طرح نگهداشت و افزایش تولید ۲۷ مخزن

INSTRUMENT DATASHEETS / CERTIFICATES
نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue/Status	Prepared By	Checked By	Approved By	Client Approval
V01	Nov.2023	IFR	Havayar CO	M.Fakharian	S.Faramarzpour	
V00	SEP.2023	IFR	Havayar CO	M.Fakharian	M.Mehrshad	

CLIENT Doc. Number:

status:

IFA: Issued For Approval
IFR:Issued For Review
IFI: Issued For Information
AFC: Approved For Construction

REVISION RECORD SHEET

Page	V00	V01	V02	V03	V04
1	X	X			
2	X	X			
3	X	X			
4	X	X			
5	X	X			
6	X	X			
7	X	X			
8	X	X			
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Data Sheet for Pressure Gauge

1 Type : Direct Rdg. ☑ 3-15 lb Reciever ☐
Other **liquid filled**

2 Mounting : Surface ☐ Local ☑ Flush ☐

3 Dial : Diameter **160 mm** Color : **White / Black Lettering ,Non Rusting Metal**

4 Case : Cast Iron ☐ SS316 ☑ Phenol ☐
Other

5 Ring : Screwed ☑ Hinged ☐ Slip ☐
Std ☐ Other

6 Blow-out Protection : None ☐ Back ☑ Disc ☐
Solid Front ☐ Other

7 Lens : Glass ☑ Plastic ☐ **Safety Glass (shatter proof)**

8 Options : ☑ As per List

9 Nominal Accuracy Required : **± 1% of full scale**

10 Over range protection : **1.3 times the maximum scale reading**

11 MFR.& Model No. **Wika 233.50.160**

12 Press Element : Bourdon ☑ Bellows ☐
Other

13 Element Mtl. : Bronze ☐ Steel ☐
SS ☑ Other **316SS**

14 Socket Mtl. : Bronze ☐ Steel ☐
SS ☑ Other **316SS**

15 Connection-NPT : 1/4 in. ☐ 1/2 in. ☑ Other **NPTM (refer to note)**
Bottom ☑ Back ☐

16 Movement: Bronze ☐ SS ☑
Naylon ☐ Other **Stainless Steel**

Type

Protection : **IP 65**

anifold S.S316 2 valve ☑

Max. normal temp. to be considered
HY Reply: Noted

sheet no. to be added
HY Reply: Noted

24.5?
HY Reply: It is 62 barg

Item	Tag No.	Range (barg)	Process Fluid/State	Design Press (barg)	Design Temp (C°)	Press (barg)	Temp (C°)	LINE NO./EQUIPMENTNO.	P&ID NO.	Accessories	NOTE
1	PG-2190A	0-10	Process gas Comp A	24/5	180	4/9	36.8	1ST STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material Over protectior Snubber Set point 10barg	
2	PG-2191A	0-40	Process gas Comp A	24/5	180	18	129	1ST STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
3	PG-2193A	0-40	Process gas Comp A	62	180	17/1	59.9	2nd STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
4	PG-2194A	0-100	Process gas Comp A	62	180	54/9	147	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
5	PG-2200A	0-16	Instrument Air Comp A	12/5	85	8	65	ISA-112-0002A-AZ00-2"-IS	BK-GCS-HY-120-PR-PI-0001		
6	PG-2201A	0-16	Lube Oil Comp A	10	85	6	70	OIL-112-0004A-S.S-1.1/2"-NP	BK-GCS-HY-120-PR-PI-0001		
7	PG-2202A	0-16	Lube Oil Comp A	10	85	6	70	OIL-112-0003A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001		
8	PG-2204A	0-16	Lube Oil Comp A	10	85	6	60	OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001		
9	PG-2205A	0-4	GAS	5	85	1/5	65	FLR-112-0009A-AN07-1"-IS	BK-GCS-HY-120-PR-PI-0001	Nace material	
10	PG-2206A	0-6	Water console Comp A	7	85	3	65	CWS-112-0003A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	Pulsation Damper (Snubber)	
11	PG-2207A	0-6	Water console Comp A	7	85	3	65	CWS-112-0004A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	Pulsation Damper (Snubber)	
12	PG-2208A	0-6	Water console Comp A	7	85	3	58	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001		
13	PG-2190B	0-10	Process gas Comp B	24/5	180	4/9	36.8	1ST STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material Over protectior Snubber Set point 10barg	
14	PG-2191B	0-40	Process gas Comp B	24/5	180	18	129	1ST STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
15	PG-2193B	0-40	Process gas Comp B	62	180	17/1	59.9	2nd STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
16	PG-2194B	0-100	Process gas Comp B	62	180	54/9	147	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
17	PG-2200B	0-16	Instrument Air Comp B	12/5	85	8	65	ISA-112-0002A-AZ00-2"-IS	BK-GCS-HY-120-PR-PI-0001		
18	PG-2201B	0-16	Lube Oil Comp B	10	85	6	70	OIL-112-0004A-S.S-1.1/2"-NP	BK-GCS-HY-120-PR-PI-0001		
19	PG-2202B	0-16	Lube Oil Comp B	10	85	6	70	OIL-112-0003A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001		
20	PG-2204B	0-16	Lube Oil Comp B	10	85	6	60	OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001		
21	PG-2205B	0-4	GAS	5	85	1/5	65	FLR-112-0009A-AN07-1"-IS	BK-GCS-HY-120-PR-PI-0001	Nace material	
22	PG-2206B	0-6	Water console Comp B	7	85	3	65	CWS-112-0003A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	Pulsation Damper (Snubber)	
23	PG-2207B	0-6	Water console Comp B	7	85	3	65	CWS-112-0004A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	Pulsation Damper (Snubber)	
24	PG-2208B	0-6	Water console Comp B	7	85	3	58	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001		
25	PG-2190C	0-10	Process gas Comp C	24/5	180	4/9	36.8	1ST STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material Over protectior Snubber Set point 10barg	
26	PG-2191C	0-40	Process gas Comp C	24/5	180	18	129	1ST STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
27	PG-2193C	0-40	Process gas Comp C	62	180	17/1	59.9	2nd STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
28	PG-2194C	0-100	Process gas Comp C	62	180	54/9	147	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
29	PG-2200C	0-16	Instrument Air Comp C	12/5	85	8	65	ISA-112-0002A-AZ00-2"-IS	BK-GCS-HY-120-PR-PI-0001		
30	PG-2201C	0-16	Lube Oil Comp C	10	85	6	70	OIL-112-0004A-S.S-1.1/2"-NP	BK-GCS-HY-120-PR-PI-0001		
31	PG-2202C	0-16	Lube Oil Comp C	10	85	6	70	OIL-112-0003A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001		
32	PG-2204C	0-16	Lube Oil Comp C	10	85	6	60	OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001		
33	PG-2205C	0-4	GAS	5	85	1/5	65	FLR-112-0009A-AN07-1"-IS	BK-GCS-HY-120-PR-PI-0001	Nace material	
34	PG-2206C	0-6	Water console Comp C	7	85	3	65	CWS-112-0003A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	Pulsation Damper (Snubber)	
35	PG-2207C	0-6	Water console Comp C	7	85	3	65	CWS-112-0004A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	Pulsation Damper (Snubber)	
36	PG-2208C	0-6	Water console Comp C	7	85	3	58	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001		

NISOC	نگهداشت و افزایش تولید میدان نفتي بینك سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 4 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	Bk	GCS	HY	120	IN	DS	0001	V01	

Data Sheet for Pressure Transmitter

	1	**Tag No.:** (Refer to Next Page)	**Service:** (Refer to Next Page)
GENERAL	2	**Function**	**Record**☐ **Indicate**■ **Control**☐ **Blind**☐ **Trans**■ **Integ**☐ (Note1)
	3	**Case**	**MFR STD**■ **Nom Size**☐ **Color MFR STD**■ **Other**
	4	**Mounting**	**Flush**☐ **Surface**☐ **Yoke**■ **Other**
	5	**Enclosure Class**	**General Purpose**☐ **Weather Proof** ■ **Explosion-Proof** ☐ **Class**
			For use in Intrinsically Safe System■ **Other** EExia, IIB, T4
	6		**Ingress Protection :** IP 66
	7	**Power Supply**	**117 V 60 Hz**☐ **Other: ac**☐ **dc**■ **Volts :** 24 VDC Loop Powered
TRANSMITTER	8	**Trans. Output**	**4-20mA**■ **10-50mA**☐ **21-10 kpa(3-15 psig)**☐ **Other** 4-20mA Smart HART
	9		**Transmitter Accuracy :** 0.1% of full scale.
UNIT	10	**Service**	**Gage Press** ■ **Vacuum**☐ **Absolute**☐ **Compound** ☐
	11	**Element Type**	**Diaphragm**■ **Helix**☐ **Bourdon** ☐ **Bellows**☐ **Fill Fluid:Silicone**
	12	**Material**	**Body** Aluminum **Element** 316 S.S. as minimum
	13	**Range**	**Fixed**☐ **Adj. Range** ■ **Set At** (Refer to Next Page)
	14	**Rating**	**Overrange Protection:** at least 1.3 times the maximum range
	15	**Process Data**	**Press:** **Normal** **Max** **Element Range** (Refer to Next Page)
	16	**Process Conn.**	**½ in. NPT**■ **Other** Male with wrench flats
	17		**Location:** **Bottom** ■ **Back** ☐ **Other**
	18	**Electrical Conn.**	**MFR STD**☐ **Other** ISO M20x1.5
OPTIONS	19	**Miscellaneous**	**Filt Reg.**☐ **Sup. Gage**☐ **Output Gage**☐ **Charts**
	20	**Diaphragm Seal**	**Diaph Seal** ☐ **Type :** **Capillary Length:** **Mtl. :**
			Conn. **Fill Fluid :** shall be Suitable for Normal and Max. Operating Temp
			Flushing Connection :
	21	**Manifold**	**Valve Manifold : See list**
	22	**MFR. & Model No.**	See PT list

Notes:
1- All transmitters shall be provided complete with LCD type integral indicator .
2- Repeatability of the transmitter shall be better than 0.1% of the span.
3- All transmitters shall be reverse polarity protected.
4- Each Instrument Shall Have a S.S. Tag Plate With Purchaser's Tag Number, The Tag Plate Shall Be Permanently Attached To The Instrument .
5- NACE MR-01-75 to be considered.

نگهداشت و افزایش تولید میدان نفتی بینک

سطح

خرید یکپارچ های

(قرارداد 03

/ CERTIFICATES

NISOC

شماره پیمان:
053 - 073 – 9184

رشته	نوع مدرک	سریال	نسخه
IN	DS	0001	V01

شماره صفحه: 5 از 41

CN05
It should be corrected in PID as well
HY Reply: The class break has been added in P&ID.

sheet no. to be added
HY Reply: Noted

Tag no. to be revised based on station's PID
HY Reply: Noted

settle out pres.
HY Reply: Noted

List of PT

ITEM NO.	TAG N		T NO.	P&ID No.	PROCESS CONNECTION	FLUID/ STATE	PRESSURE (Barg) Oper. / Design			CALIBRATED RANGE (Barg)	ACCESSORIES Option	MFR. & Model No.	REMARKS
1	PT-2123A	Process gas Comp A	GAS-111-0031A-AN05-8"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0/012	0-40	Nace material 2 valve manifold S.S316		Loose Item
2	PT-2124A	Process gas Comp A	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	54.9 / 62	147 / 180	0/016	0-80	Nace material 2 valve manifold S.S316		
3	PT-2192A	Process gas Comp A	GAS-111-0036A-CN05-6"-PT	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	18 / 24.5	129 / 180	0/015	0-40	Nace material 2 valve manifold S.S316		Loose Item
4	PT-2197A	Process gas Comp A	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	17.1 / 62	59.9 / 180	0/013	0-80	Nace material 2 valve manifold S.S316		Loose Item
5	PT-2201A	Instrument Air Comp A	ISA-112-0002A-AZ00-2"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	6 / 12.5	65 / 85	0/021	0-16	2 valve manifold S.S316		
6	PT-2200A	Lubricator Comp A	OIL-112-0008A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	1/2" NPT	Liquid	6 / 10	65 / 85	40	0-10	2 valve manifold S.S316		
7	PT-2204A	Lube Oil Comp A	OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	6 / 10	60 / 85	40	0-10	2 valve manifold S.S316		
8	PT-2210A	N2 Gas Supply Comp A	NIT-112-0001A-SS-1"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	2.2 / 10	60 / 85	0/020	0-10	2 valve manifold S.S316		
9	PT-2211A	N2 Gas Supply Comp A	NIT-112-0002A-SS-1"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	1 / 10	60 / 85	0/020	0-10	2 valve manifold S.S316		
10	PT-2220A	Water console Comp A	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	3 / 10	58 / 85	0/478	0-10	2 valve manifold S.S316		
11	PT-2221A	Water console Comp A	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	3 / 10	58 / 85	0/478	0-10	2 valve manifold S.S316		
12	PT-2123B	Process gas Comp B	GAS-111-0031A-AN05-8"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0/012	0-40	Nace material 2 valve manifold S.S316		Loose Item
13	PT-2124B	Process gas Comp B	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	54.9 / 62	147 / 180	0/016	0-80	Nace material 2 valve manifold S.S316		
14	PT-2192B	Process gas Comp B	GAS-111-0036A-CN05-6"-PT	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	18 / 24.5	129 / 180	0/015	0-40	Nace material 2 valve manifold S.S316		Loose Item
15	PT-2197B	Process gas Comp B	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	17.1 / 62	59.9 / 180	0/013	0-80	Nace material 2 valve manifold S.S316		Loose Item
16	PT-2201B	Instrument Air Comp B	ISA-112-0002A-AZ00-2"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	6 / 12.5	65 / 85	0/021	0-16	2 valve manifold S.S316		
17	PT-2200B	Lubricator Comp B	OIL-112-0008A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	1/2" NPT	Liquid	6 / 10	65 / 85	40	0-10	2 valve manifold S.S316		
18	PT-2204B	Lube Oil Comp B	OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	6 / 10	60 / 85	40	0-10	2 valve manifold S.S316		
19	PT-2210B	N2 Gas Supply Comp B	NIT-112-0001A-SS-1"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	2.2 / 10	60 / 85	0/020	0-10	2 valve manifold S.S316		
20	PT-2211B	N2 Gas Supply Comp B	NIT-112-0002A-SS-1"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	1 / 10	60 / 85	0/020	0-10	2 valve manifold S.S316		
21	PT-2220B	Water console Comp B	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	3 / 10	58 / 85	0/478	0-10	2 valve manifold S.S316		
22	PT-2221B	Water console Comp B	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	3 / 10	58 / 85	0/478	0-10	2 valve manifold S.S316		
23	PT-2123C	Process gas Comp C	GAS-111-0031A-AN05-8"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0/012	0-40	Nace material 2 valve manifold S.S316		Loose Item
24	PT-2124C	Process gas Comp C	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	54.9 / 62	147 / 180	0/016	0-80	Nace material 2 valve manifold S.S316		
25	PT-2192C	Process gas Comp C	GAS-111-0036A-CN05-6"-PT	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	18 / 24.5	129 / 180	0/015	0-40	Nace material 2 valve manifold S.S316		Loose Item
26	PT-2197C	Process gas Comp C	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	17.1 / 62	59.9 / 180	0/013	0-80	Nace material 2 valve manifold S.S316		Loose Item
27	PT-2201C	Instrument Air Comp C	ISA-112-0002A-AZ00-2"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	6 / 12.5	65 / 85	0/021	0-16	2 valve manifold S.S316		
28	PT-2200C	Lubricator Comp C	OIL-112-0008A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	1/2" NPT	Liquid	6 / 10	65 / 85	40	0-10	2 valve manifold S.S316		
29	PT-2204C	Lube Oil Comp C	OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	6 / 10	60 / 85	40	0-10	2 valve manifold S.S316		
30	PT-2210C	N2 Gas Supply Comp C	NIT-112-0001A-SS-1"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	2.2 / 10	60 / 85	0/020	0-10	2 valve manifold S.S316		
31	PT-2211C	N2 Gas Supply Comp C	NIT-112-0002A-SS-1"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	1 / 10	60 / 85	0/020	0-10	2 valve manifold S.S316		
32	PT-2220C	Water console Comp C	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	3 / 10	58 / 85	0/478	0-10	2 valve manifold S.S316		
33	PT-2221C	Water console Comp C	CWS-112-0002A-C.S-3"-IS	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	3 / 10	58 / 85	0/478	0-10	2 valve manifold S.S316		

