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شماره صفحه: 1 از 41

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

نگهداشت و افزایش تولید میدان نفتی بینک

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

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



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض
خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(قرارداد ۰۳_۰۰۸-CO-GCS-BK)



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

INSTRUMENT DATASHEETS / CERTIFICATES

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

شماره صفحه: 2 از 41

REVISION RECORD SHEET

Page	V00	V01	V02	V03	V04
1	X	X			
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3	X	X			
4	X	X			
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7	X	X			
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NISOC
شماره پیمان:

تنگداشت 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 صفحه: 3 از 41

INSTRUMENT DATASHEETS / CERTIFICATES

نسخه
0001

سریال
V01

نوع مترگ
DS

رشته
IN

تسهلات
120

صاف کننده
HY

پسته کاری
GCS

پروژه
BK

1

Type :

Direct Rdg. ☒
Other ☐
Mounting : Surface ☐ Local ☒
Dial : Diameter 160 mm Color : White / Black Lettering ,Non Rusting Metal
Case : Cast Iron ☐ SS316 ☒ Phenol ☐
Other ☐
Ring : Screwed ☒ Hinged ☐ Slip ☐
Std ☐ Other ☐
Blow-out Protection : Solid Front ☐ None ☐
Back ☐ Disc ☐
Lens : Glass ☒ Plastic ☐
Options : ☐ As per List

3-15 lb Reciever ☐

Flush ☐

Safety Glass (shatter proof)

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

Other ☒
Bellows ☐

13

Element Mtl. :

SS ☒
Other ☐
Bronze ☐ Steel ☐
14

Socket Mtl. :

SS ☒
Other ☐
Bronze ☐ Steel ☐
15

Connection-NPT :

1/4 in. ☒
Bottom ☐ 1/2 in. ☒
Bronze ☐ SS ☐ Other ☐
16

Movement:

Nylon ☐
As per List ☐
MFR. ☐
Wetted Part Mtl. ☐
Fill Fluid : ☐
Process Conn. : ☐
17

Diaphragm Seal

Other ☐
Stainless Steel ☐
Type ☐
Other Mtl. ☐
18

Ingress Protection : IP 65

19

Manifold S.S316 2 valve ☒

Item	Tag No.	Range (barg)	Process Fluid/State	Design		Operating		LINE NO./EQUIPMENTNO.	P&ID NO.	Accessories	NOTE
				Press (barg)	Temp (C°)	Press (barg)	Temp (C°)				
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 protector 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 protector 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 protector 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 نفتی بینک سطح الارض و ابنيه 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: 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								
OPTIONS	18	Electrical Conn.	MFR STD ☐ Other ISO M20x1.5								
	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.											



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شماره پیمان:
053 - 073 - 9184

INSTRUMENT DATASHEETS / CERTIFICATES

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

شماره صفحه: 6 از 41

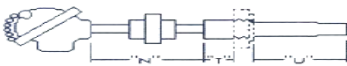
BI-METALLIC THERMOMETER WITH WELL (Complete Assembly)

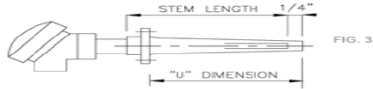
THERMOMETER				WELL			
1	ELEMENT TYPE	BI-METAL ■	GAS FILLED CAPILLARY □	15	NONE □	INCLUDED ■	6
2	STEM	THREADED (NPTM) ■	UNION □	16	MATERIAL :	304 SS □	316 SS ■ OTHER
	MATERIAL	316 S.S.		17	CONSTRUCTION	BUILT-UP □	DRILLED BAR STOCK ■
3	STEM OR UNION THREADED :	1/2 IN. ■	3/4 IN. □			OTHER	
4	STEM DIAMETER	MFR. STD □	6 mm. ■			TAPERED ■	STRAIGHT □
5	CASE MATERIAL :	MFR. STD □	OTHER	18	INTERNAL CONNECTION NOMINAL SIZE	1/2" PIPE THREAD	
6	DIAL :	SIZE	160 mm	19			
		COLOR	WHITE WITH BLACK GRADUATIONS	20			
7	SCALE TYPE :	°C	POINTER ADJUSTMENT	21			
			YES	22	FLANGE RATING	REFER TO BELOW TABLE	
8	SCALE LENGTH :	MFR. STD.	COLOR				
			MFR. STD	23	MANUFACTURER	Wika	
9	FORM :	FIG NO.	EVERY ANGLE	24	MODEL NO.	S5551	
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					

