



NISOC

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض
خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(قرارداد ۰۳_۰۰۰۸-CO-GCS-HD-BK)



INSTRUMENT DATASHEETS / CERTIFICATES

نسخه	سریال	نوع	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
V00	0001	DS	IN	120	HY	GCS	BK

شماره صفحه: 1 از 41

IN: P&ID sheet to be specified.
IN: Instrument Index is not acceptable.
IN: Document shall be updated based on latest approved P&ID.
IN: Electrical connection to be reviewed again.

طرح نگهداشت و افزایش تولید ۲۷ مخزن

INSTRUMENT DATASHEETS / CERTIFICATES

نگهداشت و افزایش تولید میدان نفتی بینک

V00	SEP.2023	IFR	Havayar Co.	M.Fakharian	A.M.Mohseni	
Rev.	Date	Purpose of Issue/Status	Prepared By	Checked By	Approved By	Client Approval

Class:

CLIENT Doc. Number:

status:

IFA: Issued For Approval

IFR: Issued For Review

IFI: Issued For Information

AFC: Approved For Construction



NISOC

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

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)



INSTRUMENT DATASHEETS / CERTIFICATES

شماره صفحه: 2 از 41

نسخه	سریال	نوع	رشته	تسهیلات	صادر کنند	بسته کاری	پروژه
V00	0001	DS	IN	120	HY	GCS	BK

Tabulation Of Revised Pages

Page	V00	V01	V02	V03	V04
1	X				
2	X				
3	X				
4	X				
5	X				
6	X				
7	X				
8	X				
9	X				
10	X				
11	X				
12	X				
13	X				
14	X				
15	X				
16	X				
17	X				
18	X				
19	X				
20	X				
21	X				
22	X				
23	X				
24	X				
25	X				
26	X				
27	X				
28	X				
29	X				
30	X				
31	X				
32	X				
33	X				
34	X				
35	X				
36	X				
37	X				
38	X				
39	X				
40	X				
41	X				
42					
43					
44					

Page	V00	V01	V02	V03	V04
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					



شماره پیمان:
053 - 073 - 9184

تگداشت 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)



شماره صفحه: 3 از 41

INSTRUMENT DATASHEETS / CERTIFICATES

نسخه	سربرگ	نوع مترک	رشته	تسهلات	صنعت کننده	پسته کاری	پروژه
V00	0001	DS	IN	120	HY	GCS	BK

Data Sheet for Pressure Gauge

1	Type :	Direct Rdg. ☒ Other ☐ liquid filled	3-15 lb Reciever ☐
2	Mounting :	Surface ☐ Local ☒	Flush ☐
3	Dial :	Diameter 160 mm	Color : White / Black Lettering ,Non Rusting Metal
4	Case :	Cast Iron ☐ SS316 ☒	Phenol ☐
5	Ring :	Screwed ☒ Hinged ☐ Std ☐ Other ☐	Slip ☐
6	Blow-out Protection :	Solid Front ☐ Plastic ☐	Back ☐ Disc ☐ Other ☐ Safety Glass (shatter proof)
7	Lens :	Glass ☒	As per List ☒
8	Options :		
9	Nominal Accuracy Required :	± 1% of full scale	
10	Over range protection :	1.3 times the maximum scale reading	
11	MFR. & Model No.	Wika 233.50.160	
12	Press Element :	Bourdon ☒	BelloWS ☐
13	Element Mtl. :	Other ☐ Bronze ☐ 316SS	Steel ☐
14	Socket Mtl. :	Other ☐ Bronze ☐ 316SS	Steel ☐
15	Connection-NPT :	1/4 in. ☐ 1/2 in. ☒	Other ☐ NPTM (refer to note)
16	Movement:	Bottom ☒ Back ☐ SS ☒	Stainless Steel ☐
17	Diaphragm Seal	Nylon ☐ As per List ☐	Type ☐ Other Mtl. ☐
18	Ingress Protection :	IP 65	
19	Manifold S.S316 2 valve	☒	

Item	Tag No.	Range (bar/g)	Process Fluid/State	Design		Operating		LINE NO./EQUIPMENTNO.	P&ID NO.	Accessories	NOTE
				Press (bar/g)	Temp (C°)	Press (bar/g)	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	
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	
	PG-2193A		Process gas Comp A	62	180	17.1	59.9	2nd STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
			Process gas Comp A	62	180	54.9	147	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
			Instrument Air Comp A	12.5	85	8	65	ISA-112-0001A-AZ00-2"-NP	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"-NP	BK-GCS-HY-120-PR-PI-0001		
9	PG-2205A	0-4	GAS	5	85	1.5	65	FLR-112-0009A-AN07-1"-NP	BK-GCS-HY-120-PR-PI-0001		
10	PG-2206A	0-6	Water console Comp A	7	85	3	65	CWS-112-0003A-C.S-3"-PT	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"-PT	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"-PT	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	
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-112-0001A-AZ00-2"-NP	BK-GCS-HY-120-PR-PI-0001		
18			Oil p B	10	85	6	70	OIL-112-0004A-S.S-1.1/2"-NP	BK-GCS-HY-120-PR-PI-0001		
19			Oil p 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"-NP	BK-GCS-HY-120-PR-PI-0001		
21	PG-2205B	0-4	GAS	5	85	1.5	65	FLR-112-0009A-AN07-1"-NP	BK-GCS-HY-120-PR-PI-0001		
22	PG-2206B	0-6	Water console Comp B	7	85	3	65	CWS-112-0003A-C.S-3"-PT	BK-GCS-HY-120-PR-PI-0001	Pulsation Damper (Snubber)	
	PG-2207B	0-6	Water console Comp B	7	85	3	65	CWS-112-0004A-C.S-3"-PT	BK-GCS-HY-120-PR-PI-0001	Pulsation Damper (Snubber)	
	PG-2208B	0-6	Water console Comp B	7	85	3	58	CWS-112-0002A-C.S-3"-PT	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	
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-112-0001A-AZ00-2"-NP	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"-NP	BK-GCS-HY-120-PR-PI-0001		
33	PG-2205C	0-4	GAS	5	85	1.5	65	FLR-112-0009A-AN07-1"-NP	BK-GCS-HY-120-PR-PI-0001		
34	PG-2206C	0-6	Water console Comp C	7	85	3	65	CWS-112-0003A-C.S-3"-PT	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"-PT	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"-PT	BK-GCS-HY-120-PR-PI-0001		

IN1: Overrange protector to be considered.

IN2: dicripancy with spec.

IN3: NACE to be rechecked and updated.

IN1

IN2

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید کپیج 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
	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه	
	V00	0001	DS	IN	120	HY	GCS	Bk	

Data Sheet for Pressure Transmitter

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
	6		For use in Intrinsically Safe System ☒ Other EExia, IIB, T4
	7	Power Supply	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 : 0.2% 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.