BI-METALLIC THERMOMETER WITH WELL (Complete Assembly)

THERMOMETER

1 ELEMENT TYPE — BI-METAL ■ — GAS FILLED CAPILLARY □

2 STEM — THREADED (NPTM) ■ — UNION □ — PLAIN □

MATERIAL — **316 S.S.**

3 STEM OR UNION THREADED : — 1/2 IN. ■ — 3/4 IN. □

4 STEM DIAMETER — MFR. STD □ — 6 mm. ■ — 8 mm. □

5 CASE MATERIAL : — MFR. STD □ — OTHER — **S.S**

6 DIAL : — SIZE — **160 mm** — COLOR — **WHITE WITH BLACK GRADUATIONS**

7 SCALE TYPE : — **°C** — POINTER ADJUSTMENT — **YES**

8 SCALE LENGTH : — **MFR. STD.** — COLOR — **MFR.STD**

9 FORM : — FIG NO. — **EVERY ANGLE**

10 EXTERNAL CALIBRATOR ■

11 PROTECTION CLASS : — **IP65**

12 ACCURACY : — **±1 % OF FULL SCALE RANGE**

13 WINDOW MATERIAL : — **SHATTER PROOF TYPE**

14 RING TYPE/MATERIAL : — **SCREWED/S.S316**

WELL

15 NONE □ — INCLUDED ■ — 6

16 MATERIAL : — 304 SS □ — 316 SS ■ — OTHER

17 CONSTRUCTION — BUILT-UP □ — DRILLED BAR STOCK ■

OTHER

TAPERED ■ — STRAIGHT □

18 INTERNAL CONNECTION NOMINAL SIZE — **1/2" PIPE THREAD**

19

20

21

22 FLANGE RATING — **REFER TO BELOW TABLE**

23 MANUFACTURER — **Wika**

24 MODEL NO. — **S5551**

sheet no. to be added
HY Reply: Noted

to be settle out pres.
HY Reply: It is settle-out pressure.

24.5?
HY Reply: It is according to the suction snubber design pressure.

ITEM NO.	TAG NO.	LINE SIZE	WELL "U" mm (*) (NOTE 1)	STEM LENGTH (mm) (*)	OPER. TEMP. (°C)	DESIGN TEMP.(°C)/ PRESSURE (BARG)	RANGE (°C)	P No			SERVICE	P&ID NO.	NOTES
1	TG-2190A	1ST STAGE SUCTION SNUBBER	Hold	HOLD	37	180 / 24.5	0-100	4.9 / 22	2" #300 1/2" NPT	40	Process Gas Comp A	BK-GCS-HY-120-PR-PI-0001	Thermowell Nace
2	TG-2193A	2nd STAGE SUCTION SNUBBER	Hold	HOLD	60	180 / 62	0-120	17.1 / 22	2" #300 1/2" NPT	40	Process Gas Comp A	BK-GCS-HY-120-PR-PI-0001	Thermowell Nace
3	TG-2204A	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120					BK-GCS-HY-120-PR-PI-0001	
3	TG-2205A	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120					BK-GCS-HY-120-PR-PI-0001	
3	TG-2206A	2" TO 4" (Expanded)	150	200	70	85 / 10	0-120					BK-GCS-HY-120-PR-PI-0001	
3	TG-2210A	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp A	BK-GCS-HY-120-PR-PI-0001	
3	TG-2211A	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp A	BK-GCS-HY-120-PR-PI-0001	
3	TG-2217A	Water Reservoir	Hold	200	65	85 / 3.5	0-120	ATM / ATM	2" #300 1/2" NPT	40	Water console Comp A	BK-GCS-HY-120-PR-PI-0001	
3	TG-2221A	3" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Water console Comp A	BK-GCS-HY-120-PR-PI-0001	
3	TG-2215A	1" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp A	BK-GCS-HY-120-PR-PI-0001	
3	TG-2216A	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp A	BK-GCS-HY-120-PR-PI-0001	
3	TG-2213A	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp A	BK-GCS-HY-120-PR-PI-0001	
3	TG-2214A	2'1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp A	BK-GCS-HY-120-PR-PI-0001	
1	TG-2190B	1ST STAGE SUCTION SNUBBER	Hold	HOLD	37	180 / 24.5	0-100	4.9 / 22	2" #300 1/2" NPT	40	Process Gas Comp B	BK-GCS-HY-120-PR-PI-0001	Thermowell Nace
2	TG-2193B	2nd STAGE SUCTION SNUBBER	Hold	HOLD	60	180 / 62	0-120	17.1 / 22	2" #300 1/2" NPT	40	Process Gas Comp B	BK-GCS-HY-120-PR-PI-0001	Thermowell Nace
3	TG-2204B	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2205B	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2206B	2" TO 4" (Expanded)	150	200	70	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2210B	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2211B	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2217B	Water Reservoir	Hold	200	65	85 / 3.5	0-120	ATM / ATM	2" #300 1/2" NPT	40	Water console Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2221B	3" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Water console Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2215B	1" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2216B	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2213B	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp B	BK-GCS-HY-120-PR-PI-0001	
3	TG-2214B	2'1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp B	BK-GCS-HY-120-PR-PI-0001	
1	TG-2190C	1ST STAGE SUCTION SNUBBER	Hold	HOLD	37	180 / 24.5	0-100	4.9 / 22	2" #300 1/2" NPT	40	Process Gas Comp C	BK-GCS-HY-120-PR-PI-0001	Thermowell Nace
2	TG-2193C	2nd STAGE SUCTION SNUBBER	Hold	HOLD	60	180 / 62	0-120	17.1 / 22	2" #300 1/2" NPT	40	Process Gas Comp C	BK-GCS-HY-120-PR-PI-0001	Thermowell Nace
3	TG-2204C	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2205C	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2206C	2" TO 4" (Expanded)	150	200	70	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2210C	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2211C	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2217C	Water Reservoir	Hold	200	65	85 / 3.5	0-120	ATM / ATM	2" #300 1/2" NPT	40	Water console Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2221C	3" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Water console Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2215C	1" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2216C	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2213C	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp C	BK-GCS-HY-120-PR-PI-0001	
3	TG-2214C	2'1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp C	BK-GCS-HY-120-PR-PI-0001	

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

INSTRUMENT DATASHEETS / CERTIFICATES

شماره پیمان: 053 - 073 – 9184

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	HY	120	IN	DS	0001	V01

Data Sheet for Temprarure Transmitter/Element/Thermowell

HEAD

1	COMPLETE ASSEMBLY	YES	OTHER	
2	SCREWED COVER ■		OTHER	
3	PROTECTION CLASS	IP-66		
4	HAZ. AREA CLASSIFICATION	EXia IIB T4		
5	MATERIAL	316 S.S	ELECTRICAL CONN.	M20 X 1.5
6	NIPPLE SIZE	1/2"	DIM."N"	UNION □
7	AMBIENT TEMPERATURE IN DIRECT SUNLIGHT			

ELEMENT

8	PLATINUM ■ 100/0°C	NICKEL □		OTHER
9	TYPE	PT100		
10	TEMPERATURE RANGE	-100°C to 500 °C		
11	LEADS	STD □	POTTED □	HERM. SEALED ■
12	SHEAT MATERIAL	316 S.S.	O.D.	6 mm
13	TYPE	SINGLE ■	DUPLEX □	
14	SPRING LOADED	YES ■	NO □	
15	CONNECTION	2-WIRE □	3-WIRE ■	4-WIRE □
16	LEAD WIRES ■	RECEPTACLE □		TERMINAL BLOCK ■
	OTHER			

WELL OR TUBE

17	NONE □	INCLUDE ■	BY OTHERS □	
18	MATERIAL	AISI 316 S.S.		
19	CONSTRUCTION	TAPERED ■	STRAIGHT □	
20	SOILD BAR-STOCK ■	BUILT-UP □	CLOSE-END TUBE □	

21	BORE DIAMETER	6.6 mm (NOTE 4)
22	OUTSIDE DIAMETER AT SUPPORT/TIP	: 28/22 mm (NOTE 4)
23	LAGGING EXTENTION "T" :	VTA
24	TEST :	HYDROSTATIC AND PENETRANT TEST
25	CONNECTION TO SENSOR	1/2" NPT F
26	PROCESS CONNECTION	See list

PERFORMANCE CHARACTERISTICS

27	MIN/MAX. AMBIENT WORKING TEMPERATURE:	BY VENDOR

TRANSMITTER

28	TRANSMITTER BODY MATERIAL	EXOPXY PAINTED DIE CAST ALUMINIUM
29	POWER SUPPLY	24 VDC, LOOP POWERED WITH HART
30	OUTPUT RANGE	4-20 ma
31	TRANSMITTER MOUNTING	HEAD MOUNTED
32	ELECTRICAL CONNECTION	ISO M20
33	ACCURACY	± 0.1 % OF CALIBRATED SPAN
34	ENCLOSURE APPROVAL	ATEX
35	ZERO ADJUST: YES	SPAN ADJUST:YES
36	ISOLATION TYPE: Barier	
37	NIPPLE & UNION MATERIAL: S.S	
38	LCD INDICATOR: YES	
39	MANUFACTURER: * See list	MODEL NO. : See list

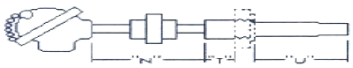

FIG. 1

FIG 2

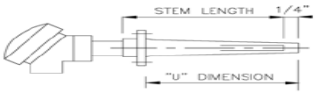

FIG. 3

NOTES :

* VENDOR TO CONFIRM

1) VENDOR SHALL FULLY SUPPLY & ASSEMBLE THERMOWELL WITH THERMOELEMENT AND HEAD MOUNTED TRANSMITTER.
2) SURFACE TEMPERATURE WILL REACH TO 85°C IN EXPOSURE OF DIRECT SUNLIGHT.
3) HEAD COVER SHALL BE FRONT GLASS TYPE FOR COMPATIBILITY OF INDICATOR REQUIREMENT
4)WAKE FREQUENCY CALCULATION SHALL BE SUBMITTED BY MANUFACTURE FOR FINALIZING ALL THERMOWELL SIZE. (ASME PTC 19.3)
5)THE LINE SIZE SHALL BE EXPANDED TO 4".
6)REFER TO IPS-D-IN-101" FOR THERMOWELL DIMENSION.
7)COMPABILITY WITH NACE MR0175/ISO 15156 TO BE CONSIDERED FOR WETTED EQUIPEMNT.

Tag no. to be revised based on Compressor station PID
HY Reply: Noted

Design
HY Reply: It is the max. operating pressure.

sheet no. to be added
HY Reply: Noted

Type of fluid to be added
HY Reply: Not

CN05
HY Reply: Class Beak is in HY and client interface

It is located on 2nd stage discharge so T, P and line no. to be revised
HY Reply: Line number modified

settle out press?
HY Reply: It is the max. operating pressure.