ITEM NO.	TAG NO.	LINE SIZE	WELL "U" mm (*) (NOTE 1)	STEM LENGTH (mm) (*)	OPER. TEMP. (°C)	DESIGN TEMP.(°C)/ PRESSURE (BARG)	RANGE (°C)	PRESSURE (barg) Norm./ Max.	PROCESS/WELL CONNECTION & RATING (ANSI)	Max. VELOCITY (cP)	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-P1-0001	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-P1-0001	Thermowell Nace
3	TG-2204A	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp A	BK-GCS-HY-120-PR-P1-0001	
3	TG-2205A	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp A	BK-GCS-HY-120-PR-P1-0001	
3	TG-2206A	2" TO 4" (Expanded)	150	200	70	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp A	BK-GCS-HY-120-PR-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	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-P1-0001	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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	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-P1-0001	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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	
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-P1-0001	

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد 03 BK-HD-GCS-CO-0008)							 HAVAYAR INDUSTRIAL GROUP		
	INSTRUMENT DATASHEETS / CERTIFICATES									شماره صفحه: 7 از 41
شماره پیمان: 053 - 073 - 9184	پروژه	بسته کاری	صادر کننده	تسهيلات	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						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				
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 _____						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: Barrier 37 NIPPLE & UNION MATERIAL: S.S. 38 LCD INDICATOR: YES 39 MANUFACTURER: * See list MODEL NO. : See list				
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 ☐										





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.

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد 03 BK-HD-GCS-CO-0008)						 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								
	6		For use in Intrinsically Safe System ☐ Other EExI, IIB, T4								
	7	Power Supply	Ingress Protection : IP 66								
			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 .											

[illegible]

 NISOC شماره پیمان: 053 - 073 – 9184		تگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و آبپنه تحت الارض خرید پکیج های کمپرسور گاز (رغت و برگشتی) بینک (فرار داد 03 -0008 -GCS-BK-HD)				 HAVAYAR INDUSTRIAL GROUP								
		INSTRUMENT DATASHEETS / CERTIFICATES				شماره صفحه: 11 از 41								
		پروژه	بسته کاری	صنایع کننده	تجهیزات	رشته	نوع مدارک	سروال	نسخه					
		BK	GCS	HY	120	IN	DS	0001	V01					
Data Sheet for Differential Pressure Gauge														
1 Type : Direct Rdg. ☒ 3-15 lb Reciever ☐ 2 Mounting : Direct ☒ Local ☐ Yoke ☐ Other ☐ 3 Dial : Diameter 160 mm Color : White / Black Lettering ,Non Rusting Metal 4 Case : SS316 ☒ Cast Aluminum ☐ Phenol ☐ 5 Ring : Screwed ☒ Hinged ☐ Slip ☒ 6 Blow-out Protection : Std ☐ None ☐ Back ☒ Disc ☒ 7 Lens : Solid Front ☐ 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 ☐ 13 Element Mtl. : Other (Note6) ☐ Steel ☐ 14 Socket Mtl. : SS ☒ 316SS ☐ Steel ☐ 15 Connection-NPT : SS ☒ 316SS ☐ 16 Movement: 1/4 in. ☐ 1/2 in. ☒ Other NPTM ☐ 17 Diaphragm Seal Nylon ☐ N/A ☒ Stainless Steel ☐ 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 (رقت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008 03)						 HAVAYAR INDUSTRIAL GROUP												
شماره پیمان: 053 - 073 – 9184		INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 12 از 41										
		پروژه		پیمانه کاری		صادر کننده		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/m³)		1/183				1/183				1/183				1/183					
15	DENSITY AT OP.COND. (KG/m³)		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 (Cp)		-				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 (قرارداد BK-HD-GCS-CO-0008 03)						 HAYAYAR INDUSTRIAL GROUP			
شماره پیمان: 053 - 073 – 9184		INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 13 از 41	
		پروژه	بسته کاری	صادر کننده	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-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/m³)		1/183		1/183		1/183		1/183		
15	DENSITY AT OP.COND. (KG/m³)		3/251		2/037		2/037		3/251		
16	COMPRESSIBILITY FACTOR (Z)		1		1		1		1		
17	MOL. WEIGHT	CP/CV	28	1/40	28	1/40	28	1/40	28	1/40	
18	OPERATING VISCOSITY (Cp)		-		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		