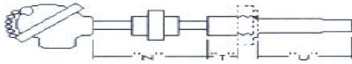
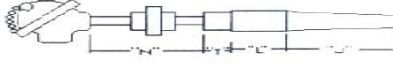
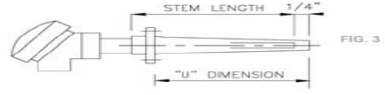
		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و البته تحت الارض خرید پکیج های کمپرسور گاز (رگت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)					 HAVAYAR INDUSTRIAL GROUP																																																																																																																																																																																																																																																															
NISOC		INSTRUMENT DATASHEETS / CERTIFICATES																																																																																																																																																																																																																																																																				
شماره پیمان: 053 - 073 - 9184		پروژه	بسته کاری	ضمانت کننده	تسهلات	رشته	نوع مترک	سریال	نسخه	شماره صفحه: 6 از 41																																																																																																																																																																																																																																																												
BK		GCS	HY	120	IN	DS	0001	V80																																																																																																																																																																																																																																																														
BI-METALLIC THERMOMETER WITH WELL. (Complete Assembly)																																																																																																																																																																																																																																																																						
<table><tr><td colspan="7">THERMOMETER</td><td colspan="6">WELL</td></tr><tr><td>1</td><td>ELEMENT TYPE</td><td colspan="2">BI-METAL ■</td><td colspan="5">GAS FILLED CAPILLARY □</td><td>15</td><td>NONE □</td><td colspan="2">INCLUDED ■ 6</td></tr><tr><td>2</td><td>STEM</td><td colspan="2">THREADED (NPTM) ■</td><td colspan="2">UNION □</td><td colspan="5">PLAIN □</td><td>16</td><td>MATERIAL :</td><td>304 SS □</td><td>316 SS ■</td><td>OTHER</td></tr><tr><td></td><td>MATERIAL</td><td colspan="11">316 S.S.</td><td>17</td><td>CONSTRUCTION</td><td>BUILT-UP □</td><td>DRILLED BAR STOCK ■</td></tr><tr><td>3</td><td>STEM OR UNION THREADED :</td><td colspan="2">1/2 IN. ■</td><td colspan="5">3/4 IN. □</td><td></td><td></td><td colspan="3">OTHER</td></tr><tr><td>4</td><td>STEM DIAMETER</td><td colspan="2">MFR. STD □</td><td colspan="2">6 mm. ■</td><td colspan="5">8 mm. □</td><td></td><td></td><td colspan="2">TAPERED ■</td><td>STRAIGHT □</td></tr><tr><td>5</td><td>CASE MATERIAL :</td><td colspan="2">MFR. STD □</td><td colspan="2">OTHER</td><td colspan="5">S.S</td><td>18</td><td>INTERNAL CONNECTION NOMINAL SIZE</td><td colspan="2">1/2" PIPE THREAD</td></tr><tr><td>6</td><td>DIAL :</td><td colspan="2">SIZE</td><td colspan="2">160 mm</td><td colspan="2">COLOR</td><td colspan="5">WHITE WITH BLACK GRADUATIONS</td><td>19</td><td></td><td colspan="2"></td></tr><tr><td>7</td><td>SCALE TYPE :</td><td colspan="2">°C</td><td colspan="2">POINTER ADJUSTMENT</td><td colspan="5">YES</td><td>20</td><td></td><td colspan="2"></td></tr><tr><td>8</td><td>SCALE LENGTH :</td><td colspan="2">MFR. STD.</td><td colspan="2">COLOR</td><td colspan="5">MFR STD</td><td>21</td><td></td><td colspan="2"></td></tr><tr><td>9</td><td>FORM :</td><td colspan="11">FIG NO. EVERY ANGLE</td><td>22</td><td>FLANGE RATING</td><td colspan="2">REFER TO BELOW TABLE</td></tr><tr><td>10</td><td>EXTERNAL CALIBRATOR ■</td><td colspan="11"></td><td>23</td><td>MANUFACTURER</td><td colspan="2">Wika</td></tr><tr><td>11</td><td>PROTECTION CLASS :</td><td colspan="11">IP-65</td><td>24</td><td>MODEL NO.</td><td colspan="2">S5551</td></tr><tr><td>12</td><td>ACCURACY :</td><td colspan="11">±1 % OF FULL SCALE RANGE</td><td colspan="3"></td></tr><tr><td>13</td><td>WINDOW MATERIAL :</td><td colspan="11">SHATTER PROOF TYPE</td><td colspan="3"></td></tr><tr><td>14</td><td>RING TYPE/MATERIAL :</td><td colspan="11">SCREWED 304 S.S. *</td><td colspan="3"></td></tr></table>													THERMOMETER							WELL						1	ELEMENT TYPE	BI-METAL ■		GAS FILLED CAPILLARY □					15	NONE □	INCLUDED ■ 6		2	STEM	THREADED (NPTM) ■		UNION □		PLAIN □					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. ■		8 mm. □							TAPERED ■		STRAIGHT □	5	CASE MATERIAL :	MFR. STD □		OTHER		S.S					18	INTERNAL CONNECTION NOMINAL SIZE	1/2" PIPE THREAD		6	DIAL :	SIZE		160 mm		COLOR		WHITE WITH BLACK GRADUATIONS					19				7	SCALE TYPE :	°C		POINTER ADJUSTMENT		YES					20				8	SCALE LENGTH :	MFR. STD.		COLOR		MFR STD					21				9	FORM :	FIG NO. EVERY ANGLE											22	FLANGE RATING	REFER TO BELOW TABLE		10	EXTERNAL CALIBRATOR ■												23	MANUFACTURER	Wika		11	PROTECTION CLASS :	IP-65											24	MODEL NO.	S5551		12	ACCURACY :	±1 % OF FULL SCALE RANGE														13	WINDOW MATERIAL :	SHATTER PROOF TYPE														14	RING TYPE/MATERIAL :	SCREWED 304 S.S. *													
THERMOMETER							WELL																																																																																																																																																																																																																																																															
1	ELEMENT TYPE	BI-METAL ■		GAS FILLED CAPILLARY □					15	NONE □	INCLUDED ■ 6																																																																																																																																																																																																																																																											
2	STEM	THREADED (NPTM) ■		UNION □		PLAIN □					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. ■		8 mm. □							TAPERED ■		STRAIGHT □																																																																																																																																																																																																																																																							
5	CASE MATERIAL :	MFR. STD □		OTHER		S.S					18	INTERNAL CONNECTION NOMINAL SIZE	1/2" PIPE THREAD																																																																																																																																																																																																																																																									
6	DIAL :	SIZE		160 mm		COLOR		WHITE WITH BLACK GRADUATIONS					19																																																																																																																																																																																																																																																									
7	SCALE TYPE :	°C		POINTER ADJUSTMENT		YES					20																																																																																																																																																																																																																																																											
8	SCALE LENGTH :	MFR. STD.		COLOR		MFR STD					21																																																																																																																																																																																																																																																											
9	FORM :	FIG NO. EVERY ANGLE											22	FLANGE RATING	REFER TO BELOW TABLE																																																																																																																																																																																																																																																							
10	EXTERNAL CALIBRATOR ■												23	MANUFACTURER	Wika																																																																																																																																																																																																																																																							
11	PROTECTION CLASS :	IP-65											24	MODEL NO.	S5551																																																																																																																																																																																																																																																							
12	ACCURACY :	±1 % OF FULL SCALE RANGE																																																																																																																																																																																																																																																																				
13	WINDOW MATERIAL :	SHATTER PROOF TYPE																																																																																																																																																																																																																																																																				
14	RING TYPE/MATERIAL :	SCREWED 304 S.S. *																																																																																																																																																																																																																																																																				
ITEM NO.	TAG NO.	LINE SIZE	WELL "U" mm (*) (NOTE 1)	STEM LENGTH (mm) (*)	OPER. TEMP. (°C)	DESIGN TEMP. (°C)/ PRESSURE (BAR/G)	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-Pi-0001																																																																																																																																																																																																																																																										
2	TG-2193A	2nd STAGE SUCTION SNUBBER	Hold	HOLD	60	180 / 62	0-120	17.1 / 22	2" #300 1/2" NPT	40	Process Gas Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
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-Pi-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-Pi-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-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2210A	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2211A	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2217A	Water Reservoir	Hold	200	65	85 / 3.5	0-120	ATM / ATM	2" #300 1/2" NPT	40	Water console Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2221A	3" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Water console Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2215A	1" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2216A	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2213A	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2214A	2 1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp A	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
1	TG-2190B	1ST STAGE SUCTION SNUBBER	Hold	HOLD	37	180 / 24.5	0-100	4.9 / 22	2" #300 1/2" NPT	40	Process Gas Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
2	TG-2193B	2nd STAGE SUCTION SNUBBER	Hold	HOLD	60	180 / 62	0-120	17.1 / 22	2" #300 1/2" NPT	40	Process Gas Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2204B	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2205B	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2206B	2" TO 4" (Expanded)	150	200	70	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2210B	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2211B	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2217B	Water Reservoir	Hold	200	65	85 / 3.5	0-120	ATM / ATM	2" #300 1/2" NPT	40	Water console Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2221B	3" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Water console Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2215B	1" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2216B	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2213B	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2214B	2 1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp B	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
1	TG-2190C	1ST STAGE SUCTION SNUBBER	Hold	HOLD	37	180 / 24.5	0-100	4.9 / 22	2" #300 1/2" NPT	40	Process Gas Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
2	TG-2193C	2nd STAGE SUCTION SNUBBER	Hold	HOLD	60	180 / 62	0-120	17.1 / 22	2" #300 1/2" NPT	40	Process Gas Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2204C	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2205C	2" TO 4" (Expanded)	150	200	60	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2206C	2" TO 4" (Expanded)	150	200	70	85 / 10	0-120	5 / 6	1 1/2" #300 1/2" NPT	40	Lube Oil Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2210C	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2211C	2" TO 4" (Expanded)	150	200	60	85 / 5	0-120	2 / 2.2	1 1/2" #300 1/2" NPT	40	N2 Gas Supply Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2217C	Water Reservoir	Hold	200	65	85 / 3.5	0-120	ATM / ATM	2" #300 1/2" NPT	40	Water console Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2221C	3" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Water console Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2215C	1" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2216C	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2213C	1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										
3	TG-2214C	2 1/2" TO 4" (Expanded)	150	200	65	85 / 7	0-120	3 / 4	1 1/2" #300 1/2" NPT	40	Jacket Cooling Comp C	BK-GCS-HY-120-PR-Pi-0001																																																																																																																																																																																																																																																										