where are these???
HY Reply: Discharge snubber stg2

62
HY Reply: Noted

سطح الارض و ابنیه تحت الارض

خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک

INSTRUMENT DATASHEETS / CERTIFICATES

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
	GCS					0001	V01

ITEM NO.	TAG NO.	LINE SIZE						RANGE (°C)	P				SERVICE	P&ID NO.	MFR. &	
1	TT-2122A	8"						0-100	4.9 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0031A-AN05-8"-ET	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
2	TT-2191A	_						0-200	18 / 22	2", 300#	Yes	REMOTE TYPE	1STG DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001		Thermowell Nace
3	TT-2192A	6"	250	290	129	180	4/0	0-200	18 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0036A-CN05-6"-PT	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
4	TT-2123A	10"	250	290	129	180	4/0	0-200	18 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0036A-CN05-10"-NP	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
5	TT-2132A	6"	200						17.1 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
6	TT-2133A	6"	200						54.9 / 22	1 1/2", 600#	Yes	REMOTE TYPE	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
7	TT-2194A	_	HOLD	HOLD	147	180	3/5	0-200	54.9 / 22	2", 60				BK-GCS-HY-120-PR-PI-0001		
8	TT-2204A	2" TO 4" (Expanded)	150	200	60	85	0/3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001		
9	TT-2203A	_	200	250	70	85	1/1	0-120	ATM / 6	1/2" NPT	Yes	REMOTE TYPE	crankcase CompA	BK-GCS-HY-120-PR-PI-0001		
10	TT-2213A	_	HOLD	HOLD	65	85	-	0-120	ATM / 3	2", 300#	Yes	REMOTE TYPE	Water Reservoir	BK-GCS-HY-120-PR-PI-0001		
11	TT-2214A	_	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor NDE	BK-GCS-HY-120-PR-PI-0001		
12	TT-2215A	_	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor DE	BK-GCS-HY-120-PR-PI-0001		
13	TT-2216A	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg1	BK-GCS-HY-120-PR-PI-0001		
14	TT-2218A	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg2	BK-GCS-HY-120-PR-PI-0001		
15	TT-2217A	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg2	BK-GCS-HY-120-PR-PI-0001		
16	TT-2219A	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg1	BK-GCS-HY-120-PR-PI-0001		
17	TE-2222A TE-2223A TE-2224A	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor T sensor	BK-GCS-HY-120-PR-PI-0001		
18	TE-2225A TE-2226A TE-2227A	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor S sensor	BK-GCS-HY-120-PR-PI-0001		
19	TE-2228A TE-2229A TE-2230A	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor R sensor	BK-GCS-HY-120-PR-PI-0001		
20	TT-2122B	8"	250	290	37	180	9/0	0-100	4.9 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0031A-AN05-8"-ET	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
21	TT-2191B	_	HOLD	HOLD	129	180	4/0	0-200	18 / 22	2", 300#	Yes	REMOTE TYPE	1STG DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001		Thermowell Nace
22	TT-2192B	6"	250	290	129	180	4/0	0-200	18 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0036A-CN05-6"-PT	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
23	TT-2197B	6"	200	240	60	180	8/0	0-120	17.1 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
24	TT-2123B	6"	200	240	147	180	3/5	0-200	54.9 / 22	1 1/2", 600#	Yes	REMOTE TYPE	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
25	TT-2194B	_	HOLD	HOLD	147	180	3/5	0-200	54.9 / 22	2", 600#	Yes	REMOTE TYPE	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001		
26	TT-2204B	2" TO 4" (Expanded)	150	200	60	85	0/3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	Lube Oil OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001		
27	TT-2203B	_	200	250	70	85	1/1	0-120	ATM / 6	1/2" NPT	Yes	REMOTE TYPE	crankcase CompA	BK-GCS-HY-120-PR-PI-0001		
28	TT-2213B	_	HOLD	HOLD	65	85	-	0-120	ATM / 3	2", 300#	Yes	REMOTE TYPE	Water Reservoir	BK-GCS-HY-120-PR-PI-0001		
29	TT-2214B	_	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor NDE	BK-GCS-HY-120-PR-PI-0001		
30	TT-2215B	_	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor DE	BK-GCS-HY-120-PR-PI-0001		
31	TT-2216B	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg1	BK-GCS-HY-120-PR-PI-0001		
32	TT-2218B	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg2	BK-GCS-HY-120-PR-PI-0001		
33	TT-2217B	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg2	BK-GCS-HY-120-PR-PI-0001		
34	TT-2219B	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg1	BK-GCS-HY-120-PR-PI-0001		
35	TE-2222B TE-2223B TE-2224B	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor T sensor	BK-GCS-HY-120-PR-PI-0001		
36	TE-2225B TE-2226B TE-2227B	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor S sensor	BK-GCS-HY-120-PR-PI-0001		
37	TE-2228B TE-2229B TE-2230B	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor R sensor	BK-GCS-HY-120-PR-PI-0001		
38	TT-2122C	8"	250	290	37	180	9/0	0-100	4.9 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0031A-AN05-8"-ET	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
39	TT-2191C	_	HOLD	HOLD	129	180	4/0	0-200	18 / 22	2", 300#	Yes	REMOTE TYPE	1STG DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001		Thermowell Nace
40	TT-2192C	6"	250	290	129	180	4/0	0-200	18 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0036A-CN05-6"-PT	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
41	TT-2197C	6"	200	240	60	180	8/0	0-120	17.1 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
42	TT-2123C	6"	200	240	147	180	3/5	0-200	54.9 / 22	1 1/2", 600#	Yes	REMOTE TYPE	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-PI-0001		Loose Item U Size & rating to be chected by client Thermowell Nace
43	TT-2194C	_	HOLD	HOLD	147	180	3/5	0-200	54.9 / 22	2", 600#	Yes	REMOTE TYPE	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001		
44	TT-2204C	2" TO 4" (Expanded)	150	200	60	85	0/3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	Lube Oil OIL-112-0008A-S.S-2"-IS	BK-GCS-HY-120-PR-PI-0001		
45	TT-2203C	_	200	250	70	85	1/1	0-120	ATM / 6	1/2" NPT	Yes	REMOTE TYPE	crankcase Comp C	BK-GCS-HY-120-PR-PI-0001		
46	TT-2213C	_	HOLD	HOLD	65	85	-	0-120	ATM / 3	2", 300#	Yes	REMOTE TYPE	Water Reservoir	BK-GCS-HY-120-PR-PI-0001		
47	TT-2214C	_	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor NDE	BK-GCS-HY-120-PR-PI-0001		
48	TT-2215C	_	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor DE	BK-GCS-HY-120-PR-PI-0001		
49	TT-2216C	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg1	BK-GCS-HY-120-PR-PI-0001		
50	TT-2218C	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg2	BK-GCS-HY-120-PR-PI-0001		
51	TT-2217C	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg2	BK-GCS-HY-120-PR-PI-0001		
52	TT-2219C	_	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg1	BK-GCS-HY-120-PR-PI-0001		
53	TE-2222C TE-2223C TE-2224C	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor T sensor	BK-GCS-HY-120-PR-PI-0001		
54	TE-2225C TE-2226C TE-2227C	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor S sensor	BK-GCS-HY-120-PR-PI-0001		
55	TE-2228C TE-2229C TE-2230C	_	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	N/A	Main Motor R sensor	BK-GCS-HY-120-PR-PI-0001		

NISOC	نگهداشت و افزایش تولید میدان نفتي بینك سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 9 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	Bk	GCS	HY	120	IN	DS	0001	V01	

Data Sheet for Differential Pressure Transmitter

	1	**Tag No.:** (Refer to Next Page)	**Service:** (Refer to Next Page)
GENERAL	2	**Function**	**Record**☐ **Indicate**■ **Control**☐ **Blind**☐ **Trans**■ **Integ**☐ (Note1)
	3	**Case**	**MFR STD**■ **Nom Size**☐ **Color MFR STD**■ **Other**
	4	**Mounting**	**Flush**☐ **Surface**☐ **Yoke**■ **Other**
	5	**Enclosure Class**	**General Purpose**☐ **Weather Proof** ■ **Explosion-Proof** ☐ **Class**
			For use in Intrinsically Safe System■ **Other** EExi, IIB, T4
	6		**Ingress Protection :** IP 66
	7	**Power Supply**	**117 V 60 Hz**☐ **Other: ac**☐ **dc**■ **Volts :** 24 VDC Loop Powered
TRANSMITTER	8	**Trans. Output**	**4-20mA**■ **10-50mA**☐ **21-10 kpa(3-15 psig)**☐ **Other** 4-20mA Smart HART
	9		**Transmitter Accuracy :** Better than 0.1% of Calibrated Span
UNIT	10	**Service**	**Flow** ☐ **Level** ☐ **Diff. Pressure** ■ **Other**
	11	**Element Type**	**Diaphragm**■ **Helix**☐ **Bourdon** ☐ **Bellows**☐ **Other**
	12	**Material**	**Body** Epoxy Painted Die Cast Aluminum Copper free **Element** 316 S.S. as minimum
	13	**Range**	**Fixed**☐ **Adj. Range** ■ **Set At** (Refer to Next Page)
	14	**Rating**	**Overrange Protection:** at least 1.3 times the maximum range
	15	**Process Data**	**Press:** **Normal** **Max** **Element Range** (Refer to Next Page)
	16	**Process Conn.**	**½ in. NPT**■ **Other** Male with wrench flats
	17		**Location:** **Bottom** ■ **Back** ☐ **Other**
	18	**Electrical Conn.**	**MFR STD**☐ **Other** ISO M20x1.5
OPTIONS	19	**Miscellaneous**	**Filt Reg.**☐ **Sup. Gage**☐ **Output Gage**☐ **Charts**
	20	**Diaphragm Seal**	**Diaph Seal** ☐ **(N/A)** **Type :** **Capillary Length:** **Mtl. :** **Conn.** **Fill Fluid :** **Flushing Connection :**
	21	**Manifold**	**Valve Manifold : See List**
	22	**MFR. & Model No.**	See list

Notes:
1- All transmitters shall be provided complete with LCD type integral indicator .
2- Repeatability of the transmitter shall be better than 0.1% of the span.
3- All transmitters shall be reverse polarity protected.
4- All components, particularly if containing electric contacts, shall be vibration resistant.
5- Each Instrument Shall Have a S.S. Tag Plate With Purchaser's Tag Number, The Tag Plate Shall Be Permanently Attached To The Instrument .

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک	HAVAYAR INDUSTRIAL GROUP

شماره پیمان:
053 - 073 – 9104

According to rev03 of Havayar's PID there are two PDTs for every train: PDT-2122 before 1st stage comp. PDT-2197 before 2nd stage comp. (that the tag no. shall be revised based on Hirgan's PID)
HY reply:PDT 2132 added.

sheet no. to be added
HY reply:Noted

CI
HY reply:As per P&ID AN05 is correct

ATES

بسته کاری				نوع مدرک	سریال	نسخه
GCS	HY	120	IN	DS	0001	V01

شماره صفحه: 10 از 41

List of DPT

ITEM NO.	TAG NO.		LINE NO. / EQUIPMENT NO.	P&ID No.	PROCESS CONNECTION	FLUID/ STATE	PRESSURE (Barg)	TEMPERATURE (C)	DIFFERENTIAL PRESSURE Norm/Max	CALIBRATED RANGE (Barg)	ACCESSORIES	MFR. & Model No.	REMARKS
							Oper. / Design	Norm. / Design					
1	PDT-2123A	Process gas Comp A	GAS-111-0031A-AN05-10"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0.1 / 0.2	0-0.6	NACE material 2 valve manifold S.S316		Loose Item
2	PDT-2204A	Lub Oil Filter	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	6 / 10	60 / 85	0.1 / 0.5	0-0.6	2 valve manifold S.S316		
3	PDT-2123B	Process gas Comp A	GAS-111-0031A-AN05-10"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0.1 / 0.2	0-0.6	NACE material 2 valve manifold S.S316		Loose Item
4	PDT-2204B	Lub Oil Filter	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	6 / 10	60 / 85	0.1 / 0.5	0-1	2 valve manifold S.S316		
5	PDT-2123C	Process gas Comp A	GAS-111-0031A-AN05-10"-ET	BK-GCS-HY-120-PR-PI-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0.1 / 0.2	0-0.5	NACE material 2 valve manifold S.S316		Loose Item
6	PDT-2204C	Lub Oil Filter	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	1" NPT	Liquid	6 / 10	60 / 85	0.1 / 0.5	0-1	2 valve manifold S.S316		
7													
8													
9													
10													
11													

NISOC شماره پیمان: 053 - 073 – 9184	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

INSTRUMENT DATASHEETS / CERTIFICATES

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	HY	120	IN	DS	0001	V01

Data Sheet for Differential Pressure Gauge

1 Type : Direct Rdg. ☑ 3-15 lb Reciever ☐
Other **liquid filled**

2 Mounting : Direct ☑ Local ☐ Yoke ☐ Other

3 Dial : Diameter **160 mm** Color : **White / Black Lettering ,Non Rusting Metal**

4 Case : SS316 ☑ Cast Aluminum ☐ Phenol ☐
Other

5 Ring : Screwed ☑ Hinged ☐ Slip ☑
Std ☐ Other

6 Blow-out Protection : None ☐ Back ☑ Disc ☑
Solid Front ☐ Other

7 Lens : Glass ☑ Plastic ☐ **Safety Glass (shatter proof)**

8 Options :
Pulsation Dampener ☐ Refer to note

9 Nominal Accuracy Required : **±1.6% of full scale**

10 Over range protection : **1.3 times the maximum scale reading**

11 MFR.& Model No. See list

12 Press Element : Diaphragm ☑ Bellows ☐
Other **(Note6)**

13 Element Mtl. : Bronze ☐ Steel ☐
SS ☑ Other **316SS**

14 Socket Mtl. : Bronze ☐ Steel ☐
SS ☑ Other **316SS**

15 Connection-NPT : 1/4 in. ☐ 1/2 in. ☑ Other **NPTM**
Bottom ☑ Back ☐

16 Movement: Bronze ☐ SS ☑
Naylon ☐ Other **Stainless Steel**

17 Diaphragm Seal N/A
MFR. ☐ Type
Wetted Part Mtl. Other Mtl.
Fill Fluid :
Process Conn. :

18 Ingress Protection : **IP 65**

Item	Tag No.	Range (barg)	Process Fluid/State	Design		Operating		Differential Pressure		LINE NO./EQUIPMENTNO.	P&ID NO.	Accessories	MFR.& Model	NOTE
				Press (barg)	Temp (C°)	Press (barg)	Temp (C°)	Norm. (bar)	Max. (bar)					
1	PDG-2204A	0~1	Lub Oil Filter	10	85	6	60	0/1	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
2	PDG-2200A	0~1	N2 Gas Supply	10	85	7/5	60	0/15	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
3	PDG-2205A	0~0.6	Jacket Cooling	10	85	3	58	0/1	0.2	CWS-112-0018A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
4	PDG-2206A	0~0.6	Jacket Cooling	10	85	3	58	0/1	0.2	CWS-112-0017A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
5	PDG-2204B	0~1	Lub Oil Filter	10	85	6	60	0/1	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
6	PDG-2200B	0~1	N2 Gas Supply	10	85	7/5	60	0/15	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
7	PDG-2205B	0~0.6	Jacket Cooling	10	85	3	58	0/1	0.2	CWS-112-0018A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
8	PDG-2206B	0~0.6	Jacket Cooling	10	85	3	58	0/1	0.2	CWS-112-0017A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
9	PDG-2204C	0~1	Lub Oil Filter	10	85	6	60	0/1	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
10	PDG-2200C	0~1	N2 Gas Supply	10	85	7/5	60	0/15	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
11	PDG-2205C	0~0.6	Jacket Cooling	10	85	3	58	0/1	0.2	CWS-112-0018A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
12	PDG-2206C	0~0.6	Jacket Cooling	10	85	3	58	0/1	0.2	CWS-112-0017A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		

NOTES :

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 12 از 41
	پروژه	بسته کاری	صادرکننده	سهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW INDICATOR (ROTAMETER)

	GENERAL DATA								
1	TAG NO.	FI-2200A		FI-2201A		FI-2202A		FI-2203A	
2	QUANTITY	1		1		1		1	
3	P&ID NO.	BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001	
4	SERVICE	N2 Gas Supply		N2 Gas Supply		N2 Gas Supply		N2 Gas Supply	
5	LINE NUMBER	1/2" SS316L Tubing		1/2" SS316L Tubing		1/2" SS316L Tubing		1/2" SS316L Tubing	
6	FUNCTION	Local Indicator		Local Indicator		Local Indicator		Local Indicator	
7	MOUNTING	Inline		Inline		Inline		Inline	
	FLUID DATA								
8	FLUID	N2 Gas		N2 Gas		N2 Gas		N2 Gas	
9	FLUID STATE	Gas		Gas		Gas		Gas	
10	MAXIMUM FLOW Nm3/h	3		3		3		3	
11	NORMAL FLOW Nm3/h	1/5		1/5		1/5		1/5	
12	PRESS. OPERATING / DESIGN (BARG)	2/2	12/5	1	12/5	1	12/5	2/2	12/5
13	TEMP. OPERATING / DESIGN (°C)	60	85	60	85	60	85	60	85
14	DENSITY AT ST. COND. (KG/m^3)	1/183		1/183		1/183		1/183	
15	DENSITY AT OP.COND. (KG/m^3)	3/251		2/037		2/037		3/251	
16	COMPRESSIBILITY FACTOR (Z)	1		1		1		1	
17	MOL. WEIGH T / CP/CV	28	1/40	28	1/40	28	1/40	28	1/40
18	OPERATING VISCOSITY (C_p)	`		0/02		0/02		0/02	
19	MAX. PRESSURE DROP @ MAX. FLOW(BAR)	min (nil)		min (nil)		min (nil)		min (nil)	
	ROTAMETER DETAIL								
20	TYPE	Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication	
21	FLANGE SIZE / RATING / FACING	1/2", 150# R.F		1/2", 150# R.F		1/2", 150# R.F		1/2", 150# R.F	
22	RANGE: FROM / TO (Kg/Hr)	3 Nm3/h		3 Nm3/h		3 Nm3/h		3 Nm3/h	
23	SCALE GRADUATION	Direct Scale		Direct Scale		Direct Scale		Direct Scale	
24	BODY / FLANGE MATERIAL	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316
25	FLOAT EXTENSION MATERIAL	316 S.S		316 S.S		316 S.S		316 S.S	
26	CONNECTION LAYOUT	Bottom-Top , Vertical		Bottom-Top , Vertical		Bottom-Top , Vertical		Bottom-Top , Vertical	
27	INGRESS PROTECTION	IP 65		IP 65		IP 65		IP 65	
28	ACCURACY	±1.6% of full scale or better.		±1.6% of full scale or better.		±1.6% of full scale or better.		±1.6% of full scale or better.	
	ACCESSORIES								
29	NEEDLE VALVE	No		No		No		No	
30	SWITCH	No		No		No		No	
	PURCHASE								
31	MODEL	H250		H250		H250		H250	
32	MANUFACTURE	KROHNE		KROHNE		KROHNE		KROHNE	

