طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEETS FOR ROTAMETER

نگهداشت و افزایش تولید میدان نفتی بینک

D02	SEP.2023	AFC	P.Hajisadeghi	M.Fakharian	S.FARAMARZPOUR	
D01	DEC.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
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Rev.	**Date**	**Purpose of Issue / Status**	**Prepared by:**	**Checked by:**	**Approved by:**	**CLIENT Approval**

Class: 1 | **CLIENT Doc. Number: F9Z-708938**

status:

IDC: Inter-Discipline Check

IFC: Issued For Comment

IFA: Issued For Approval

AFD: Approved For Design

AFC: Approved For Construction

AFP: Approved For Purchase

AFQ: Approved For Quotation

IFI: Issued For Information

AB-R: As-Built for CLIENT Review

AB-A: As-Built –Approved

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح‌الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک DATA SHEETS FOR ROTAMETER	شرکت توسعه پتروایران HIRGAN ENERGY

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۲ از ۱۲
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	IN	DT	0018	D02	

REVISION RECORD SHEET

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1	X	X	X		
2	X	X	X		
3	X	X			
4	X		X		
5	X	X	X		
6	X	X	X		
7	X	X	X		
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REFERENCE DOCUMENTS :

Specification For Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001
Process Basis Of Design	BK-GNRAL-PEDCO-000-PR-DB-0001
Piping Material Specification	BK-GCS-PEDCO-120-PI-SP-0001
Hazardous Area Classification Layout	BK-GCS-PEDCO-120-SA-PY-0002
Instrument & Control System Design Criteria	BK-GCS-PEDCO-120-IN-DC-0002
Symbol & Legend For PFD and P&ID	BK-GCS-PEDCO-120-PR-PI-0001
P&ID - Gas Compression Inlet Gas Pipeline (Binak)	BK-GCS-PEDCO-120-PR-PI-0002
P&ID - Gas Compression Inlet Gas Pipeline (Golkhari)	BK-GCS-PEDCO-120-PR-PI-0003
P&ID - Slug Catcher System	BK-GCS-PEDCO-120-PR-PI-0004
P&ID - Gas Compression Inlet Knock Out Drum	BK-GCS-PEDCO-120-PR-PI-0005
P&ID - 1st Stage Gas Compression Suction Drums	BK-GCS-PEDCO-120-PR-PI-0006
P&ID - 1st Stage Gas Compression Compressors	BK-GCS-PEDCO-120-PR-PI-0007
P&ID - 1st Stage Gas Compression Air Coolers	BK-GCS-PEDCO-120-PR-PI-0008
P&ID - 2nd Stage Gas Compression Suction Drums	BK-GCS-PEDCO-120-PR-PI-0009
P&ID - 2nd Stage Gas Compression Compressors	BK-GCS-PEDCO-120-PR-PI-0010
P&ID - 2nd Stage Gas Compression Air Coolers	BK-GCS-PEDCO-120-PR-PI-0011
P&ID - 2nd Stage Gas Compression Discharge Drum	BK-GCS-PEDCO-120-PR-PI-0012
P&ID - Gas Compression Dehydration Package	BK-GCS-PEDCO-120-PR-PI-0013
P&ID - Lean Glycol Storage Tank	BK-GCS-PEDCO-120-PR-PI-0014
P&ID - Instrument & Plant Air System	BK-GCS-PEDCO-120-PR-PI-0015
P&ID - Nitrogen Generation System	BK-GCS-PEDCO-120-PR-PI-0016
P&ID - Close Drain System	BK-GCS-PEDCO-120-PR-PI-0017
P&ID - Corrosion Inhibitor Package	BK-GCS-PEDCO-120-PR-PI-0018
P&ID - Methanol Injection Package	BK-GCS-PEDCO-120-PR-PI-0019
P&ID - LP Flare System	BK-GCS-PEDCO-120-PR-PI-0020
P&ID - Oily Water Sewer	BK-GCS-PEDCO-120-PR-PI-0021
P&ID - Fuel Gas System	BK-GCS-PEDCO-120-PR-PI-0022
P&ID - Diesel Oil System	BK-GCS-PEDCO-120-PR-PI-0023
P&ID - Potable Water System	BK-GCS-PEDCO-120-PR-PI-0024
P&ID - Glycol Sump Drum	BK-GCS-PEDCO-120-PR-PI-0025
P&ID - Fire Water Network	BK-GCS-PEDCO-120-SA-PI-0001
P&ID - Total Flooding System For Extension of Existing Elect. Building	BK-GCS-PEDCO-120-SA-PI-0002

GENERAL NOTES:

1- Environmental Condition For Field Instrumentation Of BINAK Complex Shall Be Considered As Per The Following:

Maximum ambient temperature: 50 (°C)
Minimum ambient temperature: -5 (°C)
Maximum steel surface exposed to sun: 85 (°C)
Maximum summer dry bulb: - (°C)
DB/RH for Summer HVAC Design: 41 °C / 61 %
DB FOR Winter HVAC Design: 6 °C

Relative Humidity:

- Maximum Design relative humidity (%): 100
- Minimum Design relative humidity (%): 0

2- Surface roughness shall be in accordance with ASME 16.5;
- 125 to 250 AARH for raised Face Flanges and Flat Face Flanges
- 63 AARH for Ring Joint Flanges

3- Gland assemblies shall be of “O” ring construction, unless process conditions noted on the individual data sheet require otherwise.

