequency Calculation shall be provided. 4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								



RC12 WHP PROJECT, BLOCK 09-1
RC12 WELLHEAD PLATFORM

RC12-002-TS-IA2-DS-008

DATASHEETS FOR TEMPERATURE INSTRUMENTS

TEMPERATURE TRANSMITTER

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No	TAG	P&ID No.	PIPE CLASS	LINE No	LOCATION	NOTE
1	RC12-TT-1001	RC12-002-TS-PR1-PID-003	#900	CO-DC1-4"-0001-IE	WH-0001 Flowline	
2	RC12-TT-1002	RC12-002-TS-PR1-PID-003	#900	CO-DC1-4"-0002-IE	WH-0002 Flowline	
3	RC12-TT-1003	RC12-002-TS-PR1-PID-003	#900	CO-DC1-4"-0003-IE	WH-0003 Flowline	
4	RC12-TT-1004	RC12-002-TS-PR1-PID-003	#900	CO-DC1-4"-0004-IE	WH-0004 Flowline	
5	RC12-TT-1005	RC12-002-TS-PR1-PID-003	#900	CO-DC1-4"-0005-IE	WH-0005 Flowline	
6						
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NOTES



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-008			
	RC12 WELLHEAD PLATFORM							
	DATASHEETS FOR TEMPERATURE INSTRUMENTS				Rev.	0	Page	10 of 13
TEMPERATURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RC12-TT-0801				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-005				#900
	3	Line No.	Line size	GL-DC1-4"-0825-N				4" Sch.120
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid		Hydrocarbon Gas				
	7	Oper. Press. Min/Op/Max	barg	90	95-105		110	
	8	Oper. Temp. Min/Op/Max	degC	20	25		35	
	9	Design Press.	Design Temp.	130 barg		0-45 degC		
	10	Fluid Density	Fluid Viscosity	120-135 kg/m3 @OperCond.		0.017 cP		
	11	Fluid Velocity	Nozzle Dim. (mm)			42.8 (ID) x 165.5 (Length)		
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 ($\alpha=0.00385$)		Mineral Insulated		
	13	Sensor Dimension	Material	to suit Thermowell		316 SS		
	14	Mounting of Transmitter		Direct on sensor				
	15	Instr. Range	Calibrated range	0-100 degC (VTA)		0-60 degC		
	16	Accuracy	Linearization	$\pm 0.1\%$ FS		YES, REQUIRED		
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire		24 V DC, loop powered		
	18	Burn-out Protection		YES				
	19	Housing material		316 SS, NOTE 1				
	20	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F		NOTE 4
	21	Cable Gland		cable entry plugged				
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	23	Safety Integrity Level		N/A				
	24							
THERMOWELL NOTE 3	25	Type		Flanged with Tapered drilled bar stock				
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #1500, RTJ		1/2" NPT-F		
	27	Body material		316 SS				
	28	Connection Length (H)		minimal by MfrStd				
	29	Insertion Length (U)		225 mm				
	30	Plug & Chain, Material		YES, Required, 316 SS				
ACCESSORIES	31	Integral Meter		YES (LCD), Side View				
	32	Mounting bracket		N/A				
	33							
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. Wake Frequency Calculation shall be provided. 4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-008			
	RC12 WELLHEAD PLATFORM							
	DATASHEETS FOR TEMPERATURE INSTRUMENTS				Rev.	0	Page	11 of 13
TEMPERATURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RC12-TT-0902				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-011				#300
	3	Line No.	Line size	CO-BC1-8"-1210-IE				8" Sch.40
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid		Oil Water Gas Mixture				
	7	Oper. Press. Min/Op/Max	barg	9.5			15	
	8	Oper. Temp. Min/Op/Max	degC	25			65	
	9	Design Press.	Design Temp.	45	0-80 degC			
	10	Fluid Density	Fluid Viscosity	800-1011 kg/m3	0.6-10 cP			
	11	Fluid Velocity	Nozzle Dim. (mm)		42.8 (ID) x 108.1 (Length)			
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 ($\alpha=0.00385$)			Mineral Insulated	
	13	Sensor Dimension	Material	to suit Thermowell			316 SS	
	14	Mounting of Transmitter		Direct on sensor				
	15	Instr. Range	Calibrated range	0-100 degC (VTA)			0-60 degC	
	16	Accuracy	Linearization	± 0.1 % FS			YES, REQUIRED	
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire			24 V DC, loop powered	
	18	Burn-out Protection		YES				
	19	Housing material		316 SS, NOTE 1				
	20	Process conn.	Electrical Conn.	1/2" NPT-M			1/2" NPT-F NOTE 4	
	21	Cable Gland		cable entry plugged				
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)			IP 56 min	
	23	Safety Integrity Level		N/A				
	24							
THERMOWELL NOTE 3	25	Type		Flanged with Tapered drilled bar stock				
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF			1/2" NPT-F	
	27	Body material		316 SS				
	28	Connection Length (H)		minimal by MfrStd				
	29	Insertion Length (U)		220 mm				
	30	Plug & Chain, Material		YES, Required, 316 SS				
ACCESSORIES	31	Integral Meter		YES (LCD), Side View				
	32	Mounting bracket		N/A				
	33							
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. Wake Frequency Calculation shall be provided. 4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								



	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-008			
	RC12 WHP PROJECT, BLOCK 09-1							
	DATASHEETS FOR TEMPERATURE INSTRUMENTS				Rev.	0	Page	12 of 13
TEMPERATURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	See Next Page				5
	2	P&ID No.	Pipe class	See Next Page				-
	3	Line No.	Line size	-				-
	4	Location		See Next Page				
	5	Hazardous Area Classification		See Next Page				
OPERATING CONDITIONS	6	Fluid		Clean Air				
	7	Oper. Press. Min/Op/Max	Pa	ATM			55	
	8	Oper. Temp. Min/Op/Max	degC	15	25		45	
	9	Design Press.	Design Temp.	100 Pa		0-60 degC		
	10	Fluid Density	Fluid Viscosity					
	11	Fluid Velocity	Nozzle Dim. (mm)					
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 ($\alpha=0.00385$)			Mineral Insulated	
	13	Sensor Dimension	Material	DIA 6 mm, Length 100 mm			316 SS	
	14	Mounting of Transmitter		Direct on sensor				
	15	Instr. Range	Calibrated range	0-60 degC (VTA)		0-60 degC		
	16	Accuracy	Linearization	± 0.25 % FS		YES		
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire		24 V DC, loop powered		
	18	Burn-out Protection		N/A				
	19	Housing material		316 SS, NOTE 1				
	20	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F	NOTE 3	
	21	Cable Gland		Plugged				
	22	Expl. Protection	Ingress Protec.	See Next Page		See Next Page		
	23	Safety Integrity Level		N/A				
	24							
THERMOWELL	25	Type		N/A				
	26	Process conn.	Instrum. Conn.					
	27	Body material						
	28	Lagging Extension		No				
	29	Insertion Length (U)						
	30							
ACCESSORIES	31	Integral Meter		YES (LCD)				
	32	Mounting bracket		YES, Wall Mount type				
	33							
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. Vendor shall supply Plugs suitable for area classification for spare cable entry.								





RC12 WHP PROJECT, BLOCK 09-1
RC12 WHP PROJECT, BLOCK 09-1

RC12-002-TS-IA2-DS-008

DATASHEETS FOR TEMPERATURE INSTRUMENTS

TEMPERATURE TRANSMITTER

Rev.

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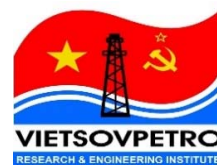
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NO	TAG	P&ID No.	SERVICE	HAZARDOUS AREA CLASSIFICATION	Explosion Protection	Ingress Protection	REMARK
1	RC12-TT-8501	RC12-002-TS-VC6-PID-001	E&I Room Temperature	Indoor, Safe Area	N/A	IP44 min	
2	RC12-TT-8502	RC12-002-TS-VC6-PID-001	Transformer Room Temperature	Indoor, Safe Area	N/A	IP44 min	
3	RC12-TT-8503	RC12-002-TS-VC6-PID-001	Compressor Room Temperature	Indoor, Safe Area	N/A	IP44 min	
4	RC12-TT-8504	RC12-002-TS-VC6-PID-001	Battery Room Temperature	Indoor, Zone 2 IIC T3	Ex d IIC T3 (IEC)	IP56 min	
5	RC12-TT-8505	RC12-002-TS-VC6-PID-001	Living Room	Indoor, Safe Area	N/A	IP44 min	





RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS



PROJECT : RC12 WHP PROJECT, BLOCK 09-1

SUB-PROJECT : RC12 WELLHEAD PLATFORM

DOCUMENT TITLE : DATASHEETS FOR LEVEL INSTRUMENTS

DOCUMENT NO. : RC12-002-TS-IA2-DS-009

PHASE : DETAILED ENGINEERING

AGREED WITH PIPING			Signed by: Lương Thuỷ Dương Date: 30/05/2025 14:59:40 Certified by: Vietsovpetro CA		
			L.T.DUONG		
AGREED WITH PROCESS			Signed by: Bùi Quang Thuận Date: 03/06/2025 13:45:46 Certified by: Vietsovpetro CA		
			B.Q.THUAN		
			CONTROLLED Signed by: Nguyễn Thị Thu Trang Date: 03/06/2025 13:47:13 Certified by: Vietsovpetro CA	Signed by: Bùi Hồng Dương Date: 04/06/2025 09:22:14 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 04/06/2025 18:08:04 Certified by: Vietsovpetro CA
				ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
				Signed by: Trần Anh Nguyên Date: 30/05/2025 11:16:22 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 30.05.2025 13:38:05 Certified by: Vietsovpetro CA
0	IFA	05.2025	Signed by: Đỗ Quốc Huy Date: 30/05/2025 10:56:32 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 30/05/2025 11:16:22 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 30.05.2025 13:38:05 Certified by: Vietsovpetro CA
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.





NO	Equipment Tag No.	Page No.
1	RC12-LG/LT-1401	4
2	RC12-LG/LZT-1402	5
3	RC12-LG/LT-0201	6
4	RC12-LG/LT-0301	7
5	RC12-LZT-0201	8
6	RC12-LG/LT-0210	9
7	RC12-LG/LT-5201	10
8	RC12-LG/LZT-6701	11
9	RC12-LZT-6702	12
10	RC12-LG/LT-6703	13



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009			
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	4 of 13

GENERAL DATA	1	Tag Number	Qty.	RC12-LG/LT-1401			1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-004			-
	3	Line No.	Line size	V-1401			-
	4	Hazardous Area Classification		Zone 2 IIA T3			
	5						
OPERATING CONDITIONS	6	Fluid		Oil Water Gas Mixture			
	7	Oper. Press. Min/Op/Max	barg	9.5			15
	8	Oper. Temp. Min/Op/Max	degC	25			65
	9	Design Press.	Design Temp.	45	0-80 degC		
	10	Fluid Density	Fluid Viscosity	800-1011 kg/m3		0.6-10 cP	
	11	NACE MR-01-75 Compliance		NOT REQUIRED			
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom			
	13	Size	Material	2-inch	316 SS		
	14	Process connection	Style	Type	Side-Side mounting	Flanged	
	15	Size	Material	2-inch, #300 WN RF	316 SS		
	16	Center-Center Dimension		1850 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug	316 SS	
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug	316 SS		
	19	Float Material		316 SS			
GAUGE	20	Indicator Type		Magnetically actuated flags in colors (MfrStd)			
	21	Scale Type	Range	Relative to Vessel	125 - 1975 mm		
	22	Housing Material	Ingress Protec.	316 SS	IP 56 min		
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length	0-2000 mm (VTA)	Suit to Chamber		
	25	Accuracy	Configuration	± 0.1 % FS	Bottom Mount Offset		
	26	Output signal	Power supply	4-20 mA HART, 2-wire	24 V DC , loop powered		
	27	Housing material		316 SS NOTE 2			
	28	Process conn.	Electrical Conn.	Clamp-on	1/2" NPT-F	NOTE 3	
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min		
	30	Safety Integrity Level		N/A			
	31						
	HEAT TRACING	32	Type	Supply	N/A		
33		Insulation Type					
34		Termination	Electrical Conn.				
35		Expl. Protection	Ingress Protec.				
PURCHASE	36	Manufacturer		VTA			
	37	Model		VTA			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)
 MfrStd - According to Manufacturer Standard or Practice

NOTES

- Permanent fitted SS Name Plate shall be provided with standard specifications.
- Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009				
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	5 of 13	
GENERAL DATA	1	Tag Number		Qty.	RC12-LG/LZT-1402				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-004					
	3	Line No.	Line size	V-1401					
	4	Hazardous Area Classification		Zone 2 IIA T3					
	5								
OPERATING CONDITIONS	6	Fluid		Oil Water Gas Mixture					
	7	Oper. Press. Min/Op/Max	barg	9.5		15			
	8	Oper. Temp. Min/Op/Max	degC	25		65			
	9	Design Press.	Design Temp.	45	0-80 degC				
	10	Fluid Density	Fluid Viscosity	800-1011 kg/m3	0.6-10 cP				
	11	NACE MR-01-75 Compliance		NOT REQUIRED					
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom					
	13	Size	Material	2-inch	316 SS				
	14	Process connection	Style	Type	Side-Side mounting	Flanged			
	15	Size	Material	2-inch, #300 WN RF	316 SS				
	16	Center-Center Dimension		1850 mm					
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug	316 SS			
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug	316 SS				
	19	Float Material		316 SS					
GAUGE	20	Indicator Type		Magnetically actuated flags in colors (MfrStd)					
	21	Scale Type	Range	Relative to Vessel	125 - 1975 mm				
	22	Housing Material	Ingress Protec.	316 SS	IP 56 min				
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber					
	24	Inst. Range	Probe Length	0-2000 mm (VTA)	Suit to Chamber				
	25	Accuracy	Configuration	± 0.1 % FS	Bottom Mount Offset				
	26	Output signal	Power supply	4-20 mA HART, 2-wire	24 V DC , loop powered				
	27	Housing material		316 SS NOTE 2					
	28	Process conn.	Electrical Conn.	Clamp-on	1/2" NPT-F	NOTE 3			
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min				
	30	Safety Integrity Level		SIL2					
	31								
	HEAT TRACING	32	Type	Supply	N/A				
33		Insulation Type							
34		Termination	Electrical Conn.						
35		Expl. Protection	Ingress Protec.						
PURCHASE	36	Manufacturer		VTA					
	37	Model		VTA					
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice									
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.									



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009			
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	6 of 13

GENERAL DATA	1	Tag Number	Qty.	RC12-LG/LT-0201			1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-008			-
	3	Line No.	Line size	V-200			-
	4	Hazardous Area Classification		Zone 2 IIA T3			
	5						
OPERATING CONDITIONS	6	Fluid		Oil Water Gas Mixture			
	7	Oper. Press. Min/Op/Max	barg	0			2
	8	Oper. Temp. Min/Op/Max	degC	25			65
	9	Design Press.	Design Temp.	7 barg		0-80 degC	
	10	Fluid Density	Fluid Viscosity	18-500 kg/m3 @OperCond.		0.6-10 cP	
	11	NACE MR-01-75 Compliance		NOT REQUIRED			
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom			
	13	Size	Material	2-inch		316 SS	
	14	Process connection	Style	Type	Side-Side mounting		Flanged
	15	Size	Material	2-inch, #150 WN RF		316 SS	
	16	Center-Center Dimension		850 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	19	Float Material		316 SS			
GAUGE	20	Indicator Type		Magnetically actuated flags in colors (MfrStd)			
	21	Scale Type	Range	Relative to Vessel		125 - 975 mm	
	22	Housing Material	Ingress Protec.	316 SS		IP 56 min	
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length	0-1000 mm (VTA)		Suit to Chamber	
	25	Accuracy	Configuration	± 0.1 % FS		Bottom Mount Offset	
	26	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered	
	27	Housing material		316 SS NOTE 2			
	28	Process conn.	Electrical Conn.	Clamp-on		1/2" NPT-F NOTE 3	
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min	
	30	Safety Integrity Level		N/A			
	31						
	HEAT TRACING	32	Type	Supply	N/A		
33		Insulation Type					
34		Termination	Electrical Conn.				
35		Expl. Protection	Ingress Protec.				
PURCHASE	36	Manufacturer		VTA			
	37	Model		VTA			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

- Permanent fitted SS Name Plate shall be provided with standard specifications.
- Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009				
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	7 of 13	
GENERAL DATA	1	Tag Number		Qty.	RC12-LG/LT-0301				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-008					
	3	Line No.	Line size	V-300					
	4	Hazardous Area Classification		Zone 2 IIA T3					
	5								
OPERATING CONDITIONS	6	Fluid		Oil, Water					
	7	Oper. Press. Min/Op/Max	barg	0		2			
	8	Oper. Temp. Min/Op/Max	degC	25		65			
	9	Design Press.	Design Temp.	7 barg		0-80 degC			
	10	Fluid Density	Fluid Viscosity	18-500 kg/m3 @OperCond.		0.6-10 cP			
	11	NACE MR-01-75 Compliance		NOT REQUIRED					
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom					
	13	Size	Material	2-inch		316 SS			
	14	Process connection	Style	Type	Side-Side mounting		Flanged		
	15	Size	Material	2-inch, #150 WN RF		316 SS			
	16	Center-Center Dimension		1200 mm					
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS		
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS			
	19	Float Material		316 SS					
GAUGE	20	Indicator Type		Magnetically actuated flags in colors (MfrStd)					
	21	Scale Type	Range	Relative to Vessel		200 - 1400 mm			
	22	Housing Material	Ingress Protec.	316 SS		IP 56 min			
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber					
	24	Inst. Range	Probe Length	0-1500 mm (VTA)		Suit to Chamber			
	25	Accuracy	Configuration	± 0.1 % FS		Bottom Mount Offset			
	26	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered			
	27	Housing material		316 SS NOTE 2					
	28	Process conn.	Electrical Conn.	Clamp-on		1/2" NPT-F NOTE 3			
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min			
	30	Safety Integrity Level		N/A					
	31								
	HEAT TRACING	32	Type	Supply	N/A				
33		Insulation Type							
34		Termination	Electrical Conn.						
35		Expl. Protection	Ingress Protec.						
PURCHASE	36	Manufacturer		VTA					
	37	Model		VTA					
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice									
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.									



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009			
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GENERAL DATA	1	Tag Number	Qty.	RC12-LZT-0201			1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-008			
	3	Line No.	Line size	V-200			
	4	Hazardous Area Classification		Zone 2 IIA T3			
	5						
OPERATING CONDITIONS	6	Fluid		Gas, oil			
	7	Oper. Press. Min/Op/Max	barg	0		2	
	8	Oper. Temp. Min/Op/Max	degC	25		65	
	9	Design Press.	Design Temp.	7 barg		0-80 degC	
	10	Fluid Density	Fluid Viscosity	18-500 kg/m3 @OperCond.		0.6-10 cP	
	11	NACE MR-01-75 Compliance		NOT REQUIRED			
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom			
	13	Size	Material	2-inch		316 SS	
	14	Process connection	Style	Type	Side-Side mounting		Flanged
	15	Size	Material	2-inch, #150 WN RF		316 SS	
	16	Center-Center Dimension		850 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	19	Float Material		316 SS			
GAUGE	20	Indicator Type		N/A			
	21	Scale Type	Range				
	22	Housing Material	Ingress Protec.				
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length	0-1000 mm (VTA)		Suit to Chamber	
	25	Accuracy	Configuration	± 0.1 % FS		Bottom Mount Offset	
	26	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered	
	27	Housing material		316 SS NOTE 2			
	28	Process conn.	Electrical Conn.	Clamp-on		1/2" NPT-F NOTE 3	
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min	
	30	Safety Integrity Level		SIL2			
	31						
	HEAT TRACING	32	Type	Supply	N/A		
33		Insulation Type					
34		Termination	Electrical Conn.				
35		Expl. Protection	Ingress Protec.				
PURCHASE	36	Manufacturer		VTA			
	37	Model		VTA			

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NOTES
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	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009				
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	9 of 13	
GENERAL DATA	1	Tag Number		Qty.	RC12-LG/LT-0210				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR1-PID-008				-	
	3	Line No.	Line size	VT-AC1-6"-0203-N				-	
	4	Hazardous Area Classification		Zone 2 IIA T3					
	5								
OPERATING CONDITIONS	6	Fluid		Oil/Water					
	7	Oper. Press. Min/Op/Max	barg	0					2
	8	Oper. Temp. Min/Op/Max	degC	25					65
	9	Design Press.	Design Temp.	7 barg		0-80 degC			
	10	Fluid Density	Fluid Viscosity	18-500 kg/m3 @OperCond.		0.6-10 cP			
	11	NACE MR-01-75 Compliance		NOT REQUIRED					
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom					
	13	Size	Material	2-inch		316 SS			
	14	Process connection	Style	Type	Side-Side mounting		Flanged		
	15	Size	Material	1-inch, #150 WN RF		316 SS			
	16	Center-Center Dimension		600 mm					
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS		
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS			
	19	Float Material		316 SS					
GAUGE	20	Indicator Type		Magnetically actuated flags in colors (MfrStd)					
	21	Scale Type	Range	Relative to Vessel		500 - 1100 mm			
	22	Housing Material	Ingress Protec.	316 SS		IP 56 min			
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber					
	24	Inst. Range	Probe Length	0-1200 mm (VTA)		Suit to Chamber			
	25	Accuracy	Configuration	± 0.1 % FS		Bottom Mount Offset			
	26	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered			
	27	Housing material		316 SS NOTE 2					
	28	Process conn.	Electrical Conn.	Clamp-on		1/2" NPT-F		NOTE 3	
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min			
	30	Safety Integrity Level		N/A					
	31								
	HEAT TRACING	32	Type	Supply	N/A				
33		Insulation Type							
34		Termination	Electrical Conn.						
35		Expl. Protection	Ingress Protec.						
PURCHASE	36	Manufacturer		VTA					
	37	Model		VTA					
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice									
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.									



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009			
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	10 of 13

GENERAL DATA	1	Tag Number	Qty.	RC12-LG/LT-5201			1
	2	P&ID No.	Pipe class	RC12-002-TS-PR6-PID-002			
	3	Line No.	Line size	T-8001			
	4	Hazardous Area Classification		Zone 2 IIA T3			
	5						
OPERATING CONDITIONS	6	Fluid		Fresh Water			
	7	Oper. Press. Min/Op/Max	barg	-	ATM	-	
	8	Oper. Temp. Min/Op/Max	degC	-	Ambient	-	
	9	Design Press.	Design Temp.	12 barg		0-45 degC	
	10	Fluid Density	Fluid Viscosity	1000 kg/m3 @OperCond.		0.982 cP	
	11	NACE MR-01-75 Compliance		NOT REQUIRED			
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom			
	13	Size	Material	2-inch		316 SS	
	14	Process connection	Style	Type	Side-Side mounting		Flanged
	15	Size	Material	1-inch, #150 RF		316 SS	
	16	Center-Center Dimension		1200 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	19	Float Material		316 SS			
GAUGE	20	Indicator Type		Magnetic Bar Graph			
	21	Scale Type	Range	Relative to Vessel		110 - 1310 mm	
	22	Housing Material	Ingress Protec.	316 SS		IP 56 min	
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length	0-1500 mm (VTA)		Suit to Chamber	
	25	Accuracy	Configuration	± 0.1 % FS		Bottom Mount Offset	
	26	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered	
	27	Housing material		316 SS NOTE 2			
	28	Process conn.	Electrical Conn.	Clamp-on		1/2" NPT-F NOTE 3	
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min	
	30	Safety Integrity Level		N/A			
	31						
	HEAT TRACING	32	Type	Supply	N/A		
33		Insulation Type					
34		Termination	Electrical Conn.				
35		Expl. Protection	Ingress Protec.				
PURCHASE	36	Manufacturer		VTA			
	37	Model		VTA			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)
MfrStd - According to Manufacturer Standard or Practice

NOTES
1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009			
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	11 of 13

GENERAL DATA	1	Tag Number	Qty.	RC12-LG/LZT-6701			1
	2	P&ID No.	Pipe class	RC12-002-TS-PR6-PID-002			
	3	Line No.	Line size	T-6701			
	4	Hazardous Area Classification		Zone 2 IIA T3			
	5						
OPERATING CONDITIONS	6	Fluid		Diesel Fuel Oil			
	7	Oper. Press. Min/Op/Max	barg			ATM	
	8	Oper. Temp. Min/Op/Max	degC			AMBIENT	
	9	Design Press.	Design Temp.	7 barg		0 - 90 degC	
	10	Fluid Density	Fluid Viscosity	850 kg/m3 @OperCond.		1.5-6 cSt	
	11	NACE MR-01-75 Compliance		NOT REQUIRED			
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom			
	13	Size	Material	2-inch		316 SS	
	14	Process connection	Style	Type	Side-Side mounting		Flanged
	15		Size	Material	1-inch, #150 RF		316 SS
	16	Center-Center Dimension		1400 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS
	18		Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS
	19	Float Material		316 SS			
GAUGE	20	Indicator Type		Magnetic Bar Graph			
	21	Scale Type	Range	Relative to Vessel		100 - 1500 mm	
	22	Housing Material	Ingress Protec.	316 SS		IP 56 min	
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length	0-1500 mm (VTA)		Suit to Chamber	
	25	Accuracy	Configuration	± 0.1 % FS		Bottom Mount Offset	
	26	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered	
	27	Housing material		316 SS NOTE 2			
	28	Process conn.	Electrical Conn.	Clamp-on		1/2" NPT-F NOTE 3	
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min	
	30	Safety Integrity Level		SIL 2			
	31						
	HEAT TRACING	32	Type	Supply	N/A		
33		Insulation Type					
34		Termination	Electrical Conn.				
35		Expl. Protection	Ingress Protec.				
PURCHASE	36	Manufacturer		VTA			
	37	Model		VTA			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)
 MfrStd - According to Manufacturer Standard or Practice