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 13 از 41
	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW INDICATOR (ROTAMETER)

GENERAL DATA									
1	TAG NO.	FI-2200B		FI-2201B		FI-2202B		FI-2203B	
2	QUANTITY	1		1		1		1	
3	P&ID NO.	BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001	
4	SERVICE	N2 Gas Supply		N2 Gas Supply		N2 Gas Supply		N2 Gas Supply	
5	LINE NUMBER	1/2" SS316L Tubing		1/2" SS316L Tubing		1/2" SS316L Tubing		1/2" SS316L Tubing	
6	FUNCTION	Local Indicator		Local Indicator		Local Indicator		Local Indicator	
7	MOUNTING	Inline		Inline		Inline		Inline	
FLUID DATA									
8	FLUID	N2 Gas		N2 Gas		N2 Gas		N2 Gas	
9	FLUID STATE	Gas		Gas		Gas		Gas	
10	MAXIMUM FLOW Nm3/h	3		3		3		3	
11	NORMAL FLOW Nm3/h	1/5		1/5		1/5		1/5	
12	PRESS. OPERATING / DESIGN (BARG)	2/2	12/5	1	12/5	1	12/5	2/2	12/5
13	TEMP. OPERATING / DESIGN (°C)	60	85	60	85	60	85	60	85
14	DENSITY AT ST. COND. (KG/m^3)	1/183		1/183		1/183		1/183	
15	DENSITY AT OP.COND. (KG/m^3)	3/251		2/037		2/037		3/251	
16	COMPRESSIBILITY FACTOR (Z)	1		1		1		1	
17	MOL. WEIGH T / CP/CV	28	1/40	28	1/40	28	1/40	28	1/40
18	OPERATING VISCOSITY (C_p)	`		0/02		0/02		0/02	
19	MAX. PRESSURE DROP @ MAX. FLOW(BAR)	min (nil)		min (nil)		min (nil)		min (nil)	
ROTAMETER DETAIL									
20	TYPE	Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication	
21	FLANGE SIZE / RATING / FACING	1/2", 150# R.F		1/2", 150# R.F		1/2", 150# R.F		1/2", 150# R.F	
22	RANGE: FROM / TO (Kg/Hr)	3 Nm3/h		3 Nm3/h		3 Nm3/h		3 Nm3/h	
23	SCALE GRADUATION	Direct Scale		Direct Scale		Direct Scale		Direct Scale	
24	BODY / FLANGE MATERIAL	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316
25	FLOAT EXTENSION MATERIAL	316 S.S		316 S.S		316 S.S		316 S.S	
26	CONNECTION LAYOUT	Bottom-Top , Vertical		Bottom-Top , Vertical		Bottom-Top , Vertical		Bottom-Top , Vertical	
27	INGRESS PROTECTION	IP 65		IP 65		IP 65		IP 65	
28	ACCURACY	±1.6% of full scale or better.		±1.6% of full scale or better.		±1.6% of full scale or better.		±1.6% of full scale or better.	
ACCESSORIES									
29	NEEDLE VALVE	No		No		No		No	
30	SWITCH	No		No		No		No	
PURCHASE									
31	MODEL	H250		H250		H250		H250	
32	MANUFACTURE	KROHNE		KROHNE		KROHNE		KROHNE	

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 14 از 41
	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW INDICATOR (ROTAMETER)

GENERAL DATA									
1	TAG NO.	FI-2200C		FI-2201C		FI-2202C		FI-2203C	
2	QUANTITY	1		1		1		1	
3	P&ID NO.	BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001		BK-GCS-HY-120-PR-PI-0001	
4	SERVICE	N2 Gas Supply		N2 Gas Supply		N2 Gas Supply		N2 Gas Supply	
5	LINE NUMBER	1/2" SS316L Tubing		1/2" SS316L Tubing		1/2" SS316L Tubing		1/2" SS316L Tubing	
6	FUNCTION	Local Indicator		Local Indicator		Local Indicator		Local Indicator	
7	MOUNTING	Inline		Inline		Inline		Inline	
FLUID DATA									
8	FLUID	N2 Gas		N2 Gas		N2 Gas		N2 Gas	
9	FLUID STATE	Gas		Gas		Gas		Gas	
10	MAXIMUM FLOW Nm3/h	3		3		3		3	
11	NORMAL FLOW Nm3/h	1/5		1/5		1/5		1/5	
12	PRESS. OPERATING / DESIGN (BARG)	2/2	12/5	1	12/5	1	12/5	2/2	12/5
13	TEMP. OPERATING / DESIGN (°C)	60	85	60	85	60	85	60	85
14	DENSITY AT ST. COND. (KG/m^3)	1/183		1/183		1/183		1/183	
15	DENSITY AT OP.COND. (KG/m^3)	3/251		2/037		2/037		3/251	
16	COMPRESSIBILITY FACTOR (Z)	1		1		1		1	
17	MOL. WEIGH T / CP/CV	28	1/40	28	1/40	28	1/40	28	1/40
18	OPERATING VISCOSITY (C_p)	`		0/02		0/02		0/02	
19	MAX. PRESSURE DROP @ MAX. FLOW(BAR)	min (nil)		min (nil)		min (nil)		min (nil)	
ROTAMETER DETAIL									
20	TYPE	Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication		Metal Type Rotameter-Shall be fitted with Magnetic Follower System For Indication	
21	FLANGE SIZE / RATING / FACING	1/2", 150# R.F		1/2", 150# R.F		1/2", 150# R.F		1/2", 150# R.F	
22	RANGE: FROM / TO (Kg/Hr)	3 Nm3/h		3 Nm3/h		3 Nm3/h		3 Nm3/h	
23	SCALE GRADUATION	Direct Scale		Direct Scale		Direct Scale		Direct Scale	
24	BODY / FLANGE MATERIAL	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316	316 S.S	ASTM A182 F316
25	FLOAT EXTENSION MATERIAL	316 S.S		316 S.S		316 S.S		316 S.S	
26	CONNECTION LAYOUT	Bottom-Top , Vertical		Bottom-Top , Vertical		Bottom-Top , Vertical		Bottom-Top , Vertical	
27	INGRESS PROTECTION	IP 65		IP 65		IP 65		IP 65	
28	ACCURACY	±1.6% of full scale or better.		±1.6% of full scale or better.		±1.6% of full scale or better.		±1.6% of full scale or better.	
ACCESSORIES									
29	NEEDLE VALVE	No		No		No		No	
30	SWITCH	No		No		No		No	
PURCHASE									
31	MODEL	H250		H250		H250		H250	
32	MANUFACTURE	KROHNE		KROHNE		KROHNE		KROHNE	

INSTRUMENT DATA SHEET FOR SIGHT GLASS

DESIGN DATA		
1	Tag Numbers	See Next Page
2	Pipe Material Class	C.S
3	Service	Cooling Water
4	Operating Pressure	See List
5	Operating Temperature	See List
6	Rating	See List
7	Size Range	See List
9	P&ID Reference	See List
SPECIFICATIONS		
10	TYPE	Rotary
11	End Connection	Flanged R.F
12	Cover Type	Tempered
13	Installation Requirements	Horizontal or Vertical
MATERIALS		
15	Body	C.S
16	Glass Cover	TEMPERED GLASS
17	Gasket	KLINGRIT
18	Bolts / Studs	C.S

List of Sight Glass

ITEM NO.	TAG NO.	SERVICE	LINE NO. / EQUIPMENT NO.	P&ID No.	PROCESS CONNECTION	FLUID/ STATE	PRESSURE (Barg)	TEMPERATURE (C)	REMARKS
							Oper. / Design	Oper. / Design	
1	SG-2200A	Cooling Water	CWR-112-0014A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85	
2	SG-2201A	Cooling Water	CWR-112-0015A-C.S-2.1/2"-PT	BK-GCS-HY-120-PR-PI-0001	2.1/2"#150	Liquid	3 / 7	65 / 85	
3	SG-2202A	Cooling Water	CWR-112-0012A-C.S-1"-PT	BK-GCS-HY-120-PR-PI-0001	1"#150	Liquid	3 / 7	65 / 85	
4	SG-2203A	Cooling Water	CWR-112-0013A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85	
5	SG-2200B	Cooling Water	CWR-112-0014A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85	
6	SG-2201B	Cooling Water	CWR-112-0015A-C.S-2.1/2"-PT	BK-GCS-HY-120-PR-PI-0001	2.1/2"#150	Liquid	3 / 7	65 / 85	
7	SG-2202B	Cooling Water	CWR-112-0012A-C.S-1"-PT	BK-GCS-HY-120-PR-PI-0001	1"#150	Liquid	3 / 7	65 / 85	
8	SG-2203B	Cooling Water	CWR-112-0013A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85	
9	SG-2200C	Cooling Water	CWR-112-0014A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85	
10	SG-2201C	Cooling Water	CWR-112-0015A-C.S-2.1/2"-PT	BK-GCS-HY-120-PR-PI-0001	2.1/2"#150	Liquid	3 / 7	65 / 85	
11	SG-2202C	Cooling Water	CWR-112-0012A-C.S-1"-PT	BK-GCS-HY-120-PR-PI-0001	1"#150	Liquid	3 / 7	65 / 85	
12	SG-2203C	Cooling Water	CWR-112-0013A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85	

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 17 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.	FT-2121A		BK-GCS-HY-120-PR-PI-0001
	2	Service	Pipe No.	Process gas		GAS-111-0031A-AN05-8"-ET
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.	8"		
	4	Pipe Material	Pipe Insulation			
Process Conditions	5	Fluid	State	Sour Hydrocarbon		Gas
	6	Operating Pressure bar(g)	Design Pressure bar(g)	4.9		24.5
	7	Operating Temperature ℃	Design Temperature ℃	36.8		180
	8	Flow Rate	Unit	Min. Flow	Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)	Nm3/h	7887	7918	8668.6
	9	Operating Density kg/m3	Standard Density kg/Nm3	5/771		-
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)	-		0/0115
	11	Specific Heat Ratio Cp/Cv	Compress Factor	1.245		0.975
	12	Vapor Pressure	Vapor Density kg/m3	5.102		
	13	Molecular Weight	Relative Humidity	24.52		
	14	Allowable Pressure Drop @ Max. Flow		0.1		
Element	15	Tag Number		FE-2121A		
	16	Measure Element Type		Orifice		
	17	Measure Element Material	Thickness	316SS		6mm
	18	Bore Diameter		Hold		
	19	Connection Type	Size	Flange Weld neck		8"
	20	Flange Standard	Flange Rating	ASME B16.5		ANSI 300#
	21	Flange Material	Facing	C.S. (Nace)		RF
	22	Bolt /Nut Material	Bolt /Nut Standard	ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1
	23	Gasket Type & Material				
Transmitter Unit	24	Model		Diff pressure		
	25	Available Range		–623 to 623 mbar		
	26	Flowmeter Scale		0~8668Nm3/h		
	27	Full Scale Differential Pressure (bar)		0~100 mbar		
	28	Output Signal		HART 4-20mA		
	29	Accuracy		0.2 %		
	30	Load Resistance		minimum loop resistance of 250 ohms		
	31	Scale Factor		Square Root		
	32	Housing Material		Cast aluminum		
	33	Allowable Static Pressure		250Barg		
	34	Power Supply		24 V DC Loop Powered		
	35	Electrical Connection		ISO M20x1.5		
	36	Explosion Proof		Exia IIB T3		
	37	Enclosure Protection		IP66		
	38	Diaphragm Material		Nace		
	38	Wetted Part Material		Nace		
	39	Drains/Vents Material		316SS		
	40	Integral Indicator / Mounting type		Yes / Direct		
Accessories	41	Valve Manifold		5 valve-S.S316		
	42	Upstream Straight Run		10X		
	43	Downstream Straight Run		5X		
Miscell.	44	Manufacturer				
	45	Requisition No.				

for capacity control % 25 normal capacity shall be considered
HY Reply: Noted

10% over design on normal flow rate to be considered
HY Reply: Noted

NA
HY Reply: Noted

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP
شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES	صفحه: 18 از 41

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	HY	120	IN	DS	0001	V01

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.	FT-2197A	BK-GCS-HY-120-PR-	
	2	Service	Pipe No.	Process gas	GAS-111-0044A-CN05-6"-ET	
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.	6"		
	4	Pipe Material	Pipe Insulation			
Process Conditions	5	Fluid	State	Sour Hydrocarbon	Gas	
	6	Operating Pressure bar(g)	Design Pressure bar(g)	18	62	
	7	Operating Temperature ℃	Design Temperature ℃	59.9	180	
	8	Flow Rate	Unit	Min. Flow	Nor. Flow	Max.
		kg/h(Liquid,Steam),Nm3/h(Gas)	Nm3/h	7887	7918	8668.8
	9	Operating Density kg/m3	Standard Density kg/Nm3	17.35	-	
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)	-	.0126	
	11	Specific Heat Ratio Cp/Cv	Compress Factor	1.275	0.964	
	12	Vapor Pressure	Vapor Density kg/m3	19.76	-	
	13	Molecular Weight	Relative Humidity	24.52	89%	
	14	Allowable Pressure Drop @ Max. Flow		0.1		
Element	15	Tag Number		FE-2197A		
	16	Measure Element Type		Orifice		
	17	Measure Element Material	Thickness	316SS	3mm	
	18	Bore Diameter		Hold		
	19	Connection Type	Size	Flange Weld neck	6"	
	20	Flange Standard	Flange Rating	ASME B16.5	ANSI 300#	
	21	Flange Material	Facing	C.S. (Nace)	RF	
	22	Bolt /Nut Material	Bolt /Nut Standard	ASTM A193 Gr.B7 / ASTM A194 Gr.2H	ASME B1.1	
	23	Gasket Type & Material				
Transmitter Unit	24	Model		Diff pressure		
	25	Available Range		–623 to 623 mbar		
	26	Flowmeter Scale		0~8668Nm3/h		
	27	Full Scale Differential Pressure (bar)		0~100 mbar		
	28	Output Signal		HART 4-20mA		
	29	Accuracy		0.2 %		
	30	Load Resistance		minimum loop resistance of 250 ohms		
	31	Scale Factor		Square Root		
	32	Housing Material		Cast aluminum		
	33	Allowable Static Pressure		250Barg		
	34	Power Supply		24 V DC Loop Powered		
	35	Electrical Connection		ISO M20x1.5		
	36	Explosion Proof		Exia IIB T3		
	37	Enclosure Protection		Nace		
	38	Diaphragm Material		Nace		
	38	Wetted Part Material		316SS		
	39	Drains/Vents Material		316SS		
	40	Integral Indicator / Mounting type		Yes / Direct		
Accessories	41	Valve Manifold		5 valve-S.S316		
	42	Upstream Straight Run		10X		
	43	Downstream Straight Run		5X		
Miscell.	44	Manufacturer				
	45	Requisition No.				

