



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_۰۰۰۰۰۰۰۰ BK-HD-GCS-CO)



INSTRUMENT DATASHEETS / CERTIFICATES

شماره صفحه: 1 از 41

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

IN: P&ID sheet to be specified.
HY reply: Will be added.
PEDCO: Opened. Not specified.
IN: Instrument Index is not acceptable.
HY reply: Instrument index is in separate document .
PEDCO: Instrument Index is pre-requirement Document.
IN: Document shall be updated based on latest approved P&ID.
HY reply: Confirmed.
PEDCO: will be finalized.
IN: Electrical connection to be reviewed again.
HY reply: Confirmed.

طرح نگهداشت و افزایش تولید

Havayar General reply :
All conclusion has been implemented in V02.

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**

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



شماره صفحه: 3 از 41

INSTRUMENT DATASHEETS / CERTIFICATES

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

Item	Tag No.	Range (barg)	Process Fluid/State	Design		Operating		LINE NO./EQUIPMENTNO.	P&ID NO.	Accessories	NOTE
				Press (barg)	Temp (C°)	Press (barg)	Temp (C°)				
1	PG-2190A	0-10	Process gas Comp A	24.5	180	4.9	36.8	1ST STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
2	PG-2191A	0-40	Process gas Comp A	24.5	180	18	129	1ST STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
3	PG-2193A	0-40	Process gas Comp A	62	180	17.1	59.9	2nd STAGE SUCTION SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
4	PG-2194A	0-100	Process gas Comp A	62	180	54.9	147	2nd STAGE DISCHARGE SNUBBER	BK-GCS-HY-120-PR-PI-0001	Nace material	
5	PG-2200A	0-16	Instrument Air Comp A	12.5	85	8	65	ISA-112-0001A-AZ00-2"-NP	BK-GCS-HY-120-PR-PI-0001		
6					85	6	70	OIL-112-0004A-S.S-1.1/2"-NP	BK-GCS-HY-120-PR-PI-0001		
7					85	6	70	OIL-112-0003A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001		
8					85	6	60	OIL-112-0008A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001		
9		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	PG-2201B	0-16						0004A-S.S-1.1/2"-NP	BK-GCS-HY-120-PR-PI-0001		
19	PG-2202B	0-16						0-0003A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001		
20	PG-2204B	0-16						0-0008A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001		
21	PG-2205B	0-4	GAS	5	85	1.5	65		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)	
23	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)	
24	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.
HY reply:Noted.
PEDCO:Closed.

IN2: dicripancy with spec.
HY reply:Comment is not clear for us. Why that has discrepancy ?
PEDCO:Closed.

IN3: NACE to be rechecked and updated.
HY reply:Nace material or seal diaphragm will be considered.
PEDCO: Seal diaphragm is not accepted in NISOC.

IN2

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						 HAVAYAR INDUSTRIAL GROUP		
شماره پیمان: 053 - 073 – 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 4 از 41	
		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
		Bk	GCS	HY	120	IN	DS	0001		V00

Data Sheet for 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 EExia, IIB, T4
	7	Power Supply	Ingress Protection : IP 66 117 V 60 Hz ☐ Other: ac ☐ dc ☒ Volts : 24 VDC Loop Powered
TRANSMITTER	8	Trans. Output	4-20mA ☒ 10-50mA ☐ 21-10 kpa(3-15 psig) ☐ Other 4-20mA Smart HART
	9		Transmitter Accuracy : 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:

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



شماره پیمان:
053 - 073 - 9184

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

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

INSTRUMENT DATASHEETS / CERTIFICATES



شماره صفحه: 5 3 41

پروژه

پستہ کاری

صادر کنندہ

تسهيلات

رشته

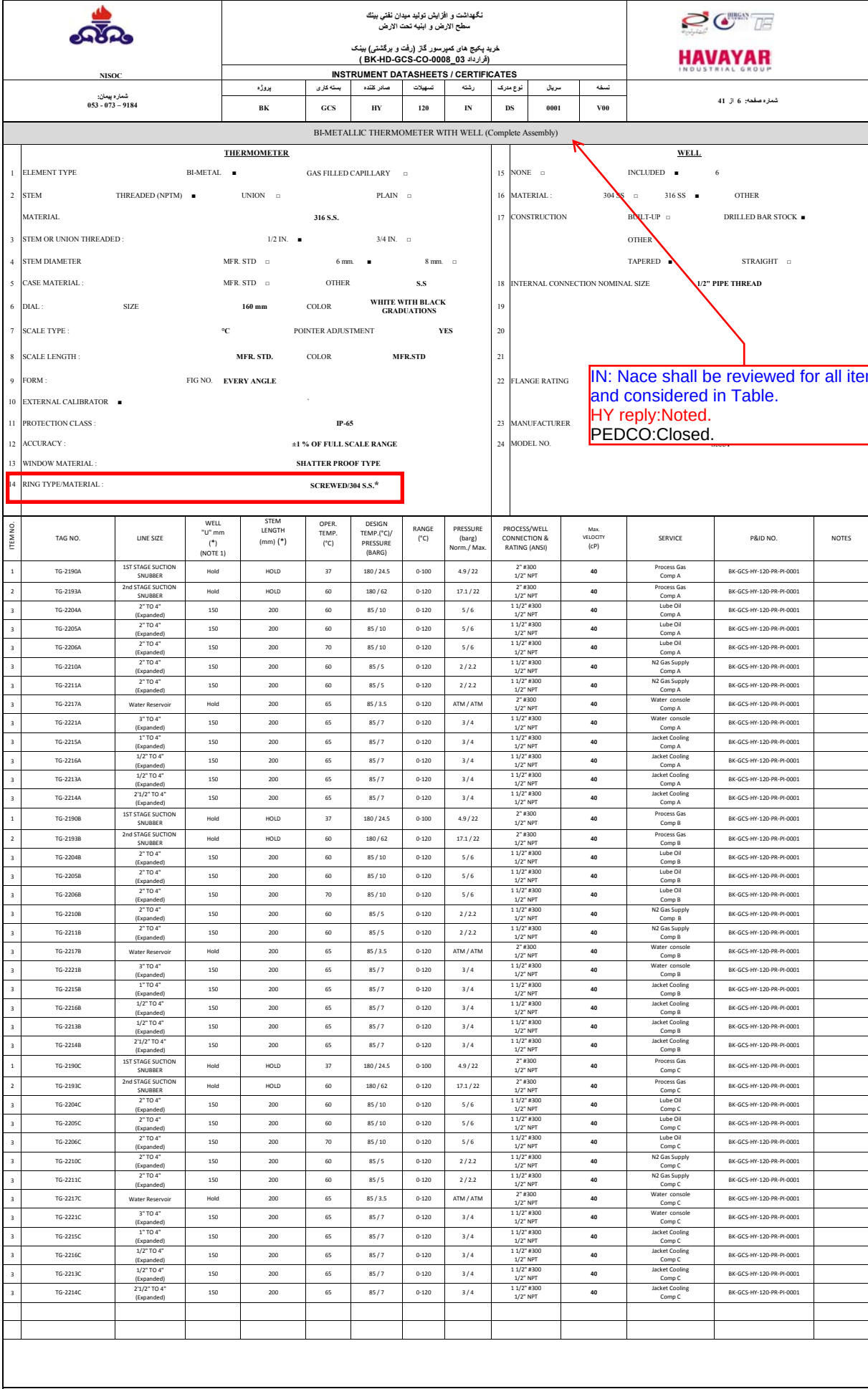
نوع مدرک

میریال

نسخه

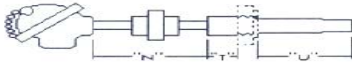
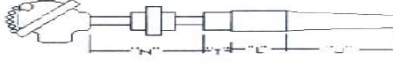
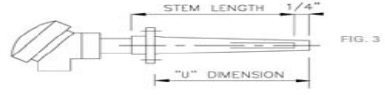
List of PT