4-Rotameters shall be completely assembled with all accessories before shipping with the orientation of connections as noted on the individual data sheet.

5-Indicating scales shall have full length safety glass shielding which has gasket in both sides and should be approximately 125mm in length for extension meters used for transmitting service or for armoured meters

6-Will be finalized after receiving vendor data.

ROTAMETER					
General	1	Tag No.	**FG-2101**	**FG-2102**	**FG-2111**
	2	Service	CHEMICAL (Corrosion Inhibitor)	CHEMICAL (Corrosion Inhibitor)	CHEMICAL (Corrosion Inhibitor)
	3	P&ID No.	BK-GCS-PEDCO-120-PR-PI-0002-D07	BK-GCS-PEDCO-120-PR-PI-0003-D07	BK-GCS-PEDCO-120-PR-PI-0005-D07
	4	Line Name	CHM-112-0001-AS00-3/4"-NP	CHM-112-0002-AS00-3/4"-NP	CHM-112-0003-AS00-3/4"-NP
	5	Area Classification	ZONE 2, IIB T4	ZONE 2, IIB T4	ZONE 2, IIB T4
	6	Piping Class	AS00	AS00	AS00
	7	Line Size	3/4"	3/4"	3/4"
	8	Enclosure Type	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)
	9	Schedule	SCH.40S	SCH.40S	SCH.40S
Process Data	10	Fluid	CHEMICAL (Corrosion Inhibitor)	CHEMICAL (Corrosion Inhibitor)	CHEMICAL (Corrosion Inhibitor)
	11	Phase	LIQUID	LIQUID	LIQUID
	12	Flow Rate Min.	0.068 lit/hr	0.132 lit/hr	0.020 lit/hr
	13	Flow Rate Operating.	0.354 lit/hr	0.354 lit/hr	1.034 lit/hr
	14	Flow Rate Max.	0.354 lit/hr	0.354 lit/hr	1.034 lit/hr
	15	Operating Temperature	AMB.	AMB.	AMB.
	16	Operating Pressure	7.5	7.5	5.1
	17	Design Temperature	55(°C)	55(°C)	55(°C)
	18	Design Pressure	13.9	13.9	13.9
	19	Molecular Weight	198~202	198~202 (Note 6)	198~202 (Note 6)
	20	Operating Viscosity (CSt)	5.5 (Note 6)	5.5 (Note 6)	5.5 (Note 6)
	21	Operating Density	860 (Note 6)	860 (Note 6)	860(Note 6)
	22	Color/Transparency	Colored fluid	Colored fluid	Colored fluid
	23	Max. Allowable Press. Drop	20 mbar(VTC)	20 mbar(VTC)	20 mbar(VTC)
	24	CP/CV	1.22 (Note 6)	1.22 (Note 6)	1.22 (Note 6)
Meter	25	Function	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)
	26	Mounting	In Line - Vertical	In Line - Vertical	In Line - Vertical
	27	Size (in)	VTA	VTA	VTA
	28	Rating (lbs.)	300#(RF)	300#(RF)	300#(RF)
	29	Process Connection	3/4", Flanged	3/4", Flanged	3/4", Flanged
	30	Meter scale range	0~0.5 Lit/hr (VTC)	0~0.5 Lit/hr (VTC)	0~0.050 Lit/hr (VTC)
	31	Meter Scale: Length & Type	VTA	VTA	VTA
	32	Tube Material	Flange & Tube: 316 SS (VTC)	Flange & Tube: 316L SS (VTC)	Flange & Tube: 316L SS (VTC)
	33	Float Material	316 SS	316L SS	316L SS
	34	Scale Length	VTA	VTA	VTA
	35	Accuracy	2% 0f F.S	2% 0f F.S	2% 0f F.S
	36	Meter Type	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)
	37	Hydraulic Calib. Required	Yes	Yes	Yes
	38	Weather Protection	IP65	IP65	IP65
	39	Housing Material	Die Cast Aluminum	Die Cast Aluminum	Die Cast Aluminum
Transmitter	40	RFI Protection	N/A	N/A	N/A
	41	Output Signal	N/A	N/A	N/A
	42	Instrument Range	N/A	N/A	N/A
	43	Power Supply	N/A	N/A	N/A
	44	Electrical Certification	N/A	N/A	N/A
	45	Electrical Connection	N/A	N/A	N/A
	46	Weather Protection	N/A	N/A	N/A
	47	Tropicalization	N/A	N/A	N/A
	48	Integral Indicator	N/A	N/A	N/A
	49	-	-	-	-
Options	50	Valve Size	N/A	N/A	N/A
	51	Valve material	N/A	N/A	N/A
	52	Air set	N/A	N/A	N/A
	53	Differential Pressure Regulator	N/A	N/A	N/A
	54	Gasket material	VTA	VTA	VTA
	55	NACE Requirements	No	No	No
Purchasing Data	56	Manufacturer	Will be finalized later	Will be finalized later	Will be finalized later
	57	Model	Will be finalized later	Will be finalized later	Will be finalized later
	58				
	59				