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

Tag no. shall be revised based on Hirgan's PID
HY reply:Noted.

for capacity control % 25 normal capacity shall be considered
HY Reply: Noted

settle out pres.
HY Reply: Noted

10% over design on normal flow rate to be considered
HY Reply: Noted

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 19 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.		FT-2206A		BK-GCS-HY-120-PR-PI-0001
	2	Service	Pipe No.		Water Console		CWR-112-0010A-C.S-3"-IS
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.		3"		
	4	Pipe Material	Pipe Insulation				
Process Conditions	5	Fluid	State		Water		Liquid
	6	Operating Pressure bar(g)	Design Pressure bar(g)		3		7
	7	Operating Temperature ℃	Design Temperature ℃		58		85
	8	Flow Rate		Unit	Min. Flow	Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)		m3/h		16000	
	9	Operating Density kg/m3	Standard Density kg/Nm3		976.6		-
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)		-		0.4298
	11	Specific Heat Ratio Cp/Cv	Compress Factor		1.166		0.0026
	12	Vapor Pressure	Vapor Density kg/m3		0.25		-
	13	Molecular Weight	Relative Humidity		18.02		-
	14	Allowable Pressure Drop @ Max. Flow			0.2		
Element	15	Tag Number			FE-2206A		
	16	Measure Element Type			Orifice		
	17	Measure Element Material	Thickness		316SS		3mm
	18	Bore Diameter			Hold		
	19	Connection Type	Size		Flange Weld neck		3"
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 150#
	21	Flange Material	Facing		C.S.		RF
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1
	23	Gasket Type & Material					
Transmitter Unit	24	Model			Diff pressure		
	25	Available Range			–623 to 623 mbar		
	26	Flowmeter Scale			0~20000m3/h		
	27	Full Scale Differential Pressure (bar)			0~200 mbar		
	28	Output Signal			HART 4-20mA		
	29	Accuracy			0.2 %		
	30	Load Resistance			minimum loop resistance of 250 ohms		
	31	Scale Factor			Square Root		
	32	Housing Material			Cast aluminum		
	33	Allowable Static Pressure			250Barg		
	34	Power Supply			24 V DC Loop Powered		
	35	Electrical Connection			ISO M20x1.5		
	36	Explosion Proof			Exia IIB T3		
	37	Enclosure Protection			IP66		
	38	Diaphragm Material			Nace		
	38	Wetted Part Material			Nace		
	39	Drains/Vents Material			316SS		
	40	Integral Indicator / Mounting type			Yes / Direct		
Accessories	41	Valve Manifold			5 valve-S.S316		
	42	Upstream Straight Run			10X		
	43	Downstream Straight Run			5X		
Miscell.	44	Manufacturer					
	45	Requisition No.					

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 20 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.		FT-2121B		BK-GCS-HY-120-PR-PI-0001
	2	Service	Pipe No.		Process gas		GAS-111-0031A-AN05-8"-ET
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.		8"		
	4	Pipe Material	Pipe Insulation				
Process Conditions	5	Fluid	State		Sour Hydrocarbon		Gas
	6	Operating Pressure bar(g)	Design Pressure bar(g)		4.9		24.5
	7	Operating Temperature ℃	Design Temperature ℃		36.8		180
	8	Flow Rate		Unit	Min. Flow	Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)		Nm3/h	7887	7918	8668.6
	9	Operating Density kg/m3	Standard Density kg/Nm3		5/771		-
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)		-		0/0115
	11	Specific Heat Ratio Cp/Cv	Compress Factor		1.245		0.975
	12	Vapor Pressure	Vapor Density kg/m3		5.102		-
	13	Molecular Weight	Relative Humidity		24.52		97%
	14	Allowable Pressure Drop @ Max. Flow			0.1		
Element	15	Tag Number			FE-2121B		
	16	Measure Element Type			Orifice		
	17	Measure Element Material	Thickness		316SS		6mm
	18	Bore Diameter			Hold		
	19	Connection Type	Size		Flange Weld neck		8"
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 300#
	21	Flange Material	Facing		C.S. (Nace)		RF
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1
	23	Gasket Type & Material					
Transmitter Unit	24	Model			3051CD		
	25	Available Range			–623 to 623 mbar		
	26	Flowmeter Scale			0~8668Nm3/h		
	27	Full Scale Differential Pressure (bar)			0~100 mbar		
	28	Output Signal			HART 4-20mA		
	29	Accuracy			0.2 %		
	30	Load Resistance			minimum loop resistance of 250 ohms		
	31	Scale Factor			Square Root		
	32	Housing Material			Cast aluminum		
	33	Allowable Static Pressure			250Barg		
	34	Power Supply			24 V DC Loop Powered		
	35	Electrical Connection			ISO M20x1.5		
	36	Explosion Proof			Exia IIB T3		
	37	Enclosure Protection			IP66		
	38	Diaphragm Material			Nace		
	38	Wetted Part Material			Nace		
	39	Drains/Vents Material			316SS		
	40	Integral Indicator / Mounting type			Yes / Direct		
Accessories	41	Valve Manifold			5 valve-S.S316		
	42	Upstream Straight Run			10X		
	43	Downstream Straight Run			5X		
Miscell.	44	Manufacturer					
	45	Requisition No.					

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 21 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.		FT-2197B		BK-GCS-HY-120-PR-PI-0001
	2	Service	Pipe No.		Process gas		GAS-111-0044A-CN05-6"-ET
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.		6"		
	4	Pipe Material	Pipe Insulation				
Process Conditions	5	Fluid	State		Sour Hydrocarbon		Gas
	6	Operating Pressure bar(g)	Design Pressure bar(g)		18		62
	7	Operating Temperature ℃	Design Temperature ℃		59.9		180
	8	Flow Rate		Unit	Min. Flow	Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)		Nm3/h	7887	7918	8668.6
	9	Operating Density kg/m3	Standard Density kg/Nm3		17.35		-
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)		-		.0126
	11	Specific Heat Ratio Cp/Cv	Compress Factor		1.275		0.964
	12	Vapor Pressure	Vapor Density kg/m3		19.76		-
	13	Molecular Weight	Relative Humidity		24.52		89%
	14	Allowable Pressure Drop @ Max. Flow			0.1		
Element	15	Tag Number			FE-2197B		
	16	Measure Element Type			Orifice		
	17	Measure Element Material	Thickness		316SS		3mm
	18	Bore Diameter			Hold		
	19	Connection Type	Size		Flange Weld neck		6"
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 600#
	21	Flange Material	Facing		C.S. (Nace)		RF
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1
	23	Gasket Type & Material					
Transmitter Unit	24	Model			3051CD		
	25	Available Range			–623 to 623 mbar		
	26	Flowmeter Scale			0~8668Nm3/h		
	27	Full Scale Differential Pressure (bar)			0~100 mbar		
	28	Output Signal			HART 4-20mA		
	29	Accuracy			0.2 %		
	30	Load Resistance			minimum loop resistance of 250 ohms		
	31	Scale Factor			Square Root		
	32	Housing Material			Cast aluminum		
	33	Allowable Static Pressure			250Barg		
	34	Power Supply			24 V DC Loop Powered		
	35	Electrical Connection			ISO M20x1.5		
	36	Explosion Proof			Exia IIB T3		
	37	Enclosure Protection			IP66		
	38	Diaphragm Material			Nace		
	38	Wetted Part Material			Nace		
	39	Drains/Vents Material			316SS		
	40	Integral Indicator / Mounting type			Yes / Direct		
Accessories	41	Valve Manifold			5 valve-S.S316		
	42	Upstream Straight Run			10X		
	43	Downstream Straight Run			5X		
Miscell.	44	Manufacturer					
	45	Requisition No.					

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 22 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.		FT-2206B		BK-GCS-HY-120-PR-PI-0001
	2	Service	Pipe No.		Water Console		CWR-112-0010A-C.S-3"-IS
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.		3"		
	4	Pipe Material	Pipe Insulation				
Process Conditions	5	Fluid	State		Water		Liquid
	6	Operating Pressure bar(g)	Design Pressure bar(g)		3		7
	7	Operating Temperature ℃	Design Temperature ℃		58		85
	8	Flow Rate		Unit	Min. Flow	Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)		m3/h		16000	
	9	Operating Density kg/m3	Standard Density kg/Nm3		976.6		-
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)		-		0.4298
	11	Specific Heat Ratio Cp/Cv	Compress Factor		1.166		0.0026
	12	Vapor Pressure	Vapor Density kg/m3		0.25		-
	13	Molecular Weight	Relative Humidity		18.02		-
	14	Allowable Pressure Drop @ Max. Flow			0.2		
Element	15	Tag Number			FE-2206B		
	16	Measure Element Type			Orifice		
	17	Measure Element Material	Thickness		316SS		3mm
	18	Bore Diameter			Hold		
	19	Connection Type	Size		Flange Weld neck		3"
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 150#
	21	Flange Material	Facing		C.S		RF
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1
	23	Gasket Type & Material					
Transmitter Unit	24	Model			3051CD		
	25	Available Range			–623 to 623 mbar		
	26	Flowmeter Scale			0~20000m3/h		
	27	Full Scale Differential Pressure (bar)			0~200 mbar		
	28	Output Signal			HART 4-20mA		
	29	Accuracy			0.2 %		
	30	Load Resistance			minimum loop resistance of 250 ohms		
	31	Scale Factor			Square Root		
	32	Housing Material			Cast aluminum		
	33	Allowable Static Pressure			250Barg		
	34	Power Supply			24 V DC Loop Powered		
	35	Electrical Connection			ISO M20x1.5		
	36	Explosion Proof			Exia IIB T3		
	37	Enclosure Protection			IP66		
	38	Diaphragm Material			Nace		
	38	Wetted Part Material			Nace		
	39	Drains/Vents Material			316SS		
	40	Integral Indicator / Mounting type			Yes / Direct		
Accessories	41	Valve Manifold			5 valve-S.S316		
	42	Upstream Straight Run			10X		
	43	Downstream Straight Run			5X		
Miscell.	44	Manufacturer					
	45	Requisition No.					

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 23 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.		FT-2121C		BK-GCS-HY-120-PR-PI-0001
	2	Service	Pipe No.		Process gas		GAS-111-0031A-AN05-8"-ET
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.		8"		
	4	Pipe Material	Pipe Insulation				
Process Conditions	5	Fluid	State		Sour Hydrocarbon		Gas
	6	Operating Pressure bar(g)	Design Pressure bar(g)		4.9		24.5
	7	Operating Temperature ℃	Design Temperature ℃		36.8		180
	8	Flow Rate		Unit	Min. Flow	Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)		Nm3/h	7887	7918	8668.6
	9	Operating Density kg/m3	Standard Density kg/Nm3		5/771		-
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)		-		0/0115
	11	Specific Heat Ratio Cp/Cv	Compress Factor		1.245		0.975
	12	Vapor Pressure	Vapor Density kg/m3		5.102		-
	13	Molecular Weight	Relative Humidity		24.52		97%
	14	Allowable Pressure Drop @ Max. Flow			0.1		
Element	15	Tag Number			FE-2121C		
	16	Measure Element Type			Orifice		
	17	Measure Element Material	Thickness		316SS		
	18	Bore Diameter			Hold		
	19	Connection Type	Size		Flange Weld neck		8"
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 300#
	21	Flange Material	Facing		C.S. (Nace)		RF
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1
	23	Gasket Type & Material					
Transmitter Unit	24	Model			3051CD		
	25	Available Range			–623 to 623 mbar		
	26	Flowmeter Scale			0~8668Nm3/h		
	27	Full Scale Differential Pressure (bar)			0~100 mbar		
	28	Output Signal			HART 4-20mA		
	29	Accuracy			0.2 %		
	30	Load Resistance			minimum loop resistance of 250 ohms		
	31	Scale Factor			Square Root		
	32	Housing Material			Cast aluminum		
	33	Allowable Static Pressure			250Barg		
	34	Power Supply			24 V DC Loop Powered		
	35	Electrical Connection			ISO M20x1.5		
	36	Explosion Proof			Exia IIB T3		
	37	Enclosure Protection			IP66		
	38	Diaphragm Material			Nace		
	38	Wetted Part Material			Nace		
	39	Drains/Vents Material			316SS		
	40	Integral Indicator / Mounting type			Yes / Direct		
Accessories	41	Valve Manifold			5 valve-S.S316		
	42	Upstream Straight Run			10X		
	43	Downstream Straight Run			5X		
Miscell.	44	Manufacturer					
	45	Requisition No.					

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 24 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.		FT-2197C		BK-GCS-HY-120-PR-PI-0001
	2	Service	Pipe No.		Process gas		GAS-111-0044A-CN05-6"-ET
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.		6"		
	4	Pipe Material	Pipe Insulation				
Process Conditions	5	Fluid	State		Sour Hydrocarbon		Gas
	6	Operating Pressure bar(g)	Design Pressure bar(g)		18		62
	7	Operating Temperature ℃	Design Temperature ℃		59.9		180
	8	Flow Rate		Unit	Min. Flow	Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)		Nm3/h	7887	7918	8668.6
	9	Operating Density kg/m3	Standard Density kg/Nm3		17.35		-
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)		-		.0126
	11	Specific Heat Ratio Cp/Cv	Compress Factor		1.275		0.964
	12	Vapor Pressure	Vapor Density kg/m3		19.76		-
	13	Molecular Weight	Relative Humidity		24.52		89%
	14	Allowable Pressure Drop @ Max. Flow			0.1		
Element	15	Tag Number			FE-2197C		
	16	Measure Element Type			Orifice		
	17	Measure Element Material	Thickness		316SS		
	18	Bore Diameter			Hold		
	19	Connection Type	Size		Flange Weld neck		6"
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 300#
	21	Flange Material	Facing		C.S. (Nace)		RF
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1
	23	Gasket Type & Material					
Transmitter Unit	24	Model			3051CD		
	25	Available Range			–623 to 623 mbar		
	26	Flowmeter Scale			0~8668Nm3/h		
	27	Full Scale Differential Pressure (bar)			0~100 mbar		
	28	Output Signal			HART 4-20mA		
	29	Accuracy			0.2 %		
	30	Load Resistance			minimum loop resistance of 250 ohms		
	31	Scale Factor			Square Root		
	32	Housing Material			Cast aluminum		
	33	Allowable Static Pressure			250Barg		
	34	Power Supply			24 V DC Loop Powered		
	35	Electrical Connection			ISO M20x1.5		
	36	Explosion Proof			Exia IIB T3		
	37	Enclosure Protection			IP66		
	38	Diaphragm Material			Nace		
	38	Wetted Part Material			Nace		
	39	Drains/Vents Material			316SS		
	40	Integral Indicator / Mounting type			Yes / Direct		
Accessories	41	Valve Manifold			5 valve-S.S316		
	42	Upstream Straight Run			10X		
	43	Downstream Straight Run			5X		
Miscell.	44	Manufacturer					
	45	Requisition No.					