NOTES

- Permanent fitted SS Name Plate shall be provided with standard specifications.
- Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009			
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	12 of 13
GENERAL DATA	1	Tag Number	Qty.	RC12-LZT-6702				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR6-PID-002				
	3	Line No.	Line size	T-6701				
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid		Diesel Fuel Oil				
	7	Oper. Press. Min/Op/Max	barg			ATM		
	8	Oper. Temp. Min/Op/Max	degC			AMBIENT		
	9	Design Press.	Design Temp.	7 barg		0 - 90 degC		
	10	Fluid Density	Fluid Viscosity	850 kg/m3 @OperCond.		1.5-6 cSt		
	11	NACE MR-01-75 Compliance		NOT REQUIRED				
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom				
	13	Size	Material	2-inch		316 SS		
	14	Process connection	Style	Type	Side-Side mounting		Flanged	
	15	Size	Material	1-inch, #150 RF		316 SS		
	16	Center-Center Dimension		1400 mm				
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS		
	19	Float Material		316 SS				
GAUGE	20	Indicator Type		N/A				
	21	Scale Type	Range					
	22	Housing Material	Ingress Protec.					
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber				
	24	Inst. Range	Probe Length	0-1500 mm (VTA)		Suit to Chamber		
	25	Accuracy	Configuration	± 0.1 % FS		Bottom Mount Offset		
	26	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	27	Housing material		316 SS NOTE 2				
	28	Process conn.	Electrical Conn.	Clamp-on		1/2" NPT-F		NOTE 3
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	30	Safety Integrity Level		SIL 2				
	31							
	HEAT TRACING	32	Type	Supply	N/A			
33		Insulation Type						
34		Termination	Electrical Conn.					
35		Expl. Protection	Ingress Protec.					
PURCHASE	36	Manufacturer		VTA				
	37	Model		VTA				
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								



	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM				RC12-002-TS-IA2-DS-009				
	DATASHEETS FOR LEVEL INSTRUMENTS				Rev.	0	Page	13 of 13	
GENERAL DATA	1	Tag Number		Qty.	RC12-LG/LT-6703				1
	2	P&ID No.	Pipe class	RC12-002-TS-PR6-PID-002					
	3	Line No.	Line size	T-6701					
	4	Hazardous Area Classification		Zone 2 IIA T3					
	5								
OPERATING CONDITIONS	6	Fluid		Diesel Fuel Oil					
	7	Oper. Press. Min/Op/Max	barg			ATM			
	8	Oper. Temp. Min/Op/Max	degC			AMBIENT			
	9	Design Press.	Design Temp.	7 barg		0 - 90 degC			
	10	Fluid Density	Fluid Viscosity	850 kg/m3 @OperCond.		1.5-6 cSt			
	11	NACE MR-01-75 Compliance		NOT REQUIRED					
CHAMBER, FLOAT	12	Type		Welded cap on Top, Flange connection at Bottom					
	13	Size	Material	2-inch		316 SS			
	14	Process connection	Style	Type	Side-Side mounting		Flanged		
	15	Size	Material	1-inch, #150 RF		316 SS			
	16	Center-Center Dimension		1400 mm					
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS		
	18	Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS			
	19	Float Material		316 SS					
GAUGE	20	Indicator Type		Magnetic Bar Graph					
	21	Scale Type	Range	Relative to Vessel		100 - 1500 mm			
	22	Housing Material	Ingress Protec.	316 SS		IP 56 min			
TRANSMITTER	23	Type		Magnetostrictive, externally mount on chamber					
	24	Inst. Range	Probe Length	0-1500 mm (VTA)		Suit to Chamber			
	25	Accuracy	Configuration	± 0.1 % FS		Bottom Mount Offset			
	26	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered			
	27	Housing material		316 SS NOTE 2					
	28	Process conn.	Electrical Conn.	Clamp-on		1/2" NPT-F		NOTE 3	
	29	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min			
	30	Safety Integrity Level		N/A					
	31								
	HEAT TRACING	32	Type	Supply	N/A				
33		Insulation Type							
34		Termination	Electrical Conn.						
35		Expl. Protection	Ingress Protec.						
PURCHASE	36	Manufacturer		VTA					
	37	Model		VTA					
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice									
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.									





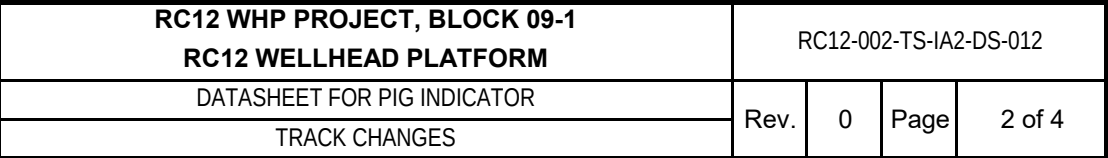
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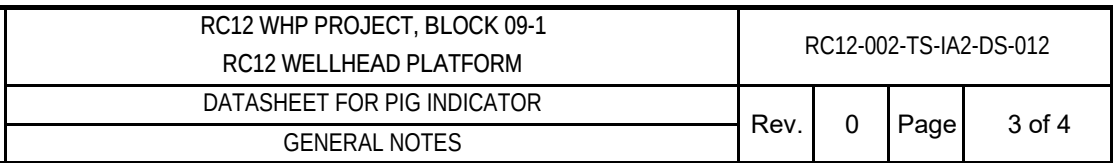


PROJECT : RC12 WHP PROJECT, BLOCK 09-1
SUB-PROJECT : RC12 WELLHEAD PLATFORM
DOCUMENT TITLE : DATASHEET FOR PIG INDICATOR
DOCUMENT NO. : RC12-002-TS-IA2-DS-012
PHASE : DETAILED ENGINEERING

AGREED WITH PIPING			Signed by: Lương Thủy Dương Date: 30/05/2025 14:59:38 Certified by: Vietsovpetro CA			
			L.T.DUONG			
AGREED WITH PROCESS			Signed by: Bùi Quang Thuận Date: 03/06/2025 13:45:43 Certified by: Vietsovpetro CA			
			B.Q.THUAN			
			CONTROLLED Signed by: Nguyễn Thị Thu Trang Date: 03/06/2025 13:47:10 Certified by: Vietsovpetro CA			
				Signed by: Bùi Hồng Dương Date: 04/06/2025 09:22:11 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 04/06/2025 18:08:00 Certified by: Vietsovpetro CA	
				DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
				Signed by: Đỗ Quốc Huy Date: 30/05/2025 10:56:31 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 30/05/2025 11:16:21 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 30.05.2025 13:37:48 Certified by: Vietsovpetro CA
0	IFA	05.2025				
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.	



[illegible]



1. All instruments to be provided with a SS 316 nameplate with tag no. and model no. permanently inscribed.
2. Gasket, Bolts and nuts material for connection to piping shall be in accordance with Piping Material Class Specification: RC12-002-TS-PI1-SP-001 and provided by Piping.
3. All equipments to be suitable for outdoor installation in direct sunlight in a saliferous marine environment.
4. Refer to Technical Specification for Painting: RC12-002-GE-AC7-SP-001_Painting Specification for Platform
5. All the wetted parts shall be compatible with the process fluid at design pressure and temperature.
6. The pig signaller shall be provided with flange and isolation valve assembly to provide easy of operation, installation and can be removed under pressure.
7. Pig signaller pressure housing shall comply with pressure/ temperature rating for flanges as stated in ASME B16.5.
8. Trigger length of Pig signaller can be adjustable at field.
9. Vendor shall provide 01 common portable jacking tool for all pig signallers on RC12 platform
10. Testing pressure for hydrostatic test shall be 1.5 times of design pressure.

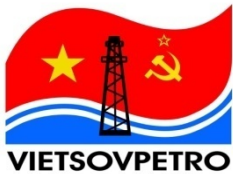


	RC12 WHP PROJECT, BLOCK 09-1				RC12-002-TS-IA2-DS-012			
	RC12 WELLHEAD PLATFORM							
	DATASHEET FOR PIG INDICATOR				Rev.	0	Page	4 of 4

GENERAL DATA	1	Tag Number	RC12-ZI-0901					
	2	P&ID No.	RC12-002-TS-PR1-PID-011					
	3	Service	RC12 Production Pig Launcher P-3301					
	4	Line No./ Vessel No.	Line Size	P-3301		CO-BX1-10"-0903-IE		
	5	Pipe Class	#300					
	6	Pipe/Equipment Material	Carbon Steel					
	7	Pipe Line (Header) Size	Pipe Wall Thickness	Ø 273.1 (10")		15.9	mm	
	8	Nozzle ID	Nozzle Length	ID: 49.2		108.1	mm	
	9							
OPERATING CONDITIONS	10	Fluid/State	Oil + Gas		Two Phase			
	11	Operating Pressure	9.5 ÷ 15					Barg
	12	Design Pressure	35					Barg
	13	Operating Temperature	25 ÷ 65					Deg. C
	14	Design Temperature	0 ÷ 80					Deg. C
	15							
INDICATOR / CASE	16	Construction	Intrusive					
	17	Pigging Detection	Mechanical Trigger					
	18	Assembly	Bi-Directional					
	19	Process Connection	Flanged 2" ASME B16.5 300# RF					
	20	Body/ Flange Material	ASTM A182 F316					
	21	Internal Parts Material	ASTM A182 F316					
	21	Gasket Material (Note 2)	Spiral Wound Gasket, Graphite Filler, SS outer ring & SS inner ring, 4.5mm thick, ASME B16.20 / Insulation kit 2" 300# RF					
	21	Bolts & Nuts Material (Note 2)	ASTM A193 Gr.B8M/ A194 Gr.8M Xylan Fluorocarbon Coated					
	22	Seal Material	Viton					
	23	Flag Material	ASTM A182 F316					
	24	Local Indicator	Mechanical Type Flag up with Manual reset					
	25	Pipe Orientation	Horizontal					
	26							
TRIGGER	27	Material	ASTM A182 F316					
	28	Trigger Length	VTA					
	29	Trigger Type	VTA					
	30	Extendable/ Retractable	Required					
	31	Extraction Tool	General Note 9					
	32	Online Installation/ Removal	Required					
	33	Isolation Valve Size & Type (General note 6)	2" Ball Valve					
	34	Isolation Valve Material	Body: ASTM A105N or ASTM A216WCB & Trim: ASTM A182 F316					
SWITCH	35	Type	N/A					
	36	Switch Rating	N/A					
	37	Enclosure Rating	N/A					
	38	Enclosure Material	N/A					
	39	Cable Entry	N/A					
	40							
PURCHASE	41	Manufacturer	VTA					
	42	Model	VTA					
	43							

NOTES							
1. VTA: Vendor to Advise, N/A - Not Applicable, VTC: Vendor to Confirm							
2. Gaskets, bolts, insulation kit and nuts are provided by piping							
3. Permanent fitted SS Name Plate shall be provided with standard specifications.							





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PROJECT NAME : RC12 WHP PROJECT, BLOCK 09-1

SUB PROJECT : RC12 WELLHEAD PLATFORM

DOCUMENT TITLE : GENERAL INSTRUMENT SPECIFICATION

DOCUMENT NO. : RC12-002-TS-IA2-SP-003

PHASE : DE

Applied Document			VSP-NIPI-TYP-TS-IA2-SP-03		Rev.	1
			CONTROLLED Signed by: Nguyễn Thị Thu Trang Date: 29/03/2025 09:54:28 Certified by: Vietsovpetro CA	Signed by: Trương Minh Đức Date: 31/03/2025 07:29:26 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 31/03/2025 10:16:30 Certified by: Vietsovpetro CA	
			DC: N.T.T.TRANG	ENG.MGR: T.M.DUC	PRO.MGR:T.D.HAI	
			Signed by: Trần Anh Nguyên Date: 28/03/2025 14:22:56 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 28.03.2025 16:40:47 Certified by: Vietsovpetro CA	
0	IFA	28.03.25				
REV.	DES.	DATE	PREPARED: T.A.NGUYEN	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.	

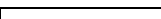


	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM GENERAL INSTRUMENT SPECIFICATION		RC12-002-TS-IA2-SP-003		
			Rev.	0	Page 3 of 5

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1	INTRODUCTION	4
2	ADDENDUM	5



	RC12 WHP PROJECT, BLOCK 09-1		RC12-002-TS-IA2-SP-003			
	RC12 WELLHEAD PLATFORM		Rev.	0	Page	4 of 5
	GENERAL INSTRUMENT SPECIFICATION					

1. INTRODUCTION

The RC12 Wellhead Platform belongs to Vietsovpetro JV. It will be located on the R-79 well template in Block 09-1 of the Dragon oil field, approximately 125 km South-East of Vung Tau City, offshore of the Socialist Republic of Vietnam. This location is approximately about 6.3 km from RP1 and 1.1 km southeast of UBN3. Water depth of this location is about 47 ± 0.5 m relative to MSL.

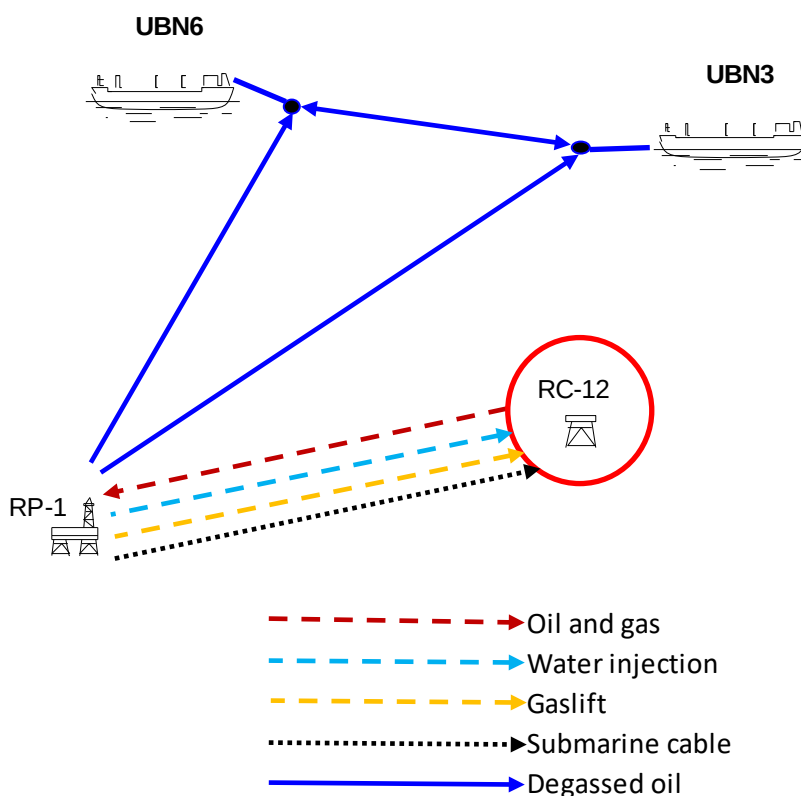


Figure 1: Location of RC12

RC12 is an unmanned platform which will be remotely controlled from the host platform RP-1 via subsea power & fiber optic cable. Design life time of RC12 is 25 years.

RC12 consists of Jacket with Boat Landing and Topsides with Helideck. Production fluid (oil, gas and water mixture) of RC12 will be transported to RP1 via subsea pipeline for further processing. Gaslift and injection water for RC12 will be provided from RP1 via subsea pipelines.

RC12 platform will be designed with 09 well slots, including 05 production wells and 04 slots for future development. After several years of production, 01 production well will be converted to water injection well.

RC12 platform topside facilities are able to accommodate the adjusting well flowrate and well testing, measuring total production flowrate of the platform, gaslift as well as other utility systems. Provision for 04 ESP wells is considered in RC12 design.

Design capacity for RC12 is 1500 m³/d of liquid; 300 000 Sm³/d of gas (associated gas and gaslift), and 500 m³/d of injection water.

Modification on RP1 for receiving product from RC12 is required.



	RC12 WHP PROJECT, BLOCK 09-1		RC12-002-TS-IA2-SP-003			
	RC12 WELLHEAD PLATFORM		Rev.	0	Page	5 of 5
	GENERAL INSTRUMENT SPECIFICATION					

2. ADDENDUM

This document uses the Typical Engineering Documentation for this Project. However, some design intends or requirements may require to be revised to fit with Project's purpose. This section lists changes in the applied typical documents, originating in Typical Engineering Documentation for any reason including those indicated in Table 1. These changes are identified in this Addendum to the applied typical document, identifying the document and section affected and the required change.

VENDOR shall review the required changes in conjunction with the referenced document and project's engineering documents.

The type of modification shall be defined and indicated in subsequent text as follows:

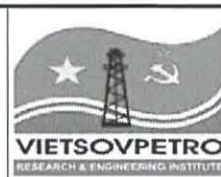
- ✓ "ADD" - Indicates the following statement(s) is/are added to the Company referenced text.
- ✓ "DELETE" - Indicates the following statement(s) is/are deleted from the Company referenced text.
- ✓ "REPLACE WITH" - Indicates the following statement(s) is/are revision(s) to the Company referenced text.

Section	Current Statement or Requirement	Revised to						
Reference Documents	VSP-NIPI-TYP-TS-IA2-SP-01 ICSS - Functional Design Specification VSP-NIPI-TYP-TS-IA2-SP-05 Specification for Control Valves VSP-NIPI-TYP-TS-IA2-SP-04_Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch	REPLACE WITH: RC12-002-TS-IA2-SP-001_ICSS - Functional Design Specification RC12-002-TS-IA2-SP-005 Specification for Control Valves RC12-002-TS-IA2-SP-004_Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch						
3.5.2 Protective Coatings	<table><tr><td>VSP-NIPI-TYP-GEN-AZ7-SP-01</td><td>Painting Specification for Platform</td></tr><tr><td>VSP-NIPI-TYP-GEN-AZ7-SCH-01</td><td>Basic Painting Schedules</td></tr></table>	VSP-NIPI-TYP-GEN-AZ7-SP-01	Painting Specification for Platform	VSP-NIPI-TYP-GEN-AZ7-SCH-01	Basic Painting Schedules	REPLACE WITH: <table><tr><td>RC12-002-GE-AC7-SP-001</td><td>Technical Specification for Painting</td></tr></table>	RC12-002-GE-AC7-SP-001	Technical Specification for Painting
VSP-NIPI-TYP-GEN-AZ7-SP-01	Painting Specification for Platform							
VSP-NIPI-TYP-GEN-AZ7-SCH-01	Basic Painting Schedules							
RC12-002-GE-AC7-SP-001	Technical Specification for Painting							
4.2 Actuated Valves	Refer to document No.: “VSP-NIPI-TYP-TS-IA2-SP-04 Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch”.	REPLACE WITH: Refer to document No.: “RC12-002-TS-IA2-SP-004_Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch”.						
4.3 Control Valves	Refer to document No.: “VSP-NIPI-TYP-TS-IA2-SP-05 Specification for Control Valves”	REPLACE WITH: Refer to document No.: “RC12-002-TS-IA2-SP-005 Specification for Control Valves”						





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AGREED BY
Deputy General Director of
Vietsovpetro

Tran Xuan Hoang

23 / 08 /2022

APPROVED BY
Chief Engineer of Vietsovpetro



Tran Van Vinh

24/08 /2022

TYPICAL ENGINEERING DOCUMENTATION

DOCUMENT TITLE GENERAL INSTRUMENT SPECIFICATION

DOCUMENT NO. : VSP-NIPI-TYP-TS-IA2-SP-03

AGREED:				Name		Date	
Capital Construction Department				Signed by: Nguyễn Hồng Giang Date: 22/08/2022 07:26:14 Certified by: Vietsovpetro CA			
Material and Equipment Department				Signed by: Châu Ngọc Hồ Date: 19/08/2022 11:20:28 Certified by: Vietsovpetro CA			
Mechanical Electrical Division				Signed by: Trịnh Hoàng Linh Date: 19/08/2022 08:07:21 Certified by: Vietsovpetro CA			
CONTROLLED							
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REV.	DES.	DATE	PREPARED	CHECKED	DEPART. MANAGER	ENG. MANAGER	PRO. MANAGER





TYPICAL ENGINEERING DOCUMENTATION
GENERAL INSTRUMENT SPECIFICATION

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CHANGE LOG

REV	SECTION	PAGE	CHANGE DESCRIPTION
1	3.6	11	REVISED: ~~DNVGL-OS-D201~~ DNV-OS-D201
1	4.1	13	REVISED: ~~1/2" 1/4" NPT-F~~ minimum
1	5.2.1	15	REVISED: Thermowells shall have ~~DN40~~ DN50 RF flange process connections (~~DN50 RF for vessel connection~~).
1	5.7	19	REVISED: in ~~API-MPMS Chap. 5.6~~ and ISO 10790 Output signal shall be Modbus interface and optional 4-20mA with local indicator (~~HART type is preferred~~).
1	5.8	20	REVISED: The Ultrasonic flow measurement shall be according to ~~AGA Report No. 9~~ . In order to meet the ~~MPFM~~ performances, Output signal shall be Modbus interface and or 4-20mA
1	5	20, 21	ADDED: Section 5.9 Rotameter Section 5.10 Turbine Meter Section 5.11 Water Cut Meter Section 5.12 Pig Signaller
1	6.4	23	REVISED: Smoke detectors installed within the Battery Room shall be suitable for Class 1 Zone 1 Group IIC T3, and shall be certified ~~SIL2~~ rated as minimum.
1	6.7	24	REVISED: All Emergency pushbutton shall be certified ~~SIL2~~ rated as minimum.
1	6.8	24,25	ADDED: Section 6.8 Open Path Flammable Gas Detector Section 6.9 Sounder Section 6.10 Beacon
1	7.1	26	REVISED: Cross section for copper conductors shall be as follows: • Power cables (i.e. for solenoids, lamps, 24VDC interface signals, etc.): ~~2.5~~ 1.5 mm² minimum • Control cables (i.e. for transmitters, positioners, limit switches): ~~4.5~~ 1.0 mm² minimum
1	8.1	28	ADDED: Section 8.1.2 FRP Cable Tray

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REFERENCE DOCUMENTS

Number of document	Description
VSP-NIPI-TYP-TS-IA2-SP-01	ICSS - Functional Design Specification
VSP-NIPI-TYP-TS-IA2-SP-05	Specification for Control Valves
VSP-NIPI-TYP-TS-IA2-SP-04	Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch



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1. INTRODUCTION

The typical engineering documentation is a set of engineering documents issued by Research and Engineering Institute (REI) that can be applied repeatedly to many projects that REI involves.

The typical engineering documentation shall be agreed by related departments in Vietsovpetro and approved by Vietsovpetro, if any.

1.1 Purpose of document

This document defines the minimum requirements for design, materials, fabrication, inspection, testing, painting, preparation for shipment, and documentation for the supply of instruments and field devices.

1.2 Definition of Terms

Within this document the following definitions shall apply:

COMPANY	The party which initiates the project and ultimately pays for its design and construction and owns the facilities. Here the COMPANY is Vietsovpetro JV (referred to as VSP).
CONTRACTOR	The party which carries out all or part of the design, engineering, procurement, construction and commissioning of the project.
VENDOR	The party which the order or contract of supply of the equipment/package or services is placed.
Shall	Refers to mandatory requirement
Should	Refers to a recommendation

1.3 Abbreviations

API	American Petroleum Institute
APS	Abandon Platform Shutdown
CCR	Central Control Room
CPP	Central Processing Platform
ESD	Emergency Shutdown System
F&G	Fire and Gas
FAT	Factory Acceptance test
FC	Fail Close
FL	Fail Lock
FO	Fail Open
FGS	Fire & Gas System
HC	Hydrocarbon
HSE	Health, Safety, and Environment
HMI	Human Machine Interface
HVAC	Heating Ventilation and Air Conditioning
IOM	Installation, Operation, and Maintenance
ITP	Inspection and Test Plan
I/O	Input/Output
ICS	Integrated Control System
ICSS	Integrated Control & Safety System
IEC	International Electrotechnical Commission
IR	Infra-red
IS	Intrinsically Safe



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ISA	The International Society of Automation
JB	Junction Box
LCD	Liquid Crystal Display
LCP	Local Control Panel
LED	Light Emitting Diode
MODBUS	Serial Communication Protocol by Modicon
MTTR	Mean Time To Recovery
MTBF	Mean Time Between Failure
NC	Normally Close
NO	Normally Open
NDE	Non Destructive Examination
NPS	Nominal Pipe Size
OS&Y	Outside Screw and Yoke
P&ID	Piping and Instrument Diagram
PAPA	Prepare to Abandon Platform
PCB	Polychlorobiphenyls
PCS	Process control system
PVC	Polyvinylchloride
PO	Purchase Order
PLC	Programmable Logic Controller
QA/QC	Quality Assurance / Quality Control
RFI	Radio Frequency Interference
RO	Restriction orifice
RTJ	Ring Type Joint
RF	Raised Face
SAT	Site Acceptance Test
SIL	Safety Integrity Level
SIS	Safety Integrated System
SOE	Sequence of Events
SWB	Steel Wire Braid
SPIR	Spare Parts and Interchange ability Record
TFE	Tetrafluoroethylene
TPI	Third Party Inspection
UCP	Unit Control Panel
UPS	Un-interruptible Power Supply
VDU	Video Display Unit
VDRL	Vendor Data Requirements List

2. REFERENCES, CODES & STANDARDS

2.1 General

All equipment shall comply with the relevant national and international codes, standards and recommendations. The Vendor shall determine what equipment requires type approval by the local Vietnamese Authority and shall provide type approval equipment where necessary. This specification requires that the design, construction and testing of the instrument shall meet all requirements of the codes, standards and other documents listed in Section 2.2.

In general, the Instrumentation and Control systems shall be designed to conform with, but not limited to the latest editions of the following industry standards, codes, professional documents, regulations and project documents.