ITEM NO.	TAG NO.	SERVICE	LINE NO. / EQUIPMENT NO.	P&ID No.	PROCESS CONNECTION	FLUID/ STATE	PRESSURE (Barg)	TEMPERATURE (C)	VISCOSITY (cP)	CALIBRATED RANGE (Barg)	ACCESSORIES Option	MFR. & Model No.	REMARKS
							Oper. / Design	Norm. / Design					
1	PT-2123A	Process gas Comp A	GAS-111-0031A-AN05-10"-ET	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0.012	0-40	Nace Material 2 valve manifold S.S316		Loose Item
2	PT-2124A	Process gas Comp A	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	54.9 / 62	147 / 180	0.016	0-80	Nace Material 2 valve manifold S.S316		
3	PT-2192A	Process gas Comp A	GAS-111-0036A-CN05-10"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	18 / 24.5	129 / 180	0.015	0-40	Nace Material 2 valve manifold S.S316		Loose Item
4	PT-2197A	Process gas Comp A	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	17.1 / 62	59.9 / 180	0.013	0-80	Nace Material 2 valve manifold S.S316		Loose Item
5	PT-2201A	Instrument Air Comp A	ISA-112-0001A-AZ00-2"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	6 / 12.5	65 / 85	0.021	0-16	2 valve manifold S.S316		
6	PT-2200A	Lubricator Comp A	OIL-112-0008A-S-S-2"-NP	BK-GCS-HY-120-PR-Pi-0001	1/2" NPT	Liquid	6 / 10	65 / 85	40	0-10	2 valve manifold S.S316		
7	PT-2204A	Lube Oil Comp A	OIL-112-0008A-S-S-2"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Liquid	6 / 10	60 / 85	40	0-10	2 valve manifold S.S316		
8	PT-2210A	N2 Gas Supply Comp A	NIT-112-0001A-SS-1"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	2.2 / 10	60 / 85	0.020	0-6	2 valve manifold S.S316		
9	PT-2211A	N2 Gas Supply Comp A	NIT-112-0002A-SS-1"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	1 / 10	60 / 85	0.020	0-6	2 valve manifold S.S316		
10	PT-2220A	Water console Comp A	NIT-112-0001A-SS-1"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Liquid	3 / 10	58 / 85	0.478	0-10	2 valve manifold S.S316		
11	PT-2221A	Water console Comp A	NIT-112-0002A-SS-1"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Liquid	3 / 10	58 / 85	0.478	0-10	2 valve manifold S.S316		
12	PT-2123B	Process gas Comp B	GAS-111-0031A-AN05-10"-ET	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0.012	0-40	Nace Material 2 valve manifold S.S316		Loose Item
13	PT-2124B	Process gas Comp B	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	54.9 / 62	147 / 180	0.016	0-80	Nace Material 2 valve manifold S.S316		
14	PT-2192B	Process gas Comp B	GAS-111-0036A-CN05-10"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	18 / 24.5	129 / 180	0.015	0-40	Nace Material 2 valve manifold S.S316		Loose Item
15	PT-2197B	Process gas Comp B	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	17.1 / 62	59.9 / 180	0.013	0-80	Nace Material 2 valve manifold S.S316		Loose Item
16	PT-2201B	IN1: The reason of using 1/2" NPT to be clarified. HY reply: Because that is will be supplied by lubricator supplier. That is manufacture design. PEDCO: NISOC's approval to be taken.	ISA-112-0001A-AZ00-2"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	6 / 12.5	65 / 85	0.021	0-16	2 valve manifold S.S316		
17	PT-2200B		Y-120-PR-Pi-0001	1/2" NPT	Liquid	6 / 10	65 / 85	40	0-10	2 valve manifold S.S316			
18	PT-2204B		Y-120-PR-Pi-0001	1" NPT	Liquid	6 / 10	60 / 85	40	0-10	2 valve manifold S.S316			
19	PT-2210B		Y-120-PR-Pi-0001	1" NPT	Gas	2.2 / 10	60 / 85	0.020	0-6	2 valve manifold S.S316			
20	PT-2211B		Y-120-PR-Pi-0001	1" NPT	Gas	1 / 10	60 / 85	0.020	0-6	2 valve manifold S.S316			
21	PT-2220B		Y-120-PR-Pi-0001	1" NPT	Liquid	3 / 10	58 / 85	0.478	0-10	2 valve manifold S.S316			
22	PT-2221B		Y-120-PR-Pi-0001	1" NPT	Liquid	3 / 10	58 / 85	0.478	0-10	2 valve manifold S.S316			
23	PT-2123C		Process gas Comp C	GAS-111-0031A-AN05-10"-ET	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	4.9 / 24.5	36.8 / 180	0.012	0-40	Nace Material 2 valve manifold S.S316	
24	PT-2124C	Process gas Comp C	GAS-111-0051A-FN05-6"-IS	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	54.9 / 62	147 / 180	0.016	0-80	Nace Material 2 valve manifold S.S316		
25	PT-2192C	Process gas Comp C	GAS-111-0036A-CN05-10"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	18 / 24.5	129 / 180	0.015	0-40	Nace Material 2 valve manifold S.S316		Loose Item
26	PT-2197C	Process gas Comp C	GAS-111-0044A-CN05-6"-ET	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	17.1 / 62	59.9 / 180	0.013	0-80	Nace Material 2 valve manifold S.S316		Loose Item
27	PT-2201C	Instrument Air Comp C	ISA-112-0001A-AZ00-2"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	6 / 12.5	65 / 85	0.021	0-16	2 valve manifold S.S316		
28	PT-2200C	Lubricator Comp C	OIL-112-0008A-S-S-2"-NP	BK-GCS-HY-120-PR-Pi-0001	1/2" NPT	Liquid	6 / 10	65 / 85	40	0-10	2 valve manifold S.S316		
29	PT-2204C	Lube Oil Comp C	OIL-112-0008A-S-S-2"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Liquid	6 / 10	60 / 85	40	0-10	2 valve manifold S.S316		
30	PT-2210C	N2 Gas Supply Comp C	NIT-112-0001A-SS-1"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	2.2 / 10	60 / 85	0.020	0-6	2 valve manifold S.S316		
31	PT-2211C	N2 Gas Supply Comp C	NIT-112-0002A-SS-1"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Gas	1 / 10	60 / 85	0.020	0-6	2 valve manifold S.S316		
32	PT-2220C	Water console Comp C	NIT-112-0001A-SS-1"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Liquid	3 / 10	58 / 85	0.478	0-10	2 valve manifold S.S316		
33	PT-2221C	Water console Comp C	NIT-112-0002A-SS-1"-NP	BK-GCS-HY-120-PR-Pi-0001	1" NPT	Liquid	3 / 10	58 / 85	0.478	0-10	2 valve manifold S.S316		