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 25 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

INSTRUMENT DATA SHEET FOR FLOW TRANSMITTER

	1	Tag Number	P&ID No.		FT-2206C		BK-GCS-HY-120-PR-PI-0001
	2	Service	Pipe No.		Water Console		CWR-112-0010A-C.S-3"-IS
	3	Pipe O. D. /I. D. mm	Pipe Sch./Thk.		3"		
	4	Pipe Material	Pipe Insulation				
Process Conditions	5	Fluid	State		Water		Liquid
	6	Operating Pressure bar(g)	Design Pressure bar(g)		3		7
	7	Operating Temperature ℃	Design Temperature ℃		58		85
	8	Flow Rate		Unit	Min. Flow	Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)		m3/h		16000	
	9	Operating Density kg/m3	Standard Density kg/Nm3		976.6		-
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)		-		0.4298
	11	Specific Heat Ratio Cp/Cv	Compress Factor		1.166		0.0026
	12	Vapor Pressure	Vapor Density kg/m3		0.25		-
	13	Molecular Weight	Relative Humidity		18.02		-
	14	Allowable Pressure Drop @ Max. Flow			0.2		
Element	15	Tag Number			FE-2206C		
	16	Measure Element Type			Orifice		
	17	Measure Element Material	Thickness		316SS		3mm
	18	Bore Diameter			Hold		
	19	Connection Type	Size		Flange Weld neck		3"
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 150#
	21	Flange Material	Facing		C.S		RF
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1
	23	Gasket Type & Material					
Transmitter Unit	24	Model			3051CD		
	25	Available Range			–623 to 623 mbar		
	26	Flowmeter Scale			0~20000m3/h		
	27	Full Scale Differential Pressure (bar)			0~200 mbar		
	28	Output Signal			HART 4-20mA		
	29	Accuracy			0.2 %		
	30	Load Resistance			minimum loop resistance of 250 ohms		
	31	Scale Factor			Square Root		
	32	Housing Material			Cast aluminum		
	33	Allowable Static Pressure			250Barg		
	34	Power Supply			24 V DC Loop Powered		
	35	Electrical Connection			ISO M20x1.5		
	36	Explosion Proof			Exia IIB T3		
	37	Enclosure Protection			IP66		
	38	Diaphragm Material			Nace		
	38	Wetted Part Material			Nace		
	39	Drains/Vents Material			316SS		
	40	Integral Indicator / Mounting type			Yes / Direct		
Accessories	41	Valve Manifold			5 valve-S.S316		
	42	Upstream Straight Run			10X		
	43	Downstream Straight Run			5X		
Miscell.	44	Manufacturer					
	45	Requisition No.					

NOTES:

1) Spiral Wound as per API 601, 304+Graf or CS, Thk 4.5mm with stainless steel winding and flexible graphite filter.

2) Integral orifice with dual D.P Transmitter

VTA:Vendor to Advise VTC:Vendor to Confirm N/A:Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 26 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Level gauge	
	2	Tag Number	P&ID No.	LG-2213A	BK-GCS-HY-120-PR-PI-0001
	3	Service	Equipment No.		TK-2101-WR A
	4	Pipe Class	Vessel Material		
	5	Vessel Class			
Process Conditions	6	Upper Fluid	Lower Fluid	Air	Water / Gloycol
	7	Upper Density kg/m3	Lower Density kg/m3	1.225	1063
	8	Operating Pressure bar(g)	Design Pressure bar(g)	ATM	3.5
	9	Operating Temperature ℃	Design Temperature ℃	65	85
	10	Upper/Lower Kinetic Viscosity (mm2/S)		-	
	11	Upper/Lower Dynamic Viscosity (cP)		0.0209 / 2.084	
Body & Cage	12	Model/Type		Magnetic	
	13	C to C mm		HOLD	
	14	Allowable Oper. Temp. ℃	Pressure Rating		
	15	Mounting Style	Connection Orientation	External	Side-Side
	16	Visible Length mm		HOLD	
	17	Scale Unit/Material	Accuracy	Cm	5mm
	18	Indicator Type	Indicator Colour	Magnetic	Flag/White & red
	19	Chamber Material	Float Material	S.S	S.S
	20	Connection Type	Connection Size	Flange	2"
	21	Flange Standard	Flange Rating	ASME	300
	22	Flange Material	Facing	C.S	RF
	23	Other Wetted Parts Material		S.S	
	24	Float Dimension	indicator Housing Material	HOLD	S.S
Transmitter/Switch	25	Output Signal	Load Resistance	N/A	N/A
	26	Switch Type	Switch Quantity	N/A	N/A
	27	Contact Form	Contact Rating	N/A	N/A
	28	Switch 1 Contact Action		N/A	
	29	Switch 2 Contact Action		N/A	
	30	Calibration Value (for Switch)		N/A	
	31	Power Supply	Electrical Connection	N/A	N/A
	32	Explosion Proof	Enclosure Protection	N/A	N/A
	33	Housing Material	Integral Indicator	N/A	N/A
	34				
	35				
Accessories	36	Drain Valve	Drain Valve Material	1/2"NPT	S.S
	37	Vent Valve	Vent Valve Material	N/A	N/A
	38	Vent Valve Connection	Vent Valve Size	N/A	N/A
	39	Drain Plug	Vent Plug	N/A	N/A
	40	Protective Heat Shield		N/A	
	41	Steam Jacket	Jacket Connection Size	N/A	N/A
	42	Steam Pressure bar(g)		N/A	
	43	Non Frosting Extension		N/A	
	44	Stilling Well		N/A	
	45	Surge Protection Device		N/A	
	46				
Miscell.	47	Manufacturer		AZARSAM (Eyvaz Technic)	
	48	Requisition No.			

NOTES: VTA : Vendor to advise VTC : Vendor to confirm N/A : Not Applicable

1 . Vendor shall supply and install Swage Nipple 11/2"THREAD(L) × 3/4" PE(S) for vent and drain connections

2. COMPABILITY WITH NACE MR0175/ISO 15156 TO BE CONSIDERED FOR WETTED EQUIPEMNT.

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 27 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Level gauge	
	2	Tag Number	P&ID No.	LG-2213B	BK-GCS-HY-120-PR-PI-0001
	3	Service	Equipment No.		TK-2101-WR B
	4	Pipe Class	Vessel Material		
	5	Vessel Class			
Process Conditions	6	Upper Fluid	Lower Fluid	Air	Water / Gloycol
	7	Upper Density kg/m3	Lower Density kg/m3	1.225	1063
	8	Operating Pressure bar(g)	Design Pressure bar(g)	ATM	3.5
	9	Operating Temperature ℃	Design Temperature ℃	65	85
	10	Upper/Lower Kinetic Viscosity (mm2/S)		-	
	11	Upper/Lower Dynamic Viscosity (cP)		0.0209 / 2.084	
Body & Cage	12	Model/Type		Magnetic	
	13	C to C mm		HOLD	
	14	Allowable Oper. Temp. ℃	Pressure Rating		
	15	Mounting Style	Connection Orientation	External	Side-Side
	16	Visible Length mm		HOLD	
	17	Scale Unit/Material	Accuracy	Cm	5mm
	18	Indicator Type	Indicator Colour	Magnetic	Flag/White & red
	19	Chamber Material	Float Material	S.S	S.S
	20	Connection Type	Connection Size	Flange	2"
	21	Flange Standard	Flange Rating	ASME	300
	22	Flange Material	Facing	C.S	RF
	23	Other Wetted Parts Material		S.S	
	24	Float Dimension	indicator Housing Material	HOLD	S.S
Transmitter/Switch	25	Output Signal	Load Resistance	N/A	N/A
	26	Switch Type	Switch Quantity	N/A	N/A
	27	Contact Form	Contact Rating	N/A	N/A
	28	Switch 1 Contact Action		N/A	
	29	Switch 2 Contact Action		N/A	
	30	Calibration Value (for Switch)		N/A	
	31	Power Supply	Electrical Connection	N/A	N/A
	32	Explosion Proof	Enclosure Protection	N/A	N/A
	33	Housing Material	Integral Indicator	N/A	N/A
	34				
	35				
Accessories	36	Drain Valve	Drain Valve Material	1/2"NPT	S.S
	37	Vent Valve	Vent Valve Material	N/A	N/A
	38	Vent Valve Connection	Vent Valve Size	N/A	N/A
	39	Drain Plug	Vent Plug	N/A	N/A
	40	Protective Heat Shield		N/A	
	41	Steam Jacket	Jacket Connection Size	N/A	N/A
	42	Steam Pressure bar(g)		N/A	
	43	Non Frosting Extension		N/A	
	44	Stilling Well		N/A	
	45	Surge Protection Device		N/A	
	46				
Miscell.	47	Manufacturer		AZARSAM (Eyvaz Technic)	
	48	Requisition No.			

NOTES: VTA : Vendor to advise VTC : Vendor to confirm N/A : Not Applicable

1 . Vendor shall supply and install Swage Nipple 11/2"THREAD(L) × 3/4" PE(S) for vent and drain connections

2. COMPABILITY WITH NACE MR0175/ISO 15156 TO BE CONSIDERED FOR WETTED EQUIPEMNT.

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 28 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Level gauge	
	2	Tag Number	P&ID No.	LG-2213C	BK-GCS-HY-120-PR-PI-0001
	3	Service	Equipment No.		TK-2101-WR C
	4	Pipe Class	Vessel Material		
	5	Vessel Class			
Process Conditions	6	Upper Fluid	Lower Fluid	Air	Water / Gloycol
	7	Upper Density kg/m3	Lower Density kg/m3	1.225	1063
	8	Operating Pressure bar(g)	Design Pressure bar(g)	ATM	3.5
	9	Operating Temperature ℃	Design Temperature ℃	65	85
	10	Upper/Lower Kinetic Viscosity (mm2/S)		-	
	11	Upper/Lower Dynamic Viscosity (cP)		0.0209 / 2.084	
Body & Cage	12	Model/Type		Magnetic	
	13	C to C mm		HOLD	
	14	Allowable Oper. Temp. ℃	Pressure Rating		
	15	Mounting Style	Connection Orientation	External	Side-Side
	16	Visible Length mm		HOLD	
	17	Scale Unit/Material	Accuracy	Cm	5mm
	18	Indicator Type	Indicator Colour	Magnetic	Flag/White & red
	19	Chamber Material	Float Material	S.S	S.S
	20	Connection Type	Connection Size	Flange	2"
	21	Flange Standard	Flange Rating	ASME	300
	22	Flange Material	Facing	C.S	RF
	23	Other Wetted Parts Material		S.S	
	24	Float Dimension	indicator Housing Material	HOLD	S.S
Transmitter/Switch	25	Output Signal	Load Resistance	N/A	N/A
	26	Switch Type	Switch Quantity	N/A	N/A
	27	Contact Form	Contact Rating	N/A	N/A
	28	Switch 1 Contact Action		N/A	
	29	Switch 2 Contact Action		N/A	
	30	Calibration Value (for Switch)		N/A	
	31	Power Supply	Electrical Connection	N/A	N/A
	32	Explosion Proof	Enclosure Protection	N/A	N/A
	33	Housing Material	Integral Indicator	N/A	N/A
	34				
	35				
Accessories	36	Drain Valve	Drain Valve Material	1/2"NPT	S.S
	37	Vent Valve	Vent Valve Material	N/A	N/A
	38	Vent Valve Connection	Vent Valve Size	N/A	N/A
	39	Drain Plug	Vent Plug	N/A	N/A
	40	Protective Heat Shield		N/A	
	41	Steam Jacket	Jacket Connection Size	N/A	N/A
	42	Steam Pressure bar(g)		N/A	
	43	Non Frosting Extension		N/A	
	44	Stilling Well		N/A	
	45	Surge Protection Device		N/A	
	46				
Miscell.	47	Manufacturer		AZARSAM (Eyvaz Technic)	
	48	Requisition No.			

NOTES: VTA : Vendor to advise VTC : Vendor to confirm N/A : Not Applicable

1 . Vendor shall supply and install Swage Nipple 11/2"THREAD(L) × 3/4" PE(S) for vent and drain connections

2. COMPABILITY WITH NACE MR0175/ISO 15156 TO BE CONSIDERED FOR WETTED EQUIPEMNT.

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

INSTRUMENT DATASHEETS / CERTIFICATES

شماره پیمان: 053 - 073 – 9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 29 از 41
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Diff. Press. Level Transmitter	
	2	Tag Number	P&ID No.	LT-2213A	BK-GCS-HY-120-PR-PI-0001
	3	Service	Pipe / Equipment No.	1601-CC-001A	TK-2101-WR C
	4	Pipe Class	Vessel Material	-	
	5	Vessel Class			
	6	Upper Fluid / Phase	Lower Fluid / Phase	Air / Gas	Water-Glycol / Liquid
	7	Upper Density(kg/m3)	Lower Density(kg/m3)	1/225	1063
	8	Operating Pressure bar(g)	Design Pressure bar(g)	ATM	3/5
	9	Operating Temperature ℃	Design Temperature ℃	65	85
	10	Upper/Lower Dynamic Viscosity (cP)		0.0209 / 2.084	
	11	C to C mm		-	
Transmitter	12	Model		3051	
	13	Type	Accuracy	DP level Tranmitter	+/- 0.1% Full Scale
	14	Available Range	Calibration Range (bar)	HOLD	HOLD
	15	Output Signal	Power Supply	HART 4-20mA	24VDC Loop Powered
	16	Load Resistance(Ω)		250 ohms	
	17	Zero Elevation & Suppression		Yes	
	18	Electrical Connection		ISO M20	
	19	Explosion Proof	Enclosure Protection	EXia (Zone 2 IIB T3)	IP65
	20	Response Time	Housing Material	N/A	Epoxy Painted Die Cast Aluminum Copper Free
	21	Failure Mode Alarm		Up Scale	
Sensing & Body	22	Element Type	Element Material	Diaphragm (VTC)	316SS
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. ℃	250barg	85 °C
	24	Body Material	Flange Material	316SS	ASTM A105
	25	Process Connection	Flange Standard	2"	ASME B16.5
	26	Overrange Protection	Connector Material	130 %	316SS
	27	Vent/Drain Type&Size	Vent/Drain Material	1/4"NPT	316SS
	28	Gasket/O-Ring Material	Bolts Material	PTFE	ASTM A449
Diaphragm Seal	29	Seal Type		N/A	N/A
	30	Extended Length	Extended Material	N/A	N/A
	31	Diaphragm Diameter	Diaphragm Material	N/A	N/A
	32	Capillary Material	Capillary Length H/L	N/A	N/A
	33	Capillary Armor Material	Fill Fluid	N/A	N/A
	34	Fill Fluid Temperature Limits	Fill Fluid Density	N/A	N/A
	35	Connection Type	Size	N/A	N/A
	36	Flange Standard	Flange Rating	N/A	N/A
	37	Flange Material	Facing	N/A	N/A
	38	Flushing Connection		N/A	N/A
Indicator	39	Indicator Type	Display	Integral LCD type	Digital
	40	Mounting Bracket	Remo. Indic. Connection	No	YES
Manifold	41	Manifold Model	Manifold Type	VTA	5 Way
	42	Manifold Rating	Manifold Material	Min. CL 3000	316 SS
	43	Manifold Connection		1/2" PROCESS SIDE/FLANG INST SIDE	
Accessories	44	Mounting Bracket	Bracket Material	Yes / 2" Pipe	316SS
	45	Add Corrisive Envir. Enclosure	Surge Protected Device	N/A	N/A
	46				
Miscell	47	Manufacturer			
	48	Requisition No.			