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2.2 International Codes & Standards

API MPMS	API Manual of Petroleum Measurement Standards (for turbine meter, auto sampling, etc)
API RP-14C	Recommended Practice for Analysis, Design, Installation and Testing of Basic Surface Safety Systems for Offshore Production Platforms
API RP-14FZ	Recommended Practice for Design, Installation and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class 1, Zone 0, Zone 1 and Zone 2 Locations
API RP 14G	Recommended Practice for Fire Prevention and Control on Open Type Offshore Production Platforms.
API RP 14J	Recommended Practice for Design and Hazards Analysis for Offshore production facilities.
API RP 2218	Fireproofing Practices in Petroleum and Petrochemical Processing Plants
API RP-505	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, and Zone 2
API RP 540	Electrical Installations in Petroleum Processing Plant
API RP 550	Manual on Installation of Refinery Instruments and Control Systems
API RP-551	Process Measurement Instrumentation
API RP-552	Transmission System
API RP 554 (3 parts)	Process Instrumentation and Control
API RP-555	Process Analyzers
API RP 581	Risk Based Inspection Base Resource Document
ASME B16.5	Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard
ASME 19.3	Performance Test Code, Part 3: Instruments and Apparatus Temperature Measurement
ASTM A269	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
BS 6739	Code of Practice for instrumentation in process control system : Installation design and practice
DNVGL-OS-A101	Safety Principles and Arrangements
DNVGL-OS-D201	Electrical Installations
DNVGL-OS-D202	Instrumentation and Telecommunication Systems
DNVGL-OS-D301	Fire Protection
DNVGL-OS-E201	Oil and Gas Processing Systems
DNVGL-RP-E402	Recommendation for selecting standards for electrical and instrumentation components (tentative recommended practice)
EN 54-2	Fire Alarm Control Panel
IEC 60079-1 to 14	Electrical apparatus for explosive gas atmospheres
IEC 60092 (all parts)	Electrical installation in Ship
IEC 60331	Tests for Electric Cables under Fire Conditions
IEC 60332	Tests on Electric and Optical Fiber Cables under Fire Conditions
IEC 60381	Analogue Signals for Process Control Systems.
IEC 60529	Degrees of Protection Provided by Enclosures (IP Code)
IEC 60534	Industrial Process Control Valves
IEC 60896	Stationary lead Acid Batteries
IEC 61000	Electromagnetic Compatibility (EMC)
IEC 61131	Programmable Controllers
IEC 61499	Functional Blocks
IEC 61508	Functional Safety of Electrical/Electronic/Programmable Electronic Safety-related Systems





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IEC 61511	Functional Safety - Safety Instrumented Systems for the Process Industry Sector
IEC 61882	Hazard and Operability Studies (HAZOP Studies)
IEC 61892 series	Mobile and fixed offshore units - Electrical installations
IEC 62040	Uninterruptible Power Supply
IEC 62086	Electrical apparatus for explosive gas atmospheres - Electrical resistance trace heating
IEC 61537	Cable tray systems and cable ladder systems for cable management
IEE (1992)	Recommendations for electrical and electronic equipment of mobile and fixed offshore installations
IEEE Std 1242	Guide for Specifying and Selecting Cable for Petrochemical Plants.
ISA 5.1	Instrumentation Symbols Identification
ISA 5.3	Graphic Symbols for Distributed Control/Shared Display Instrumentation, Logic, and Computer Systems
ISA 5.4	Instrument Loop Diagrams
ISA 5.5	Graphic Symbols for Process Displays
ISA 12.13.01	Performance Requirement for Combustible Gas Detectors
ISA 12.21.01	Use of Fiber Optic Systems in Class 1 Hazardous (Classified) Locations
ISA 12.13.01	Performance Requirements for Combustible Gas Detectors.
ISA 12.13.02	Installation, Operation, and Maintenance of Combustible Gas Detection Instruments
ISA 20	Specification Forms for Process Measurement and Control Instruments, Primary Elements, and Control Valves
ISA RP 60 Series	Control Center
ISA S71	Environmental Conditions for Process Measurement and Control Systems
ISA 75 Series	Control Valve Standards & User Resources
ISA 84.01	Application of Safety Instrumented Systems for the Process Industries.
ISA TR 84 Series	Safety Instrumented Functions (SIF)-Safety Integrity Level (SIL) Evaluation Techniques
ISA RP 92.0.02	Installation, Operation, and Maintenance of Toxic Gas - Detection Instruments: Hydrogen Sulfide.
ISA 92.0.01	Part I Performance Requirements for Hydrogen Sulfide Detection Instruments.
ISO 2715	Liquid hydrocarbons – Volumetric measurement by turbine meter system
ISO 3170	Petroleum liquids – Manual sampling
ISO 3171	Petroleum liquid – Automatic pipeline sampling
ISO 10790	Measurement of fluid flow in closed conduits -- Guidance to the selection, installation and use of Coriolis flowmeters (mass flow, density and volume flow measurements)
NEMA ICS 1	General Requirements for Industrial Control
NEMA ICS 2	Industrial Control Devices, Controllers and Assemblies
NEMA ICS 6	Enclosures for Industrial Control Systems
NEMA PE-1	Uninterruptible Power Supply – Specification and Verification
NFPA 1	Fire Protection Code.
NFPA 70	National Electrical Code ® (NEC)
NFPA 72	National Fire Alarm Code
IP 15	Area Classification Code for Installations

3. ENGINEERING DESIGN DATA

3.1 Environmental conditions

All Instrument and Control equipment shall be suitable for operation on offshore platform. The equipment shall be suitable for continuous and short time duty, in the environmental conditions prevailing at site.

The environmental and climatic data are summarized below:



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Atmosphere:	Offshore, salt laden, marine air condition, expose to monsoon storm and winter depression
Ambient Temperature:	39°C (Max) 21°C (Min)
Relative Humidity:	98% (max) 62% (min)
Wind Velocity:	18.8 m/s
Rainfall:	50 mm/hr
Seismic:	5 Richter

Indoor Air-conditioner conditions:

Instruments located in indoor equipment rooms, which will normally be air-conditioned (AC) environments. These areas shall be subject to the following conditions:

- Ambient Air Temperature: 21 - 24 °C
- Relative Humidity: 45 - 55%

The equipment shall be able to operate correctly under conditions of air-conditioning failure, when the ambient conditions may rise to 50°C and 100% RH.

3.2 Design Life

All new equipment shall be designed for a service life of 15 years and shall have minimum 2 years proven in used in offshore environment condition.

3.3 Utilities

The facilities will be equipped instrument air system which shall meet requirements of ISA-7.0.01 "Quality Standard for Instrument Air" in general as followed.

The instrument air shall be free from oil and other liquids, and from toxic, corrosive, flammable and obnoxious gases or vapors.

The pressure dew point as measured at the dryer outlet shall be at least 10°C below the minimum temperature to which any part of the instrument air system is exposed. The pressure dew point shall not exceed 4°C at line pressure.

The quantity of solids shall be less than 0.1 g/m3 and the diameter of the particles shall not be more than 40 micrometer particle size in the instrument air system is acceptable for a majority of pneumatic devices.

The lubricant content should be as close to zero as possible and under no circumstances shall it exceed one ppm w/w or v/v.

- Design Instrument Air pressure : 12 barg
- Normal Instrument Air pressure : 5~7 barg
- Max./ Min. Instrument Air pressure : 8 / 4 barg

Electrical Power: Power supply to Instrument and Control systems shall be as follows:

- 220 VAC, 50 Hz, 1-phase, unearthed, UPS
- 220 VAC, 50 Hz, 1-phase, Non-UPS, solidly earthed
- 380 VAC, 50 Hz, 3-phase

24 VDC power supplies, if required, shall be derived from the respective power supply unit within the systems.

Note 1: For UPS backup time definition, reference shall be made to "BK21-002-TS-ES2-DB-01_Electrical Design Basis".

3.4 Units of Measurement



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Unless otherwise stated, units of measurement shall in general be in accordance with the International System of Units (SI Units), ISO 80000-1.

3.5 Weather Protection

3.5.1 Ingress Protection

Ingress protection for instruments / equipment shall be in accordance with IEC 60529 and as follows:

- Minimum IP 56 for outdoor installations
- Minimum IP 44 for installations inside enclosed rooms without air-conditioner
- Minimum IP 22 for installations inside enclosed rooms with air-conditioner

3.5.2 Painting

All field instruments housing of carbon steel, frame works and supports shall be painted to suit the environmental condition. The detailed requirements for painting will be stated in:

VSP-NIPI-TYP-GEN-AZ7-SP-01	Painting Specification for Platform
VSP-NIPI-TYP -GEN-AZ7-SCH-01	Basic Painting Schedules

Stainless steel instruments/equipment shall not be painted.

3.5.3 Tropicalization

All field mounted electrical/electronic instruments/equipment shall be tropicalized in accordance with manufacturer's standard procedure. All electronic printed circuit boards shall be conformal coated or equal, to protect against humidity, corrosion and heat (i.e. tropical ambience).

3.6 Hazardous Area Classification

Hazardous areas shall be classified according to API RP 505, and equipment specified accordingly.

All equipment for use in hazardous areas shall be certified by reputable bodies such as ATEX, PTB, CENELEC, BASEEFA, FM, UL, CSA...

Sensors and actuating devices outside rooms shall be certified for operation in a Class 1, Zone 2 Group IIA T3 hazardous areas as minimum, except all detector devices located in the hazardous area shall be certified for use in Class 1, Zone 1, Group IIA T3 hazardous areas. Unless otherwise stated, the minimum ingress protection of outdoor instruments and devices shall be IP56 as minimum as per DNV-OS-D201 and IEC 60529. 

For reasons of standardization, unless otherwise stated, all field mounted electrical equipment used for instrumentation circuits shall utilize the methods of EEx'd' protection and be certified for the hazardous area. Two following cases should be considered:

- Junction boxes for Non-Intrinsically Safe Circuits–Explosion proof/flameproof Ex 'e' if comply with API RP14F, otherwise Ex'd' shall be required
- Cable Gland – Explosion proof/flameproof Ex 'd'.

If specialist instrumentation cannot be provided with the above methods of protection, then alternative methods suitable for the classified area and certified by an acceptable Authority may be proposed. The Vendor shall submit a technical report justifying the instrument selection for the Purchaser's consideration.

Cables that necessarily are located so they may come into contact with mud are to be constructed of materials resistant to oil based mud to comply with DNV-OS-D201. 

The Vendor shall provide a dossier of all hazardous area equipment, containing all information pertinent to the hazardous area work. The dossier shall include all necessary certificates, drawings, calculations, catalogue information, data and specification sheets etc.

All instrument equipment to be installed in a hazardous area meets all the relevant requirements of the ATEX Directive and shall have the **CE** symbol clearly fixed to indicate compliance.



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If they meet other requirement of UL, CSA (North America)...., the  ;  or relevant symbols shall be provided to indicate compliance.

3.7 Earthing

There are 2 type of earth in platform:

- Instrument Earth: Instrument termination; earth bar... shall be connected to.
- Protective Earth: Instrument housing, enclosure shall be connected to.

All panels, junction boxes, frames, etc. shall be equipped with 10 mm diameter earth studs and all metal work shall be earth bonded. All outdoor equipment shall have external earth studs.

All Instrument signal cable screens shall be earthed at one point only. This shall be at the equipment panels. All screens shall be continued through junction boxes and insulated from earth at the field side.

Cable armors shall be earthed at both ends with continuity through junction boxes.

All electronics field instrument housings shall be separately grounded by connecting the external studs to the platform ground.

For Offshore all the earth points converge to a single earthing boss, however the safety and Instrument earths will remain segregated at the enclosure end.

Earthing cables used shall be stranded Cu and EPR insulated, 600/1000 Volt grade and shall have green / yellow colored outer sheaths.

3.8 Material Requirements

Materials shall be selected with regard to the following criteria:

Suitability for the specified process conditions, with 316SS as the minimum for use outside fully enclosed rooms.

Suitability for the corrosive effects of the atmosphere.

Galvanic compatibility between dissimilar materials, with isolating bushes, plates, used where necessary to prevent corrosion due to galvanic action.

The possibility of selective corrosion in certain alloys and stress corrosion cracking in certain high strength materials when used in corrosive environments.

Purchaser approval shall be obtained for the use of aluminum for any instrument component. Aluminum may only be used if no other suitable material is available from the manufacturer and shall not be used for any component in contact with the process fluid. If aluminum is used for any housing or component it shall be suitably coated and certified as copper free i.e. less than 0.4% copper by mass.

Material for all Ex'e' junction boxes, and instrument electronics and termination housings shall be 316SS.

All proposed plastic components shall be toxic free and fire resistant, UV resistant, and compatible with the environmental conditions.

All bolting, screws etc, shall be manufactured from a suitable grade of stainless steel.

All brackets, fittings etc shall be fabricated from 316SS.

3.9 Nameplates

Each item shall be equipped with a manufacturer's nameplate of 316SS permanently attached with stainless steel screws or rivets indicating the specified data referred to under the particular Instrument Specification in addition to the following as a minimum:

- Instrument Tag No.
- Purchase Order No.
- Name of Manufacturer.
- Place of Manufacture.
- Type and Model No. (including reference to any special features).
- Serial No.



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5.1.1 General

Materials for process wetted parts of instruments and accessories shall comply with the project piping specification. The minimum requirement is 316SS for all wetted parts.

In addition to the process isolation valve, pressure instruments shall be provided with close-coupled manifolds providing facilities for isolation of each impulse line, equalization, bleeding and testing DP gauges and switches shall be provided with manifolds, DP transmitters (except DP level transmitters with filled-leg or diaphragm seal) shall be provided with manifolds.

Pressure instruments shall be mounted such that they may be easily removed and adjusted without deforming impulse lines.

All pressure instruments shall be mounted so as to minimize the length of impulse lines.

The use of over-range protector shall be advised by Vendor. Over-range protectors shall not be applied without the written permission of the Purchaser.

5.1.2 Pressure Gauges

Gauge scales shall be direct reading linear in Bar or kPa.

Dials shall have a diameter of 100mm or 160mm for all measurement readings and 63mm for filter regulators or other pneumatic instrument.

Gauges shall withstand 130% of the maximum full range pressure without affecting their calibration.

Pulsation dampeners or snubbers shall be supplied for instruments in pulsating service, such as reciprocating pump and compressor suction and discharge.

Gauges shall be of solid front 316SS construction, with a screwed retaining ring, weather-proof design, equipped with rear blowout disc and zero adjustment. Gauge lenses shall be shatterproof glass or acrylic plastic.

Accuracy shall be within 1% of the scale range. Accuracy within 1.6% of the scale range can be accepted for Difference Pressure Gauge.

Gauge connections shall be ½" NPT-M bottom except for receiver gauges, which may have ½" NPT-M back connection.

Pressure gauges shall be liquid filled as standard, using fluids as listed below:

Pressure Span	Filling	Temp. Range
Spans 243 kPa Minimum	Glycerine 98 %	-10° to 66°C
Spans 60 kPa Minimum	Silicone	-40° to 100°C
Up to 0.61 kPa Maximum	No Filling	N/A

Gauge ranges shall be selected such that the normal operating pressure will read between approximately 1/3 and 2/3 full scale.

5.1.3 Pressure Switches

Pressure switches shall be diaphragm or piston type with hermetically sealed single pole double throw (SPDT) micro-switch rated 1 Amp 24 VDC minimum.

Piston type switches shall have a process isolation diaphragm made of "TFE" or similarly inert material, and may only be applied on utility service.

Pressure switches shall have tamper-proof set point adjustment.

Pressure switch dead band shall be less than the difference between the normal operating pressure and set point.

Pressure switches shall not be used for ESD functions without Purchaser approval.

Set point shall be not less than 50% of the range and shall be adjustable without violating the flameproof integrity of the switch enclosure. A separate cover shall give set point adjustment access.

The switch element shall withstand an over-range pressure of 1.3 times maximum range without loss of calibration.

Electrical connection shall be ½" NPT.



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Enclosure material shall be SS316.

Repeatability shall be $\pm 1.0\%$ with fixed dead-band.

Process connection shall be bottom entry, 316SS threaded 1/2" NPT-F.

Pressure switches shall have provision for surface mounting by body lugs or flange.

5.1.4 Pressure and Differential Pressure Transmitters

All pressure transmitters shall use Coplanar type arrangement process connections. All transmitters shall be supplied with Integral Manifold assembly.

Output signals shall be 4-20mA with HART.

Electrical connection shall be 1/2" NPT.

Transmitters shall include an LCD indicator scaled in engineering units, and shall be mounted integrally in the head of the detecting element where access permits, otherwise remotely mounted. Where the transmitter is not readily visible a separate loop-powered indicator shall be provided.

Transmitters shall be able to withstand an overpressure equal to the body rating.

Span shall be continuously adjustable over the transmitter range.

Transmitters shall have 50% over-range protection and body studs shall be high tensile stainless steel, or other corrosion-resistant material for higher stress levels.

Accuracy shall be within 0.25% of the scale range.

Transmitters shall be constructed of material suitable for the process fluid, 316SS minimum.

Bolting shall be 316SS with 1/2" NPT process connection.

5.1.5 Mounting

Mountings shall be 316SS bracket type suitable for mounting on a 2" pipe stand and/ or flat steel plate.

Nuts, bolts and washers shall be 316SS or better. Where switches and other devices are grouped and mounted on a gauge board, or instrument stand, adjustment or removal of each instrument shall be possible without the need to disconnect, dismantle or remove any other instruments or equipment or deform any tubing.

5.2 Temperature Instruments

5.2.1 Thermowells

Temperature elements installed on process lines or vessels shall be installed in thermowells.

Thermowells shall have DN50 RF flange process connections. Sensor connections to thermowells shall be 1/2" NPT. Stainless steel thermowell flanges shall be rated as the same class of pipe which it is connected.

Screwed thermowells may be used on utilities with specific Purchaser approval, and shall be fabricated from drilled and threaded bar stock, with 1"NPT (male) and 1/2" NPT (female) threads.

Thermowell pressure/temperature ratings shall be in accordance with ASME B16.5 (latest edition).

Thermowell material shall be suitable for the process media, generally 316SS, or other material as required by the project piping specification.

Thermowells shall be fabricated from drilled bar stock, with minimum wall thickness of 4.8mm, and 6.5mm bore. Bore shall be concentric with the outside diameter to within 10% of wall thickness.

Thermowells shall be designed to withstand vibration stresses caused by stream velocity. Wake frequency at maximum flow velocity shall be less than 80 per cent of the natural frequency of the thermowell. The Vendor shall provide calculations to ASME Performance Test Code 19.3, Part 3: Instruments and Apparatus Temperature Measurement.

Thermowells shall project into the centre third of pipe diameter, up to a maximum immersion length of 127mm (5inches) as per API RP551. Where a thermowell is required in line sizes DN80 or less, a line section enlarged to DN100 shall be provided. Thermowells shall not be installed in elbows.

Lagging extensions shall be provided on insulated piping and insulated vessels.

Thermowells for use as test wells shall be provided with a stainless steel plug and chain.

All thermowells will be provided with pressure test and NDT certificates.



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5.2.2 Temperature Gauges

Local temperature indication shall be Bimetallic thermometer type and provided by gauges with 100mm dials, every angle head, 316SS construction and zero adjustment. Where the use of rigid stem temperature gauges would hamper reading of the scale, remote-mounted gauges with capillary extension may be used.

Gauge accuracy shall be $\pm 1\%$ full scale.

5.2.3 Temperature Sensors and Transmitters

For temperatures up to 350°C, measurement elements shall be platinum resistance temperature detectors, 100 ohms at 0°C to BS 1904, with RTD/current transmitters. Transmitters shall include an LCD indicator scaled in engineering units, and shall be mounted integrally in the head of the detecting element where access permits, otherwise remotely mounted.

For critical loops temperature transmitters shall use dual sensors with HOT BACKUP facility.

Surface metal temperatures shall be measured by thermocouples secured to the surface.

Thermocouples shall normally be the mineral-insulated metal-sheathed type, isolated from earth. Characteristics of mV versus temperature shall conform with BS 4937.

Electrical connection shall be $\frac{1}{2}$ " NPT.

5.2.4 Thermocouples

Thermocouples shall be mineral insulated and sheathed. The hot junction shall be electrically insulated from the sheath.

Thermoelectric properties, color coding, and limits of error of thermocouples and thermocouple extension wires shall conform to IEC 60584.

In general thermocouples shall be Type K (Chromel-Alumel) for the temperature range - 20°C to 1000°C.

For temperatures above 1000°C, Type R (Platinum/13% Rhodium – Platinum) shall be used.

Thermocouples for temperature-differential measurements shall be electrically isolated from ground.

All thermocouple instruments shall have thermocouple burn-out indication. This will be full upscale or down scale as per specific requirement.

Thermocouple wires (if and when required) shall be as short possible prior to the temperature transmitter.

5.3 Level Instruments

5.3.1 General

Where possible, vessel bridles with DN80 ANSI flanges shall be used for multiple level instrument installations. Process control and safety instruments shall be mounted on separate bridles and have difference nozzles.

Vent and drain connections shall be provided. Vent connections shall be plugged, drain and test connections shall be valved and piped to the platform drains system.

For utility system, level measurement greater than two meters and fixed S.G., a differential type pressure transmitter shall be used. Consideration shall be given to the use of wet legs in this application.

All flanges on the level instrument pressure retaining parts shall be of the same type and rating as the process flanges, and shall be in accordance with the vessel trim specification.

Transmitters shall be fitted with LCD output indicators, scaled 0 –100%. Where this is not possible or desirable, a separate loop-powered indicator shall be installed.

The transmitter housings shall be SS316. Accuracy shall be in range 0.25% of full scale. Output signals shall be 4-20mA with HART.

Electrical connection shall be $\frac{1}{2}$ " NPT.

Heat tracing system including electrical heat tracing, isolation, distribution panels... shall be required where necessary. The 220VAC, 1Ph incoming power will be provide by purchaser based on Vendor calculation for power consumption. Electrical heat tracing device shall be suitable for Class 1, Zone 2, Group IIA T3. All technical requirements for heat tracing system shall follow IEEE 515.



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5.3.2 Displacement Type Level Instruments

Displacement type level instruments shall be of the externally mounted type.

Preferred ranges are: 356mm 813mm 1219mm

In cases where these steps are too large, intermediate ranges of 559 and 1015mm may be specified. For ranges over 1219mm differential pressure instruments are preferred.

Displacer chambers for external displacers shall have minimum DN50 ANSI 300 RF flanged vessel connections. 'Side and Side' connections shall be used with ring type joints or similar connections. 'Side and top' connections shall be used only in cases where this would avoid a pocket in the connecting piping (on small vessels).

Constructions using air fins or torque tube extensions shall be specified for high and low temperature services.

Displacer material shall be compatible with the vessel specifications. Special attention shall be paid to correct welding and heat treatment services.

Torque tube shall be Inconel or Monel minimum, with nylon bushing type bearings.

All other wetted parts shall be 316SS or as approved by Purchaser.

Connection for internal displacer shall be DN100 flanged, unless otherwise specified and approved by the Purchaser.

5.3.3 Magnetic Float Level Gauge

Magnetic Float type level gauges used externally to vessels shall include the following specific features:

- An external gauge chamber
- A hermetically sealed float, which shall have a minimum positive buoyancy in the lower fluid, at the minimum specified density. Vented or pressure-equalized floats shall not be used. The float shall contain a permanent magnet
- Float shall be able to withstand the full design pressure, not just a margin above operating pressure
- Float specific gravity shall be properly selected such that magnetic coverage be 360 degrees.
- Clearance between the float and the gauge chamber internal walls shall be adequate for the intended service, particularly in respect to expected solids or waxes which may occur.
- The gauge chamber shall be sized with due consideration to the float length to ensure that float can be accommodated, with clearance, at the specified 0% and 100% of measuring range levels, inclusive of worst case specified density variation. For side entry chambers, the 0% and 100% points correspond to the center line of the process flanges, unless otherwise noted.
- An external visual level indicator, comprising a series of pivoted flapper bars magnetically coupled to the float shall be provided. The indicator bar shall be contained within a hermetically sealed polycarbonate or glass transparent enclosure. It shall be possible to remove the Indicator bar from the enclosure for maintenance. A graduated ruler bar, parallel to the indicator bar, shall also be provided, calibrated in mm. The origin for the scale shall correspond to the relevant level sketch.
- The ruler bar shall be made of SS316L. Numbers shall be painted on and embossed into the metal ruler.
- Top and bottom travel stops shall be fitted to all chambers.
- Means shall be provided to secure the float during transportation.
- All lengths shall be standardized platform wide as far as possible.

Level float elements shall be external chamber type. Floats shall be entered on the instrument data sheet, and marked on the instrument nameplate.

5.3.4 Differential Pressure Level Instruments

The transmitter body shall be suitable for either direct flange-mounted to vessel piping isolation valve or remote mounted type with capillary. The transmitter body and diaphragm sensor materials shall be manufactured from 316 stainless steel or superior metals.

The differential sensor unit shall be able to withstand loss of design static pressure on either side of the diaphragm without permanent damage to the sensor.



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Where plugging, condensation of vapor or vaporization is liable to occur chemical seals shall be utilized together with flushing/calibration ring. 'Wet' reference legs for level measurements are not acceptable.

5.3.5 Guided Wave Radar level transmitter

Guided wave radar instruments shall be based on Time Domain Reflectometry (TDR) technology.

Vessel connections of GWR transmitter's head shall be flanged and removal of the transmitter shall be possible in situ with the vessel still pressurized.

Stilling wells if required shall be provided. Manufacturer shall advise the type of probe as selection is dependent on service applications.

5.3.6 Magnetostrictive Level Transmitters (MTL)

Level transmitter shall be included with the magnetic gauge, see section 5.3.3 for gauge requirements.

Transmitter shall be side-bottom mounting. Transmitter shall meet the same enclosure design, signal requirements and electrical area classification defined for other types of level transmitters.

They shall be rated for the design pressure and temperature of the monitored equipment for the service ratings.

5.3.7 Other Level Instrument type

If none of the above types satisfies the requirement of specified application, other type such as capacitance, ultrasonic, etc. can be used with approval by COMPANY.