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008 03)																		
شماره پیمان: 053 - 073 – 9184		INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 14 از 41										
		پروژه		پیمانه کاری		صادر کننده		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-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/m³)		1/183				1/183				1/183				1/183					
15	DENSITY AT OP.COND. (KG/m³)		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 (Cp)		-				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 اینیه 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: 15 از 41		
		پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال			نسخه
		BK	GCS	HY	120	IN	DS	0001			V01
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					



خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(قرارداد BK-HD-GCS-CO-0008 03)



053 - 073 - 9184

INSTRUMENT DATASHEETS / CERTIFICATES

شماره صفحه: 16 از 41

پروژہ

پستہ کاری

صادر کنندہ

نصیحتات

رشته

مدری

سریال

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List of Sight Glass

[illegible]

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (فرار داد 03 BK-HD-GCS-CO-0008)						 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 °C		Design Temperature °C		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%		
Element	14	Allowable Pressure Drop @ Max. Flow				0.1				
	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		
Transmitter Unit	23	Gasket Type & Material								
	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				
	Accessories	39	Drains/Vents Material				316SS			
40		Integral Indicator / Mounting type				Yes / Direct				
41		Valve Manifold				5 valve-S.S316				
Miscell.	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 (فرار داد 03 BK-HD-GCS-CO-0008)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره 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-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 °C		Design Temperature °C		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-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										

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (فرار داد 03 BK-HD-GCS-CO-0008)						 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 °C		Design Temperature °C		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		-		
Element	14	Allowable Pressure Drop @ Max. Flow				0.2				
	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		
Transmitter Unit	23	Gasket Type & Material								
	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				
	Accessories	39	Drains/Vents Material				316SS			
40		Integral Indicator / Mounting type				Yes / Direct				
41		Valve Manifold				5 valve-S.S316				
Miscell.	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 (فرار داد 03 BK-HD-GCS-CO-0008)						 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 °C		Design Temperature °C		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%		
Element	14	Allowable Pressure Drop @ Max. Flow				0.1				
	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		
Transmitter Unit	23	Gasket Type & Material								
	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				
	Accessories	39	Drains/Vents Material				316SS			
40		Integral Indicator / Mounting type				Yes / Direct				
41		Valve Manifold				5 valve-S.S316				
Miscell.	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 (فرار داد 03 BK-HD-GCS-CO-0008)						 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 °C		Design Temperature °C		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%		
Element	14	Allowable Pressure Drop @ Max. Flow				0.1				
	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		
Transmitter Unit	23	Gasket Type & Material								
	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				
	Accessories	39	Drains/Vents Material				316SS			
40		Integral Indicator / Mounting type				Yes / Direct				
41		Valve Manifold				5 valve-S.S316				
Miscell.	42	Upstream Straight Run				10X				
	43	Downstream Straight Run				5X				
	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 (فرار داد 03 BK-HD-GCS-CO-0008)						 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	
		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 °C		Design Temperature °C		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		-	
Element	14	Allowable Pressure Drop @ Max. Flow				0.2			
	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	
Transmitter Unit	23	Gasket Type & Material							
	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			
	Accessories	39	Drains/Vents Material				316SS		
40		Integral Indicator / Mounting type				Yes / Direct			
41		Valve Manifold				5 valve-S.S316			
Miscell.	42	Upstream Straight Run				10X			
	43	Downstream Straight Run				5X			
	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 (فرار داد 03 BK-HD-GCS-CO-0008)						 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	
		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 °C		Design Temperature °C		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 (فرار داد 03 BK-HD-GCS-CO-0008)						 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 °C		Design Temperature °C		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%		
Element	14	Allowable Pressure Drop @ Max. Flow				0.1				
	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		
Transmitter Unit	23	Gasket Type & Material								
	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				
	Accessories	39	Drains/Vents Material				316SS			
40		Integral Indicator / Mounting type				Yes / Direct				
41		Valve Manifold				5 valve-S.S316				
Miscell.	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 (فرار داد 03 BK-HD-GCS-CO-0008)						 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 °C		Design Temperature °C		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		-		
Element	14	Allowable Pressure Drop @ Max. Flow				0.2				
	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		
Transmitter Unit	23	Gasket Type & Material								
	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				
	Accessories	39	Drains/Vents Material				316SS			
40		Integral Indicator / Mounting type				Yes / Direct				
41		Valve Manifold				5 valve-S.S316				
Miscell.	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 (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP	
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 26 از 41
		پروژه	پسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
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 °C	Design Temperature °C		65			85	
	10	Upper/Lower Kinetic Viscosity (mm2/S)							
Body & Cage	11	Upper/Lower Dynamic Viscosity (cP)			0.0209 / 2.084				
	12	Model/Type			Magnetic				
	13	C to C mm			HOLD				
	14	Allowable Oper. Temp. °C	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	
	Transmitter/Switch	23	Other Wetted Parts Material			S.S			
24		Float Dimension	indicator Housing Material		HOLD			S.S	
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	
Accessories	33	Housing Material	Integral Indicator		N/A			N/A	
	34								
	35								
	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				
Miscell.	43	Non Frosting Extension			N/A				
	44	Stilling Well			N/A				
	45	Surge Protection Device			N/A				
	46								
	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 1 1/2"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 نفتی بینک سطح الارض و ابنيه 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: 27 از 41	
		نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	پسته کاری		پروژه
		V01	0001	DS	IN	120	HY	GCS		BK
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 °C		Design Temperature °C		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. °C		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				
	Transmitter/Switch	24	Float Dimension		indicator Housing Material		HOLD		S.S	
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		
Accessories	34									
	35									
	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				
Miscell.	44	Stilling Well				N/A				
	45	Surge Protection Device				N/A				
	46									
	47	Manufacturer				AZARSAM (Eyyaz 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 1 1/2"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 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: 28 از 41	
		پروژه	پسته 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 °C	Design Temperature °C		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. °C	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				
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 نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 29 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			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 °C	Design Temperature °C		65		85			
	10	Upper/Lower Dynamic Viscosity (cP)			0.0209 / 2.084					
Transmitter	11	C to C mm			-					
	12	Model			3051					
	13	Type	Accuracy		DP level Transmitter		+/- 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			
Sensing & Body	21	Failure Mode Alarm			Up Scale					
	22	Element Type	Element Material		Diaphragm (VTC)		316SS			
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. °C		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 Corrosive 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 نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (فرار داد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 30 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			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 °C		Design Temperature °C		65		85		
	10	Upper/Lower Dynamic Viscosity (cP)				0.0209 / 2.084				
Transmitter	11	C to C mm				-				
	12	Model				3051				
	13	Type		Accuracy		DP level Transmitter		+/- 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		
Sensing & Body	21	Failure Mode Alarm				Up Scale				
	22	Element Type		Element Material		Diaphragm (VTC)		316SS		
	23	Max. Static Pressure (barg)		Allowable Oper. Temp. °C		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 Corrosive 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 نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 31 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			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 °C		Design Temperature °C		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 Transmitter		+/- 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. °C		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		
	29	Seal Type				N/A		N/A		
Diaphragm Seal	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 Corrosive 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 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: 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										