IN: Nace shall be reviewed for all items and considered in Table.

 NISOC شماره پیمان: 053 - 073 - 9184	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابلیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد 03 BK-HD-GCS-CO-0008)						 شماره صفحه: 7 از 41		
	INSTRUMENT DATASHEETS / CERTIFICATES								
پروژه	پروژه	بسته کاری	صنایع کننده	تجهیزات	رشته	نوع مدرک	سریال	نسخه	
BK	GCS	HY	120	IN	DS	0001	V00		

Data Sheet for Temprature Transmitter/Element/Thermowell									
HEAD									
1	COMPLETE ASSEMBLY	YES	OTHER						
2	SCREWED COVER	■	OTHER						
3	PROTECTION CLASS	IP-66							
4	HAZ. AREA CLASSIFICATION	EXia IIB T4							
5	MATERIAL	316 S.S.	ELECTRICAL CONN.	M20 X 1.5					
6	NIPPLE SIZE	1/2"	DIM."N"	UNION	□				
7	AMBIENT TEMPERATURE IN DIRECT SUNLIGHT								
ELEMENT									
8	PLATINUM	■ 100/0°C	NICKEL	□	OTHER				
9	TYPE	PT100							
10	TEMPERATURE RANGE	-100°C to 500 °C							
11	LEADS	STD	□	POTTED	□	HERM. SEALED	■		
12	SHEAT MATERIAL	316 S.S.	O.D.	6 mm					
13	TYPE	SINGLE	■	DUPLX	□				
14	SPRING LOADED	YES	■	NO	□				
15	CONNECTION	2-WIRE	□	3-WIRE	■	4-WIRE	□		
16	LEAD WIRES	■	RECEPTACLE	□		TERMINAL BLOCK	■		
OTHER									
WELL OR TUBE									
17	NONE	□	INCLUDE	■	BY OTHERS	□			
18	MATERIAL	AISI 316 S.S.							
19	CONSTRUCTION	TAPERED	■	STRAIGHT	□				
20	SOILD BAR-STOCK	■	BUILT-UP	□	CLOSE-END TUBE	□			

21	BORE DIAMETER	6.6 mm (NOTE 4)
22	OUTSIDE DIAMETER AT SUPPORT/TIP	28/22 mm (NOTE 4)
23	LAGGING EXTENTION "T"	VTA
24	TEST	HYDROSTATIC AND PENETRANT TEST
25	CONNECTION TO SENSOR	1/2" NPT F
26	PROCESS CONNECTION	1 1/2" FLANGE (SEE Next TABLE)
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	± 0.2 % 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

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.

IN: NACE requirement
to be rechecked and
updated as a column in
table.