5.4 Flow Meter Assembly

Supplier to implement calculation, selection, engineering, procurement/ fabrication and delivery of the complete Flow Meter assembly, including meter, pressure transmitter, temperature transmitter, meter tubes, strainer, flanges, gaskets, bolts, nuts, cable, flow computer and all other accessories following API MPMS so that the owner don't need to provide any additional materials to perform the meter assembly. All components can be disassembled for transport and shall be reassembled on the offshore platform.

Sizing calculation/selection, hook-up drawings, full catalogs, data sheets, bill of materials shall be attached to the proposal.

Electrical connection shall be ½" NPT.

5.5 Orifice Plates

5.5.1 Orifice Plate Assemblies

Orifice plates shall be used for Gas service.

Transmitter range and orifice sizing shall be arranged such that normally:

- The differential pressure at maximum flow rate is 25kPa. If circumstances dictate otherwise, the differential pressure shall be a simple multiple or fraction of 25kPa, Vendor to provide the suitable value of Dp for Company's approval. Maximum Dp shall be 50kPa.
- The d/D ratio shall be in the range of 0.2 to 0.75.
- The upper range value of the flow instrument shall be a whole number multiple of the lower range value, to provide straightforward interpretation of chart scales.

The turndown ratio shall not greater than 5:1 unless otherwise specified in Datasheet documents.

Orifice plates shall be square edge, constructed from 316SS and have an identification tab, external to the process, with the following information stamped on the upstream side:

- Tag no
- Material
- Orifice bore size (specified or calculated)
- d (bore corrected to 20°C)
- Line Size

Orifice plates, flanges and fittings shall be fabricated in accordance with ISO 5167 or AGA - Gas Measurement Committee, Report No. 3 (AGA 3). The plate finish shall be 15-20 micro-inch roughness. The Vendor shall



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provide a measurement report showing that the orifice plate is within the tolerance limit of the AGA 3. The measurement must be traceable to a known primary reference standard like NIST.

Orifice fitting, quick change orifice fitting or equivalent type orifice holder shall be preferred over conventional orifice holder on live hydrocarbon service. Orifice holder of 8" or less shall have a locating dowel pin on the sealing bar and index hole on the plate holder to ensure that the orifice plate is fully seated and concentric with the line bore. Orifice holder larger than 8" shall have special positioning set screws. These shall be permanently installed at the factory and located so that impinge on the plate holder on all four edges, fixing its position. The seal bar shall have a top set screw that prevents the fitting from being fully sealed off unless the holder is fully seated and centered.

Where conventional orifice carriers are allowed by the Purchaser, they shall be in accordance with the piping classification, have a minimum flange rating of 300 ANSI, be of minimum size DN50 and equipped with jacking bolts. Two sets of alignment dowel pins shall be furnished to ensure mating flanges are aligned correctly.

Orifice assemblies shall be located in horizontal pipe runs. Tapping shall be 1/2" NPT and be 45° above the horizontal for gases, and 45° below for liquids. Upstream and downstream tapings shall be orientated 90° to each other.

Generally, for non-fiscal measurement, the straight lengths of upstream and downstream pipe work run for an orifice installation shall be 15D and 8D respectively (10D and 5D minimum). No connections shall be made in either the upstream or downstream straight pipe work, other than the orifice flange tapings. The piping layout shall always be arranged such that straightening vanes are not required and gas meter runs are self-draining.

Upstream elbows in more than one plane shall be avoided to minimize vorticity.

Piping and equipment shall be arranged so that flashing does not occur at or upstream of orifice plates.

Eccentric, segmental or quadrant edged orifices may be used for special services such as slurry, wet gas or highly viscous service.

5.5.2 Differential pressure flow transmitter

Refer section 5.1.4 for Differential pressure transmitter requirement.

Accuracy shall be within 0.25% of the scale range.

Differential pressure flow transmitters shall be fitted with a 5-valve manifold, mounted directly to the transmitter. The manifold shall be fixed to the mounting arrangement, allowing the transmitter to be freely removed without disturbing impulse lines.

Where possible, the transmitter should be close coupled to the process to keep tubing length to a minimum.

5.6 Restriction Orifice Plates

The Vendor shall provide calculations for sizing, and for stress calculation to validate plate thickness.

5.7 Coriolis Flow Meter

The Coriolis meter shall meet the requirements in ISO 10790.

 A typical uncertainty specification is 0.5% of reading on mass flow (until the influence of the zero stability impacts the measurement).

Coriolis meter shall be used as the mass flow-measuring element and density measuring element.

Coriolis Meter shall be selected such that the nominal bore size of the sensor is equal or less than line size.

Coriolis Meter shall have the flanged end connection, rated for the associated piping class.

Any special cable and/or hardware that required for make the system complete shall be supplied by Contractor.

Contractor shall ensure the sensor and wetted part are compatible with the process fluid condition. The sensor (metal tube) shall be made of SS316 at a minimum.

 The coriolis meter transmitter shall be 'SMART' type with 24VDC power supply. Output signal shall be Modbus interface and optional 4-20mA with local indicator.

Transmitter mounting type can be remote or direct otherwise specified in Datasheet. With remote mounting transmitter, pipe 2" mounting kit, internal cable from transmitter to sensor and suitable cable glands both end shall be provided by VENDOR. Transmitter housing material shall be SS316, if SS316 cannot be provided as



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Manufacture standard, cooper free Aluminum Alloy Epoxy Coated and certified for offshore/Marine application can be accepted.

5.8 Ultrasonic Flowmeters

Ultrasonic Flow Meters (USM) can be used to measure gas and shall be based on time-of-travel method.

USM shall be in-line type with flanged end connections. Flange shall be in accordance to ASME B16.5.

1 The USM shall consist of flow meter / element and the flow transmitter. In order to meet the performances, calculations and selections of the meter shall be scope of Vendor. The USM shall be able to operate reliably even under unsteady flow, pulsating pressure, varying gas composition and temperature, and the wide flow turndown ranges typical of flare systems.

In general, accuracy shall be better than $\pm 1\%$ of span.

1 The Ultrasonic meter transmitter shall be 'SMART' type with 24VDC power supply. Output signal shall be Modbus interface 4-20mA with local indicator (HART type is preferred).

Transmitter mounting type can be remote or direct otherwise specified in Datasheet. With remote mounting transmitter, pipe 2" mounting kit, internal cable from transmitter to sensor and suitable cable glands both end shall be provided by VENDOR. Transmitter housing material shall be SS316 if SS316 cannot be provided as Manufacture standard, cooper free Aluminum Alloy Epoxy Coated and certified for offshore/Marine application can be accepted.

5.9 Rotameter

1 Rotameter shall be of the tapered tube and float type. All wetted parts of rotameter shall be minimum stainless steel (SS316). The meter housings shall be a minimum 316 stainless steel unless otherwise specified and protection IP56 as minimum.

Rotameter for remote monitoring shall be provided with transmitter. Output signals of transmitter shall be 4-20mA with HART. Electrical connection shall be $\frac{1}{2}$ " NPT.

Transmitters shall include an LCD indicator scaled in engineering units, and shall be mounted integrally in the head of the detecting element where access permits, otherwise remotely mounted.

Rotameter shall have a metal metering tube depending on the application, process conditions, etc. Where metal tube is required, material shall meet the relevant piping specification as well as connecting flanges.

For the Rotameter with metallic tube, the connection between the moving and indicating /transmitting parts shall be glandless magnetic coupling.

Floats shall be self-cleaning and shall be designed for maximum immunity to viscosity variations and dimensional stability.

Rotameter shall be fitted with inlet and outlet float stops.

Rotameter fitted with a constant flow regulator shall only be used for fixed rate flows such as flushing or purging.

Process connections shall be:

- Flanged, according to the relevant piping specification and ASME B16.5.
- Screwed NPT for flushing or purging service.

The rangeability of the rotameter shall be 10:1 and shall have and accuracy of $\pm 2\%$ or better.

5.10 Turbine Meter

1 The VENDOR shall calibrate the liquid turbine meters in accordance with the API Manual of Petroleum Measurement Standards (MPMS), Chapter 5, Section 3.

All meters shall be equipped with pre-amplifiers.

Preamplifiers shall be compatible with the turbine meter pickups both in connection and signal.

Preamplifiers shall operate on 24V DC, and protection IP56, Ex'd as minimum.

Electrical connection shall be $\frac{1}{2}$ " NPT.

Preamplifiers shall include an LCD indicator scaled in engineering units, and shall be mounted integrally with the meter where access permits, otherwise remotely mounted.





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The meter body material shall be suitable with Piping design and process connections shall be flanged type, according to the relevant piping specification and ASME B16.5.

Preamplifiers housings shall be a minimum 316 stainless steel unless otherwise specified.

Turbine meters for liquids shall have a linearity of $\pm 0.15\%$ and a repeatability of 0.05% on non custody services.

For liquid meters rotor hubs, blades, and rims shall be, as a minimum, stainless steel.

5.11 Water cut meter



A Water cut meter (*Water/condensate in Oil Analyser*) shall be provided on the liquid line of the Separator to indicate the quantity of Produced water and Condensate on liquid streams.

The water cut meter shall be certified for use in a Class 1, Zone 2, Gas Group IIA temperature class T3 hazardous area as a minimum.

Humidity Operating Range shall be at least from 5%-100% RH, non-condensing.

Water content range shall be from 0% to 100%.

The transmitter output shall be 24VDC Loop Powered and provided 4-20 mA (% of Water) output with HART protocol, real time compensation for temperature effect. In general, the transmitter shall be better than $\pm 1\%$ absolute accuracy, 0.25% repeatability, 0.05% sensitivity, less than 1 sec of response time and 0%-100%WC calibrated range.

Communication Port of Modbus TCP/IP and/or RS-485 (Modbus TCP/IP is preferred) shall be provided.

All Sensors, spools, flanges, enclosure/transmitter housing materials shall be SS316 and enclosure protection IP56 as minimum.

The Static Mixer shall be designed in accordance with ASME B31.3. The mixer element shall be SS316.

The piping, flanges shall be design and in accordance with ASME B.16.5.

All analysers shall be provided with necessary calibration test kit for zero and span check.



5.12 Pig Signaller

5.12.1 Pig Signaller transmitter

Pig signaller transmitter shall be Non-Intrusive Type and designed to clamp onto the outside of the pipe, utilizing ultrasonic detection principle.

The pig signaller transmitter shall be provided with local and remote indication to indicate the passing pig. Remote indication shall be loop powered (24VDC) and with 4-20mA (HART) output signal wired to the platform's PCS for monitoring purpose.

The complete pig signaller transmitter including sensor assembly shall be suitable for Class 1, Zone 2 Group IIA T3 hazardous area installation. The Signaller and sensor housing shall be SS316, enclosure protection IP56 as minimum.

5.12.2 Pig Signaller Indicator

Pig signaller indicator shall be Intrusive Type and designed with flanged connection to the pipe, utilizing mechanical trigger detection principle.

The pig signaller indicator shall be provided with local indicator, mechanical type Flag up with Manual reset.

6. GENERAL REQUIREMENT FOR FIRE AND GAS DEVICES

6.1 Point Gas Detector

Gas detector shall be located in process areas, generator rooms and control room air intake.

The detecting unit included in the sensor head shall provide adequate sensitivity and the stability necessary, under all conditions, to repeat any reading within ± 3 percent over the full-scale range.

"Smart" sensor technology shall be used when selecting gas detection systems. The selected detector's maintenance/calibration frequency shall be stated. Low maintenance requirements shall be a factor in the selection.



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Detectors shall be powered from 24VDC, with a 4-20mA HART signal loop to cover the calibrated range. Detector faults shall be signaled by the range below 4mA.

Cable entries shall be ½" NPT-F.

Detectors requiring sample pumps for operation shall not be used.

Fixed-point combustible-gas detectors shall be based on infrared absorption technology and shall be calibrated 0-100% LEL (lower explosive limit) of Methane in air. Detectors shall initiate responses at two different concentrations: for warning alarms and for initiation of executive action. Typical values of these set-points are: 20% and 60% LEL for general process areas and shall be reviewed by the Contractor during the risk assessment and detail design, and revised as required.

The alarm condition shall not be resettable until the specific detector reading has dropped below the warning alarm level as applicable.

Operator response shall be required to clear the audible and visual alarms.

Catalytic type detectors shall not be used.

All detector devices shall be certified SIL2 rated as minimum.

All detectors shall be equipped with built-in field display in order to calibrate easily.

6.2 Hydrogen Gas Detectors

Hydrogen detection will be required in battery rooms if hydrogen is generated during the battery charging process. Catalytic type detectors can be used.

All detector devices shall be certified SIL2 rated as minimum.

Detectors shall be powered from 24VDC, with a 4-20mA HART signal loop to cover the calibrated range. Detector faults shall be signaled by the range below 4mA.

Battery room ventilation shall be sufficient as to prevent accumulation of H2 exceeding 20% LEL (high gas alarm) and 60% LEL high high gas alarm) from a single detector shall generate an alarm at the SIS. Detection of 60% LEL from a single detector shall also initiate alarm at mimic panel.

Cable entries shall be ½" NPT-F.

Catalytic bead sensors shall be used to detect the accumulation hydrogen in the enclosed area. A minimum of two detectors shall be provided in the enclosed area.

6.3 Flame detector

Optical flame detectors shall be infra-red triple spectrum type and shall make use of such sensors, filters, and/or design to reject such phenomena as electric arcs, heaters, artificial light sources, lightning, and be completely "solar blind". The detectors shall be able to detect all types of flaming fires. The minimum cone of vision shall be 90°.

The detectors shall alarm to a 0.1m2 n-Heptane fire at 20 meters within three (03) seconds unless otherwise stated in data sheet.

Detectors shall be powered from 24VDC, with a 4-20mA HART signal loop to cover the calibrated range. Detector faults and dirty optics shall be signaled at level less than 4 mA signal. Sufficient margin shall be allowed between fault, normal and alarm levels to minimize spurious alarms.

Cable entries shall be ½" NPT-F.

Optical flame detectors shall have automatic, self-diagnostic circuitry that continuously monitors the optical surfaces, sensor sensitivity, and electronic circuitry, and shall fail to fault status. Any detector malfunction shall be alarmed on the SIS.

Test kits shall be supplied for testing of each type of detector from deck level or fixed platforms.

Fire and flame detectors employ the latest technology available, reliable and have low incidence of nuisance alarms, long term stability and long calibration intervals.

The signal from these detectors is wired to the analogue module of SIS, and these detectors send the analogue values which indicate the fault state, normal range value, etc. The wiring to these detectors is therefore line-monitored.

All conventional flame detectors shall be certified SIL2 rated as minimum.



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Detail installation of the detectors shall be defined by Contractor's design.

6.4 Smoke Detector

Smoke detectors sense combustion products and should be used within enclosed spaces which are not subject to extremes of temperature, humidity, dust or wind, complying with DNV-OS-D301.

Smoke detectors shall be certified to operate before the smoke density exceeds 12.5% obscuration per meter, but not until the smoke density exceeds 2% obscuration per meter.

Detectors shall incorporate an integral LED indicator for confirmation that the unit is active. Detectors that are not visible, such as ceiling void or under floor, shall provide an output to a remote LED located in the room being monitored.

Ionization/photoelectric type smoke detectors shall be installed in offices and sleeping cabins;

A detector base shall be provided for connecting the individual detectors to the SIS.

Cable entries shall be ½" NPT-F complete with cable gland.

In general, all fire and gas detection equipment, ESD Process Field Devices and ESD Driven actuating devices shall be certified for use in a Zone 1, Gas Group IIA temperature class T3 Hazardous Area. For non-hazardous areas such control rooms, living quarter, etc. where protected by pressurizes system completed with gas detection at air intakes, non-certified smoke and heat detector are acceptable for use.

Smoke detectors installed within the Battery Room shall be suitable for Class 1 Zone 1 Group IIC T3.

Detector shall be powered from 24VDC.

Smoke detectors shall remain in alarm state until reset by the SIS. End-Of-Line resistances shall be provided by VENDOR.



6.5 Heat detectors

Heat detectors may be installed in areas where flammable and combustible materials are handled or stored, or where local normal operating conditions are not considered suitable for installing the faster-acting smoke detectors according to DNV-OS-D301.

The positioning of point heat detectors should take account of the density and spacing, including their proximity to bulkheads. Detectors in high ceiling rooms or multiple floor areas should take account of the reduced sensitivity of the detectors at heights above 8 m.

Heat detectors shall also be installed within the machinery enclosures as a complement to IR detectors installed. Where specified such heat detectors shall be based on Rate of Rise type (ROR) principle. ROR type heat detectors shall actuate when the temperature rise within the enclosure exceeds 1degree C/minute. Electrical Conductivity–Type Rate-of-Rise Detector spot-type sensing element in which resistance changes due to a change in temperature. The rate of change of resistance is monitored by associated control equipment, and an alarm is initiated when the rate of temperature increase exceeds a preset value. The sensitivity and the preset temperature value can be adjustable.

Detectors shall be of the plug in base type.

Rate of rise heat detectors shall have no moving parts and shall operate on the twin thermistor principle or similar solid state circuitry.

Detectors shall incorporate an integral LED indicator for confirmation that the unit is active. Detectors that are not visible, such as ceiling void or under floor, shall provide an output to a remote LED located in the room being monitored.

In general, all fire and gas detection equipment, ESD Process Field Devices and ESD Driven actuating devices shall be certified for use in a Zone 1, Gas Group IIA temperature class T3 Hazardous Area. For non-hazardous areas such control rooms, living quarter, etc. where protected by pressurized system completed with gas detection at air intakes, non-certified smoke and heat detector are acceptable for use.

Cable entries shall be ½" NPT-F.

Detector shall be powered from 24VDC.

Heat detectors shall remain in alarm state until reset by the SIS. End-Of-Line resistances shall be provided by VENDOR.



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6.6 Manual Call Point Pushbuttons

Manual call point pushbuttons shall be arranged strategically on the platform's different areas installed no higher than 1.4m over floor level. All switches shall mount at a height of 1.3 meters in easily accessible, well lighted, conspicuous areas. The Manual call point shall be provided as specified in Fire & Gas Layout.

The Manual call point shall have screw-less terminals with built-in strain limits accepting wires of 1.5 mm².

Manual call point pushbutton (MCP) shall be provided throughout the Platform and at the entry / exit points, and escape route stairways.

MCP of the conventional type shall be of the lift flap press button latching type. All MCP shall be constructed from 316 stainless steel or glass reinforced polyester (GRP).

MCP shall be certified for the hazardous area, color red.

The MCP shall be designed for fast, simple and failure-proof dismantling and assembling and shall have provision for easy and clear labelling.

The MCP shall have a sealable opening for wire introduction through compression cable glands on the top and bottom of housing.

The lid of the MCP shall be permanently fixed to the body of the call point by a hinger.

Contact shall be SPDT type with the rated voltage/current shall be 24VDC/2A.

Cable entries shall be ½" NPT-F.

The switches shall also provide with SS316 lid and label fastener and mounting accessories. Where switches are used as inputs to the SIS, they shall be voltage and ground-free, and shall be closed during normal (safe) operation.

End-Of-Line resistances shall be provided by VENDOR.

6.7 Emergency Push Button

The ESD push button shall be provided as specified in Fire & Gas Layout.

All push buttons shall be constructed from 316 stainless steel.



The switches shall be Push Button Latching key reset, and shall be wired directly and individually to the SIS.

Contact shall be SPDT type with the rated voltage/current shall be 24VDC/2A.

Cable entries shall be ½" NPT-F.

Switches shall be prominently located and colored yellow for ESD-1 and blue for APS, so as to be highly visible, shall be protected from inadvertent operation by shrouds or flaps, and clearly labelled with a description of their duty.

The switches shall also provide with SS316 lid and label fastener and mounting accessories.

Where switches are used as inputs to the SIS, they shall be voltage and ground-free, and shall be closed during normal (safe) operation.

All switches shall mount at a height of 1.3 meters in easily accessible, well lighted, conspicuous areas.

End-Of-Line resistances shall be provided by VENDOR.

6.8 Open Path Flammable Gas Detector

The IR open path gas detector (Line of Sight (LOS)) shall comprise separate transmitter and receiver units allowing gas concentration within a specified distant to be measured without the use of reflectors.

Response time shall be less than 5 seconds following a step change in concentration.

Gas concentration shall be in path average LEL meters for the specified composition.



Detector shall measure hydrocarbon gasses between methane to hexane, but shall predominantly be methane and therefore the unit shall be calibrated to methane with a range of 0 to 5 LEL meters and 0 to 5000 as an option if required.

Detectors shall remain fully functional with a power supply 24VDC, with a 4-20mA HART signal loop to cover the calibrated range. Blocked beam shall raise an alarm only (<4mA) after an adjustable time delay.

Cable entries shall be ½" NPT-F.



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Detector shall be certified for use in a Class 1, Zone 2, Gas Group IIA temperature class T3 Hazardous Area and certified SIL2 rated as minimum.

Humidity Operating Range shall be at least from 5%-100% RH, non-condensing.

The VENDOR shall provide details that demonstrate the immunity to direct and reflective sunlight and vibration.

Transmitter and receiver pairs will be installed in line of sight locations covering process hazardous areas.

VENDORS shall provide all necessary alignment and calibration tools / software to assist the alignment setup and calibration.

6.9 Sounder

The Sounders shall be provided as specified in Fire & Gas Layout.

All Sounders shall be constructed from 316 stainless steel or glass reinforced polyester (GRP).

All sounders shall be supplied with suitable 316 stainless steel mounting assembly that allows speaker to be oriented in any direction and locked in desired position.



Cable entries shall be ½" NPT-F.

All sounders shall be certified for area suitable with hazardous area classification.

The indoor sounders shall be maximum rated of 6 watts. These speaker shall be ceiling or wall mouting type.

The hazardous/outdoor sounders shall be maximum rated of 25 watts of power handling capability with 118dBA Sound Pressure Level (SPL), horn type and wide angle. VENDOR shall consider the effect of heavy and high wind in determining the suitable size of outdoor sounders.

6.10 Beacon

The Beacons shall be provided as specified in Fire & Gas Layout.

Flashing beacons color shall be of Red, Yellow, and Blue to show different alarms from Fire and Gas system.

All Sounders shall be constructed from 316 stainless steel or glass reinforced polyester (GRP).



Cable entries shall be ½" NPT-F.

All beacons shall be certified for area suitable with hazardous area classification.

Indoor beacon shall be Xeon/LED type.

All beacons shall meet the minimum requirement as following:

Supply Voltage	:	24VDC
Tube Energy	:	Minimum 15 Joules each color
Bulb type	:	Xenon
Effective Intensity	:	95Cd min, at 60 flashes per minute
Color lens	:	Red, Yellow, Blue, ...

7. GENERAL REQUIREMENT FOR INSTRUMENTATION CABLES

7.1 General

Cables shall be segregated for the following services as a minimum:

- 4 to 20 mA signals (Individually screen)
- mV signals (Individually screen)
- Pulse signals (Individually screen)
- RTDs (Individually screen)
- 24 VDC solenoid signals (No screen)
- Digital signals (Overall screen)
- Vibration probes (Individually screen)
- Any other signal (as required)
- Each communication (as per required application)
- Earthing (1C_without armour_UX type)





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Cross section for copper conductors shall be as follows:

- Power cables (i.e. for solenoids, lamps, 24VDC interface signals, etc.): 1.5 mm² minimum
- Control cables (i.e. for transmitters, positioners, limit switches): 1.0 mm² minimum
- Earthing cable: 2.5mm² minimum, cable tray jumpers and end point connection 4.0mm²

Note: Cable with rated voltage 600V is not required to comply with IEC 60092-376.

All cable materials shall be new and unused, of current manufacture, of the highest grade and free from all defects and imperfections affecting performance.

Cable Core Identification

Color coding for pair/triple identification shall be as described below.

Pairs and triples shall be identified by having the pair/triple number printed on the insulation in contrasting color.

- Pair colors : Blue and Black
- Triad colors : Blue, Black and Brown

Outer Sheath Color

The outer sheath color shall be as follow:

- Digital signals : Grey
- Analogue signals : Grey
- IS signal (Digital/Analogue) : Blue
- Electrical signals (solenoid) : Black
- Earthing cable : Green & Yellow strips, lengthways along the cable.
- FGS signals : Red

Marking on cables

The cable outer sheath shall be marked on its surface at every interval of 1 meter with the following information:

- Voltage grade
- Cable type
- Number of Pairs/Triples and conductor size
- IEC standards
- Manufacturer's name or trademark
- Year of manufacturer

Marking on drums

The wooden drum shall be marked with the following information:

- Drum Number
- Cable type
- Voltage grade
- Number of Pairs/Triples and conductor size
- Cable length (m)
- Net and gross weight
- Manufacturer's name or trademark
- Month and year of manufacture

Packing

The cable shall be coiled in non-returnable wooden drums.

The ends of cables shall be sealed against the ingress of moisture, dirt and insects and the end projecting from the drum shall be adequately protected against mechanical damage during lifting, transportation, intermediate storage and site handling.

Both ends of cable shall be packed out of drum for easy check number of length.

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7.2 Instrument Cables for non-essential service

Cable construction shall be as per IEC 60092-376; NEK TS 606. In general, conductor insulation rating shall be as a minimum 150/250V (300V) in accordance with IEC 60092-3. For fire resistant and flame retardant cables both 300V and 600V rated voltage are acceptable. Maximum operating temperature 85°C.

Instrument cables for indoor/ outdoor hazardous and non-hazardous areas, shall be constructed as follows:

- (a) Conductors : Tinned annealed stranded copper as per IEC 60228, Class 2.
- (b) Insulation : EPR to IEC 60092-360.
- (c) Individual Screen : Aluminium back polyester tape, stranded copper drain core
- (d) Overall Screen (as optional). : Aluminium back polyester tape, stranded copper drain core.
- (e) Core identification : By colour code.
- (f) Inner sheath : LSZH compound to IEC 60092-360.
- (g) Armour : Tinned Copper Wire Braided (TCWB).
- (h) Outer sheath : Extruded layer of flame retardant compound outer sheath to IEC 60332-3 Cat A (reduced propagation). Halogen-free mud resistant thermoset compound in accordance with type SHF Mud in accordance with NEK TS 606.
- (i) Requirement : IEC 60092-350, IEC 60092-360, IEC 60228, IEC 60332-3 Cat. A, IEC 60754, IEC 61034, IEC 60092-376, NEK 606.