 NISOC شماره پیمان: 053 - 073 - 9184	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و اینیله تحت الارض خرید پکیج های کمپرسور گاز (رگت و برگشتی) بینک (قرارداد 03 BK-HD-GCS-CO-0008)					 HERCAN هرجان			
	INSTRUMENT DATASHEETS / CERTIFICATES								
پروژه	پست کار	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 ☐ DUPLEX ☐ 14 SPRING LOADED ☒ YES ☐ NO ☐ 15 CONNECTION ☐ 2-WIRE ☒ 3-WIRE ☐ 4-WIRE ☐ 16 LEAD WIRES ☒ RECEPTACLE ☐ ☐ TERMINAL BLOCK ☒ OTHER _____ WELL OR TUBE 17 NONE ☐ ☒ INCLUDE ☐ BY OTHERS ☐ 18 MATERIAL ☐ AISI 316 S.S. 19 CONSTRUCTION ☒ TAPERED ☐ STRAIGHT ☐ 20 SOILD BAR-STOCK ☒ ☐ BUILT-UP ☐ ☐ CLOSE-END TUBE ☐	21 BORE DIAMETER 6.6 mm (NOTE 4) 22 OUTSIDE DIAMETER AT SUPPORT/TIP : 28/22 mm (NOT) 23 LAGGING EXTENTION "I" : VTA 24 TEST : HYDROSTATIC AND PENETRANT TEST 25 CONNECTION TO SENSOR 26 PROCESS CONNECTION 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: Recheck. 6 mm is preferred.

HY reply: 6.6mm is correct.

PEDCO: Closed.

IN: 2" Flanged will be considered for vessels and Tanks.

HY reply: Noted as per last P&ID

PEDCO: Closed.

1 1/2" FLANGE (SEE Next TABLE)

سطح الأرض و ابلیه تحت الأرض

میج های کمپرسور گاز (رقت و برگشتی) بینک

INSTRUMENT DATASHEETS / CERTIFICATE

ردیف	پست کار	صنعت	تجهیزات	نوع
IBK	IBK	IBK	IBK	IBK

IN: Type of element shall be considered for each transmitter.
HY reply:Refer to item 9 last page.

IN: NACE requirement to be rechecked and updated as a column in table.
HY reply:Nace material has been specified in notes.