خرید یکجای های کمپرسور گاز (رفت و برگشتی) بینک

053 - 073 - 9184

INSTRUMENT DATASHEETS / CERTIFICATES

شماره صفحه: 8 از 41

List of TT/TE/TW

ITEM NO	TAG NO	LINE SIZE	WELL DIMENSION (mm) (*)		OPER. TEMP (°C)	DESIGN TEMP (°C)	MAX VELOCITY (m/s)	RANGE (°C)	PRESSURE See Max (barg)	PROCESS CONNECTION & RATING (ANSI)	PNEUMATIC	TRANSMITTER MOUNTING	SERVICE	P&ID NO	MFR. & Model No	NOTES
			U	STEM												
1	TT-2122A	10"	250	290	37	180	9.0	0-100	4.9 / 22	1 1/2", 300#	Yes	REMOTE TYPE	Process gas Inlet Comp A	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
2	TT-2191A	—	HOLD	HOLD	129	180	4.0	0-200	18 / 22	2", 300#	Yes	REMOTE TYPE	15TG DISCHARGE SNUBBER	BK-GCS-HY-120-PR-Pi-0001		
3	TT-2123A	10"	250	290	129	180	4.0	0-200	18 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0036A-CN05-10"-NP	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
4	TT-2132A	6"	200	240	60	180	8.0	0-120	17.1 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
5	TT-2133A	6"	200	240	147	180	3.5	0-200	54.9 / 22	1 1/2", 600#	Yes	REMOTE TYPE	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
6	TT-2194A	—	HOLD	HOLD	147	180	3.5	0-200	54.9 / 22	2", 600#	Yes	REMOTE TYPE	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-Pi-0001		
7	TT-2204A	2" TO 4" (Expanded)	150	200	60	85	0.3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	LODR DI OIL-112-0008A-5.5-2"-NP	BK-GCS-HY-120-PR-Pi-0001		
8	TT-2203A	—	200	250	70	85	1.1	0-120	ATM / 6	1/2" NPT	Yes	REMOTE TYPE	crankcase CompA	BK-GCS-HY-120-PR-Pi-0001		
9	TT-2213A	—	HOLD	HOLD	65	85	-	0-120	ATM / 3	2", 300#	Yes	REMOTE TYPE	Water Reservoir	BK-GCS-HY-120-PR-Pi-0001		
10	TT-2214A	—	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor NDE	BK-GCS-HY-120-PR-Pi-0001		
11	TT-2215A	—	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor DE	BK-GCS-HY-120-PR-Pi-0001		
12	TT-2216A	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg1	BK-GCS-HY-120-PR-Pi-0001		
13	TT-2218A	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg2	BK-GCS-HY-120-PR-Pi-0001		
14	TT-2217A	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg2	BK-GCS-HY-120-PR-Pi-0001		
15	TT-2219A	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg1	BK-GCS-HY-120-PR-Pi-0001		
16	TE-2222A TT-2223A TE-2224A	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor T sensor	BK-GCS-HY-120-PR-Pi-0001		
17	TE-2225A TE-2226A TE-2227A	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor S sensor	BK-GCS-HY-120-PR-Pi-0001		
18	TE-2228A TE-2229A TE-2230A	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor R sensor	BK-GCS-HY-120-PR-Pi-0001		
19	TT-2122B	10"	250	290	37	180	9.0	0-100	4.9 / 22	1 1/2", 300#	Yes	REMOTE TYPE	Process gas Inlet Comp B	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
20	TT-2191B	—	HOLD	HOLD	129	180	4.0	0-200	18 / 22	2", 300#	Yes	REMOTE TYPE	15TG DISCHARGE SNUBBER	BK-GCS-HY-120-PR-Pi-0001		
21	TT-2192B	10"	250	290	129	180	4.0	0-200	18 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0036A-CN05-10"-NP	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
22	TT-2197B	6"	200	240	60	180	8.0	0-120	17.1 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
23	TT-2123B	6"	200	240	147	180	3.5	0-200	54.9 / 22	1 1/2", 600#	Yes	REMOTE TYPE	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
24	TT-2194B	—	HOLD	HOLD	147	180	3.5	0-200	54.9 / 22	2", 600#	Yes	REMOTE TYPE	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-Pi-0001		
25	TT-2204B	2" TO 4" (Expanded)	150	200	60	85	0.3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	LODR DI OIL-112-0008A-5.5-2"-NP	BK-GCS-HY-120-PR-Pi-0001		
26	TT-2203B	—	200	250	70	85	1.1	0-120	ATM / 6	1/2" NPT	Yes	REMOTE TYPE	crankcase CompA	BK-GCS-HY-120-PR-Pi-0001		
27	TT-2213B	—	HOLD	HOLD	65	85	-	0-120	ATM / 3	2", 300#	Yes	REMOTE TYPE	Water Reservoir	BK-GCS-HY-120-PR-Pi-0001		
28	TT-2214B	—	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor NDE	BK-GCS-HY-120-PR-Pi-0001		
29	TT-2215B	—	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor DE	BK-GCS-HY-120-PR-Pi-0001		
30	TT-2216B	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg1	BK-GCS-HY-120-PR-Pi-0001		
31	TT-2218B	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg2	BK-GCS-HY-120-PR-Pi-0001		
32	TT-2217B	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg2	BK-GCS-HY-120-PR-Pi-0001		
33	TT-2219B	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg1	BK-GCS-HY-120-PR-Pi-0001		
34	TE-2222B TT-2223B TE-2224B	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor T sensor	BK-GCS-HY-120-PR-Pi-0001		
35	TE-2225B TE-2226B TE-2227B	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor S sensor	BK-GCS-HY-120-PR-Pi-0001		
36	TE-2228B TE-2229B TE-2230B	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor R sensor	BK-GCS-HY-120-PR-Pi-0001		
37	TT-2122C	10"	250	290	37	180	9.0	0-100	4.9 / 22	1 1/2", 300#	Yes	REMOTE TYPE	Process gas Inlet Comp C	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
38	TT-2191C	—	HOLD	HOLD	129	180	4.0	0-200	18 / 22	2", 300#	Yes	REMOTE TYPE	15TG DISCHARGE SNUBBER	BK-GCS-HY-120-PR-Pi-0001		
39	TT-2192C	10"	250	290	129	180	4.0	0-200	18 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0036A-CN05-10"-NP	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
40	TT-2197C	6"	200	240	60	180	8.0	0-120	17.1 / 22	1 1/2", 300#	Yes	REMOTE TYPE	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
41	TT-2123C	6"	200	240	147	180	3.5	0-200	54.9 / 22	1 1/2", 600#	Yes	REMOTE TYPE	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-Pi-0001		Loose Item U Size & rating to be checked by client
42	TT-2194C	—	HOLD	HOLD	147	180	3.5	0-200	54.9 / 22	2", 600#	Yes	REMOTE TYPE	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-Pi-0001		
43	TT-2204C	2" TO 4" (Expanded)	150	200	60	85	0.3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	LODR DI OIL-112-0008A-5.5-2"-NP	BK-GCS-HY-120-PR-Pi-0001		
44	TT-2203C	—	200	250	70	85	1.1	0-120	ATM / 6	1/2" NPT	Yes	REMOTE TYPE	crankcase Comp C	BK-GCS-HY-120-PR-Pi-0001		
45	TT-2213C	—	HOLD	HOLD	65	85	-	0-120	ATM / 3	2", 300#	Yes	REMOTE TYPE	Water Reservoir	BK-GCS-HY-120-PR-Pi-0001		
46	TT-2214C	—	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor NDE	BK-GCS-HY-120-PR-Pi-0001		
47	TT-2215C	—	N/A	N/A	N/A	N/A	N/A	0-120	N/A	N/A	Yes	REMOTE TYPE	Main Motor DE	BK-GCS-HY-120-PR-Pi-0001		
48	TT-2216C	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg1	BK-GCS-HY-120-PR-Pi-0001		
49	TT-2218C	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Packing Stg2	BK-GCS-HY-120-PR-Pi-0001		
50	TT-2217C	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg2	BK-GCS-HY-120-PR-Pi-0001		
51	TT-2219C	—	N/A	N/A	N/A	N/A	N/A	HOLD	N/A	N/A	Yes	REMOTE TYPE	Cylinder Stg1	BK-GCS-HY-120-PR-Pi-0001		
52	TE-2222C TT-2223C TE-2224C	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor T sensor	BK-GCS-HY-120-PR-Pi-0001		
53	TE-2225C TE-2226C TE-2227C	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor S sensor	BK-GCS-HY-120-PR-Pi-0001		
54	TE-2228C TE-2229C TE-2230C	—	N/A	N/A	N/A	N/A	N/A	RTD Range	N/A	N/A	Yes	REMOTE TYPE	Main Motor R sensor	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: 9 از 41	
		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
		Bk	GCS	HY	120	IN	DS	0001		V00
Data Sheet for Differential Pressure Transmitter										
GENERAL	1	Tag No.: (Refer to Next Page)	Service: (Refer to Next Page)							
	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							
TRANSMITTER	8	Trans. Output	117 V 60 Hz ☒ Other: ac ☐ dc ☐ Volts : 24 VDC Loop Powered							
	9		4-20mA ☒ 10-50mA ☐ 21-10 kpa(3-15 psig) ☐ Other 4-20mA Smart HART							
UNIT	10	Service	Transmitter Accuracy : Better than 0.2% of Calibrated Span							
	11	Element Type	Flow ☐	Level ☐	Diff. Pressure ☒	Other				
	12	Material	Diaphragm ☒	Helix ☐	Bourdon ☐	Bellows ☐	Other			
	13	Range	Body Epoxy Painted Die Cast Aluminum Copper free Element 316 S.S. as minimum							
	14	Rating	Fixed ☐	Adj. Range ☒	Set At (Refer to Next Page)					
	15	Process Data	Overrange Protection: at least 1.3 times the maximum range							
	16	Process Conn.	Press: Normal Max Element Range (Refer to Next Page)							
	17		1/2 in. NPT ☒ Other Male with wrench flats							
OPTIONS	18	Electrical Conn.	Location: Bottom ☒ Back ☐ Other							
	19	Miscellaneous	MFR STD ☐ Other ISO M20x1.5							
	20	Diaphragm Seal	Filt Reg. ☐ Sup. Gage ☐ Output Gage ☐ Charts							
	21	Manifold	Diaph Seal ☐ (N/A) Type : Capillary Length: Mtl : Conn. Fill Fluid : Flushing Connection :							
	22	MFR. & Model No.	Valve Manifold : See List							
		22	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.