7.3 Instrument Cables for essential service

Cable construction shall be as per IEC 60092-376; NEK TS 606. In general, conductor insulation rating shall be as a minimum 150/250V (300V) in accordance with IEC 60092-3. For fire resistant and flame retardant cables both 300V and 600V rated voltage are acceptable. Maximum operating temperature 85°C.

Instrument cables for indoor/ outdoor hazardous and non-hazardous areas, shall be constructed as follows:

- (a) Conductors : Tinned annealed stranded copper as per IEC 60228, Class 2.
- (b) Insulation : EPR to IEC 60092-360.
- (c) Individual Screen : Aluminium back polyester tape, stranded copper drain core
- (d) Overall Screen : Aluminium back polyester tape, stranded copper drain core.
(as optional).
- (e) Fire resistant layer : Fire resistant layer to IEC 60331 shall be mica glass tapes applied over the conductor. Cable must be able to withstand 750°C for 3 hours.
- (f) Core identification : By colour code.
- (g) Inner sheath : LSZH compound to IEC 60092-360.
- (h) Armour : Tinned Copper Wire Braided (TCWB).
- (i) Outer sheath : Extruded layer of flame retardant compound outer sheath to IEC 60332-3 Cat A (reduced propagation). Fire resistance as per IEC 60331. Halogen-free mud resistant thermoset compound in accordance with type SHF Mud in accordance with NEK TS 606.
- (j) Requirement : IEC 60092-350, IEC 60092-360, IEC 60228, IEC 60332-3 Cat. A, IEC 60754, IEC 61034, IEC 60092-376, IEC 60331, NEK 606.

7.4 Communication Cable

Modbus RTU RS-485 cable construction shall be as per ANSI/TIA/EIA-485 Specification.

Communication cable shall be constructed as follows:





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- Rated Voltage 150/250V (300).
- Flame retardant in accordance with IEC 60332-3.
- Two twisted paired, 22/24 AWG tinned copper conductor;
- Overall foil shield with tinned copper drain wire plus tinned copper braid shield;
- SHF Mud in accordance with NEK TS 606.

8. GENERAL REQUIREMENT FOR BULK MATERIALS

8.1 Cable tray

8.1.1 Stainless Steel Cable tray

The cable tray/ladder shall be perforated, SS316, 1.5 mm thickness.

The cover shall be SS316 1.0 mm thickness.

Resistance against corrosion for ladder and tray is classified 9B as minimum complied with IEC 61537.

System component for cable ladder and cable tray shall offer impact resistance 20J as minimum as per IEC 61537.

Wherever main cables are exposed to sunlight, or mechanical damages are going to occur during installation or chemical spillage then the main cable ladder/ tray shall be fitted with suitable covers to protect them.

8.1.2 FRP Cable tray

In general, cable trays, cable ladders and fittings shall be:

- Manufactured from Flame Retardant Glass Reinforced Polyester (GRP/FRP). The material shall be non-magnetic, UV resistant, and free from sharp edges so as not to damage the cable.
- Manufactured using the pultrusion process using a high-grade polyester resin and shall have a minimum surface veil of 200 microns thick. The minimum weight percentage of glass in these items shall be 50%.
- All GRP/FRP products shall be halogen free. Material shall be tested in accordance with IEC 60754-1 and no halogen acid should be detected.
- Cable ladder rungs shall be fixed in place in such a way that they cannot roll over during cable pulling. Ladder Rungs shall be secured in place by SS (A4) or GRP / FRP fasteners. PBT insert is preferred. Ladder rungs shall be slotted to allow for clamping of cables, they shall also be designed to prevent fluid build-up.
- Cable Trays shall be slotted base type. The perforations shall be for used with cable ties and other similar accessories.
- Withstand impact testing at an approximate energy of 10 Joules when impact testing is carried out as per the requirements of IEC61537. Testing shall be conducted without the use of covers.
- Available with drill jigs so that new splice plate perforations on side profiles of trays / ladders can be productively & safely drilled when cutting to required lengths.

Flame Retardant and Low Smoke Properties of FRP shall comply with:

- ASTM D635 and have an 'HB' classification.
- Class 1 rating in accordance with BS 476 Part 7 or ASTM E84 and UL94.
- A flame-spread index (FSI) less than 25 and a smoke development index (SDI) less than 450 so that they achieve a class 1 rating when tested in accordance with ASTM E84.
- ANSI/UL94-2013(R2021) section 8 with a V-0 classification

For the UV Resistance Properties, material shall be tested in accordance with ASTM G53 and achieve grade 5 in color change with exposure period 250 hours or better.

Cable Trays, Cable Ladders and Fittings shall not increase in weight by more than 0.5% when tested in accordance with ASTM D570 for Water Resistance. Chemical Resistance shall be tested in accordance with ASTM C581.



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In case anti-static properties are required, the material shall be tested in accordance with IEC 60079 or IEC 60093 for surface resistivity.

Color of the tray and ladder shall be grey for non-anti-static, and dark grey or black for anti-static required.

8.2 Multi Cable transit

A-60 Fire rated and/or blast resistant type MCT systems shall be provided.

MCT frames shall be galvanized steel suitable for offshore application.

MCT shall be complete with all accessories to make a complete MCT system, e.g. frame, wedge, stay plates, "fire-resistant, low-smoke halogen free rubber" insert modules and insert spare modules. Lubricant shall also be included for installation of insert modules.

Insert modules shall come in two-halves with multilayer bore, which and can be peeled off to fit the installed cable outside diameter.

Transits shall be identified by weatherproof labels on each side of their penetration.

The compression system is to comprise of a compression plate and end-packer. The three-part end packer unit is to be installed from one side, and only once an external compression tool has correctly compressed the transit. The side elements of the end packer are to incorporate steel pins to evenly distribute pressure to the compression plate.

All components of the transit system are to be lubricated with a silicone lubricant to ensure ease of installation and possible future demounting for cable alterations.

Multi-cable transits shall have the following certification requirements:

- Fire rated certificates
- Accepted and approved by LR, DNVGL, ABS, BV, VR...
- Constructed and tested to DIN 4102-9 and IEC 60092-390

8.3 Cable accessories

8.3.1 Cable gland

Nickel plated brass, Ex-d certified, min IP56, suitable for group IIA, IIB, IIC, zone 1 & 2, metric/NPT pitch threaded, suitable for cables with armor/braid and inner/outer sheath. C/w lock nuts, earth tags and sealing washers.

Cable gland compression system shall be suitable for use with the cables intended. The compression/ sealing method and material shall not cause "cold flow" condition to the cables. Cable glands shall be selected to reduce the effects of "cold flow characteristics" of the cable to comply with IEC 60079-14.

Manufacturer specifications/data sheet/catalogue must be attached to the proposal for reference.

The entry thread sizes / cable O.D. (min – max) are following:

- M20 / 9 – 14 mm
- M25 / 14 – 22 mm
- M32 / 22 – 32 mm
- M40 / 32 – 42 mm
- 1/2"NPT / 11 – 16 mm
- 3/4"NPT / 14 – 20 mm

8.3.2 Cable terminal

- Tinned copper, PVC pre-insulated, ferrule type with wire section 1.5 – 2.5mm².
- Tinned copper, PVC pre-insulated, ring type, screw M6 with wire section 2.5mm².

8.3.3 Cable ties

Cable ties shall be Polyamide 6.6, UV stabilized (color black), flammability UL94 class V2, tested according EN 50146, size as below:

- size 9 x 120



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- size 9 x 260
- size 9 x 350

8.3.4 Cable marking

Cable marking shall be complete with marker holder for 14 char, red color and cable marker.

Cable marker:

- Number 0 to 9 (50pcs per parcel)
- Letter A to Z (50pcs per parcel)
- Conventional symbol "-" (100pcs per parcel)
- Marker for cable cross-section 1.5 to 2.5, polyamide, number 0 to 9 (100pcs per parcel)

8.4 Instrument Junction Boxes

8.4.1 General

Instrument junction boxes shall be certified for use in the hazardous area in which they are installed.

Boxes certified Explosion-Proof/Flameproof Ex "e" shall be used, suitable for using in Zone 1 hazardous area. Unless otherwise stated boxes shall provide minimum IP56 ingress protection.

Multicore cables should enter from the bottom, and 20% spare entries shall be provided cable entries shall be drilled and tapped to suit the required glands, and fitted with certified brass plugs.

Internal terminals shall be provided with at least 20% spare.

8.4.2 Construction

Increased Safety

Junction box construction shall be 1.5mm 316SS.

Boxes shall be bottom entry and side (for single cable) with a removable 316SS gland plate. The gland plate shall be drilled and tapped; 6mm thick for tapered threads and 3mm thick for parallel threads. The plate shall be bolted to the box with 316SS bolts, sealed with a neoprene gasket and fitted with an 8mm earthing stud.

Boxes shall have four external mounting lugs, two top and bottom, drilled with 10mm fixing holes.

A full size removable stainless steel gear plate shall be fitted inside each box.

Terminals shall be Ex "e" rail-mounted tunnel-type, made of melamine. Wiring ducts shall be colored blue.

Boxes shall have doors hinged at two points with a neoprene seal fitted all round. Hinges shall be the lift-off pintle type, constructed of stainless steel; piano hinges are not acceptable.

A restraining mechanism shall prevent opening more than 160°. Screwdriver-operated door latches shall be fitted at the top and bottom.

In addition to the manufacturer's certification label, each junction box shall have an identification label attached to the box with 316SS screws in a manner which will not invalidate the hazardous area certification. The label shall be constructed of white-black-white laminated plastic and/or blue-white-blue laminated plastic for difference control/safety systems. The label shall include an engraved Tag No.

Boxes shall have grounding connection c/w SS316 earthing screw. Earthing bar shall be provided and located inside the boxes.

Explosion Proof

Explosion proof junction boxes shall be constructed from Epoxy coated copper free aluminum.

Boxes shall have at least four external mounting lugs, drilled with 10mm fixing holes, and an 8mm external earth lug.

A full size removable stainless steel gear plate shall be fitted inside each box.

Junction box lids shall have cast hinges integral to the box with stainless steel pins.

Each junction box shall have an identification label, in addition the manufacturer's certification label, attached with 316SS screws in a manner which will not invalidate the hazardous area certification. The label shall be constructed of white-black-white laminated plastic.



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Terminals shall be rail-mounted tunnel-type, made of melamine.

8.5 Tubing and Fittings

All tubing and fittings shall be Imperial sizes, expressed in nominal outside diameter (OD), and all threads shall be NPT.

Process-to-instrument impulse lines, pneumatic supplies (downstream of filter/regulators) and pneumatic signal lines shall be run in seamless 316SS tubing to ASTM A269.

Impulse lines shall be 1/2" OD, pneumatic lines shall be 3/8" OD, unless specific applications require the use of other sizes.

Stainless steel tubing size and wall thicknesses shall be as detailed below. Maximum allowable working pressures are also detailed for each size and wall thickness.

- 3/8" OD x 0.035 " wall thickness - 19.6 MPa gauge
- 3/8" OD x 0.065 " wall thickness - 39.0 MPa gauge
- 1/2" OD x 0.035 " wall thickness - 14.7 MPa gauge
- 1/2" OD x 0.065 " wall thickness - 29.4 MPa gauge
- 1/4" OD x 0.035 " wall thickness - 25.3 MPa gauge
- 1/4" OD x 0.049 " wall thickness - 52.0 MPa gauge

Note: 3/8" and 1/2" tubing are the preferred sizes.

Threaded connections shall be NPT for all components and piping and tubing systems for process and utilities connections.

TFE thread sealant shall be used on all threaded connections. Tape shall not be used.

Tubing and fittings shall be 316SS unless specified otherwise. Tube fittings shall be twin ferrule compression type. All fittings shall be the same approved brand.

Tubing shall be supported and protected by stainless steel angle/channel or ladder/tray along the complete length of each run and shall be fastened with stainless steel saddles at a maximum of 1m intervals on straight runs.

All pneumatic exhaust ports and breathers shall be fitted with bug screens, installed facing downwards.

9. DOCUMENTATION

9.1 General

The Vendor shall provide a complete suite of documents for the works, including those described in the following sections. Hard copies plus electronic copies on DVD/CD shall be provided.

9.2 Instrument Index

The Vendor shall be provided preliminary instrument index to update them with full information for each instrument from his data. The index shall be based on Microsoft Excel.

9.3 Instrument Data Sheets

A data sheet shall be completed for every item of instrumentation equipment, including those which are part of equipment packages, except those items which form part of the bulk material take-off.

Preliminary data sheets for instruments that are attached in references must be filled by Vendor/Supplier with all required information.

When a number of items are identical in their requirements, these can be covered by a single specification sheet, providing all tag numbers are clearly listed.

Where a number of items are similar, and it can be identified that these items can be sourced from a single vendor (e.g. control valves), then these items can be covered as separate items of a single specification sheet. A data sheet covering each item, listing the individual item details as stated above, shall be completed for each item.



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Where preliminary data sheet is not available for specific instrument, the Vendor shall submit his proposed data sheet for Purchaser approval according to ISA Standards.

Data sheets shall be generated using Microsoft Excel.

9.4 Instrument Calculations

The Vendor shall provide certified calculations for instruments, including but not be limited to:

- Control valve sizing (if any)
- Restriction orifice sizing and stress analysis
- Thermowell wake frequency
- Thermowell calculation
- Instrument Air Consumption
- Flow meter calculation/sizing

Where required in applied codes and standards or requested by Certify Agent, Vendor/Contractor is responsible for provision of other necessary calculations.

9.5 Instrument Tagging

The Vendor shall assign individual tag numbers in accordance with the Purchaser's established system to all instruments.

The tag number that pertains to a specific instrument shall appear on all drawings and documents.

10.CONFLICTS AND ORDER OF PRECEDENCE

In case of conflict or discrepancies between any requirements of technical specifications and/or codes & standards, the more stringent shall govern. Contractor and/or Vendor shall inform and issue officially Technical Queries to VSP for review and making decision.

11.QUALITY ASSURANCE, INSPECTION AND TESTING

11.1 Quality Assurance

The Vendor shall demonstrate that he operates a quality system in accordance with the ISO 9000 series of requirements. The effectiveness of the quality system and the Vendor's compliance with it shall be subject to monitoring by PURCHASER and in addition, may be audited following an agreed period of notice.

The Vendor shall submit a quality control program for PURCHASER review at the time of Tender. The Vendor shall provide facilities for and cooperate with PURCHASER and statutory authority inspectors during manufacturing, assembly and testing.

11.2 Inspection and Testing

Unless otherwise stated, field devices, instruments and cables aren't required inspection and testing with Purchaser's witness. However, Vendor/Contractor is responsible to provide all manufacturers' testing and inspections. Where certificates are required approvals by Third Party or others, Vendor/Contractor to provide all required certificates.

12.SPARE PARTS AND SPECIAL TOOLS

12.1 General

The Vendor shall provide in the Tender the recommended spare parts and priced lists for commissioning and operational spares as well as special tools for the equipment specified herein to cover the commissioning and start-up and the first two (2) years of operation.

12.2 Commissioning Spares



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Commissioning spares should largely comprise of consumable items and spares estimated by the Vendor. The Vendor shall propose the commissioning spares which comprise of consumable item and spares that may be required during the commissioning.

12.3 Operational Spares

Replacement parts shall be the responsibility of the Vendor during the Defects Liability Period.

The Vendor shall provide a two-year list of operational spares. The quantities of spares provided shall be based on the expected reliability figures of each item.

The Vendor shall assure from equipment manufacturers that spare components and expansion module or units will be available for a minimum period of ten years after Final Acceptance

12.4 Special Tools

If special tools are required, the Vendor shall provide a priced list of all special tools required for the installation and/or maintenance of the equipment with tender. Special tools shall be purchased at the PURCHASER's discretion.

Prior to shipment each special tool shall be tagged with stainless steel tags indicating Purchase Order number, identification of the tool and equipment that the tool relates to.

13.WARRANTY AND PERFORMANCE GUARANTEE

Vendor shall provide a process and mechanical guarantee. Guarantee period shall be as stated in the commercial documentation accompanying the requisition. Compliance by the Vendor with the provisions of this Specification does not relieve them of the responsibility of furnishing instruments within the bounds of the relevant standards, suited to meet the specified service conditions.

The Vendor shall guarantee that the required quality of materials, fabrication and performance to the specified operating conditions will be met.

Unless otherwise agreed, all instruments shall be guaranteed as follows:

All instruments shall perform satisfactorily under the specified operating conditions detailed on the Instrument Data Sheets, and shall be fit for the intended purpose.

All hardware and software supplied shall be guaranteed free from defects.

All workmanship shall be guaranteed free of defects and in accordance with the best industrial standards and practices.

Vendor shall guarantee the operation of the system to be in full compliance with the Specification, including all attachments and listed Specifications, codes and standards.

The Vendor shall guarantee the mechanical and structural integrity, workmanship and the materials of construction used.

Under the warranty, the Vendor shall replace all hardware, software and subsystems that are found faulty due to defective devices, workmanship or engineering during the warranty period at no cost to the PURCHASER. The Vendor shall, if required by the PURCHASER, supply the services of an experienced technician to supervise the necessary repairs and replacements.

14.PREPARATION FOR SHIPMENT

Instruments shall be packaged separately, in the original manufacturer's boxes, to prevent damage during shipment. Each package shall be identified with purchase order number, content list and destination in a weatherproof envelope.

All openings shall be sealed. Threaded connections shall be protected with forged steel or moulded plastic screwed plugs.

All flanged openings shall be protected with wood or steel closures attached by proper bolting and sealed with a plastic compound to exclude foreign material from the interior and fully protect the flange faces.

All mechanical or machined surfaces subject to atmospheric corrosion prior to installation on site shall be treated with an easily removable rust preventative.

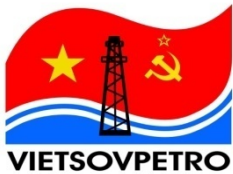


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A desiccant shall be provided inside all enclosures to prevent moisture damage due to high humidity.

Any plant component exceeding 40 kg in weight shall be supplied with lifting lugs or eye bolts. The lugs or eye bolts should be positioned such that the component can be readily slung from a point over its center of gravity.





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PROJECT NAME : RC12 WHP PROJECT, BLOCK 09-1

SUB PROJECT : RC12 WELLHEAD PLATFORM

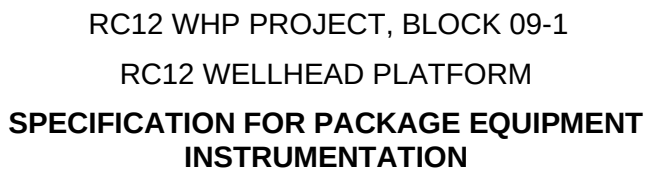
DOCUMENT TITLE : SPECIFICATION FOR PACKAGE EQUIPMENT
INSTRUMENTATION

DOCUMENT NO. : RC12-002-TS-IA2-SP-006

PHASE : DE

Applied Document			VSP-NIPI-TYP-TS-IA2-SP-06		Rev.	1
			Signed by: Nguyễn Thị Thu Trang Date: 29/03/2025 08:54:26 Certified by: Vietsovpetro CA	Signed by: Trương Minh Đức Date: 31/03/2025 07:29:23 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 31/03/2025 10:16:26 Certified by: Vietsovpetro CA	
			DC: N.T.T.TRANG	ENG.MGR: T.M.DUC	PRO.MGR:T.D.HAI	
			Signed by: Trần Anh Nguyên Date: 28/03/2025 14:22:54 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 28.03.2025 16:40:45 Certified by: Vietsovpetro CA	
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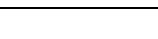
 VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	RC12 WHP PROJECT, BLOCK 09-1 RC12 WELLHEAD PLATFORM		RC12-002-TS-IA2-SP-006			
	SPECIFICATION FOR PACKAGE EQUIPMENT INSTRUMENTATION		Rev.	0	Page	3 of 5

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1. INTRODUCTION

The RC12 Wellhead Platform belongs to Vietsovpetro JV. It will be located on the R-79 well template in Block 09-1 of the Dragon oil field, approximately 125 km South-East of Vung Tau City, offshore of the Socialist Republic of Vietnam. This location is approximately about 6.3 km from RP1 and 1.1 km southeast of UBN3. Water depth of this location is about 47 ± 0.5 m relative to MSL.

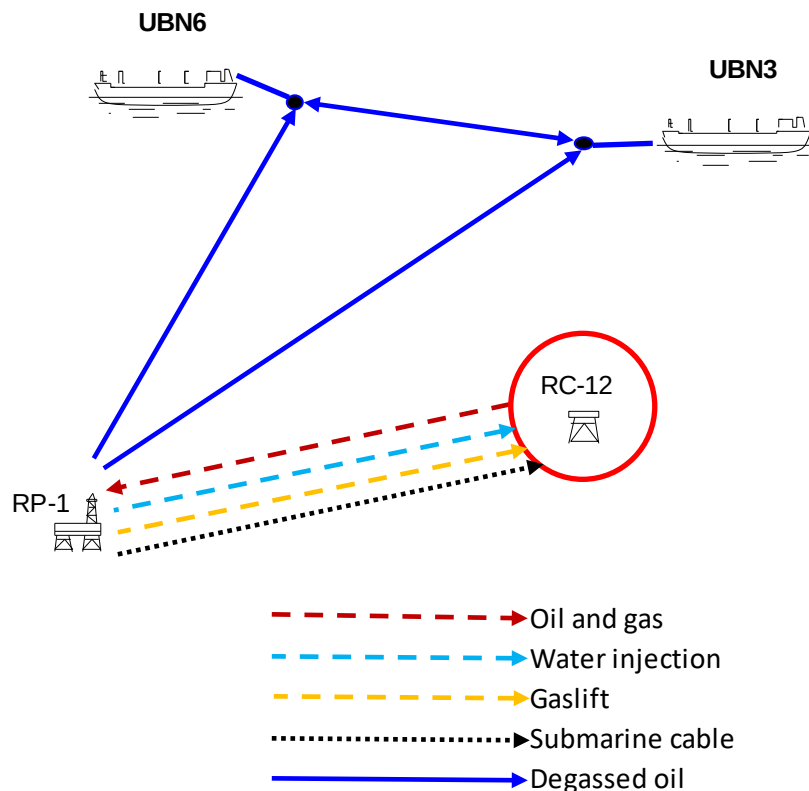


Figure 1: Location of RC12

RC12 is an unmanned platform which will be remotely controlled from the host platform RP-1 via subsea power & fiber optic cable. Design life time of RC12 is 25 years.

RC12 consists of Jacket with Boat Landing and Topsides with Helideck. Production fluid (oil, gas and water mixture) of RC12 will be transported to RP1 via subsea pipeline for further processing. Gaslift and injection water for RC12 will be provided from RP1 via subsea pipelines.

RC12 platform will be designed with 09 well slots, including 05 production wells and 04 slots for future development. After several years of production, 01 production well will be converted to water injection well.

RC12 platform topside facilities are able to accommodate the adjusting well flowrate and well testing, measuring total production flowrate of the platform, gaslift as well as other utility systems. Provision for 04 ESP wells is considered in RC12 design.

Design capacity for RC12 is 1500 m³/d of liquid; 300 000 Sm³/d of gas (associated gas and gaslift), and 500 m³/d of injection water.

Modification on RP1 for receiving product from RC12 is required.



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2. ADDENDUM

This document uses the Typical Engineering Documentation for this Project. However, some design intends or requirements may require to be revised to fit with Project's purpose. This section lists changes in the applied typical documents, originating in Typical Engineering Documentation for any reason including those indicated in Table 1. These changes are identified in this Addendum to the applied typical document, identifying the document and section affected and the required change.

VENDOR shall review the required changes in conjunction with the referenced document and project's engineering documents.

The type of modification shall be defined and indicated in subsequent text as follows:

- ✓ "ADD" - Indicates the following statement(s) is/are added to the Company referenced text.
- ✓ "DELETE" - Indicates the following statement(s) is/are deleted from the Company referenced text.
- ✓ "REPLACE WITH" - Indicates the following statement(s) is/are revision(s) to the Company referenced text.