ITEM NO	TAG NO	SIZE	U (")		FCI	DESIGN TEMP (°C)	MAX VELOCITY (m/s)	RANGE (°C)	PRESSURE Nom Max (barg)	PROCESS CONNECTION & RATING (ANSI)	PROCESS COVER	MFR. & Model No	NOTES		
			STEM	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 Rem 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	1STG 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 Rem 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 Rem 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 Rem 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"10 4" (Expanded)	150	200	60	85	0.3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	LUBE OIL OIL-112-0008A-S.S-2"-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 Stg1	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 Stg2	BK-GCS-HY-120-PR-Pi-0001	
16	TE-2222A TE-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 Rem 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	1STG 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 Rem 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 Rem 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 Rem 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"10 4" (Expanded)	150	200	60	85	0.3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	LUBE OIL OIL-112-0008A-S.S-2"-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 Stg1	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 Stg2	BK-GCS-HY-120-PR-Pi-0001	
34	TE-2222B TE-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 Rem 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	1STG 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 Rem 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 Rem 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 Rem 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"10 4" (Expanded)	150	200	60	85	0.3	0-120	5 / 6	1 1/2", 300#	Yes	REMOTE TYPE	LUBE OIL OIL-112-0008A-S.S-2"-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 TE-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							

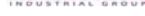
Notes:
1- All transmitters shall be provided complete with LCD type integral indicator .
2- Repeatability of the transmitter shall be better than 0.1% of the span.
3- All transmitters shall be reverse polarity protected.
4- All components, particularly if containing electric contacts, shall be vibration 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 HY : S.S316.				 HAVAYAR INDUSTRIAL GROUP		
		INSTRUMENT DATA				شماره صفحه: 11 از 41		
		پروژه	پسمه کاروی	صنایع کننده	رشته	نوع مدرک	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 :	Solid Front ☐	Plastic ☐	Other ☐	Safety Glass (shatter proof)								
8	Options :	Glass ☒	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 ☒	Stainless Steel								
17	Diaphragm Seal	N/A											
	MFR.	Type											
	Wetted Part Mtl.	Other Mtl.											
	Fill Fluid :												
	Process Conn. :												
18	Ingress Protection :	IP 65											

Item	Tag No.	Range (barg)	Process Fluid/State	Design		Operating		Differential Pressure		LINE NO./EQUIPMENTNO.	P&ID NO.	Accessories	MFR. & Model	NOTE
				Press (barg)	Temp (C°)	Press (barg)	Temp (C°)	Norm. (bar)	Max. (bar)					
1	PDG-2204A	0~1	Lub Oil Filter	10	85	6	60	0.1	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
2	PDG-2200A	0~1	N2 Gas Supply	10	85	7.5	60	0.15	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
3	PDG-2205A	0~0.6	Jacket Cooling	10	85	3	58	0.1	0.2	CWS-112-0018A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
4	PDG-2206A	0~0.6	Jacket Cooling	10	85	3	58	0.1	0.2	CWS-112-0017A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
5	PDG-2204B	0~1	Lub Oil Filter	10	85	6	60	0.1	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
6	PDG-2200B	0~1	N2 Gas Supply	10	85	7.5	60	0.15	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
7	PDG-2205B	0~0.6	Jacket Cooling	10	85	3	58	0.1	0.2	CWS-112-0018A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
8	PDG-2206B	0~0.6	Jacket Cooling	10	85	3	58	0.1	0.2	CWS-112-0017A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
9	PDG-2204C	0~1	Lub Oil Filter	10	85	6	60	0.1	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
10	PDG-2200C	0~1	N2 Gas Supply	10	85	7.5	60	0.15	0.5	OIL-112-0004A-S.S-2"-NP	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
11	PDG-2205C	0~0.6	Jacket Cooling	10	85	3	58	0.1	0.2	CWS-112-0018A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		
12	PDG-2206C	0~0.6	Jacket Cooling	10	85	3	58	0.1	0.2	CWS-112-0017A-C.S-1/2"-PT	BK-GCS-HY-120-PR-PI-0001	5 valve manifold S.S316		

NOTES :

		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: 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 Nm3/h	3			3		3		3	
11	NORMAL FLOW Nm3/h	1.5			1.5		1.5		1.5	
12	PRESS. OPER	1			12.5		1		12.5	
13	TEMP. OPER	60			85		60		85	
14	DENSITY AT	1.23			1.23		1.23		1.23	
15	DENSITY AT	1.55			1.24		1.24		2.38	
16	COMPRESSIB	1			1		1		1	
17	MOL. WEIGH	28			1.40		28		1.40	
18	OPERATING	0.02			0.02		0.02		0.02	
19	MAX. PRESS	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: According to spec, minimum rate #300 to be considered for flanges.
 HY reply: Not required.
 That is selected as per our experience.
 We will have problem in assembling with rating 300 because The line is tubing. As per design Temp & pressure rating 150 is ok.
 PEDCO: The answer is not accepted.
 According to ASME B16.5, this assembly can be implemented. Please clarify.