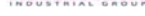
5- Each Instrument Shall Have a S.S. Tag Plate With Purchaser's Tag Number, The Tag Plate Shall Be Permanently Attached To The Instrument .



شماره پیمان:
053 - 073 - 9184

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض

خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(قرارداد BK-HD-GCS-CO-0008_03)



شماره صفحه: 10 از 41

INSTRUMENT DATASHEETS / CERTIFICATES

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صاندر کننده	بسته کاری	پروژه
V00	0001	DS	IN	120	HY	GCS	Bk

List of DPT

[illegible]

 NISOC شماره پیمان: 053 - 073 – 9184		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-IN: Chose one of them.				 HAVAYAR INDUSTRIAL GROUP		
		INSTRUMENT DATA				شماره صفحه: 11 از 41		
		پروژه	پسمه کاری	صنایع کننده	رشته	نوع مترک	سریال	نسخه
		BK	GCS	HY	120	IN	DS	0001 V00

Data Sheet for Differential Pressure Gauge													
1	Type :	Direct Rdg. ☒	3-15 lb Reciever ☐										
2	Mounting :	Other ☒ liquid filled	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 ☐	Other ☐	None ☐	Back ☒	Disc ☒							
7	Lens :	Glass ☒	Plastic ☐	Other ☐	Safety Glass (shatter proof)								
8	Options :	Pulsation Damper ☐ 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 ☒	Belloows ☐										
13	Element Mtl. :	Other ☐ (Note6)	Steel ☐										
14	Socket Mtl. :	SS ☒	Other ☐ 316SS	Steel ☐									
15	Connection-NPT :	1/4 in. ☐	1/2 in. ☒	Other ☐ NPTM									
16	Movement:	Bottom ☒	Back ☐	SS ☒									
17	Diaphragm Seal	N/A	Other ☐	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 03 BK-HD-GCS-CO-0008)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 12 از 41
		پروژه	پسته کاری	صادر کننده	سهیلات	رشته	نوع مدرک	سریال	نسخه	
		BK	GCS	HY	120	IN	DS	0001	V00	
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		3		3		3		3	
11	NORMAL FLOW		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)		1.23		1.23		1.23		1.23	
15	DENSITY AT OP.COND. (KG/m³)		1.55		1.55		1.24		2.38	
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		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 A105	
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	

IN: Material to rechecked.

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد 03 0008-BK-HD-GCS-CO)									
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 13 از 41	
		رشته		نوع مدرک		سریال		نسخه			
		BK	GCS	HY	120	IN	DS	0001	V00		
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 Nm ³ /h		3		3		3		3		
11	NORMAL FLOW Nm ³ /h		3		3		3		3		
12	PRESS. OPERATING / DESIGN (BARG)		1.5 12		1.5 12		1.2 12		1.2 12		
13	TEMP. OPERATING / DESIGN (°C)		52 85		52 85		52 85		52 85		
14	DENSITY AT ST. COND. (KG/m ³)		1.23		1.23		1.23		1.23		
15	DENSITY AT OP.COND. (KG/m ³)		1.55		1.55		1.24		2.38		
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		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 Nm ³ /h		3 Nm ³ /h		3 Nm ³ /h		3 Nm ³ /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 A105		
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		

IN: Material to rechecked.

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (قرارداد 03 0008-BK-HD-GCS-CO)									
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 14 از 41	
		پروژه	پسته کاری	صادر کننده	سهیلات	رشته	نوع مدرک	سریال	نسخه		
		BK	GCS	HY	120	IN	DS	0001	V00		
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 Nm ³ /h		3		3		3		3		
11	NORMAL FLOW Nm ³ /h		3		3		3		3		
12	PRESS. OPERATING / DESIGN (BARG)		1.5	12	1.5	12	1.2	12	1.2	12	
13	TEMP. OPERATING / DESIGN (°C)		52	85	52	85	52	85	52	85	
14	DENSITY AT ST. COND. (KG/m ³)		1.23		1.23		1.23		1.23		
15	DENSITY AT OP.COND. (KG/m ³)		1.55		1.55		1.24		2.38		
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		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 Nm ³ /h		3 Nm ³ /h		3 Nm ³ /h		3 Nm ³ /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 A105	
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		

IN: Material to rechecked.

 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: 15 از 41	
		پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
		BK	GCS	HY	120	IN	DS	0001		V00
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									
17	Glass	TEMPERED GLASS								
18	Gasket	KLINGRIT								
19	Bolts / Studs									

IN: Blank cells are not acceptable.