Section	Current Statement or Requirement	Revised to																													
Reference Documents	VSP-NIPI-TYP-TS-IA2-SP-01_ICSS - Functional Design Specification VSP-NIPI-TYP-TS-IA2-SP-02_Specification for Wellhead Control Panel VSP-NIPI-TYP-TS-IA2-SP-03_General Instrument Specification VSP-NIPI-TYP-TS-IA2-SP-04_Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch VSP-NIPI-TYP-TS-IA2-SP-05_Specification for Control Valves	REPLACE WITH: RC12-002-TS-IA2-SP-001_ICSS - Functional Design Specification RC12-002-TS-IA2-SP-002_Specification for Wellhead Control Panel RC12-002-TS-IA2-SP-003_General Instrument Specification RC12-002-TS-IA2-SP-004_Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch RC12-002-TS-IA2-SP-005_Specification for Control Valves																													
Appendix A	<table><tr><td>A</td><td>Process Packages</td></tr><tr><td>1</td><td></td></tr><tr><td>B</td><td>Utility Packages</td></tr><tr><td>2</td><td></td></tr></table>	A	Process Packages	1		B	Utility Packages	2		REPLACE WITH: <table><tr><td>A</td><td>Process Packages</td><td>Package Type</td></tr><tr><td>1</td><td>Multiphase Flowmeter Skid</td><td>P2</td></tr><tr><td>B</td><td>Utility Packages</td><td></td></tr><tr><td>1</td><td>Pedestal Crane</td><td>P2</td></tr><tr><td>2</td><td>Air Compressor</td><td>P4</td></tr><tr><td>3</td><td>Mobile Steam Generator</td><td>P4</td></tr><tr><td>4</td><td>Chemical Injection Skid</td><td>P2</td></tr></table>	A	Process Packages	Package Type	1	Multiphase Flowmeter Skid	P2	B	Utility Packages		1	Pedestal Crane	P2	2	Air Compressor	P4	3	Mobile Steam Generator	P4	4	Chemical Injection Skid	P2
A	Process Packages																														
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RESEARCH AND ENGINEERING INSTITUTE FOR
OFFSHORE OIL AND GAS



AGREED BY
Deputy General Director of
Vietsovpetro

Tran Xuan Hoang

23 / 08 /2022

APPROVED BY
Chief Engineer of Vietsovpetro



Tran Van Vinh

23 / 08 /2022

TYPICAL ENGINEERING DOCUMENTATION

DOCUMENT TITLE **SPECIFICATION FOR PACKAGE EQUIPMENT
INSTRUMENTATION**

DOCUMENT NO. : **VSP-NIPI-TYP-TS-IA2-SP-06**

CONTROLLED

AGREED:

Name

Date

Capital Construction Department

Signed by: Nguyễn Hồng Giang
Date: 22/08/2022 07:26:10
Certified by: Vietsovpetro CA

Material and Equipment Department

Signed by: Châu Ngọc Hồ
Date: 19/08/2022 11:20:25
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Mechanical Electrical Division

Signed by: Trịnh Hoàng Linh
Date: 19/08/2022 08:07:19
Certified by: Vietsovpetro CA

Signed by: Hồ Quốc Huy
Date: 16/08/2022 14:10:00
Certified by: Vietsovpetro CA

Signed by: Trần Anh Nguyễn
Date: 16/08/2022 14:43:42
Certified by: Vietsovpetro CA

Signed by: Nguyễn Hải Chung
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Signed by: Гайнутдинов
Евгений Нурлыгалиевич
Date: 16/08/2022 15:07:23
Certified by: Vietsovpetro CA

Signed by: Trần Duy Hải
Date: 16/08/2022 15:23:16
Certified by: Vietsovpetro CA

Signed by: Bùi Trọng Hân
Date: 16/08/2022 22:13:53
Certified by: Vietsovpetro CA

1	IFA	25/07/2022	T.A.NGUYEN /D.Q.HUY	N.H.CHUNG	G.E.N	T.D.HAI	B.T.HAN
0	IFA	25/10/2019	N.H.CHUNG	N.H.CHUNG	G.E.N	T.D.HAI	B.T.HAN
REV.	DES.	DATE	PREPARED	CHECKED	DEPART. MANAGER	ENG. MANAGER	PRO. MANAGER



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CHANGE LOG

REV	SECTION	PAGE	CHANGE DESCRIPTION
1	6.5	12	ADDED: • I/O modules for critical signals

REFERENCE DOCUMENTS

Number of document	Description
VSP-NIPI-TYP-TS-IA2-SP-01	ICSS - Functional Design Specification
VSP-NIPI-TYP-TS-IA2-SP-02	Specification For Wellhead Control Panel
VSP-NIPI-TYP-TS-IA2-SP-03	General Instrument Specification
VSP-NIPI-TYP-TS-IA2-SP-04	Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch
VSP-NIPI-TYP-TS-IA2-SP-05	Specification for Control Valves



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ISA	The International Society of Automation
JB	Junction Box
LCD	Liquid Crystal Display
LCP	Local Control Panel
LED	Light Emitting Diode
MODBUS	Serial Communication Protocol by Modicon
MTTR	Mean Time To Recovery
MTBF	Mean Time Between Failure
NC	Normally Close
NO	Normally Open
NDE	Non Destructive Examination
NPS	Nominal Pipe Size
OS&Y	Outside Screw and Yoke
P&ID	Piping and Instrument Diagram
PAPA	Prepare to Abandon Platform
PCB	Polychlorobiphenyls
PCS	Process control system
PVC	Polyvinylchloride
PO	Purchase Order
PLC	Programmable Logic Controller
QA/QC	Quality Assurance / Quality Control
RFI	Radio Frequency Interference
RO	Restriction orifice
RTJ	Ring Type Joint
RF	Raised Face
SAT	Site Acceptance Test
SIL	Safety Integrity Level
SIS	Safety Integrated System
SOE	Sequence of Events
SWB	Steel Wire Braid
SPIR	Spare Parts and Interchange ability Record
TFE	Tetrafluoroethylene
TPI	Third Party Inspection
UCP	Unit Control Panel
UPS	Un-interruptible Power Supply
VDU	Video Display Unit
VDRL	Vendor Data Requirements List

2. REFERENCES, CODES & STANDARDS

2.1 General

All equipment shall comply with the relevant national and international codes, standards and recommendations. The Vendor shall determine what equipment requires type approval by the local Vietnamese Authority and shall provide type approval equipment where necessary. This specification requires that the design, construction and testing of the instrument shall meet all requirements of the codes, standards and other documents listed in Section 2.2.



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In general, the Instrumentation and Control systems shall be designed to conform with, but not limited to the latest editions of the following industry standards, codes, professional documents, regulations and project documents.

2.2 International Codes & Standards

Refer to the applied Codes and Standards listed in:

VSP-NIPI-TYP-TS-IA2-SP-01	ICSS - Functional Design Specification
VSP-NIPI-TYP-TS-IA2-SP-03	General Instrument Specification
VSP-NIPI-TYP-TS-IA2-SP-05	Specification for Control Valves
VSP-NIPI-TYP-TS-IA2-SP-04	Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch

3. PACKAGE VENDOR SCOPE OF DELIVERY AND INSTRUMENT DESIGN

3.1 General

The VENDOR shall assume full responsibility for engineering, equipment selection, interface definition, purchase, installation, testing, calibration, function testing and documentation of the instrument equipment and control system for the entire package.

The VENDOR shall be responsible for providing the CONTRACTOR/ COMPANY with information necessary for integration with equipment outside the delivery, but essential for the intended performance of the package.

The VENDOR shall as minimum, submit for CONTRACTOR/ COMPANY review/approval all applicable documents for the package as listed in Appendix B.

The VENDOR shall as a minimum, perform inspection, calibration and function testing according to Section 8.0 of this specification.

It is the VENDOR's responsibility to assist the CONTRACTOR/ COMPANY in defining all relevant functions and parameters for control and monitoring via the PCS.

3.2 Scope of work

Package VENDOR scope of work shall include as a minimum:

- All inline, online, and offline instrumentation shall be fully installed complete with all impulse line tubing, pneumatic signal tubing, instrument valves, instrument manifolds, instrument supports, instrument tags and instrument labels.
- Instrument air manifold(s) c/w isolation valves shall be installed at the skid edge and fully tubed to the instrument air users on angle iron or tubing tray.
- The skid edge junction boxes shall be fully hooked to the skid Instruments and LCP, and fully function tested.
- The VENDOR shall supply all instrument equipment, junction boxes, cable gland, cabling (within the skid and panel), tubing, fittings and other items necessary for the satisfactory operation of the instrumentation and any associated control panels.
- All parts subject to moisture, fungus growth or insect attack shall be treated with a coating to ensure suitability for tropical conditions.
- Where the packaged equipment is provided with its own control and safeguarding system(s), the VENDOR is responsible for the design, engineering and safe operation of these systems. The CONTRACTOR/ COMPANY will review and approve the design for overall compliance but the



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satisfactory operation and adherence to requirements remains the VENDOR's responsibility. The system shall be supplied fully assembled, wired, tested and ready for operation.

- To facilitate operation and maintenance of the facility, standardization of all instrument equipment shall be adopted. For this purpose, COMPANY Approved Vendor List shall be followed. If major technical requirements dictate the selection of manufacturer(s) not included in COMPANY's Approved Vendor List, the VENDOR shall inform the CONTRACTOR/ COMPANY of the exception in his bid. Specific details shall be given on the requirements that cannot be achieved by selection from the Approved Vendor List, and of the proposed alternative.

3.3 Instrument Design

Instrument specification and design shall comply with "VSP-NIPI-TYP-TS-IA2-SP-03_General Instrument Specification".

Design of the package shall comply with the functional requirement stated in the respective package equipment specification.

Deviations if any shall be brought to the notice of the COMPANY/CONTRACTOR for approval.

3.4 Documentation

The purpose of all drawings and documentation is to enable the equipment to be installed, tested and maintained by the COMPANY's technicians, even if they are not totally familiar with the equipment.

The Package VENDOR shall prepare instrument data sheets for all instruments in his supply in accordance with ISA 20 standard instrument data sheets which are subject to CONTRACTOR/ COMPANY's approval. Tag number for package instruments shall be allocated by CONTRACTOR/ COMPANY in accordance with the VENDOR's P&IDs.

Symbols and legend used on drawings shall be same as that used in the Project's P&IDs.

Logic diagrams shall comply with ISA 5.2 "Binary Logic Diagrams for Process Operation".

VENDOR shall provide other documents such as Instrument Index, Wiring Diagrams, Hook-Up drawings, Layouts, etc as included in Appendix B.

The Package VENDOR shall provide an Operation and Maintenance Manual for all equipment with references to tag numbers to enable COMPANY's technicians to operate and maintain the equipment in a safe and efficient manner.

VENDOR shall provide control narratives for control of the package. Emphasis shall be based on the complex control loops/ configuration that require Interlock.

VENDOR shall provide Cause and Effect Matrix and Loop Drawings for the package.

Test and Inspection plan proposed shall be submitted to CONTRACTOR / COMPANY for approval.

4. PACKAGE DESCRIPTION

The Instrumentation in Package Equipment shall be supplied and designed in one of the following configurations:

- **Package Type 1-P1**

Instruments located in the package, connected to ICSS, monitored and controlled from ICSS. Cabling from the Instrument to the ICSS shall be by CONTRACTOR/ COMPANY without the use of Package supplied Junction Box.

- **Package Type 2-P2**

Instruments located in the package, connected to ICSS, monitored and controlled from ICSS. VENDOR shall run the cabling from the Instruments up to junction boxes located at the edge of the package skid. Cabling from the junction box to the ICSS shall be by CONTRACTOR/ COMPANY unless otherwise



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stated. Control philosophy and all documents related to design and programming works for package shall be provided by package vendor.

- **Package Type 3-P3**

Instruments located in the package, connected, monitored and controlled by dedicated control system in a remote central location. The control panel is called Unit Control Panel (UCP). VENDOR shall provide and run all the cabling from the Instruments up to a junction boxes located at the edge of the package skid. CONTRACTOR/ COMPANY shall run the interface cables from the junction box to the UCP and from UCP to ICSS. Interface cables and suitable cable glands (both end) shall be provided by VENDOR as loose item unless otherwise specified in package's specification. The distance between UCP and ICSS shall be confirmed by COMPANY/ CONTRACTOR.

- **Package Type 4-P4**

Instruments located in the package, connected, monitored and controlled from dedicated control system integral to the package skid. The control panel is called Local Control Panel (LCP). VENDOR shall provide and run all the cabling from the Instruments up to LCP / Skid's JB's and from the skid's JB's to LCP. CONTRACTOR/ COMPANY shall run the interface cables from the LCP to the ICSS. Interface cables and suitable cable glands (both end) shall be provided by VENDOR as loose item unless otherwise specified in package's specification. The distance between LCP and ICSS shall be confirmed by COMPANY/ CONTRACTOR.

The Instrumentation specification and design shall be in accordance to "VSP-NIPI-TYP-TS-IA2-SP-03_General Instrument Specification". Where Instrument is part of VENDOR proprietary equipment which requires the use of VENDOR standard engineering and design, VENDOR shall highlight the requirement for acceptance by COMPANY.

5. PACKAGE UNIT CONTROLS AND SAFEGUARDING SYSTEM PHILOSOPHIES

5.1 General

Where the control requirements of the packaged equipment are relatively simple, consideration shall be given to implementing these controls within the platform's PCS. In general, those requirements will be specified in the actual mechanical package specification.

Where the packaged equipment is provided with its own control and safeguarding system(s), the VENDOR is responsible for the design and safe operation of these systems. The CONTRACTOR/ COMPANY will review and approve the design for overall compliance but the satisfactory operation and adherence to requirements remains the VENDOR's responsibility.

The package process control system will perform the following functions:

- Local operator interface
- Interface to platform's ICSS. The interface shall be at sufficient level to enable the operation of the unit from the CR.
- Self-contained control and monitoring of all internal parameters.
- Self-contained protective actions and alarms

Except where specified otherwise in package specification, all controls shall be failsafe i.e. fail into alarm and shutdown.

PLC based and proprietary microprocessor based control systems shall be used for all electronic control systems unless approved otherwise by COMPANY.

Protective shutdown function shall be either wired to the main platform's SIS (Safety Integrated System) or implemented by Package's own Safeguarding System required as part of VENDOR's proprietary design. When



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the package supplied with its own Safeguarding system, it is possible to combine it with the control function subject to COMPANY approval.

The Package Safeguarding system related to SIS (Safety Integrated System) shall be implemented in a PLC approved by TUV Rhienland (to IEC 61508, suitable for SIL-3 applications as minimum). This SIL requirement includes the controller, the programming software, the I/O modules and termination boards. VENDOR shall provide the relevant certificates and associated reports.

All control software shall be documented according with ANS/ISA-5.06.01. The software documentations shall be able to be used for control software definition, design, testing and validation and not require specialized knowledge of any particular engineering or computer science discipline to develop or understand.

All software used shall be handed over to the COMPANY after FAT. Third party software requires evergreen license in COMPANY'S name.

5.2 Selection Guidelines

The general platform requirements place emphasis on particular aspects of the instrument systems.

- The operator interface must be easy to use with respect to multi-skilled operators and low manning level.
- The system should be easily configurable /programmable to reduce the need for specialist staff.
- The system maintenance requirement must be low.

Due to operational requirements, VENDOR supplied systems shall be based on the following principles:

- The operator shall, via the PCS system, normally be able to monitor the operation of the package.
- The operators shall, via the PCS system, have access to the parameters necessary to perform remote start-up and shut-down of the package.

The VENDOR shall recommend a control strategy, which in his opinion best meets the CONTRACTOR/ COMPANY's objectives for standardization, easy maintenance, etc. as given above and the package specification and also meets VENDOR's detail design and package responsibility.

The control system (PLC) chosen for the package shall be as per COMPANY Approved Vendor List.

5.3 Local operator interface

The Package shall be supplied with all local operator interfaces required to safely start, stop, commission, operate and maintain the package.

Local field panels will display all pertinent information required by field operators adjacent to the package.

Package unit panels shall contain all operator interfaces necessary for independent operation and trouble shooting.

5.4 Interface to platform's ICSS

Package control systems which are totally self-contained and operated independently will be interconnected to PCS via serial link or hardwired links or combination of both. However, in case where only small amount of data is required to be transferred, hardwired links are preferred. All safeguarding signals shall be hardwired to platform SIS (Safety Integrated System).

The interface shall be at sufficient level to enable the operation of the unit from the CCR.

Where the numbers of signals are small or safety related, a hardwired interface shall be used. The signals shall be of the following types:

- Analogue (4-20mA at 24VDC)
- Volt-free contact (24VDC) for status and alarms from the package to ICSS and be powered by the LCP/UCP. Contact rating shall be 1 Amp.



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- Digital output (24VDC powered, 0.5A max) directly from ICSS to the package devices.
- Relay coil (24VDC powered) for output control signals from ICSS to the packages for devices with power consumption higher than 8W 24VDC.

For equipment that operates on AC power or not on 24VDC power, VENDOR shall provide appropriate interposing relays or interface at the local panels to interface with 24VDC powered output signals from the ICSS. MODBUS RTU RS485 or TCP/IP communications protocol shall be used for all data link interfaces between UCP/LCP and PCS. The UCP/LCP will act as slave in any communications with the PCS.

Data links shall be provided with appropriate test equipment. VENDOR offering data links will include provision for, at the COMPANY's discretion:

- An integration test at the PCS supplier's works.
- Provide facilities and assistance for the PCS supplier to attend tests.

Overrides for the purposes of testing shall be as recommended by VENDOR. In general, all I/O's shall have bypass capability for safe operation and maintenance of package unless specifically agreed by COMPANY in writing.

5.5 Alarm Handling and Annunciation

Each process trip shall have a pre-trip alarm. Alarms generated from instruments shall be provided at the panel to warn operators of potentially hazardous situations before shutdown occurs.

Package panel alarm annunciations that do not require first-up facility (e.g. pre-alarms) should have "Automatic Reset" in accordance with sequence A as detailed in ISA-S18.1. Package panel alarm annunciation groups that require first-up facility should have "Automatic Reset First Out with First Out Flashing and Reset Pushbutton with Silence Pushbutton" in accordance with sequence F3A-1 as detailed in ISA S18.1.

Alarms acknowledge and reset philosophy shall be decided during detailed engineering.

5.6 Fire and Gas System

Fire and gas devices inside package skid for package without F&G System shall be wired to platform's FGS/SIS (Safety Integrated System).

Where detectors and other equipment are installed as part of the VENDOR's scope (i.e. inside enclosures) the make and models shall be required to be in accordance with the make and models approved for the Project.

Refer individual mechanical equipment specification for Fire & Gas Detection and protection requirements.

5.7 Installed Spares

The UCP / LCP shall have minimum 20% spare prewired and tested, up to field I/O incoming cable termination blocks. In addition, 20% spare space and slots shall be provided. All spare positions in racks/slots shall be provided with cover plates. All hardware required for pre-wiring of spare shall be provided by VENDOR. All spare capacity shall be evenly distributed as spare positions over the various cabinets/equipment. Spare terminals shall be provided to terminate all cores/pairs of the field cables.

VENDOR shall also ensure that all power supplies shall be dimensioned to take the above requirements into account.

6. PROGRAMMABLE LOGIC CONTROLLER (PLC)

6.1 General

PLC shall run in a standalone mode and shall be able to operate without operator intervention under normal operating conditions. The overall availability that required to be 99.95% or better for process control.

All key operational data and alarms from equipment packages shall be displayed and recorded by the ICSS.



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6.2 Power Supply

The CONTRACTOR will supply 220V A.C. UPS power supplies for the UCP via a redundant cables, further distribution shall be by VENDOR, for which the VENDOR shall provide double pole isolators within the System panel.

Redundant 220VAC/24VDC Power supply unit (PSU), with a common D.C. distribution and circuit protection network shall be provided to power up the PLC. Each PSU shall be rated at 125% maximum system load, and shall provide local and remote status and alarm facilities. Each PSU shall be of the linear type. PSU failure alarm shall be provided as part of common cabinet alarm.

Each PSU in a redundant power supply shall be rated such that all loads, including spares, can be simultaneously powered.

Diagnostics, signaling and isolation facilities shall be provided to service or replace a faulty PSU.

PSU shall be easily replaceable without disrupting the process plant.

6.3 PLC Hardware

6.3.1 Main processor module

Processor module shall be a microprocessor based controller that provides the functions required for a variety of field automation applications.

The module shall be fitted with status and diagnostic LED's (as a minimum, status and fault).

The final design should not utilize more than 50% of available memory at final commissioning.

6.3.2 Communication module

Communication module shall be automatically and permanently tested, to monitor their healthy condition. Identification and location of statuses and faults shall be automatic.

The serial communication between PLC and PCS shall be Modbus RTU RS 485 or TCP/IP, unless otherwise specified. Vendor shall provide details on Modbus address, data type and size, alarm and trip points (for analogue input points), logic active state (for discrete points), slave address, PLC details, baud rate etc at the minimum.

Communication module shall be designed for optimum data transmission speed.

6.3.3 Input and Output modules (I/O)

All input and output circuits shall be electrically isolated to prevent transients in the field wiring from affecting the internal machine circuitry (components other than I/O modules). Optical or transformer isolation is acceptable.

All input/output module electronics and channels shall include individual protecting device to prevent short circuit of the card.

Analog Input/Output modules should have HART pass-through facility to pass on health data coming from the smart field instruments to the LCP/UCP.

The system shall be designed to automatically self-test input and output cards in such a way as not to cause any process disturbance.

The I/O modules shall feature status and diagnostic LED's (as a minimum, power supply status and I/O channel status).

It must be possible to remove the I/O modules and replace them without:

- Disconnecting the field wiring from the I/O module termination assembly.
- Removing power from the PLC or any field devices.
- Disrupting the operation of the PLC in any way except for the functions associated with the module being replaced.



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- Incurring any damage to any circuits.

6.4 Application software requirements

The PLC shall be supplied with a standard laptop PC complete with the operating system, antivirus and programming software for programming, commissioning, testing and maintenance. All software used shall be handed over to the COMPANY after FAT. Third party software requires evergreen license in COMPANY'S name.

Type and characteristics of the notebook shall be submitted by VENDOR at bid stage and shall be subject to COMPANY's approval.

Password access shall be provided for different using levels (configuration, programming, operation and maintenance).

6.5 Redundancy Requirement

The PLC shall be equipped with redundant components and designed such that on failure of a single module, the system or components shall be able to switch over automatically in the event of malfunction or failure of the primary unit. The transfer shall be 'bumpless' and no data acquisition shall be lost during the transfer.

The following parts of the system shall be redundant:

- Controller module
- Memory module
- Power supply module
- Communication module (as required)
- I/O modules for regulatory control
- I/O modules for critical signals



7. CONTROL PANEL REQUIREMENT

7.1 General

The VENDOR shall provide all necessary terminals and circuit breakers to distribute power logically within all panels in his supply. A suitably rated heavy duty, double pole, electrical isolator shall be provided for each incoming power cable (VENDOR to advise maximum cable size). Further power distribution within panels shall use Miniature circuit breakers (MCB's). For the LCP all the breakers shall be explosion proof, Ex"d" type.

Panel wiring shall be in accordance with IEEE wiring Regulations. Wiring shall be sized to suit each application with a minimum of 0.5mm², (except for ribbon type cabling).

Wiring shall be routed in vented flame retardant plastic trunking with adequate separation and sized so that not more than 50% of the cross sectional area is filled with conductors.

For UCP, all field input cables shall be terminated to knife edge isolation terminal block. Terminal block for output field cables shall be installed with fuse. For the LCP, all terminal block shall be Fuse isolation.

Cable entry shall be from bottom only. Top entry shall not be used.

Each panel shall be provided with rigidly supported 25mm x 6mm copper earthing bars. Each bar shall have an identification label and two 10mm bolts for the earthing cables.

7.2 LCP Panel Requirement

LCP shall be constructed for outdoor application with appropriate safety / area classification and suitable for offshore marine using. SS316 and Cooper free aluminum alloy with epoxy or polyurethane coating are preferred. Material selection shall be proposed by Vendor for COMPANY approval.



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The LCP at the hazardous area shall be certified suitable for Zone 1 hazardous area (Ex"de"/Ex"d"). This requirement does not include LCP at unclassified / safe area. Ingress protection class shall be IP 56 as a minimum for all the LCP.

If Ex"e" will be provided for LCP enclosure, Ex"ia" components could be provided only when Ex"d" is not available, all relative instruments inside package shall be Ex"ia" and safety barriers shall be provided in LCP. The using of Ex"ia" shall be proposed by VENDOR for COMPANY approval.

Field panel size and shape shall be as per manufacturer's standard.

Weather shields shall cover the LCP front and rear panels.

LCP shall be located at the edge of skid for easy maintenance and operation.

7.3 UCP Cabinet Requirement

UCP shall consist of one combined system and marshalling cabinet. The UCP cabinet shall be used to install input/output modules, controllers, termination of field incoming/outgoing signals, communication modules, network switches, converters and other electronic modules specific to the system architecture and the selected PLC VENDOR. The UCP shall be supplied as a completely assembled unit, pre-wired and tested to meet the operation requirements.

The cabinets shall meet the requirement of IP44 for installation inside enclosed rooms without air conditioner. Installation inside enclosed room with air conditioner shall meet IP22. UCP for high heat dissipation shall be equipped with own cooling and ventilation system.

Cabinets shall be constructed from steel plate painted, these shall be a standard rack cubicle (e.g. Rittal) or custom made cabinet or panels.

Cabinets shall generally be free standing, fully enclosed cubicle type complete with access doors. Unless otherwise stated in package's specification, base cabinet shall be 800mm x 800mm x 2000mm - maximum shipping length 1600mm. Panels shall be fitted with a plinth constructed from 100mm high mild steel channel with a minimum of 4 bolt down points, anti-vibration mountings, and prepared/finished in line with CONTRACTOR/COMPANY approved paint specification.

Access doors shall be fully gasketed and adequately stiffened to prevent distortion. Doors shall be mounted on lift-off hinges complete with lockable handles. Where doors have components mounted on them, steps must be taken to prevent damage to wiring, equipment or adjacent apparatus.

The cabinets shall be supplied as one complete unit unless it is required to be sectioned for access. Removable lifting eye bolts with local stiffening shall be provided to allow lifting and transportation of the fully assembled and wired panel, without any distortion.

Instruments on the panel front which require adjustment or which have dials that require inspection shall be fitted within a height of 1.5m from grade.

8. INSTRUMENT INSTALLATION

Instruments Installation, cable routing and tubing routing within skid limit shall be in accordance to "VSP-NIPI-TYP-TS-IA2-SP-03_General Instrument Specification".

9. INSPECTION, CALIBRATION AND FUNCTIONAL TEST

9.1 Scope of work

The VENDOR shall, before shipment visually inspect, calibrate, and functionally test all instruments which are included in the package instrumentation system. This shall apply whether instruments are mounted on the package, mounted but disconnected for shipment, or shipped loose for installation at the module construction yard or offshore.

The VENDOR shall perform the following:



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- Control function testing before installation, installation checking and testing, leak testing, resistance and continuity testing and system function test where applicable.
- Complete package functional test shall be performed at VENDORS workshop, which means VENDORS/Sub-VENDORS Panel(s) and Skid(s) have to be hooked up and tested together.
- Spool pieces shall be provided for all inline instruments which will have to be removed for flushing (control valves, turbine meters, etc.).

9.2 Documentation and Test Equipment

All test shall be recorded and verified by VENDOR on suitable documents, and according to agreed procedures for inclusion in the final documentation for the package.

All test equipment shall have a valid calibration certificate, not older than one year at the time of testing.