 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: 33 از 41		
		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/DESIGN NPPRESSURE (Bar)	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 03 BK-HD-GCS-CO-0008)						 HAVAYAR INDUSTRIAL GROUP	
		INSTRUMENT DATASHEETS / CERTIFICATES							
شماره پیمان: 053 - 073 - 9184		شماره صفحه: 34 از 41							
		پروژه BK	بسته کاری GCS	صادر کننده HY	تسهیلات 120	رشته IN	نوع مدرک DS	سریال 0001	نسخه 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/cm ² g)	N/A				N/A			
	Temp. Nor(°C)	- 40°C to +100°C				- 40°C to +100°C			
	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			
	- Proximitior	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 03 BK-HD-GCS-CO-0008)						 HAVAYAR INDUSTRIAL GROUP	
		INSTRUMENT DATASHEETS / CERTIFICATES							
شماره پیمان: 053 - 073 - 9184		شماره صفحه: 35 از 41							
		پروژه BK	بسته کاری GCS	صادر کننده HY	تسهیلات 120	رشته IN	نوع مدرک DS	سریال 0001	نسخه 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/cm ² g)	N/A				N/A			
	Temp. Nor(°C)	- 40°C to +100°C				- 40°C to +100°C			
	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			
	- Proximitior	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 03 BK-HD-GCS-CO-0008)						 HAVAYAR INDUSTRIAL GROUP	
		INSTRUMENT DATASHEETS / CERTIFICATES							
شماره پیمان: 053 - 073 - 9184		شماره صفحه: 36 از 41							
		پروژه BK	بسته کاری GCS	صادر کننده HY	تسهیلات 120	رشته IN	نوع مدرک DS	سریال 0001	نسخه 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/cm ² g)	N/A				N/A			
	Temp. Nor(°C)	- 40°C to +100°C				- 40°C to +100°C			
	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			
	- Proximitior	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 (رقت و برگشتی) بینک (فرار داد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 37 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			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 °C	Design Temperature °C		70		85			
	10	U/L Dynamic Viscosity (cP)					0.021/0.89			
Transmitter	11	C to C mm					-			
	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			
Sensing & Body	21	Failure Mode Alarm			Up Scale					
	22	Element Type	Element Material		Diaphragm		316SS			
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. °C		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 Corrosive 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 نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 38 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			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 °C	Design Temperature °C		70		85			
	10	U/L Dynamic Viscosity (cP)					0.021/0.89			
Transmitter	11	C to C mm					-			
	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			
Sensing & Body	21	Failure Mode Alarm			Up Scale					
	22	Element Type	Element Material		Diaphragm		316SS			
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. °C		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 Corrosive 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 (رقت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 39 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			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 °C	Design Temperature °C		70		85			
	10	U/L Dynamic Viscosity (cP)					0.021/0.89			
Transmitter	11	C to C mm					-			
	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			
Sensing & Body	21	Failure Mode Alarm			Up Scale					
	22	Element Type	Element Material		Diaphragm		316SS			
	23	Max. Static Pressure (barg)	Allowable Oper. Temp. °C		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 Corrosive 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 ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (فراراد 03-0008 HD-GCS-BK)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 40 از 41		
		پروژه	پمپه کاری	صنایع کننده	تجهیزات	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										
4	Diaphragm	●		Bourdon	○		Bellows	○		
							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
Tag No.	Process Connection	Adj. Range		Set Point		Pressure		Service or Line Number		Remark
		(Bar G)		(Bar G)		Design Working				
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		