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه 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: 16 از 41		
		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال			نسخه
		BK	GCS	HY	120	IN	DS	0001			V00
List of Sight Glass											
ITEM NO.	TAG NO.	SERVICE	LINE NO. / EQUIPMENT NO.	P&ID No.	PROCESS CONNECTION	FLUID/ STATE	PRESSURE (Barg)	TEMPERATURE (C)	REMARKS		
							Oper. / Design	Oper. / Design			
1	SG-2200A	Cooling Water	CWR-112-0014A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85			
2	SG-2201A	Cooling Water	CWR-112-0015A-C.S-2.1/2"-PT	BK-GCS-HY-120-PR-PI-0001	2.1/2"#150	Liquid	3 / 7	65 / 85			
3	SG-2202A	Cooling Water	CWR-112-0012A-C.S-1"-PT	BK-GCS-HY-120-PR-PI-0001	1"#150	Liquid	3 / 7	65 / 85			
4	SG-2203A	Cooling Water	CWR-112-0013A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85			
5	SG-2200B	Cooling Water	CWR-112-0014A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85			
6	SG-2201B	Cooling Water	CWR-112-0015A-C.S-2.1/2"-PT	BK-GCS-HY-120-PR-PI-0001	2.1/2"#150	Liquid	3 / 7	65 / 85			
7	SG-2202B	Cooling Water	CWR-112-0012A-C.S-1"-PT	BK-GCS-HY-120-PR-PI-0001	1"#150	Liquid	3 / 7	65 / 85			
8	SG-2203B	Cooling Water	CWR-112-0013A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85			
9	SG-2200C	Cooling Water	CWR-112-0014A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85			
10	SG-2201C	Cooling Water	CWR-112-0015A-C.S-2.1/2"-PT	BK-GCS-HY-120-PR-PI-0001	2.1/2"#150	Liquid	3 / 7	65 / 85			
11	SG-2202C	Cooling Water	CWR-112-0012A-C.S-1"-PT	BK-GCS-HY-120-PR-PI-0001	1"#150	Liquid	3 / 7	65 / 85			
12	SG-2203C	Cooling Water	CWR-112-0013A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	1/2"#150	Liquid	3 / 7	65 / 85			

IN: According to spec, minimum flange rating for instrument shall be # 300.

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه 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: 17 از 41		
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مترک	سریال	نسخه	
		BK	GCS	HY	120	IN	DS	0001	V00	
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-AN05-10"-ET			
	3	Pipe O. D. / I. D. mm	Pipe Sch./Thk.		10"					
	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-2121A				
		16	Measure Element Type			Orifice				
17		Measure Element Material	Thickness		316SS		6mm			
18		Bore Diameter			Hold					
19		Connection Type	Size		Flange Weld neck		10"			
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 M20					
	36	Explosion Proof			Exia IIB T3					
	37	Enclosure Protection			IP66					
	38	Diaphragm Material			Hastelloy (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										

IN: NACE requirement to be considered.

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه 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: 18 از 41		
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مترک	سریال	نسخه	
		BK	GCS	HY	120	IN	DS	0001	V00	
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				
		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 M20					
	36	Explosion Proof			Exia IIB T3					
	37	Enclosure Protection			IP66					
	38	Diaphragm Material			Hastelloy (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										

IN: NACE requirement to be considered.

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه 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: 19 از 41		
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مترک	سریال	نسخه	
		BK	GCS	HY	120	IN	DS	0001	V00	
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"-PT			
	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		-			
	14	Allowable Pressure Drop @ Max. Flow				0.2				
	Element	15	Tag Number		FE-2206A					
		16	Measure Element Type		Orifice					
17		Measure Element Material	Thickness		316SS		3mm			
18		Bore Diameter		Hold						
19		Connection Type	Size		Flange Weld neck		3"			
20		Flange Standard	Flange Rating		ASME B16.5		ANSI 150#			
21		Flange Material	Facing		C.S.		RF			
22		Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1			
23	Gasket Type & Material									
Transmitter Unit	24	Model		Diff pressure						
	25	Available Range		-623 to 623 mbar						
	26	Flowmeter Scale		0~20000m3/h						
	27	Full Scale Differential Pressure (bar)		0~200 mbar						
	28	Output Signal		HART 4-20mA						
	29	Accuracy		0.2 %						
	30	Load Resistance		minimum loop resistance of 250 ohms						
	31	Scale Factor		Square Root						
	32	Housing Material		Cast aluminum						
	33	Allowable Static Pressure		250Barg						
	34	Power Supply		24 V DC Loop Powered						
	35	Electrical Connection		ISO M20						
	36	Explosion Proof		Exia IIB T3						
	37	Enclosure Protection		IP66						
	38	Diaphragm Material		Hastelloy (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 ابنيه 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: 20 از 41	
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مترک	سریال	نسخه
		BK	GCS	HY	120	IN	DS	0001	V00
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-AN05-10"-ET		
	3	Pipe O. D. / I. D. mm	Pipe Sch./Thk.		10"				
	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-2121B				
	16	Measure Element Type			Orifice				
	17	Measure Element Material	Thickness		316SS		6mm		
	18	Bore Diameter			Hold				
	19	Connection Type	Size		Flange Weld neck		10"		
	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 M20				
	36	Explosion Proof			Exia IIB T3				
	37	Enclosure Protection			IP66				
	38	Diaphragm Material			Hastelloy (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									

IN: NACE requirement to be considered.

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه 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: 21 از 41	
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مدرک	سریال	نسخه
		BK	GCS	HY	120	IN	DS	0001	V00
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%		
	14	Allowable Pressure Drop @ Max. Flow				0.1			
Element	15	Tag Number			FE-2197B				
	16	Measure Element Type			Orifice				
	17	Measure Element Material	Thickness		316SS				
	18	Bore Diameter			Hold				
	19	Connection Type	Size		Flange Weld neck		6"		
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 600#		
	21	Flange Material	Facing		C.S. (Nace)		RF		
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1		
	23	Gasket Type & Material							
Transmitter Unit	24	Model			3051CD				
	25	Available Range			-623 to 623 mbar				
	26	Flowmeter Scale			0-8668Nm3/h				
	27	Full Scale Differential Pressure (bar)			0-100 mbar				
	28	Output Signal			HART 4-20mA				
	29	Accuracy			0.2 %				
	30	Load Resistance			minimum loop resistance of 250 ohms				
	31	Scale Factor			Square Root				
	32	Housing Material			Cast aluminum				
	33	Allowable Static Pressure			250Barg				
	34	Power Supply			24 V DC Loop Powered				
	35	Electrical Connection			ISO M20				
	36	Explosion Proof			Exia IIB T3				
	37	Enclosure Protection			IP66				
	38	Diaphragm Material			Hastelloy (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									

IN: NACE requirement to be considered.

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه 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: 22 از 41		
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مترک	سریال	نسخه	
		BK	GCS	HY	120	IN	DS	0001	V00	
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"-PT			
	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		-			
	14	Allowable Pressure Drop @ Max. Flow			0.2					
	Element	15	Tag Number			FE-2206B				
		16	Measure Element Type			Orifice				
17		Measure Element Material	Thickness		316SS		3mm			
18		Bore Diameter			Hold					
19		Connection Type	Size		Flange Weld neck	3"				
20		Flange Standard	Flange Rating		ASME B16.5	ANSI 150#				
21		Flange Material	Facing		C.S	RF				
22		Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H	ASME B1.1				
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 M20					
	36	Explosion Proof			Exia IIB T3					
	37	Enclosure Protection			IP66					
	38	Diaphragm Material			Hastelloy (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 ابنيه 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: 23 از 41	
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مدرک	سریال	نسخه
		BK	GCS	HY	120	IN	DS	0001	V00
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-AN05-10"-ET		
	3	Pipe O. D. / I. D. mm	Pipe Sch./Thk.		10"				
	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		10"		
	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 M20				
	36	Explosion Proof			Exia IIB T3				
	37	Enclosure Protection			IP66				
	38	Diaphragm Material			Hastelloy (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									

IN: NACE requirement to be considered.