NOTES:

VTA : Vendor To Advise VTC : Vendor To Confirm N/A : Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

INSTRUMENT DATASHEETS / CERTIFICATES

شماره پیمان: 053 - 073 – 9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 30 از 41
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Diff. Press. Level Transmitter	
	2	Tag Number	P&ID No.	LT-2213B	BK-GCS-HY-120-PR-PI-0001
	3	Service	Pipe / Equipment No.		TK-2101-WR B
	4	Pipe Class	Vessel Material	-	
	5	Vessel Class			
	6	Upper Fluid / Phase	Lower Fluid / Phase	Air / Gas	Water-Glycol / Liquid
	7	Upper Density(kg/m3)	Lower Density(kg/m3)	1/225	1063
	8	Operating Pressure bar(g)	Design Pressure bar(g)	ATM	3/5
	9	Operating Temperature ℃	Design Temperature ℃	65	85
	10	Upper/Lower Dynamic Viscosity (cP)		0.0209 / 2.084	
	11	C to C mm		-	
Transmitter	12	Model		3051	
	13	Type	Accuracy	DP level Tranmitter	+/- 0.1% Full Scale
	14	Available Range	Calibration Range (bar)	HOLD	HOLD
	15	Output Signal	Power Supply	HART 4-20mA	24VDC Loop Powered
	16	Load Resistance(Ω)		250 ohms	
	17	Zero Elevation & Suppression		Yes	
	18	Electrical Connection		ISO M20	
	19	Explosion Proof	Enclosure Protection	EXia (Zone 2 IIB T3)	IP65
	20	Response Time	Housing Material	N/A	Epoxy Painted Die Cast Aluminum Copper Free
	21	Failure Mode Alarm		Up Scale	
Sensing & Body	22	Element Type	Element Material	Diaphragm (VTC)	316SS
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. ℃	250barg	85 °C
	24	Body Material	Flange Material	316SS	ASTM A105
	25	Process Connection	Flange Standard	2"	ASME B16.5
	26	Overrange Protection	Connector Material	130 %	316SS
	27	Vent/Drain Type&Size	Vent/Drain Material	1/4"NPT	316SS
	28	Gasket/O-Ring Material	Bolts Material	PTFE	ASTM A449
Diaphragm Seal	29	Seal Type		N/A	N/A
	30	Extended Length	Extended Material	N/A	N/A
	31	Diaphragm Diameter	Diaphragm Material	N/A	N/A
	32	Capillary Material	Capillary Length H/L	N/A	N/A
	33	Capillary Armor Material	Fill Fluid	N/A	N/A
	34	Fill Fluid Temperature Limits	Fill Fluid Density	N/A	N/A
	35	Connection Type	Size	N/A	N/A
	36	Flange Standard	Flange Rating	N/A	N/A
	37	Flange Material	Facing	N/A	N/A
	38	Flushing Connection		N/A	N/A
Indicator	39	Indicator Type	Display	Integral LCD type	Digital
	40	Mounting Bracket	Remo. Indic. Connection	No	YES
Manifold	41	Manifold Model	Manifold Type	VTA	5 Way
	42	Manifold Rating	Manifold Material	Min. CL 3000	316 SS
	43	Manifold Connection		1/2" PROCESS SIDE/FLANG INST SIDE	
Accessories	44	Mounting Bracket	Bracket Material	Yes / 2" Pipe	316SS
	45	Add Corrisive Envir. Enclosure	Surge Protected Device	N/A	N/A
	46				
Miscell	47	Manufacturer			
	48	Requisition No.			

NOTES:

VTA : Vendor To Advise VTC : Vendor To Confirm N/A : Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

INSTRUMENT DATASHEETS / CERTIFICATES

شماره پیمان: 053 - 073 – 9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 31 از 41
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Diff. Press. Level Transmitter	
	2	Tag Number	P&ID No.	LT-2213C	BK-GCS-HY-120-PR-PI-0001
	3	Service	Pipe / Equipment No.		TK-2101-WR C
	4	Pipe Class	Vessel Material	-	
	5	Vessel Class			
	6	Upper Fluid / Phase	Lower Fluid / Phase	Air / Gas	Water-Glycol / Liquid
	7	Upper Density(kg/m3)	Lower Density(kg/m3)	1/225	1063
	8	Operating Pressure bar(g)	Design Pressure bar(g)	ATM	3/5
	9	Operating Temperature ℃	Design Temperature ℃	65	85
	10	Upper/Lower Dynamic Viscosity (cP)		0.0209 / 2.084	
	11	C to C mm		-	
Transmitter	12	Model		3051	
	13	Type	Accuracy	DP level Tranmitter	+/- 0.1% Full Scale
	14	Available Range	Calibration Range (bar)	HOLD	HOLD
	15	Output Signal	Power Supply	HART 4-20mA	24VDC Loop Powered
	16	Load Resistance(Ω)		250 ohms	
	17	Zero Elevation & Suppression		Yes	
	18	Electrical Connection		ISO M20	
	19	Explosion Proof	Enclosure Protection	EXia (Zone 2 IIB T3)	IP65
	20	Response Time	Housing Material	N/A	Epoxy Painted Die Cast Aluminum Copper Free
	21	Failure Mode Alarm		Up Scale	
Sensing & Body	22	Element Type	Element Material	Diaphragm (VTC)	316SS
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. ℃	250barg	85 °C
	24	Body Material	Flange Material	316SS	ASTM A105
	25	Process Connection	Flange Standard	2"	ASME B16.5
	26	Overrange Protection	Connector Material	130 %	316SS
	27	Vent/Drain Type&Size	Vent/Drain Material	1/4"NPT	316SS
	28	Gasket/O-Ring Material	Bolts Material	PTFE	ASTM A449
Diaphragm Seal	29	Seal Type		N/A	N/A
	30	Extended Length	Extended Material	N/A	N/A
	31	Diaphragm Diameter	Diaphragm Material	N/A	N/A
	32	Capillary Material	Capillary Length H/L	N/A	N/A
	33	Capillary Armor Material	Fill Fluid	N/A	N/A
	34	Fill Fluid Temperature Limits	Fill Fluid Density	N/A	N/A
	35	Connection Type	Size	N/A	N/A
	36	Flange Standard	Flange Rating	N/A	N/A
	37	Flange Material	Facing	N/A	N/A
	38	Flushing Connection		N/A	N/A
Indicator	39	Indicator Type	Display	Integral LCD type	Digital
	40	Mounting Bracket	Remo. Indic. Connection	No	YES
Manifold	41	Manifold Model	Manifold Type	VTA	5 Way
	42	Manifold Rating	Manifold Material	Min. CL 3000	316 SS
	43	Manifold Connection		1/2" PROCESS SIDE/FLANG INST SIDE	
Accessories	44	Mounting Bracket	Bracket Material	Yes / 2" Pipe	316SS
	45	Add Corrisive Envir. Enclosure	Surge Protected Device	N/A	N/A
	46				
Miscell	47	Manufacturer			
	48	Requisition No.			

NOTES:

VTA : Vendor To Advise VTC : Vendor To Confirm N/A : Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 32 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

Data Sheet for Solenoid Valve

GENERAL	1	TAG NO .	See List
	2	SERVICE	Instrument Air
	3	LINE NO,	See List
	4	QUNTITY	See List
VALVE BODY	5	TYPE	For single acting
	6	SIZE- BODY /PORT	See List
	7	RATING & TYPE CONN.	NPTF
	8	MATERIAL -BODY	Brass
	9	MATERIAL -SEAT	MFR STD
	10	MATERIAL -DIAPHRAGM	N/A
	11	OPERATION DIRECT / PILOT	Pilot operated
	12	MANUAL RESET	N/A
	13	MANUAL OPERATOR	N/A
	14	PAINTING	N/A
WHEN DEENERGIZED	15	2 WAY VALVE : OPEN/CLOSE	YES
	16	3 WAY	N/A
	17	VENT PORT : OPEN/CLOSE	N/A
	18	PRESS PORT : OPEN/CLOSE	OPEN
	19	EXTERNAL OVERRIDE	No
SOLENOID	20	ENCLOSURE	IP 66
	21	VOLTAGE/POWER	24 VDC /11W
	22	STYLE OF COIL	MFR STD
	23	SINGLE OR DOUBLE COIL	SINGLE
	24	INSULATION CLASS	F
	25	ENCLOSURE MATERIAL	ALUMINUM
	26	CERTIFICATION	Eex 'd'-IIB-T3
	27	ELEC. ENTRY	M20x1.5 ISO
SERVICE CONDITIONS	28	FLUID	Instrument Air
	29	OPER.DIFF.MIN (BAR)	See List
	30	OPER.DIFF.MAX (BAR)	See List
	31	TEMP. NORMAL /MAX	See List
	32	SP.GR	1.0
	33	VISCOSITY	N/A
	34	VALVE CV	V.T.A
	35	MANUFACTURER	V.T.A
	36	MODEL NO.	V.T.A
	37		

NOTE:
VTA:Vendor To Advise N/A:Not Applicable

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	HY	120	IN	DS	0001	V01

List of SOV

ITEM NO.	TAG NO.	SERVICE	LINE NO. / EQUIPMENT NO.	P&ID No.	OPERATING/DESIG NPRESSSURE (Bars)	TEMPERATURE (C)	SOLENOID VALVE SIZE	REMARKS
					Min. / Max	Norm. / Design		
1	SV-2201A	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	
2	SV-2202A	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	
3	SV-2203A	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	
4	SV-2201B	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	
5	SV-2202B	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	
6	SV-2203B	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	
7	SV-2201C	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	
8	SV-2202C	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	
9	SV-2203C	Instrument Air	1/2" SS316L Tubing	BK-GCS-HY-120-PR-PI-0001	8 / 12.5	65 / 85	1/2"	

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 34 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

SERVICE	Tag Number	VE-2200A VE-2201A VE-2202A	ZE-2200A ZE-2201A
	Service	Frame vibration	Cylinder Rod Drop Detector
	P&ID No.	BK-GCS-HY-120-PR-PI-0001	BK-GCS-HY-120-PR-PI-0001
	Q'TY	3	2
OPERATING CONDITION	Press. Nor(Kg/㎠g)	N/A	N/A
	Temp. Nor(℃)	- 40℃ to +100℃	- 40℃ to +100℃
	Humidity		
	Explosion Class & Cert.	Ex ia IIC, T4	Ex ia IIC, T4
GENERAL	Description	Frame vibration	Cylinder Rod Drop Detector
	Manufacturer	Metrix	SHINKAWA
	Model No. - Probe		FL-452F11L-M9-00-09-10/E50/Z05
	- Ext. Cable	N/A	FW-452FT-80/E50
	- Proximitor	N/A	FK-452F2-1-2/E50
	Piston Rod Material	N/A	N/A
PROBE	Type	Seismic Vibration	Proximity
	Range	25.4mm/SEC, RMS	4.0 mm
	Material	316 Stainless Steel	316 Stainless Steel
	Conduit size	N/A	N/A
	Probe Cable Length	N/A	1.0 Meter + Ext 9 Meter
	Sealing	IP66	IP66
	Sensor Mounting	M8 x P1.25	Internal of Bare block
	Mounting Housing	N/A	N/A
	Mounting Thread	N/A	M16x1.5
	Sensitivity	100 mV/g	100 mV/g
	Standard	API 670	API 670
TRANSMITTER	Input Power	24 VDC(Loop Powered)	24 VDC(Loop Powered)
	Output	4~20 mA	4~20 mA
	Enclosure Class	IP66	Without
	Model No.	VST5484E	VM-21T1-22C012-1

Notes :

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 35 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

SERVICE	Tag Number	VE-2200B VE-2201B VE-2202B	ZE-2200B ZE-2201B
	Service	Frame vibration	Cylinder Rod Drop Detector
	P&ID No.	BK-GCS-HY-120-PR-PI-0001	BK-GCS-HY-120-PR-PI-0001
	Q'TY	3	2
OPERATING CONDITION	Press. Nor(Kg/㎠g)	N/A	N/A
	Temp. Nor(℃)	- 40℃ to +100℃	- 40℃ to +100℃
	Humidity		
	Explosion Class & Cert.	Ex ia IIC, T4	Ex ia IIC, T4
GENERAL	Description	Frame vibration	Cylinder Rod Drop Detector
	Manufacturer	Metrix	SHINKAWA
	Model No. - Probe		FL-452F11L-M9-00-09-10/E50/Z05
	- Ext. Cable	N/A	FW-452FT-80/E50
	- Proximitor	N/A	FK-452F2-1-2/E50
	Piston Rod Material	N/A	N/A
PROBE	Type	Seismic Vibration	Proximity
	Range	25.4mm/SEC, RMS	4.0 mm
	Material	316 Stainless Steel	316 Stainless Steel
	Conduit size	N/A	N/A
	Probe Cable Length	N/A	1.0 Meter + Ext 9 Meter
	Sealing	IP66	IP66
	Sensor Mounting	M8 x P1.25	Internal of Bare block
	Mounting Housing	N/A	N/A
	Mounting Thread	N/A	M16x1.5
	Sensitivity	100 mV/g	100 mV/g
	Standard	API 670	API 670
TRANSMITTER	Input Power	24 VDC(Loop Powered)	24 VDC(Loop Powered)
	Output	4~20 mA	4~20 mA
	Enclosure Class	IP66	Without
	Model No.	VST5484E	VM-21T1-22C012-1

Notes :

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 36 از 41
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

SERVICE	Tag Number	VE-2200C VE-2201C VE-2202C	ZE-2200C ZE-2201C
	Service	Frame vibration	Cylinder Rod Drop Detector
	P&ID No.	BK-GCS-HY-120-PR-PI-0001	BK-GCS-HY-120-PR-PI-0001
	Q'TY	3	2
OPERATING CONDITION	Press. Nor(Kg/㎠g)	N/A	N/A
	Temp. Nor(℃)	- 40℃ to +100℃	- 40℃ to +100℃
	Humidity		
	Explosion Class & Cert.	Ex ia IIC, T4	Ex ia IIC, T4
GENERAL	Description	Frame vibration	Cylinder Rod Drop Detector
	Manufacturer	Metrix	SHINKAWA
	Model No. - Probe		FL-452F11L-M9-00-09-10/E50/Z05
	- Ext. Cable	N/A	FW-452FT-80/E50
	- Proximitor	N/A	FK-452F2-1-2/E50
	Piston Rod Material	N/A	N/A
PROBE	Type	Seismic Vibration	Proximity
	Range	25.4mm/SEC, RMS	4.0 mm
	Material	316 Stainless Steel	316 Stainless Steel
	Conduit size	N/A	N/A
	Probe Cable Length	N/A	1.0 Meter + Ext 9 Meter
	Sealing	IP66	IP66
	Sensor Mounting	M8 x P1.25	Internal of Bare block
	Mounting Housing	N/A	N/A
	Mounting Thread	N/A	M16x1.5
	Sensitivity	100 mV/g	100 mV/g
	Standard	API 670	API 670
TRANSMITTER	Input Power	24 VDC(Loop Powered)	24 VDC(Loop Powered)
	Output	4~20 mA	4~20 mA
	Enclosure Class	IP66	Without
	Model No.	VST5484E	VM-21T1-22C012-1

Notes :