9.3 CONTRACTOR / COMPANY's Inspection Representative

CONTRACTOR's Inspection Representatives shall be granted access to VENDOR's premises for inspection and verification of materials and work at any time. All material and test certificates shall be presented to the Inspector for verification or witnessing in accordance with VENDOR's approved Inspection Plan.

9.4 Calibration Procedure

The VENDOR shall perform a check/inspection on equipment purchased or received from sub-VENDOR and ensure that all instruments which are part of his supply, either have a calibration certificate supplied with the equipment, or are calibrated by the VENDOR witnessed by CONTRACTOR / COMPANY approved inspectors in his works.

Calibration/test certificate shall be issued for all instruments.

9.5 Functional Testing

The VENDOR must include the function testing procedure for the instrumentation system for testing of the package. This test procedure shall be prepared by the VENDOR including for control panel, field instruments, etc. and submitted to the CONTRACTOR / COMPANY for approval before testing is performed.

Before shipment, package VENDOR shall test all serial link input/ output on PLC panel side using simulating PC with software.

VENDOR shall supply test simulators to test all I/O's of the panel. Full functional test shall be carried out to simulate both normal and abnormal conditions / sequence.

All equipment failure modes shall be checked (e.g. power dips, redundancy, fail safe). The equipment radiated emission characteristics shall be within the recommendations of IEC standard.

VENDOR shall develop a control narrative for the system prior to functional test. This document shall be approved by COMPANY.

VENDOR shall participate in the panel integration test at the PCS Supplier works, for those packages that are connected via Modbus communication to PCS. VENDOR shall provide the PLC rack with CPU, communication cards, etc. fully loaded with the latest & final configuration files, software's required for this testing at PCS works. It is VENDOR's responsibility for coordinating with PCS Supplier for establishing the successful communication and testing with PCS. VENDOR shall provide all necessary parameters in the requested formats for the PCS interface.

The following tests shall be carried out to demonstrate the immunity of the equipment to radio frequency interference.

- A portable radio of frequency and electric field shall be operated at a distance of 3 feet from each equipment cabinet or console in turn.
- All doors on the equipment cabinets or consoles shall be left fully open for the duration of this test.



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- During the test, the system shall be fully operational and shall be monitored for abnormal indications or spurious data.

9.6 Flushing and Testing Requirement

During flushing/clean of process and utility pipework all inline instruments including control valves and orifice plates shall be disconnected, removed and replaced by spool-pieces. Thermowells may be left in place.

In the case of pipework pressure-testing all instruments connected on small bore off-takes which are protected by a block and bleed arrangement shall be isolated and vented. Where no block and bleed is provided the instrument will be removed unless there is no danger of damage due to leakage of the isolating valve. Orifice plates and thermowells may remain in place during pressure testing.

In general, instruments which form part of the process pipework may be left in place during pressure testing but if there is a danger of damage they are to be removed. Control valves with axial stem movement shall be removed or protected by spades or spectacle blinds. Control and shutoff valves with rotary stem movement may be left in place provided the gland is rated to withstand the test pressure. All instruments forming part of the process piping shall be replaced for the reinstatement test.

After the reinstallation the VENDOR shall recheck for correct installation including checks to ensure that valves, flowmeter etc. are installed in the correct flow direction.

Instrument impulse lines shall be flushed and tested according to VENDORS test procedure, which shall be subject to CONTRACTOR / COMPANY approval. A pressure test to 1.5 times maximum process design pressure shall be performed. All the lines shall be drained with clean air or nitrogen after the test, the lines should be considered dry after blowing for 30 minutes.

Hydraulic piping and equipment shall be flushed, pressure tested and leak tested according to VENDORS procedures.

The CONTRACTOR shall certify that the system cleanliness level is in accordance with ISO 4406 Class 17/15/12 or better. The pressure test shall be performed to 1.5 times the maximum working pressure.

The flushing shall be carried out by a dedicated flushing unit with capacity of a flow rate of at least 1.5 times the service pump flow rate. The system hydraulic pump shall not be used for flushing.

Piping and equipment which have been protected with a rust inhibitor (preservation liquid) shall be ascertained for compatibility with the operating fluid. If not, the piping/equipment shall be flushed to remove the rust inhibitor.

Pneumatic signal and supply lines shall be flushed and pressure tested according to VENDORS test procedure, which shall be subjected to CONTRACTOR / COMPANY approval. A pressure test to 1.1 times maximum design pressure shall be performed in accordance with the requirements of ANSI B 31.3.

Pneumatic signal and supply lines shall be leak tested according to VENDORS test procedure, which shall be subject to CONTRACTOR / COMPANY approval. Instrument air or nitrogen to be used for the leak testing at the maximum operating pressure.

All instruments shall be calibrated, and the calibration results recorded on agreed record sheets.

All cables shall be "megger" tested for insulation, between core to core, core to screen, screen to armor, screen to ground, armor to ground.

Polarity and continuity of cores, screens and armor shall also be tested. All tests shall be documented on agreed record sheets.

The completed skid instrumentation shall be subjected to as full functional test as possible. This includes the operation of control valves, block valves and solenoid valves. Where a panel is provided as part of the package a full functional test of the panel together with the skid shall be carried out.

The Package VENDOR shall be responsible for the supply and cost of all replacement material and labor necessary to rectify faults which show up during instrument installation and testing, if such faults are due to design errors, faulty workmanship or faulty materials in the Package VENDOR supply.



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10. PACKING, SHIPPING AND REASSEMBLE

The instruments on skid or packaged equipment shall be packed to avoid damage during shipment. Any instrument on skid or packaged equipment which possibly being damaged during shipment shall be disassembled and removed. The disassembled instruments shall be packed and shipped with the skid or packaged equipment. All openings to be suitably sealed.

Any electronic or electrical component in control panel which possibly being damaged during shipment shall be removed. Each such item shall be suitably packed or crated to protect them from damage during shipment. Each item, crate, box, etc. shall be identified. A complete packing list for each box or crate shall be provided.

The electronic and electrical components removed from skid mounted panel shall be shipped independently. The shipping notice shall be written on the box or crate with red letters, such as "Handle with Care", "Keep Dry", "Fragile", etc.

The control panels or junction boxes in which contain electronic or electrical components shall be put drying agent inside to protect from wet and rusty during shipment.

The instruments disassembled during shipment shall be reassembled after the skids or packaged equipment are positioned and installed on site.

The installation material such as fittings, sealant, etc., used for instrument reassemble shall be provided by skid or packaged equipment VENDOR.

It is VENDOR's responsibility to reassemble the instruments removed from skid or packaged equipment during shipment.

The instruments shall be functionally tested and recalibrated after completing the reassemble work. Any fault component or instrument found shall be replaced by the VENDOR of skid or packaged equipment.

The pneumatic tubing reassembled shall be checked for leakage.

11. SPARE PARTS AND SPECIAL TOOLS

11.1 Spare Parts

The package VENDOR shall supply commissioning and start-up spares for instrumentation as part of his scope of delivery. A complete list shall be forwarded by VENDOR for CONTRACTOR / COMPANY approval.

All unused commissioning and start-up spares left after the start-up shall be left onboard, handover with proper documents and become COMPANY's property.

11.2 Special Tools

The Package VENDOR shall supply one set of any and all special tools required for erection or maintenance of the instrument system provided (e.g. HART configurator).



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APPENDIX A

Detailed Package type of this project shall be specified later for each Project.

No.	Package Description	Package Type
A	Process Packages	
B	Utility Packages	





TYPICAL ENGINEERING DOCUMENTATION
SPECIFICATION FOR PACKAGE EQUIPMENT
INSTRUMENTATION

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APPENDIX B

Documentation for Instrument for Package Equipment shall be minimum as follow:

DOCUMENT DESCRIPTION	APPLICABLE FOR PACKAGE	APPROVAL/ INFOR.
A. General Documentation		
1. Overall schedule	ALL	Approval
2. P&ID	ALL	Approval
3. Instrument list	ALL	Approval
4. I/O list	P3, P4	Approval
5. Instrument Data sheet	ALL	Approval
6. Interconnection Diagram	P2, P3, P4	Approval
7. Tubing layout and tubing routing	P3, P4	Approval
8. Cable routing and cable tray layout	P3, P4	Approval
9. Instrumentation Loop wiring diagram	P3, P4	Approval
10. Instrument Calculation Sheets	ALL	Approval
11. Calculation sheet for IS loop (if required)	ALL	Approval
12. System Architecture (showing interconnection)	P3, P4	Approval
13. Control and Safety Systems Description	P3, P4	Approval
14. Operating principle and Functional Design Specification	ALL	Infor.
15. Control, logic and sequence diagram, cause and effect chart	ALL	Approval
16. Instrument card I/O assignment	P3, P4	Approval
17. Calculation Sheets of network and controller load	P3, P4	Infor.
18. Software specification, configuration documentation	P3, P4	Infor.
19. Software Database Exchange Table	P3, P4	Infor.
20. Power supply and Instrument air consumption	ALL	Infor.
21. CPU heat dissipation	P3, P4	Infor.
22. SIL Data	ALL	Infor.
B. Operation and Maintenance Documentation		
23. Operating Manual	ALL	Infor.
24. HMI Graphic Display, Report Printouts	P3, P4	Infor.
25. Spare part list (for start-up and for 2 years of normal use)	ALL	Infor.
26. Special Tools List	ALL	Infor.
C. Test Procedure		
27. Performance and Test Procedure	ALL	Infor.



	TYPICAL ENGINEERING DOCUMENTATION SPECIFICATION FOR PACKAGE EQUIPMENT INSTRUMENTATION		VSP-NIPI-TYP-TS-IA2-SP-06		
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DOCUMENT DESCRIPTION	APPLICABLE FOR PACKAGE	APPROVAL/ INFOR.
28. Hydro test Procedures	ALL	Infor.
29. Performance Test Reports	ALL	Infor.
30. Surface Preparation and Paint System Specification	ALL	Infor.
31. Commissioning and Site Acceptance Test Procedures	ALL	Infor.
32. Factory Acceptance Test Procedure (FAT, IFAT, SAT)	ALL	Infor.
33. Preservation and Storage Procedure	ALL	Infor.
34. Welding Procedures & Qualification Test Reports	ALL	Infor.
35. NDT Procedures	ALL	Infor.
D. QA/Certification		
36. QA Accreditation Certification	ALL	Infor.
37. Contract Quality Plan	ALL	Infor.
38. Inspection and Test Plan	ALL	Approval
39. Statement of Code Compliance	ALL	Infor.
40. Approval of Relevant Authorities	ALL	Infor.
41. Inspection and Test Reports	ALL	Approval
42. Material Certification	ALL	Infor.
43. Hazardous Area Electrical Equipment Certification	ALL	Infor.
44. Electrical Type Test Certificates	ALL	Approval
45. Post Weld Heat Treatment Records	ALL	Approval
46. Hydro test Reports	ALL	Infor.
47. NDT Reports	ALL	Infor.
48. Performance Curves and Data (ANSI and ASME)	ALL	Approval
49. FAT, IFAT, SAT Reports (performance, leak and functional systems tests)	ALL	Approval
50. Commissioning and Site Acceptance Test Results	ALL	Approval
51. Noise Test Data	ALL	Infor.

NOTE:

Other documents may be required as detailed in package specifications and/or relevant codes and standards.





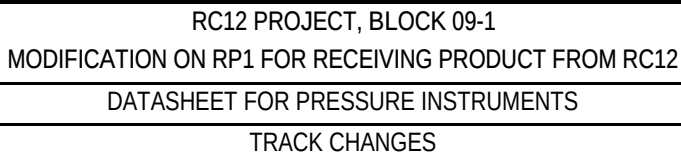
RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS



PROJECT NAME : RC12 PROJECT, BLOCK 09-1
**PROJECT : MODIFICATION ON RP1 FOR RECEIVING
PRODUCT FROM RC12**
DOCUMENT TITLE : DATASHEET FOR PRESSURE INSTRUMENTS
DOCUMENT NO. : RP1-233-TS-IA2-DS-001
PHASE : DETAILED ENGINEERING

			AGREED	Signed by: Костикин Виталий Николаевич Date: 26.05.2025 13:51:51 Certified by: Vietsovpetro CA	Signed by: Phạm Thanh Tùng Date: 22/05/2025 17:36:58 Certified by: Vietsovpetro CA	
				PIPING: K.V.N.	PROCESS: P.T.TUNG	
			CONTROLLED	Signed by: Nguyễn Thị Thu Trang Date: 26/05/2025 14:01:51 Certified by: Vietsovpetro CA	Signed by: Bùi Hồng Dương Date: 27/05/2025 09:22:33 Certified by: Vietsovpetro CA	
				DC: L.T.HANG	ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
				Signed by: Đỗ Quốc Huy Date: 22/05/2025 15:21:26 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 22/05/2025 15:26:00 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.05.2025 16:27:56 Certified by: Vietsovpetro CA
0	IFA	05.2025				
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.	





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RC12 PROJECT, BLOCK 09-1
MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12
DATASHEET FOR PRESSURE INSTRUMENTS
TABLE OF CONTENT

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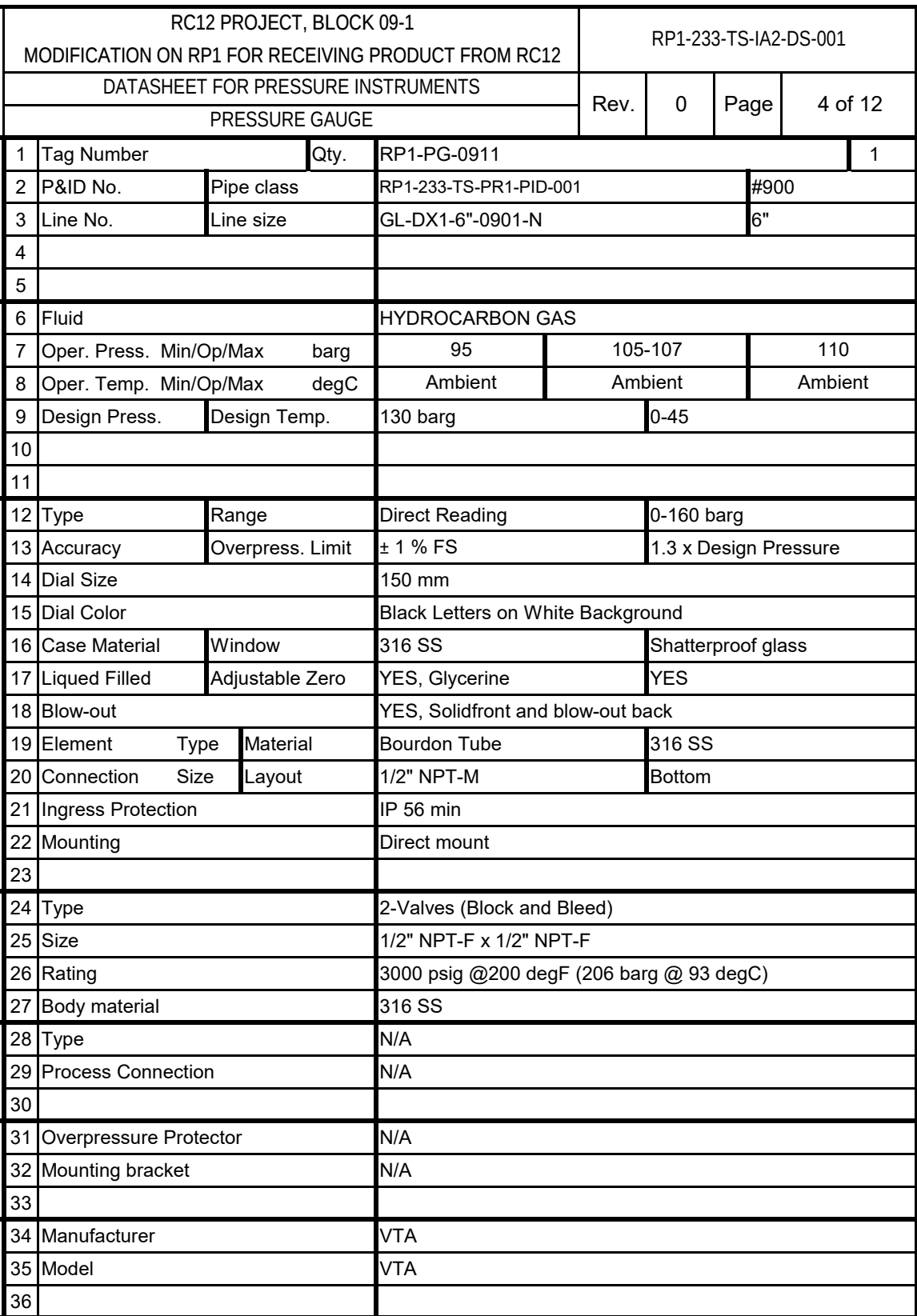
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NO	Equipment Tag No.	Page No.
1	RP1- PG-0911	4
2	RP1- PG-0910	5
3	RP1- PG-0909	6
4	RP1- PT-0911	7
5	RP1- PT-0910	8
6	RP1- PT-0909	9
7	RP1- PZT-0911	10
8	RP1- PZT-0910	11
9	RP1- PZT-0909	12





N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.



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	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	5 of 12
	DATASHEET FOR PRESSURE INSTRUMENTS							
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RP1-PG-0910				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#2500
	3	Line No.	Line size	WI-FC1-6"-0901-N				6"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	WATER INJECTION					
	7	Oper. Press. Min/Op/Max	barg	-	250	-		
	8	Oper. Temp. Min/Op/Max	degC	-	AMBIENT	-		
	9	Design Press.	Design Temp.	275 barg		0-45 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0-400 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	150 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Glycerine		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		Monel	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
	MANIFOLD	24	Type	2-Valves (Block and Bleed)				
25		Size	1/2" NPT-F x 1/2" NPT-F					
26		Rating	6000 psig @200 degF (414 barg @ 93 degC)					
27		Body material	Monel					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33							
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Manifold shall c/w 316 SS plug for vent/drain/test port. 2. Permanent fitted SS Name Plate shall be provided with standard specifications.								



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-001			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	6 of 12
	DATASHEET FOR PRESSURE INSTRUMENTS							
PRESSURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RP1-PG-0909				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#300
	3	Line No.	Line size	PL-BX1-10"-0901-IE				10"
	4							
	5							
OPERATING CONDITIONS	6	Fluid	HC WATER-OIL LIQUID MIXTURE					
	7	Oper. Press. Min/Op/Max	barg	9.5	-	15		
	8	Oper. Temp. Min/Op/Max	degC	25	-	65		
	9	Design Press.	Design Temp.	45 barg		0-80 degC		
	10							
	11							
GAUGE	12	Type	Range	Direct Reading		0-40 barg		
	13	Accuracy	Overpress. Limit	± 1 % FS		1.3 x Design Pressure		
	14	Dial Size	150 mm					
	15	Dial Color	Black Letters on White Background					
	16	Case Material	Window	316 SS		Shatterproof glass		
	17	Liqued Filled	Adjustable Zero	YES, Glycerine		YES		
	18	Blow-out	YES, Solidfront and blow-out back					
	19	Element	Type	Material	Bourdon Tube		316 SS	
	20	Connection	Size	Layout	1/2" NPT-M		Bottom	
	21	Ingress Protection	IP 56 min					
	22	Mounting	Direct mount					
	23							
	MANIFOLD	24	Type	2-Valves (Block and Bleed)				
25		Size	1/2" NPT-F x 1/2" NPT-F					
26		Rating	1500 psig @200 degF (103 barg @ 93 degC)					
27		Body material	316 SS					
DIAPHRAGM SEAL	28	Type	N/A					
	29	Process Connection	N/A					
	30							
ACCESSORIES	31	Overpressure Protector	N/A					
	32	Mounting bracket	N/A					
	33							
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
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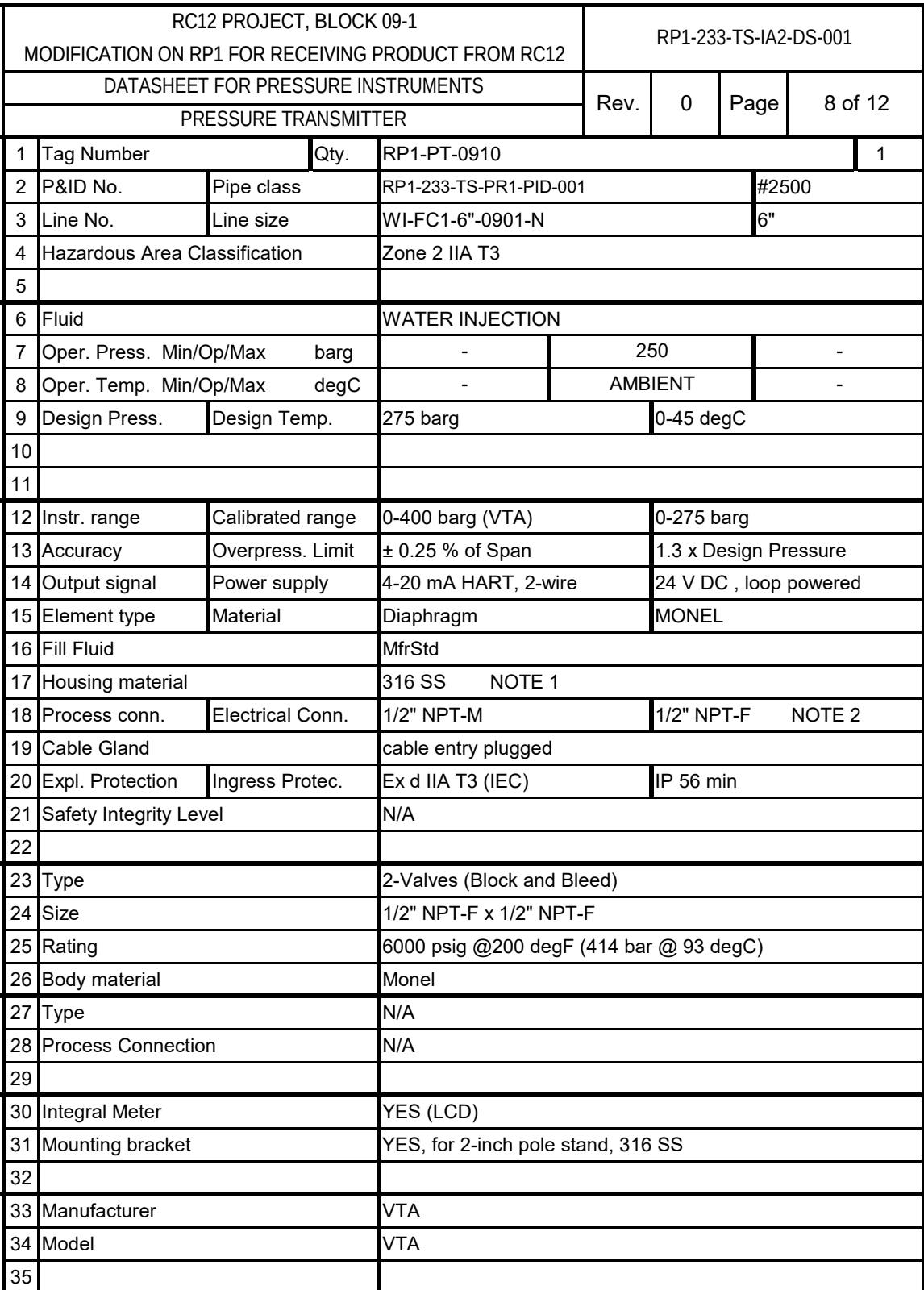
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	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	7 of 12
	DATASHEET FOR PRESSURE INSTRUMENTS							
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RP1-PT-0911				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#900
	3	Line No.	Line size	GL-DX1-6"-0901-N				6"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid		HYDROCARBON GAS				
	7	Oper. Press. Min/Op/Max	barg	95	105-107		110	
	8	Oper. Temp. Min/Op/Max	degC	Ambient		Ambient		Ambient
	9	Design Press.	Design Temp.	130 barg		0-45		
	10							
	11							
TRANSMITTER	12	Instr. range	Calibrated range	0-400 barg (VTA)		0-160 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		N/A				
	22							
	MANIFOLD	23	Type		2-Valves (Block and Bleed)			
24		Size		1/2" NPT-F x 1/2" NPT-F				
25		Rating		3000 psig @200 degF (207 bar @ 93 degC)				
26		Body material		316 SS				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							

VTC - Vendor to Confirm / Calculate
VTA - Vendor to Advise
N/A - Not Applicable (Not Required)
MfrStd - According to Manufacturer Standard or Practice

NOTES

- Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
- Manifold shall c/w 316 SS plug for vent/drain/test port.
- Permanent fitted SS Name Plate shall be provided with standard specifications.





N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
3. Manifold shall c/w 316 SS plug for vent/drain/test port.
4. Permanent fitted SS Name Plate shall be provided with standard specifications.



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-001			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	9 of 12
	DATASHEET FOR PRESSURE INSTRUMENTS							
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RP1-PT-0909				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#300
	3	Line No.	Line size	PL-BX1-10"-0901-IE				6"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid			HC WATER-OIL LIQUID MIXTURE			
	7	Oper. Press. Min/Op/Max	barg	9.5	-	15		
	8	Oper. Temp. Min/Op/Max	degC	25	-	65		
	9	Design Press.	Design Temp.	45 barg		0-80 degC		
	10							
	11							
TRANSMITTER	12	Instr. range	Calibrated range	0-100 barg (VTA)		0-25 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid			MfrStd			
	17	Housing material			316 SS NOTE 1			
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland			cable entry plugged			
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level			N/A			
	22							
	MANIFOLD	23	Type			2-Valves (Block and Bleed)		
24		Size			1/2" NPT-F x 1/2" NPT-F			
25		Rating			1500 psig @200 degF (103 bar @ 93 degC)			
26		Body material			316 SS			
DIAPHRAGM SEAL	27	Type			N/A			
	28	Process Connection			N/A			
	29							
ACCESSORIES	30	Integral Meter			YES (LCD)			
	31	Mounting bracket			YES, for 2-inch pole stand, 316 SS			
	32							
PURCHASE	33	Manufacturer			VTA			
	34	Model			VTA			
	35							

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VTA - Vendor to Advise
N/A - Not Applicable (Not Required)
MfrStd - According to Manufacturer Standard or Practice

NOTES

- Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
- Manifold shall c/w 316 SS plug for vent/drain/test port.
- Permanent fitted SS Name Plate shall be provided with standard specifications.