IN: to be filled.

IN: M20*1.5

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه 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: 24 از 41		
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مترک	سریال	نسخه	
		BK	GCS	HY	120	IN	DS	0001	V00	
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 M20					
	36	Explosion Proof			Exia IIB T3					
	37	Enclosure Protection			IP66					
	38	Diaphragm Material			Hastelloy (Nace)					
	Accessories	38	Wetted Part Material			316SS				
		39	Drains/Vents Material			316SS				
40		Integral Indicator / Mounting type			Yes / Direct					
Miscell.	41	Valve Manifold			5 valve-S.S316					
	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										

IN: NACE requirement to be considered.

IN: to be filled.

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه 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: 25 از 41		
		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مترک	سریال	نسخه	
		BK	GCS	HY	120	IN	DS	0001	V00	
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"-PT			
	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		-			
	14	Allowable Pressure Drop @ Max. Flow			0.2					
	Element	15	Tag Number			FE-2206C				
		16	Measure Element Type			Orifice				
17		Measure Element Material	Thickness		316SS		3mm			
18		Bore Diameter			Hold					
19		Connection Type	Size		Flange Weld neck	3"				
20		Flange Standard	Flange Rating		ASME B16.5	ANSI 150#				
21		Flange Material	Facing		C.S	RF				
22		Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H	ASME B1.1				
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 M20					
	36	Explosion Proof			Exia IIB T3					
	37	Enclosure Protection			IP66					
	38	Diaphragm Material			Hastelloy (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 (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP	
		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 26 از 41	
شماره پیمان: 053 - 073 - 9184		پروژه	پسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
		BK	GCS	HY	120	IN	DS	0001	V00
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 / Glycol		
	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				
	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		
	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.	46								
	47	Manufacturer				AZARSAM (Eyvaz Technic)			
	48	Requisition No.							

IN: To be filled according to P&ID. (Applicable for all LGs)

IN: to be considered according to project spec. (Applicable for all LGs)

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	
		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 27 از 41	
شماره پیمان: 053 - 073 - 9184		پروژه	پسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک		
		BK	GCS	HY	120	IN	DS	0001	V00
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 / Glycol		
	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		
	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 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 (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP	
		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 28 از 41	
شماره پیمان: 053 - 073 - 9184		پروژه	پسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک		
		BK	GCS	HY	120	IN	DS	0001	V00
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 / Glycol		
	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		
	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									
Accessories		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			
	44	Stilling Well				N/A			
Miscell	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 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 (رفت 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	V00
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			
	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)				VTA			
	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			
Miscell 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: 30 از 41
		نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	
		V00	0001	DS	IN	120	HY	GCS	BK
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			
	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)			VTA				
	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		
	39	Indicator Type	Display		Integral LCD type		Digital		
Indicator	40	Mounting Bracket	Remo. Indic. Connection		No		YES		
	41	Manifold Model	Manifold Type		VTA		5 Way		
Manifold	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	
		INSTRUMENT DATASHEETS / CERTIFICATES							
شماره پیمان: 053 - 073 - 9184		نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
		V00	0001	DS	IN	120	HY	GCS	BK
شماره صفحه: 31 از 41									
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)			VTA				
	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		V00
Data Sheet for Solenoid Valve										
GENERAL	1	TAG NO .		See List						
	2	SERVICE		Instrument Air						
	3	LINE NO,		See List						
	4	QUANTITY		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	پسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	IN	DS	0001		V00
List of SOV									
ITEM NO.	TAG NO.	SERVICE	LINE NO. / EQUIPMENT NO.	P&ID No.	OPERATING/DESIGN PRESSURE (Barg)	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							
		نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
		BK	GCS	HY	120	IN	DS	0001	V00
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)	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			
	- Proximitor	N/A				FK-452F2-1-2/E50			
	Piston Rod Material	N/A				N/A			
PROBE	Type	Seismic Vibration				Proximity			
	Range	25.4mm/SEC, RMS				4.0 mm			
	Material	316 Stainless Steel				316 Stainless Steel			
	Conduit size	N/A				N/A			
	Probe Cable Length	N/A				1.0 Meter + Ext 9 Meter			
	Sealing	IP66				IP66			
	Sensor Mounting	M8 x P1.25				Internal of Bare block			
	Mounting Housing	N/A				N/A			
	Mounting Thread	N/A				M16x1.5			
	Sensitivity	100 mV/g				100 mV/g			
	Standard	API 670				API 670			
	TRANSMITTER	Input Power	24 VDC(Loop Powered)				24 VDC(Loop Powered)		
Output		4~20 mA				4~20 mA			
Enclosure Class		IP66				Without			
Model No.		VST5484E				VM-21T1-22C012-1			
Notes :									

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد 03 BK-HD-GCS-CO-0008)						 HAVAYAR INDUSTRIAL GROUP	
		INSTRUMENT DATASHEETS / CERTIFICATES							
شماره پیمان: 053 - 073 – 9184		شماره صفحه: 35 از 41							
		نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
		BK	GCS	HY	120	IN	DS	0001	V00
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/cm²g)	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			
	- Proximitor	N/A				FK-452F2-1-2/E50			
	Piston Rod Material	N/A				N/A			
PROBE	Type	Seismic Vibration				Proximity			
	Range	25.4mm/SEC, RMS				4.0 mm			
	Material	316 Stainless Steel				316 Stainless Steel			
	Conduit size	N/A				N/A			
	Probe Cable Length	N/A				1.0 Meter + Ext 9 Meter			
	Sealing	IP66				IP66			
	Sensor Mounting	M8 x P1.25				Internal of Bare block			
	Mounting Housing	N/A				N/A			
	Mounting Thread	N/A				M16x1.5			
	Sensitivity	100 mV/g				100 mV/g			
	Standard	API 670				API 670			
	TRANSMITTER	Input Power	24 VDC(Loop Powered)				24 VDC(Loop Powered)		
Output		4~20 mA				4~20 mA			
Enclosure Class		IP66				Without			
Model No.		VST5484E				VM-21T1-22C012-1			
Notes :									

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008 03)						 HAVAYAR INDUSTRIAL GROUP		
		INSTRUMENT DATASHEETS / CERTIFICATES								
شماره پیمان: 053 - 073 - 9184		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 36 از 41
		BK	GCS	HY	120	IN	DS	0001	V00	
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/cm²g)	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				
	- Proximitor	N/A				FK-452F2-1-2/E50				
	Piston Rod Material	N/A				N/A				
PROBE	Type	Seismic Vibration				Proximity				
	Range	25.4mm/SEC, RMS				4.0 mm				
	Material	316 Stainless Steel				316 Stainless Steel				
	Conduit size	N/A				N/A				
	Probe Cable Length	N/A				1.0 Meter + Ext 9 Meter				
	Sealing	IP66				IP66				
	Sensor Mounting	M8 x P1.25				Internal of Bare block				
	Mounting Housing	N/A				N/A				
	Mounting Thread	N/A				M16x1.5				
	Sensitivity	100 mV/g				100 mV/g				
	Standard	API 670				API 670				
	TRANSMITTER	Input Power	24 VDC(Loop Powered)				24 VDC(Loop Powered)			
Output		4~20 mA				4~20 mA				
Enclosure Class		IP66				Without				
Model No.		VST5484E				VM-21T1-22C012-1				