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

INSTRUMENT DATASHEETS / CERTIFICATES

شماره پیمان: 053 - 073 – 9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 37 از 41
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Diff. Press. Level Transmitter	
	2	Tag Number	P&ID No.	LT-2200A	BK-GCS-HY-120-PR-PI-0001
	3	Service	Pipe / Equipment No.		crankcase
	4	Pipe Class	Vessel Material	-	
	5	Vessel Class			
	6	Upper Fluid / Phase	Lower Fluid / Phase	Air / Gas	Lubricant Oil / Liquid
	7	Upper Density(kg/m3)	Lower Density(kg/m3)	1/225	890
	8	Operating Pressure bar(g)	Design Pressure bar(g)	6	10
	9	Operating Temperature ℃	Design Temperature ℃	70	85
	10	U/L Dynamic Viscosity (cP)		0.021/0.89	
	11	C to C mm		-	
Transmitter	12	Model		3051	
	13	Type	Accuracy	DP level Tranmitter	+/- 0.1% Full Scale
	14	Available Range	Calibration Range (bar)	-635~635mmH2O	300mmH2O
	15	Output Signal	Power Supply	HART 4-20MA	24VDC Loop Powered
	16	Load Resistance(Ω)		250 ohms	
	17	Zero Elevation & Suppression		Yes	
	18	Electrical Connection		ISO M20x1.5	
	19	Explosion Proof	Enclosure Protection	EXia (Zone 2 IIB T3)	IP65
	20	Response Time	Housing Material	N/A	Epoxy Painted Die Cast Aluminum Copper Free
	21	Failure Mode Alarm		Up Scale	
Sensing & Body	22	Element Type	Element Material	Diaphragm	316SS
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. ℃	250barg	85 °C
	24	Body Material	Flange Material	316SS	ASTM A105
	25	Process Connection	Flange Standard	2"	ASME B16.5
	26	Overrange Protection	Connector Material	130 %	316SS
	27	Vent/Drain Type&Size	Vent/Drain Material	1/4"NPT	316SS
	28	Gasket/O-Ring Material	Bolts Material	PTFE	ASTM A449
Diaphragm Seal	29	Seal Type		N/A	
	30	Extended Length	Extended Material	N/A	N/A
	31	Diaphragm Diameter	Diaphragm Material	N/A	N/A
	32	Capillary Material	Capillary Length H/L	N/A	N/A
	33	Capillary Armor Material	Fill Fluid	N/A	N/A
	34	Fill Fluid Temperature Limits	Fill Fluid Density	N/A	N/A
	35	Connection Type	Size	N/A	N/A
	36	Flange Standard	Flange Rating	N/A	N/A
	37	Flange Material	Facing	N/A	N/A
	38	Flushing Connection		N/A	N/A
Indicator	39	Indicator Type	Display	Integral LCD type	Digital
	40	Mounting Bracket	Remo. Indic. Connection	No	YES
Manifold	41	Manifold Model	Manifold Type	VTA	5 Way
	42	Manifold Rating	Manifold Material	Min. CL 3000	316 SS
	43	Manifold Connection		1/2" PROCESS SIDE/FLANG INST SIDE	
Accessories	44	Mounting Bracket	Bracket Material	Yes / 2" Pipe	316SS
	45	Add Corrisive Envir. Enclosure	Surge Protected Device	N/A	N/A
	46				
Miscell	47	Manufacturer			
	48	Requisition No.			

NOTES:

VTA : Vendor To Advise VTC : Vendor To Confirm N/A : Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

INSTRUMENT DATASHEETS / CERTIFICATES

شماره پیمان: 053 - 073 – 9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 38 از 41
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Diff. Press. Level Transmitter	
	2	Tag Number	P&ID No.	LT-2200B	BK-GCS-HY-120-PR-PI-0001
	3	Service	Pipe / Equipment No.		crankcase
	4	Pipe Class	Vessel Material	-	
	5	Vessel Class			
	6	Upper Fluid / Phase	Lower Fluid / Phase	Air / Gas	Lubricant Oil / Liquid
	7	Upper Density(kg/m3)	Lower Density(kg/m3)	1/225	890
	8	Operating Pressure bar(g)	Design Pressure bar(g)	6	10
	9	Operating Temperature ℃	Design Temperature ℃	70	85
	10	U/L Dynamic Viscosity (cP)		0.021/0.89	
	11	C to C mm		-	
Transmitter	12	Model		3051	
	13	Type	Accuracy	DP level Tranmitter	+/- 0.1% Full Scale
	14	Available Range	Calibration Range (bar)	-635~635mmH2O	300mmH2O
	15	Output Signal	Power Supply	HART 4-20MA	24VDC Loop Powered
	16	Load Resistance(Ω)		250 ohms	
	17	Zero Elevation & Suppression		Yes	
	18	Electrical Connection		ISO M20x1.5	
	19	Explosion Proof	Enclosure Protection	EXia (Zone 2 IIB T3)	IP65
	20	Response Time	Housing Material	N/A	Epoxy Painted Die Cast Aluminum Copper Free
	21	Failure Mode Alarm		Up Scale	
Sensing & Body	22	Element Type	Element Material	Diaphragm	316SS
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. ℃	250barg	85 °C
	24	Body Material	Flange Material	316SS	ASTM A105
	25	Process Connection	Flange Standard	2"	ASME B16.5
	26	Overrange Protection	Connector Material	130 %	316SS
	27	Vent/Drain Type&Size	Vent/Drain Material	1/4"NPT	316SS
	28	Gasket/O-Ring Material	Bolts Material	PTFE	ASTM A449
Diaphragm Seal	29	Seal Type		N/A	
	30	Extended Length	Extended Material	N/A	N/A
	31	Diaphragm Diameter	Diaphragm Material	N/A	N/A
	32	Capillary Material	Capillary Length H/L	N/A	N/A
	33	Capillary Armor Material	Fill Fluid	N/A	N/A
	34	Fill Fluid Temperature Limits	Fill Fluid Density	N/A	N/A
	35	Connection Type	Size	N/A	N/A
	36	Flange Standard	Flange Rating	N/A	N/A
	37	Flange Material	Facing	N/A	N/A
	38	Flushing Connection		N/A	N/A
Indicator	39	Indicator Type	Display	Integral LCD type	Digital
	40	Mounting Bracket	Remo. Indic. Connection	No	YES
Manifold	41	Manifold Model	Manifold Type	VTA	5 Way
	42	Manifold Rating	Manifold Material	Min. CL 3000	316 SS
	43	Manifold Connection		1/2" PROCESS SIDE/FLANG INST SIDE	
Accessories	44	Mounting Bracket	Bracket Material	Yes / 2" Pipe	316SS
	45	Add Corrisive Envir. Enclosure	Surge Protected Device	N/A	N/A
Miscell	46	Manufacturer			
	47	Requisition No.			

NOTES:

VTA : Vendor To Advise VTC : Vendor To Confirm N/A : Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتي بينك سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

INSTRUMENT DATASHEETS / CERTIFICATES

شماره پیمان: 053 - 073 – 9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 39 از 41
	BK	GCS	HY	120	IN	DS	0001	V01	

General	1	Instrument Name		Diff. Press. Level Transmitter	
	2	Tag Number	P&ID No.	LT-2200B	BK-GCS-HY-120-PR-PI-0001
	3	Service	Pipe / Equipment No.		crankcase
	4	Pipe Class	Vessel Material	-	
	5	Vessel Class			
	6	Upper Fluid / Phase	Lower Fluid / Phase	Air / Gas	Lubricant Oil / Liquid
	7	Upper Density(kg/m3)	Lower Density(kg/m3)	1/225	890
	8	Operating Pressure bar(g)	Design Pressure bar(g)	6	10
	9	Operating Temperature ℃	Design Temperature ℃	70	85
	10	U/L Dynamic Viscosity (cP)		0.021/0.89	
	11	C to C mm		-	
Transmitter	12	Model		3051	
	13	Type	Accuracy	DP level Tranmitter	+/- 0.1% Full Scale
	14	Available Range	Calibration Range (bar)	-635~635mmH2O	300mmH2O
	15	Output Signal	Power Supply	HART 4-20MA	24VDC Loop Powered
	16	Load Resistance(Ω)		250 ohms	
	17	Zero Elevation & Suppression		Yes	
	18	Electrical Connection		ISO M20x1.5	
	19	Explosion Proof	Enclosure Protection	EXia (Zone 2 IIB T3)	IP65
	20	Response Time	Housing Material	N/A	Epoxy Painted Die Cast Aluminum Copper Free
	21	Failure Mode Alarm		Up Scale	
Sensing & Body	22	Element Type	Element Material	Diaphragm	316SS
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. ℃	250barg	85 °C
	24	Body Material	Flange Material	316SS	ASTM A105
	25	Process Connection	Flange Standard	2"	ASME B16.5
	26	Overrange Protection	Connector Material	130 %	316SS
	27	Vent/Drain Type&Size	Vent/Drain Material	1/4"NPT	316SS
	28	Gasket/O-Ring Material	Bolts Material	PTFE	ASTM A449
Diaphragm Seal	29	Seal Type		N/A	
	30	Extended Length	Extended Material	N/A	N/A
	31	Diaphragm Diameter	Diaphragm Material	N/A	N/A
	32	Capillary Material	Capillary Length H/L	N/A	N/A
	33	Capillary Armor Material	Fill Fluid	N/A	N/A
	34	Fill Fluid Temperature Limits	Fill Fluid Density	N/A	N/A
	35	Connection Type	Size	N/A	N/A
	36	Flange Standard	Flange Rating	N/A	N/A
	37	Flange Material	Facing	N/A	N/A
	38	Flushing Connection		N/A	N/A
Indicator	39	Indicator Type	Display	Integral LCD type	Digital
	40	Mounting Bracket	Remo. Indic. Connection	No	YES
Manifold	41	Manifold Model	Manifold Type	VTA	5 Way
	42	Manifold Rating	Manifold Material	Min. CL 3000	316 SS
	43	Manifold Connection		1/2" PROCESS SIDE/FLANG INST SIDE	
Accessories	44	Mounting Bracket	Bracket Material	Yes / 2" Pipe	316SS
	45	Add Corrisive Envir. Enclosure	Surge Protected Device	N/A	N/A
Miscell	46	Manufacturer			
	47	Requisition No.			

NOTES:

VTA : Vendor To Advise VTC : Vendor To Confirm N/A : Not Applicable

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008 03 قرارداد)	HAVAYAR INDUSTRIAL GROUP
شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES	شماره صفحه: 40 از 41

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	HY	120	IN	DS	0001	V01

Instrument Data Sheet For Pressure Switch

	GENERAL							***SWITCH***					
1	Press. ●			Vaccum ○				8	Type:		Mercury ○		Snap ●
	Comp. ○			Diff. Press. ○							Other :		
2		Set In Field ●			Factory Set			9	Quantity:		Single ●		Dual ○
		Internal ●		External ○		Dial		10	Form:		SPST ○	SPDT ●	
3		Fixed		Adj. ●		Min. ○					Other:		
	ELEMENT							11	Max Rating:		2 Amps	24vdc	
4	Diaphragm ●			Bourdon ○		Bellows ○					Other:		
								12	Load:		Inductive ○		Non-Inductive ●
5	Material				Aluminum			13	IP		IP66 Exd/IIB		SIL Certified
6	Connection	1/2"NPT ●			Other Size :			14	Electrical Connection:		M20		
		Bottom ●			Back			15	Manufacturer & Model No.				
7		Local ●		Surface ○		Flush		16	Accessories		Manifold 2Valve		

to be specified
HY Reply: Noted

Tag No.	Process Connection	Adj. Range (Bar G)	Set Point (Bar G)	Pressure Design	Pressure Working	Service or Line Number	Remark
PS-2195A	1 " NPT	0~80	HOLD	62Bar	54.9Bar	GAS-111-0051A-FN05-6"-IS	Nace material
PS-2204A	1 " NPT	0~10	HOLD	10Bar	6Bar	OIL-112-0008A-S.S-2"-IS	
PS-2220A	1 " NPT	0~10	HOLD	10Bar	3Bar	CWS-112-0002A-C.S-3"-IS	
PS-2195B	1 " NPT	0~80	HOLD	62Bar	54.9Bar	GAS-111-0051A-FN05-6"-IS	Nace material
PS-2204B	1 " NPT	0~10	HOLD	10Bar	6Bar	OIL-112-0008A-S.S-2"-IS	
PS-2220B	1 " NPT	0~10	HOLD	10Bar	3Bar	CWS-112-0002A-C.S-3"-IS	
PS-2195C	1 " NPT	0~80	HOLD	62Bar	54.9Bar	GAS-111-0051A-FN05-6"-IS	Nace material
PS-2204C	1 " NPT	0~10	HOLD	10Bar	6Bar	OIL-112-0008A-S.S-2"-IS	
PS-2220C	1 " NPT	0~10	HOLD	10Bar	3Bar	CWS-112-0002A-C.S-3"-IS	

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)	HAVAYAR INDUSTRIAL GROUP

شماره پیمان: 053 - 073 – 9184	INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 41 از 41
	پروژه	پسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	HY	120	IN	DS	0001	V01	

Instrument Data Sheet For Temperature Switch

GENERAL						
1.TAG.NO	TS-2191A	TS-2194A	TS-2191B	TS-2194B	TS-2191C	TS-2194C
2.Equipment	1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER	1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER	1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER
3.ENCLOSURE MATERIAL	Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum
4.SERVICE	Gas	Gas	Gas	Gas	Gas	Gas
5.RANGE	0-200C	0-200'C	0-200'C	0-200'C	0-200'C	0-200'C
6.Ingress Protection	IP 66/Exd-IIB SIL Certified					
THERMOWELL						
7.TYPE SYSTEM	FInage	Flange	Flange	Flange	Flange	Flange
8 MATERIAL	AISI 316/Nace	AISI 316/Nace	AISI 316/Nace	AISI 316/Nace	AISI 316/Nace	AISI 316/Nace
9.CONNECTION LOCATION	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
10.TUBING LENGTH	N/A	N/A	N/A	N/A	N/A	N/A
11.TUBING TYPE & MATERIAL	N/A	N/A	N/A	N/A	N/A	N/A
12.WELL CONN.SIZE & TYPE	2"#300	2"#600	2"#300	2"#600	2"#300	2"#600
13.WELL MATERIAL	316 S.S	316 S.S	316 S.S	316 S.S	316 S.S	316 S.S
14.'U' DIMENSION(NOMINAL)	Hold	Hold	Hold	Hold	Hold	Hold
SWITCH						
15.TYPE	Snap Action	Snap Action	Snap Action	Snap Action	Snap Action	Snap Action
16.QUANTITY FORM	1/SPD	1/SPD	1/SPD	1/SPD	1/SPD	1/SPD
17.ENCLOSURE	IP66	IP66	IP66	IP66	IP66	IP66
18.RATING:VOLTS	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
19.AMPS	2	2	2	2	2	5
20.LOAD TYPE	INDUCTIVE	INDUCTIVE	INDUCTIVE	INDUCTIVE	INDUCTIVE	INDUCTIVE
21.DIFF.:FIXED ADJUST	YES/-	YES/-	YES/-	YES/-	YES/-	YES/-
22.ELECTRICAL CONNECTION	M20*1.5	M20*1.5	M20*1.5	M20*1.5	M20*1.5	M20*1.5
23.Accuracy	1% Of Spna	1% Of Spna	1% Of Spna	1% Of Spna	1% Of Spna	1% Of Spna
SERVICE CONDITIONS						
27.TEMP.:OPER 'C	129'C	147'C	129'C	147'C	129'C	147'C
28.PRESS.:OPER 'C	18	54/9	18	54/9	18	54/9
29.TRIP POINT 'C	HOLD	Hold	Hold	Hold	Hold	Hold
30.MANUFACTURER	HOLD	Hold	Hold	Hold	Hold	Hold
31.MANUFACTURER'S MODEL NO.	HOLD	HOLD	HOLD	HOLD	HOLD	HOLD

design pressure to be mentioned
HY Reply: Noted

to be specified
HY Reply: Noted