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-001			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	10 of 12
	DATASHEET FOR PRESSURE INSTRUMENTS							
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RP1-PZT-0911				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#900
	3	Line No.	Line size	GL-DX1-6"-0901-N				6"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid		HYDROCARBON GAS				
	7	Oper. Press. Min/Op/Max	barg	95	105-107		110	
	8	Oper. Temp. Min/Op/Max	degC	Ambient		Ambient		Ambient
	9	Design Press.	Design Temp.	130 barg		0-45		
	10							
	11							
TRANSMITTER	12	Instr. range	Calibrated range	0-400 barg (VTA)		0-160 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		SIL2				
	22							
	MANIFOLD	23	Type		2-Valves (Block and Bleed)			
24		Size		1/2" NPT-F x 1/2" NPT-F				
25		Rating		3000 psig @200 degF (207 bar @ 93 degC)				
26		Body material		316 SS				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							

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VTA - Vendor to Advise
N/A - Not Applicable (Not Required)
MfrStd - According to Manufacturer Standard or Practice

NOTES

- Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
- Manifold shall c/w 316 SS plug for vent/drain/test port.
- Permanent fitted SS Name Plate shall be provided with standard specifications.



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-001			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	11 of 12
	DATASHEET FOR PRESSURE INSTRUMENTS							
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RP1-PZT-0910				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#900
	3	Line No.	Line size	WI-FC1-6"-0901-N				6"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid		WATER INJECTION				
	7	Oper. Press. Min/Op/Max	barg	-	250		-	
	8	Oper. Temp. Min/Op/Max	degC	-	AMBIENT		-	
	9	Design Press.	Design Temp.	275 barg		0-45 degC		
	10							
	11							
TRANSMITTER	12	Instr. range	Calibrated range	0-400 barg (VTA)		0-275 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		MONEL		
	16	Fill Fluid		MfrStd				
	17	Housing material		316 SS NOTE 1				
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland		cable entry plugged				
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level		SIL2				
	22							
	MANIFOLD	23	Type		2-Valves (Block and Bleed)			
24		Size		1/2" NPT-F x 1/2" NPT-F				
25		Rating		6000 psig @200 degF (414 bar @ 93 degC)				
26		Body material		Monel				
DIAPHRAGM SEAL	27	Type		N/A				
	28	Process Connection		N/A				
	29							
ACCESSORIES	30	Integral Meter		YES (LCD)				
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
	32							
PURCHASE	33	Manufacturer		VTA				
	34	Model		VTA				
	35							

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NOTES

- Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
- Manifold shall c/w 316 SS plug for vent/drain/test port.
- Permanent fitted SS Name Plate shall be provided with standard specifications.



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-001			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	12 of 12
	DATASHEET FOR PRESSURE INSTRUMENTS							
PRESSURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RP1-PZT-0909				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#300
	3	Line No.	Line size	PL-BX1-10"-0901-IE				6"
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid			HC WATER-OIL LIQUID MIXTURE			
	7	Oper. Press. Min/Op/Max	barg	9.5	-	15		
	8	Oper. Temp. Min/Op/Max	degC	25	-	65		
	9	Design Press.	Design Temp.	45 barg		0-80 degC		
	10							
	11							
TRANSMITTER	12	Instr. range	Calibrated range	0-100 barg (VTA)		0-25 barg		
	13	Accuracy	Overpress. Limit	± 0.25 % of Span		1.3 x Design Pressure		
	14	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered		
	15	Element type	Material	Diaphragm		316 SS		
	16	Fill Fluid			MfrStd			
	17	Housing material			316 SS NOTE 1			
	18	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F NOTE 2		
	19	Cable Gland			cable entry plugged			
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	21	Safety Integrity Level			SIL2			
	22							
	MANIFOLD	23	Type			2-Valves (Block and Bleed)		
24		Size			1/2" NPT-F x 1/2" NPT-F			
25		Rating			1500 psig @200 degF (103 bar @ 93 degC)			
26		Body material			316 SS			
DIAPHRAGM SEAL	27	Type			N/A			
	28	Process Connection			N/A			
	29							
ACCESSORIES	30	Integral Meter			YES (LCD)			
	31	Mounting bracket			YES, for 2-inch pole stand, 316 SS			
	32							
PURCHASE	33	Manufacturer			VTA			
	34	Model			VTA			
	35							

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NOTES

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- Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
- Manifold shall c/w 316 SS plug for vent/drain/test port.
- Permanent fitted SS Name Plate shall be provided with standard specifications.





RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS



PROJECT NAME : RC12 PROJECT, BLOCK 09-1

SUB PROJECT : MODIFICATION ON RP1 FOR RECEIVING
PRODUCT FROM RC12

DOCUMENT TITLE : DATASHEETS FOR TEMPERATURE
INSTRUMENTS

DOCUMENT NO. : RP1-233-TS-IA2-DS-002

PHASE : DDM

			AGREED	Signed by: Костикин Виталий Николаевич Date: 26.05.2025 13:51:51 Certified by: Vietsovpetro CA	Signed by: Phạm Thanh Tùng Date: 22/05/2025 17:36:58 Certified by: Vietsovpetro CA
				PIPING: K.V.N.	PROCESS: P.T.TUNG
			CONTROLLED	Signed by: Nguyễn Thị Thu Trang Date: 26/05/2025 14:01:50 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 27/05/2025 15:58:50 Certified by: Vietsovpetro CA
				DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG
				ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
				Signed by: Đỗ Quốc Huy Date: 22/05/2025 15:21:26 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.05.2025 16:27:55 Certified by: Vietsovpetro CA
0	IFA	05.2025			
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.





RC12 PROJECT, BLOCK 09-1
MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12
DATASHEETS FOR TEMPERATURE INSTRUMENTS
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2	RP1-TG-0909	5
3	RP1-TT-0911	6
4	RP1-TT-0909	7



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-002			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	4 of 7
	DATASHEETS FOR TEMPERATURE INSTRUMENTS							
TEMPERATURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RP1-TG-0911				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#900
	3	Line No.	Line size	GL-DC1-6"-0901-N				6" Sch.120
	4							
	5							
OPERATING CONDITIONS	6	Fluid	GASLIFT					
	7	Oper. Press. Min/Op/Max	barg	95	105-107	110		
	8	Oper. Temp. Min/Op/Max	degC	20	25	40		
	9	Design Press.	Design Temp.	130 barg		0-45 degC		
	10	Fluid Density	Fluid Viscosity	120-135 kg/m3 @OperCond.		0.017 cP		
	11	Fluid Velocity	Nozzle Dim. (mm)	1.3-4 m/s		42.8 (ID) x 165.5 (Length)		
GAUGE	12	Type	Option	Bi-metal		with Silicone oil dampener		
	13	Range	Accuracy	0-60 degC		± 1 % FS		
	14	Dial Size	150 mm					
	15	Dial Color	Black Letters on White Background					
	16	Window	Shatterproof glass					
	17	Adjustable Pointer	YES					
	18	Case Orientation	Rotatable on stem 360 deg					
	19	Case Material	Ingress Protec.	316 SS		IP 56 min		
	20	Stem Material	Stem Length	316 SS		to suit Thermowell		
	21	Process conn.	1/2" NPT-M					
THERMOWELL NOTE 2	25	Type	Flanged with Tapered drilled bar stock					
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #1500, RTJ		1/2" NPT-F		
	27	Body material	316 SS					
	28	Connection Length (H)	minimal by MfrStd					
	29	Insertion Length (U)	250 mm					
	30	Plug & Chain, Material	YES, Required, 316 SS					
	31							
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Wake Frequency Calculation shall be provided.								



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-002			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	5 of 7
	DATASHEETS FOR TEMPERATURE INSTRUMENTS							
TEMPERATURE GAUGE								
GENERAL DATA	1	Tag Number	Qty.	RP1-TG-0909				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#300
	3	Line No.	Line size	PL-BX1-10"-0901-IE				8" Sch.40
	4							
	5							
OPERATING CONDITIONS	6	Fluid	HC WATER-OIL LIQUID MIXTURE					
	7	Oper. Press. Min/Op/Max	barg	9.5	-	15		
	8	Oper. Temp. Min/Op/Max	degC	25	-	65		
	9	Design Press.	Design Temp.	45	0-80 degC			
	10	Fluid Density	Fluid Viscosity	42.84 kg/m3	0.011-9.2 cP			
	11	Fluid Velocity	Nozzle Dim. (mm)	12.56 m/s	49.2 (ID) x 108.1 (Length)			
GAUGE	12	Type	Option	Bi-metal		with Silicone oil dampener		
	13	Range	Accuracy	0-100 degC		± 1 % FS		
	14	Dial Size	150 mm					
	15	Dial Color	Black Letters on White Background					
	16	Window	Shatterproof glass					
	17	Adjustable Pointer	YES					
	18	Case Orientation	Rotatable on stem 360 deg					
	19	Case Material	Ingress Protec.	316 SS		IP 56 min		
	20	Stem Material	Stem Length	316 SS		to suit Thermowell		
	21	Process conn.	1/2" NPT-M					
	24							
	THERMOWELL NOTE 2	25	Type	Flanged with Tapered drilled bar stock				
26		Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF		1/2" NPT-F		
27		Body material	316 SS					
28		Connection Length (H)	minimal by MfrStd					
29		Insertion Length (U)	220 mm					
30		Plug & Chain, Material	YES, Required, 316 SS					
31								
PURCHASE	34	Manufacturer	VTA					
	35	Model	VTA					
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Permanent fitted SS Name Plate shall be provided with standard specifications. 2. Wake Frequency Calculation shall be provided.								



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-002			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	6 of 7
	DATASHEETS FOR TEMPERATURE INSTRUMENTS							
TEMPERATURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RP1-TT-0911				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#900
	3	Line No.	Line size	GL-DC1-6"-0901-N				6" Sch.120
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid		GASLIFT				
	7	Oper. Press. Min/Op/Max	barg	95	105-107		110	
	8	Oper. Temp. Min/Op/Max	degC	20	25		45	
	9	Design Press.	Design Temp.	130 barg		0-45 degC		
	10	Fluid Density	Fluid Viscosity	120-135 kg/m3 @OperCond.		0.017 cP		
	11	Fluid Velocity	Nozzle Dim. (mm)	1.3-4 m/s		42.8 (ID) x 165.5 (Length)		
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 ($\alpha=0.00385$)			Mineral Insulated	
	13	Sensor Dimension	Material	to suit Thermowell			316 SS	
	14	Mounting of Transmitter		Direct on sensor				
	15	Instr. Range	Calibrated range	0-100 degC (VTA)		0-60 degC		
	16	Accuracy	Linearization	$\pm 0.1\%$ FS		YES, REQUIRED		
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire		24 V DC, loop powered		
	18	Burn-out Protection		YES				
	19	Housing material		316 SS, NOTE 1				
	20	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F		NOTE 4
	21	Cable Gland		cable entry plugged				
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	23	Safety Integrity Level		N/A				
	24							
THERMOWELL NOTE 3	25	Type		Flanged with Tapered drilled bar stock				
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #1500, RTJ		1/2" NPT-F		
	27	Body material		316 SS				
	28	Connection Length (H)		minimal by MfrStd				
	29	Insertion Length (U)		250 mm				
	30	Plug & Chain, Material		YES, Required, 316 SS				
ACCESSORIES	31	Integral Meter		YES (LCD), Side View				
	32	Mounting bracket		N/A				
	33							
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. Wake Frequency Calculation shall be provided. 4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								



	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-002			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	7 of 7
	DATASHEETS FOR TEMPERATURE INSTRUMENTS							
TEMPERATURE TRANSMITTER								
GENERAL DATA	1	Tag Number	Qty.	RP1-TT-0909				1
	2	P&ID No.	Pipe class	RP1-233-TS-PR1-PID-001				#300
	3	Line No.	Line size	PL-BX1-10"-0901-IE				8" Sch.40
	4	Hazardous Area Classification		Zone 2 IIA T3				
	5							
OPERATING CONDITIONS	6	Fluid		HC WATER-OIL LIQUID MIXTURE				
	7	Oper. Press. Min/Op/Max	barg	9.5	-	15		
	8	Oper. Temp. Min/Op/Max	degC	25	-	65		
	9	Design Press.	Design Temp.	45	0-80 degC			
	10	Fluid Density	Fluid Viscosity	42.84 kg/m3	0.011-9.2 cP			
	11	Fluid Velocity	Nozzle Dim. (mm)	12.56 m/s	49.2 (ID) x 108.1 (Length)			
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 ($\alpha=0.00385$)			Mineral Insulated	
	13	Sensor Dimension	Material	to suit Thermowell			316 SS	
	14	Mounting of Transmitter		Direct on sensor				
	15	Instr. Range	Calibrated range	0-100 degC (VTA)			0-100 degC	
	16	Accuracy	Linearization	$\pm 0.1\%$ FS			YES, REQUIRED	
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire			24 V DC, loop powered	
	18	Burn-out Protection		YES				
	19	Housing material		316 SS, NOTE 1				
	20	Process conn.	Electrical Conn.	1/2" NPT-M		1/2" NPT-F		NOTE 4
	21	Cable Gland		cable entry plugged				
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)			IP 56 min	
	23	Safety Integrity Level		N/A				
	24							
THERMOWELL NOTE 3	25	Type		Flanged with Tapered drilled bar stock				
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF			1/2" NPT-F	
	27	Body material		316 SS				
	28	Connection Length (H)		minimal by MfrStd				
	29	Insertion Length (U)		220 mm				
	30	Plug & Chain, Material		YES, Required, 316 SS				
ACCESSORIES	31	Integral Meter		YES (LCD), Side View				
	32	Mounting bracket		N/A				
	33							
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. Wake Frequency Calculation shall be provided. 4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.								





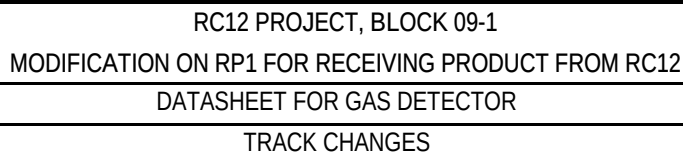
RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS



PROJECT NAME : RC12 PROJECT, BLOCK 09-1
PROJECT : MODIFICATION ON RP1 FOR RECEIVING
PRODUCT FROM RC12
DOCUMENT TITLE : DATASHEET FOR GAS DETECTOR
DOCUMENT NO. : RP1-233-TS-IA2-DS-004
PHASE : DDM

			CONTROLLED Signed by: Nguyễn Thị Thu Trang Date: 26/05/2025 14:01:58 Certified by: Vietsovpetro CA	Signed by: Bùi Hồng Dương Date: 27/05/2025 09:22:36 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 27/05/2025 15:58:54 Certified by: Vietsovpetro CA
			DC: N.T.T.TRANG	ENG.MGR: B.H.DUONG	PRO.MGR: T.D.HAI
			Signed by: Đỗ Quốc Huy Date: 22/05/2025 15:21:27 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 22/05/2025 15:26:03 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.05.2025 16:27:59 Certified by: Vietsovpetro CA
0	IFA	05.2025			
REV.	DES.	DATE	PREPARED: D.Q.HUY	CHECKED: T.A.NGUYEN	DEPT.MGR: G.E.N.





Rev.	0	Page	2 of 4

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	RC12 PROJECT, BLOCK 09-1				RP1-233-TS-IA2-DS-004			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12				Rev.	0	Page	3 of 4
	DATASHEET FOR GAS DETECTOR							
HYDROCARBON GAS DETECTORS								
GENERAL DATA	1	Tag Number	Qty.	See NEXT PAGE				2
	2	Plan / Layout DWG.		See NEXT PAGE				
	3	Location		See NEXT PAGE				
	4	Hazardous Area Classification		Class 1, Zone 1 IIA T3				
	5							
OPERATING CONDITIONS	6	Environment		Tropical, Marine, Offshore				
	7	Area		Open-door, exposed to sun, wind, rainfall, water splashes				
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC		Aver. 80 % (MAX 100 %)		
	9	Wind Velocity	Rainfall	Aver. 8.5 m/s (MAX 45.6 m/s)		up to 50 mm/hr		
	10							
SENSOR AND TRANSMITTER	11	Sensor Type		Dual-Wavelength Infrared, Point, for Hydrocarbon Gas				
	12	Range	Response Time	0 - 100 % LEL		T50 ≤ 7 s, VTA		
	13	Accuracy		± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL)				
	14	Power Supply		24 V DC nominal (± 10 % floating)				
	15	Output Signal		4-20 mA (stepped) ,source mode, HART, 3-wires				
	16	Output Relays	Quantity	N/A				
	17	Relays Form	Rating					
	18	Electrical Terminals		MfrStd according Output Signal				
	19	Wiring Size		up to 2.5 mm2				
	20	Optics		Self-compensated or Heated (preferred)				
	21	Status Indicator	Sensor Life	YES (LED)		5 years and more		
	22	Safety Integrity Level		SIL2				
	23							
	24							
HOUSING	25	Housing material		316 SS				
	26	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F		plugged		
	27	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)		IP 56 min		
	28							
	29							
	30							
ACCESSORIES	31	Weather Protector		YES, (Sunshield / Water splashes protection)				
	32	Junction Box		MfrStd (if need to meet above listed requirements)				
	33	Mounting bracket		YES, for 2-inch pole stand, 316 SS				
PURCHASE	34	Manufacturer		VTA				
	35	Model		VTA				
	36							
VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required) MfrStd - According to Manufacturer Standard or Practice								
NOTES 1. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry. 2. Permanent fitted SS Name Plate shall be provided with standard specifications. 3. One (01) hydrocarbon gas calibration and test Kit shall be supplied.								



	RC12 PROJECT, BLOCK 09-1		RP1-233-TS-IA2-DS-004			
	MODIFICATION ON RP1 FOR RECEIVING PRODUCT FROM RC12		Rev.	0	Page	4 of 4
	DATASHEET FOR GAS DETECTOR HYDROCARBON GAS DETECTORS					
No	TAG	Layout DWG	LOCATION			NOTE
1	RP1-GD-04-21	RP1-233-TS-IA2-LD-001	RP1 PLATFORM			
2	RP1-GD-04-22	RP1-233-TS-IA2-LD-001	RP1 PLATFORM			
3						
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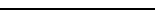
RESEARCH AND ENGINEERING INSTITUTE FOR
OFFSHORE OIL AND GAS



PROJECT NAME : RC12 WHP PROJECT, BLOCK 09-1
SUB-PROJECT : MODIFICATION ON RP-1 FOR RECEIVING PRODUCT
FROM RC12
DOCUMENT TITLE : PURCHASE REQUISITION FOR INSTRUMENTS AND
DETECTORS
DOCUMENT NO. : RP1-233-TS-IA2-RQ-001
PHASE : DDM

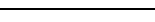
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			DC: N.T.T.TRANG	ENG.MGR: T.M.D.	PRO.MGR: T.D.HAI
			Signed by: Đỗ Quốc Huy Date: 28/04/2025 10:53:12 Certified by: Vietsovpetro CA	Signed by: Trần Anh Nguyên Date: 28/04/2025 10:56:42 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 28.04.2025 11:18:59 Certified by: Vietsovpetro CA
0	IFA	04.2025			
REV.	DES.	DATE	PREP.: D.Q.HUY	CHECKED: T.A.N.	DEPT.MGR: G.E.N.



 VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	RC12 WHP PROJECT, BLOCK 09-1 MODIFICATION ON RP-1 FOR RECEIVING PRODUCT FROM RC12 PURCHASE REQUISITION FOR INSTRUMENTS AND DETECTORS		RP1-233-TS-IA2-RQ-001			
	Rev.	0	Page	3 of 7		

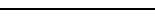
NO	DESCRIPTION	TAG NUMBER	UNIT	QTY	NOTE
1.	PRESSURE INSTRUMENTS Datasheet RP1-233-TS-IA2-DS-001_0_DATA SHEET FOR PRESSURE INSTRUMENTS				
1.1	PRESSURE GAUGE Service: Hydrocarbon Gas; CASE Dial: 150 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; <u>GAUGE</u> Scale: 0-160 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC) Process connection: ½" NPT-F; Instrument connections ½" NPT-F;	RP1-PG-0911	set	01	
1.2	Ditto item 1.1, but Service: Water injection; <u>GAUGE</u> Scale: 0-400 Bar; Element Type / Material: BOURDON / MONEL; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: MONEL Rating: 6000 psig @ 200 °F (414 barg @ 93 °C)	RP1-PG-0910	set	01	
1.3	Ditto item 1.1, but Service: HC WATER-OIL LIQUID MIXTURE; <u>GAUGE</u> Scale: 0-40 Bar; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @ 200 °F (103 barg @ 93 °C)	RP1-PG-0909	set	01	



 VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	RC12 WHP PROJECT, BLOCK 09-1 MODIFICATION ON RP-1 FOR RECEIVING PRODUCT FROM RC12 PURCHASE REQUISITION FOR INSTRUMENTS AND DETECTORS		RP1-233-TS-IA2-RQ-001			
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1.4	PRESSURE TRANSMITTER Service: Hydrocarbon Gas <u>TRANSMITTER</u> Pressure calibrated range: 0-160 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; <u>HOUSING</u> Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; <u>ACCESSORIES</u> Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	RP1-PT-0911	set	01	
1.5	Ditto item 1.4, but Service: WATER INJECTION <u>TRANSMITTER</u> Pressure calibrated range: 0-250 Barg; Element type/material: Diaphragm / MONEL; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: MONEL; Rating: 6000 psig @200 degF (414 bar @ 93 degC);	RP1-PT-0910	set	01	
1.6	Ditto item 1.4, but Service: HC WATER-OIL LIQUID MIXTURE <u>TRANSMITTER</u> Pressure calibrated range: 0-25 Barg; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @200 degF (103 bar @ 93 degC);	RP1-PT-0909	set	01	
1.7	Ditto item 1.4, but <u>TRANSMITTER</u> Pressure calibrated range: 0-160 Barg; Safety Level: SIL 2;	RP1-PZT-9011	set	01	



 VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	RC12 WHP PROJECT, BLOCK 09-1 MODIFICATION ON RP-1 FOR RECEIVING PRODUCT FROM RC12 PURCHASE REQUISITION FOR INSTRUMENTS AND DETECTORS		RP1-233-TS-IA2-RQ-001			
	Rev.	0	Page	5 of 7		

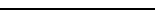
1.8	Ditto item 1.4, but Service: WATER INJECTION <u>TRANSMITTER</u> Pressure calibrated range: 0-250 Barg; Safety Level: SIL 2; Element type/material: Diaphragm / MONEL; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Material: MONEL; Rating: 6000 psig @200 degF (414 bar @ 93 degC);	RP1-PZT-0910	set	01	
1.9	Ditto item 1.4, but Service: HC WATER-OIL LIQUID MIXTURE <u>TRANSMITTER</u> Pressure calibrated range: 0-25 Barg; Safety Level: SIL 2; <u>COMPLETED WITH</u> Two-Valve Manifold (block and bleed) Rating: 1500 psig @200 degF (103 bar @ 93 degC);	RP1-PZT-0909	set	01	
2.	TEMPERATURE INSTRUMENT Datasheet : RP1-233-TS-IA2-DS-002_0_DATA SHEET FOR TEMPERATURE INSTRUMENTS				
2.1	TEMPERATURE GAUGE Service: Hydrocarbon Gas; <u>SENSOR</u> Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; <u>CASE</u> Dial: 150 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg <u>GAUGE</u> Scale: 0-60 degC; Accuracy: 1 % FS; <u>THERMOWELL</u> Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 250 mm;	RP1-TG-0911	set	01	



	RC12 WHP PROJECT, BLOCK 09-1 MODIFICATION ON RP-1 FOR RECEIVING PRODUCT FROM RC12 PURCHASE REQUISITION FOR INSTRUMENTS AND DETECTORS		RP1-233-TS-IA2-RQ-001		
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2.2	Ditto item 2.1, but Service: Oil, Water, Gas Mixture; <u>GAUGE</u> Scale: 0-100 degC; <u>THERMOWELL</u> Process connection: Flange 2", #300, RF; Immersion length (dimension U): 220 mm	RP1-TG-0909	set	01	
2.3	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; <u>SENSOR</u> Type: 3-Wire RTD, PT-100 ($\alpha=0.00385$), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½" NPT-M; <u>TRANSMITTER</u> Instrument range: 0-60 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; <u>HOUSING</u> Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; <u>THERMOWELL</u> Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS; Immersion length (dimension U): 250 mm;	RP1-TT-0911	set	01	
2.4	Ditto item 2.3, but <u>TRANSMITTER</u> Instrument range: 0-100 degC; <u>THERMOWELL</u> Process connection: Flange 2", #300, RF; Immersion length (dimension U): 220 mm;	RP1-TT-0909	set	01	



 VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	RC12 WHP PROJECT, BLOCK 09-1 MODIFICATION ON RP-1 FOR RECEIVING PRODUCT FROM RC12 PURCHASE REQUISITION FOR INSTRUMENTS AND DETECTORS		RP1-233-TS-IA2-RQ-001			
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3.	FIRE AND GAS DETECTORS				
3.1	GAS DETECTOR Datasheet: RP1-233-TS-IA2-DS-004_0_Datasheet for Gas Detector General Tropical, Marine, Offshore, Open-door. TRANSMITTER Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: $\pm 3\%$ LEL (@ 0-50 % LEL), $\pm 5\%$ LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts; Sunshield / Water splashes protection	RP1-GD-04-21 RP1-GD-04-22	Set	02	

Notes:

- The PR is based on Doc. No.:
- RP1-233-TS-PR1-PID-001
- This purchase requisition shall be read in conjunction with Datasheet No. "RP1-233-TS-IA2-DS-001, 002,004".