IN: Material to rechecked.
 HY reply: will be modified.
 PEDCO: Closed.

		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)									
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES								شماره صفحه: 13 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-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.
 HY reply:will be modified.
 PEDCO:Closed.

		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	
		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.
 HY reply:will be modified.
 PEDCO:Closed.

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد 03_0008-BK-HD-GCS-CO)								
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.
 HY reply: will be modified.

 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: 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.
HY reply: Not required.
That is selected as per our experience.
As per design Temp & pressure rating 150 is ok.
PEDCO: Discrepancy with basic and spec. Deviation to be checked and client's approval shall be taken.

 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 مدرک	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.
 HY reply:Refer to item 21 & 38.
 PEDCO:Closed.

 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	Max. Flow			
		kg/h(Liquid,Steam),Nm3/h(Gas)	Nm3/h		7887	7918	8668.6			
	9	Operating Density kg/m3	Standard Density kg/Nm3		17.35		-			
	10	Kinetic Viscosity(mm2/s)	Dynamic Viscosity (cP)		-		.0126			
	11	Specific Heat Ratio Cp/Cv	Compress Factor		1.275		0.964			
	12	Vapor Pressure	Vapor Density kg/m3		19.76		-			
	13	Molecular Weight	Relative Humidity		24.52		89%			
	14	Allowable Pressure Drop @ Max. Flow			0.1					
	Element	15	Tag Number			FE-2197A				
		16	Measure Element Type			Orifice				
		17	Measure Element Material	Thickness		316SS		3mm		
18		Bore Diameter			Hold					
19		Connection Type	Size		Flange Weld neck		6"			
20		Flange Standard	Flange Rating		ASME B16.5		ANSI 300#			
21		Flange Material	Facing		C.S. (Nace)		RF			
22		Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1			
23		Gasket Type & Material								
Transmitter Unit	24	Model			Diff pressure					
	25	Available Range			-623 to 623 mbar					
	26	Flowmeter Scale			0-8668Nm3/h					
	27	Full Scale Differential Pressure (bar)			0-100 mbar					
	28	Output Signal			HART 4-20mA					
	29	Accuracy			0.2 %					
	30	Load Resistance			minimum loop resistance of 250 ohms					
	31	Scale Factor			Square Root					
	32	Housing Material			Cast aluminum					
	33	Allowable Static Pressure			250Barg					
	34	Power Supply			24 V DC Loop Powered					
	35	Electrical Connection			ISO 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					
	Accessories	40	Integral Indicator / Mounting type			Yes / Direct				
41		Valve Manifold			5 valve-S.S316					
42		Upstream Straight Run			10X					
Miscell.	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.
 HY reply:Refer to item 21 & 38.
 PEDCO:Closed.

 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							
20		Flange Standard	Flange Rating							
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		
		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 20 از 41		
شماره پیمان: 053 - 073 - 9184		پروژه BK	بسته کاری GCS	صادر کننده HY	تسهیلات 120	رشته IN	نوع مترک DS	سریال 0001	نسخه 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								
19		Connection Type	Size		Flange					
20		Flange Standard	Flange Rating		AS					
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.
 HY reply:Refer to item 21 & 38.
 PEDCO:Closed.

HY: that is according to IPS-m-IN-130

 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		
		INSTRUMENT DATASHEETS / CERTIFICATES								
شماره پیمان: 053 - 073 - 9184		شماره صفحه: 41 از 21								
		پروژه BK	بسته کاری GCS	صادر کننده HY	تسهیلات 120	رشته IN	نوع مدرک DS	سریال 0001	نسخه 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					
	Accessories	40	Integral Indicator / Mounting type			Yes / Direct				
41		Valve Manifold			5 valve-S.S316					
42		Upstream Straight Run			10X					
Miscell.	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.
HY reply:Refer to item
21 & 38.
PEDCO:Closed.