IN: To be specified according to project design basis. (Applicable for all VE/ZE)

Notes :

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP	
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 37 از 41
		نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	
		V00	0001	DS	IN	120	HY	GCS	BK
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			
	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)		-635~635mmH2O		300mmH2O		
	15	Output Signal	Power Supply		HART 4-20MA		24VDC Loop Powered		
	16	Load Resistance(Ω)			VTA				
	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				
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		
	39	Indicator Type	Display		Integral LCD type		Digital		
Indicator	40	Mounting Bracket	Remo. Indic. Connection		No		YES		
	41	Manifold Model	Manifold Type		VTA		5 Way		
Manifold	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: 38 از 41
		نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	
		V00	0001	DS	IN	120	HY	GCS	BK
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			
	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)		-635~635mmH2O		300mmH2O		
	15	Output Signal	Power Supply		HART 4-20MA		24VDC Loop Powered		
	16	Load Resistance(Ω)			VTA				
	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				
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		
Miscell	46	Manufacturer							
	47	Requisition No.							
NOTES: VTA : Vendor To Advise VTC : Vendor To Confirm N/A : Not Applicable									

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP		
		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 39 از 41		
شماره پیمان: 053 - 073 - 9184		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک			سریال
		BK	GCS	HY	120	IN	DS	0001	V00	
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		
	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)		-635~635mmH2O		300mmH2O			
	15	Output Signal	Power Supply		HART 4-20MA		24VDC Loop Powered			
	16	Load Resistance(Ω)			VTA					
	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					
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			
Miscell	46	Manufacturer								
	47	Requisition No.								
NOTES: VTA : Vendor To Advise VTC : Vendor To Confirm N/A : Not Applicable										

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (فراراد 03 BK-HD-GCS-CO-0008)									
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 40 از 41			
		پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع مدارک	سریال	نسخه		
		BK	GCS	HY	120	IN	DS	0001	V00		
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	☐	10	Form:	SPST	☐	SPDT	☒
		Fixed		Adj.	☒			Other:			
ELEMENT						11	Max Rating:	2 Amps		24vdc	
4	Diaphragm	☒	Bourdon	☐	Bellows	☐		Other:			
						12	Load:	Inductive	☐	Non-Inductive	☒
5	Material				Aluminum	13	IP	IP66	Exd/IIB		
6	Connection	1/2"NPT	☒	Other Size :		14	Electrical Connection:		M20		
		Bottom	☒	Back		15	Manufacturer & Model No.				
7		Local	☒	Surface	☐	Flush		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"-NP						
PS-2220A	1 " NPT	0~10	HOLD	10Bar 3Bar	CWS-112-0002A-C.S-3"-PT						
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"-NP						
PS-2220B	1 " NPT	0~10	HOLD	10Bar 3Bar	CWS-112-0002A-C.S-3"-PT						
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"-NP						
PS-2220C	1 " NPT	0~10	HOLD	10Bar 3Bar	CWS-112-0002A-C.S-3"-PT						

IN: Material to be specified as project spec.

IN: Material of Manifold to be specified.

IN: To be specified (According to detail design doc)

		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)							
		INSTRUMENT DATASHEETS / CERTIFICATES					شماره صفحه: 41 از 41		
شماره پیمان: 053 - 073 - 9184		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
		BK	GCS	HY	120	IN	DS	0001	V00
Instrument Data Sheet For Temperature Switch									
GENERAL									
1.TAG.NO		TS-2191A	TS-2194A	TS-2191B	TS-2194B	TS-2191C	TS-2194C		
2.TAG.DESC		1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER	1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER	1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER		
3.ENCLOSURE MATERIAL		Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum		
4.SERVICE		Gas	Gas	Gas	Gas	Gas	Gas		
5.RANGE		0-200C	0-200'C	0-200'C	0-200'C	0-200'C	0-200'C		
6.Ingress Protection		IP 66/EXd	IP 66/Exd	IP 66/Exd	IP 66/EXd	IP 66/Exd	IP 66/Exd		
THERMOWELL									
7.TYPE SYSTEM		Flange	Flange	Flange	Flange	Flange	Flange		
8 MATERIAL		AISI 316/Nace	AISI 316/Nace	AISI 316/Nace	AISI 316/Nace	AISI 316/Nace	AISI 316/Nace		
9.CONNECTION LOCATION		Bottom	Bottom	Bottom	Bottom	Bottom	Bottom		
10.WELL LENGTH		N/A	N/A	N/A	N/A	N/A	N/A		
11.WELL DIA		N/A	N/A	N/A	N/A	N/A	N/A		
12.WELL CONN.SIZE & TYPE		2"#300	2"#600	2"#300	2"#600	2"#300	2"#600		
13.WELL MATERIAL		316 S.S	316 S.S	316 S.S	316 S.S	316 S.S	316 S.S		
14.'U' DIMENSION(NOMINAL)		Hold	Hold	Hold	Hold	Hold	Hold		
SWITCH									
		Snap Action	Snap Action	Snap Action	Snap Action	Snap Action	Snap Action		
16.QUANTITY	FORM	1/SPD	1/SPD	1/SPD	1/SPD	1/SPD	1/SPD		
17.ENCLOSURE		IP66	IP66	IP66	IP66	IP66	IP66		
18.RATING.VOLTS		24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC		
19.AMPS		2	2	5	2	5	5		
20.LOAD TYPE		INDUCTIVE	INDUCTIVE	INDUCTIVE	INDUCTIVE	INDUCTIVE	INDUCTIVE		
21.DIFF.:FIXED	ADJUST	YES/-	YES/-	YES/-	YES/-	YES/-	YES/-		
22.ELECTRICAL CONNECTION		M20*1.5	M20*1.5	M20*1.5	M20*1.5	M20*1.5	M20*1.5		
23.Accuracy		1% Of Spna	1% Of Spna	1% Of Spna	1% Of Spna	1% Of Spna	1% Of Spna		
SERVICE CONDITIONS									
27.TEMP.:OPER 'C		129'C	147'C	129'C	147'C	129'C	147'C		
28.PRESS.:OPER 'C		18	54.9	18	54.9	18	54.9		
29.TRIP POINT 'C		HOLD	Hold	Hold	Hold	Hold	Hold		
30.MANUFACTURER		HOLD	Hold	Hold	Hold	Hold	Hold		
31.MANUFACTURER'S MODEL NO.		HOLD	HOLD	HOLD	HOLD	HOLD	HOLD		

IN: Type of thermowell to be specified.

IN: To be specified by vendor according to spec and IPS Standard.

IN: To be rechecked.

IN: To be specified (According to engineering detail document).