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008 03)								
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 41 از 41	
		نسخه	سرپال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری		پروژه
		V01	0001	DS	IN	120	HY	GCS		BK
Instrument Data Sheet For Temperature Switch										
GENERAL										
1.TAG.NO		TS-2191A		TS-2194A		TS-2191B		TS-2194B		
2.Equipment		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		
4.SERVICE		Gas		Gas		Gas		Gas		
5.RANGE		0-200C		0-200'C		0-200'C		0-200'C		
6.Ingress Protection		IP 66/Exd-IIB SIL Certified								
THERMOWELL										
7.TYPE SYSTEM		Flnage		Flange		Flange		Flange		
8 MATERIAL		AISI 316/Nace		AISI 316/Nace		AISI 316/Nace		AISI 316/Nace		
9.CONNECTION LOCATION		Bottom		Bottom		Bottom		Bottom		
10.TUBING LENGTH		N/A		N/A		N/A		N/A		
11.TUBING TYPE & MATERIAL		N/A		N/A		N/A		N/A		
12.WELL CONN.SIZE & TYPE		2"#300		2"#600		2"#300		2"#600		
13.WELL MATERIAL		316 S.S		316 S.S		316 S.S		316 S.S		
14.'U' DIMENSION(NOMINAL)		Hold		Hold		Hold		Hold		
SWITCH										
15.TYPE		Snap Action		Snap Action		Snap Action		Snap Action		
16.QUANTITY		1/SPD		1/SPD		1/SPD		1/SPD		
FORM										
17.ENCLOSURE		IP66		IP66		IP66		IP66		
18.RATING.VOLTS		24 VDC		24 VDC		24 VDC		24 VDC		
19.AMPS		2		2		2		5		
20.LOAD TYPE		INDUCTIVE		INDUCTIVE		INDUCTIVE		INDUCTIVE		
21.DIFF.:FIXED		YES/-		YES/-		YES/-		YES/-		
ADJUST										
22.ELECTRICAL CONNECTION		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		
SERVICE CONDITIONS										
27.TEMP.:OPER 'C		129'C		147'C		129'C		147'C		
28.PRESS.:OPER 'C		18		54/9		18		54/9		
29.TRIP POINT 'C		HOLD		Hold		Hold		Hold		
30.MANUFACTURER		HOLD		Hold		Hold		Hold		
31.MANUFACTURER'S MODEL NO.		HOLD		HOLD		HOLD		HOLD		