 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	
		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 23 از 41	
شماره پیمان: 053 - 073 - 9184		پروژه	پسته کاری	صادر کننده	تسهيلات	رشته	نوع مدرک		
		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.
 HY reply:Refer to item 21 & 38.
 PEDCO:Closed.

IN: to be filled.
 HY reply: noted

IN: M20*1.5
 HY reply:modified.
 PEDCO:Closed.

 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%		
	14	Allowable Pressure Drop @ Max. Flow				0.1			
Element	15	Tag Number			FE-2197C				
	16	Measure Element Type			Orifice				
	17	Measure Element Material	Thickness		316SS				
	18	Bore Diameter			Hold				
	19	Connection Type	Size		Flange Weld neck		6"		
	20	Flange Standard	Flange Rating		ASME B16.5		ANSI 300#		
	21	Flange Material	Facing		C.S. (Nace)		RF		
	22	Bolt /Nut Material	Bolt /Nut Standard		ASTM A193 Gr.B7 / ASTM A194 Gr.2H		ASME B1.1		
	23	Gasket Type & Material							
Transmitter Unit	24	Model			3051CD				
	25	Available Range			-623 to 623 mbar				
	26	Flowmeter Scale			0-8668Nm3/h				
	27	Full Scale Differential Pressure (bar)			0-100 mbar				
	28	Output Signal			HART 4-20mA				
	29	Accuracy			0.2 %				
	30	Load Resistance			minimum loop resistance of 250 ohms				
	31	Scale Factor			Square Root				
	32	Housing Material			Cast aluminum				
	33	Allowable Static Pressure			250Barg				
	34	Power Supply			24 V DC Loop Powered				
	35	Electrical Connection			ISO 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.
 HY reply:Refer to item 21 & 38.
 PEDCO:Closed.

IN: to be filled.
 HY reply: noted

 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
		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			
	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				
27		Contact Form	Contact Rating		N/A				
28		Switch 1 Contact Action							
29		Switch 2 Contact Action							
30		Calibration Value (for Switch)							
31		Power Supply	Electrical Connection		N/A				
32		Explosion Proof	Enclosure Protection		N/A				
33		Housing Material	Integral Indicator		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)

HY reply: We can not modify.

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) x 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		
	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.							

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 BK	پسته کاری GCS	صادر کننده HY	تسهیلات 120	رشته IN	نوع مدرک DS	سریال 0001	نسخه 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)				-			
	11	Upper/Lower Dynamic Viscosity (cP)				0.0209 / 2.084			
Body & Cage	12	Model/Type				Magnetic			
	13	C to C mm				HOLD			
	14	Allowable Oper. Temp. °C	Pressure Rating						
	15	Mounting Style	Connection Orientation		External		Side-Side		
	16	Visible Length mm			HOLD				
	17	Scale Unit/Material	Accuracy		Cm		5mm		
	18	Indicator Type	Indicator Colour		Magnetic		Flag/White & red		
	19	Chamber Material	Float Material		S.S		S.S		
	20	Connection Type	Connection Size		Flange		2"		
	21	Flange Standard	Flange Rating		ASME		300		
	22	Flange Material	Facing		C.S		RF		
	23	Other Wetted Parts Material				S.S			
Transmitter/Switch	24	Float Dimension	Indicator Housing Material		HOLD		S.S		
	25	Output Signal	Load Resistance		N/A		N/A		
	26	Switch Type	Switch Quantity		N/A		N/A		
	27	Contact Form	Contact Rating		N/A		N/A		
	28	Switch 1 Contact Action				N/A			
	29	Switch 2 Contact Action				N/A			
	30	Calibration Value (for Switch)				N/A			
	31	Power Supply	Electrical Connection		N/A		N/A		
	32	Explosion Proof	Enclosure Protection		N/A		N/A		
	33	Housing Material	Integral Indicator		N/A		N/A		
	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.							

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
		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-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		
	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: 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				
	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		
	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		
Diaphragm Seal	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		
Miscell	46								
	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	بسته 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							
		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
		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/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 03 BK-HD-GCS-CO-0008)						 HAVAYAR INDUSTRIAL GROUP	
		INSTRUMENT DATASHEETS / CERTIFICATES							
شماره پیمان: 053 - 073 – 9184		شماره صفحه: 35 از 41							
		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
		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/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			
	- Proximitior	N/A				FK-452F2-1-2/E50			
	Piston Rod Material	N/A				N/A			
PROBE	Type	Seismic Vibration				Proximity			
	Range	25.4mm/SEC, RMS				4.0 mm			
	Material	316 Stainless Steel				316 Stainless Steel			
	Conduit size	N/A				N/A			
	Probe Cable Length	N/A				1.0 Meter + Ext 9 Meter			
	Sealing	IP66				IP66			
	Sensor Mounting	M8 x P1.25				Internal of Bare block			
	Mounting Housing	N/A				N/A			
	Mounting Thread	N/A				M16x1.5			
	Sensitivity	100 mV/g				100 mV/g			
	Standard	API 670				API 670			
	TRANSMITTER	Input Power	24 VDC(Loop Powered)				24 VDC(Loop Powered)		
Output		4~20 mA				4~20 mA			
Enclosure Class		IP66				Without			
Model No.		VST5484E				VM-21T1-22C012-1			
Notes :									

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد 03 BK-HD-GCS-CO-0008)						 HAVAYAR INDUSTRIAL GROUP	
		INSTRUMENT DATASHEETS / CERTIFICATES							
شماره پیمان: 053 - 073 - 9184		شماره صفحه: 36 از 41							
		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
		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/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			

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

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		
	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		
	42	Manifold Rating	Manifold Material		Min. CL 3000		316 SS		
Manifold	43	Manifold Connection			1/2" PROCESS SIDE/FLANG INST SIDE				
	44	Mounting Bracket	Bracket Material		Yes / 2" Pipe		316SS		
Accessories	45	Add Corrosive Envir. Enclosure	Surge Protected Device		N/A		N/A		
	46	Manufacturer							
Miscell	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	
شماره پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES							شماره صفحه: 39 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									

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنيه تحت الارض خرید پکیج های کمپرسور گاز (رقت و برگشتی) بینک (فراراد BK-HD-GCS-CO-0008_03)												
		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 40 از 41						
053	نسخه V00		سریال 0001		نوع مدارک DS		رشته IN		تسهیلات 120		صادر کننده HY		بسته کاری GCS	
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 ☒		
3	Fixed			Adj. ☒					Other:					
ELEMENT							11	Max Rating:	2 Amps			24vdc		
4	Diaphragm ☒			Bourdon ☐					Other:					
				Bellows ☐			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 ☐			16	Accessories	Manifold 2Valve					
Tag No.	Process Connection	Adj. Range (Bar G)	Set Point (Bar G)	Design	Working	Service or Line Number	Remark							
PS-2195A	1 " NPT	0~80	HOLD	62Bar	54.9Bar	GAS-111-0051A-FN05-6"-IS	Nace material							
PS-2204A	1 " NPT	0~10	HOLD	10Bar	6Bar	OIL-112-0008A-S.S-2"-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.
HY reply: That is as per project specification.

IN: Material of Manifold to be specified.
HY reply: Noted.
PEDCO: Closed.

IN: To be specified (According to detail design doc)
HY reply: Noted.
PEDCO: Closed.

		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 پیمان: 053 - 073 - 9184		INSTRUMENT DATASHEETS / CERTIFICATES						شماره صفحه: 41 از 41	
		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		
		1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER	1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER	1ST STAGE DISCHARGE SNUBBER	2ND STAGE DISCHARGE SNUBBER		
2.MATERIAL		Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum	Cast Aluminum		
		Gas	Gas	Gas	Gas	Gas	Gas		
3.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.STEM LENGTH		N/A	N/A	N/A	N/A	N/A	N/A		
11.STEM MATERIAL		N/A	N/A	N/A	N/A	N/A	N/A		
		2"#300	2"#600	2"#300	2"#600	2"#300	2"#600		
		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		
		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.
 HY reply:Noted.
 PEDCO:Closed.

IN: To be specified by vendor according to spec and IPS Standard.
 HY reply:Noted.
 PEDCO:Closed.

IN: To be rechecked.
 HY reply:Noted.
 PEDCO:Closed.

IN: To be specified (According to engineering detail document).
 HY reply:Noted.
 PEDCO:Closed.