NOTES : VTA : VENDOR TO ADVISE VTC: VENDOR TO CONFIRM

- The flow direction will be clearly stamped or cast on the body
- Bidder shall be submitted calculation sheet.

D02

ROTAMETER					
General	1	Tag No.	**FG-2112**	**FG-2141**	**FG-2151**
	2	Service	CHEMICAL (Corrosion Inhibitor)	CHEMICAL (Corrosion Inhibitor)	CHEMICAL (Corrosion Inhibitor)
	3	P&ID No.	BK-GCS-PEDCO-120-PR-PI-0004-D07 (1/2)	BK-GCS-PEDCO-120-PR-PI-0012-D07	BK-GCS-PEDCO-120-PR-PI-0013-D07 (1/3)
	4	Line Name	CHM-112-0021-AS00-3/4"-NP	CHM-112-0010-FS00-3/4"-NP	CHM-112-0011-FS00-3/4"-NP
	5	Area Classification	ZONE 2, IIB T4	ZONE 2, IIB T4	ZONE 2, IIB T4
	6	Piping Class	AS00	FS00	FS00
	7	Line Size	3/4"	3/4"	3/4"
	8	Enclosure Type	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)
	9	Schedule	SCH.40S	SCH.40S	SCH.40S
Process Data	10	Fluid	CHEMICAL (Corrosion Inhibitor)	CHEMICAL (Corrosion Inhibitor)	CHEMICAL (Corrosion Inhibitor)
	11	Phase	LIQUID	LIQUID	LIQUID
	12	Flow Rate Min.	0.133lit/hr	0.069 lit/hr	0.068 lit/hr
	13	Flow Rate Operating.	0.680 lit/hr	-	-
	14	Flow Rate Max.	0.680 lit/hr	0.35 lit/hr	0.349 lit/hr
	15	Operating Temperature	AMB.	AMB.	AMB.
	16	Operating Pressure	7.5	54.1	52.9
	17	Design Temperature	55(°C)	55(°C)	55(°C)
	18	Design Pressure	13.9	62.4 barg (Note 6)	62.4 barg (Note 6)
	19	Molecular Weight	198~202	198~202 (Note 6)	198~202 (Note 6)
	20	Operating Viscosity (CSt)	5.5 (Note 6)	5.5 (Note 6)	5.5 (Note 6)
	21	Operating Density	860 (Note 6)	860 (Note 6)	860 (Note 6)
	22	Color/Transparency	Colored fluid	Colored fluid	Colored fluid
	23	Max. Allowable Press. Drop	20 mbar(VTC)	20 mbar(VTC)	20 mbar(VTC)
	24	CP/CV	1.22 (Note 6)	1.22 (Note 6)	1.22 (Note 6)
Meter	25	Function	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)
	26	Mounting	In Line - Vertical	In Line - Vertical	In Line - Vertical
	27	Size (in)	VTA	VTA	VTA
	28	Rating (lbs.)	300#(RF)	600#(RF)	600#(RF)
	29	Process Connection	3/4", Flanged	3/4", Flanged	3/4", Flanged
	30	Meter scale range	0~1 Lit/hr (VTC)	0~0.5 Lit/hr (VTC)	0~0.5 Lit/hr (VTC)
	31	Meter Scale: Length & Type	VTA	VTA	VTA
	32	Tube Material	Flange & Tube: 316 SS (VTC)	Flange & Tube: 316 SS (VTC)	Flange & Tube: 316 SS (VTC)
	33	Float Material	316 SS	316 SS	316 SS
	34	Scale Length	VTA	VTA	VTA
	35	Accuracy	2% 0f F.S	2% 0f F.S	2% 0f F.S
	36	Meter Type	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)
	37	Hydraulic Calib. Required	Yes	Yes	Yes
	38	Weather Protection	IP65	IP65	IP65
	39	Housing Material	Die Cast Aluminum	Die Cast Aluminum	Die Cast Aluminum
Transmitter	40	RFI Protection	N/A	N/A	N/A
	41	Output Signal	N/A	N/A	N/A
	42	Instrument Range	N/A	N/A	N/A
	43	Power Supply	N/A	N/A	N/A
	44	Electrical Certification	N/A	N/A	N/A
	45	Electrical Connection	N/A	N/A	N/A
	46	Weather Protection	N/A	N/A	N/A
	47	Tropicalization	N/A	N/A	N/A
	48	Integral Indicator	N/A	N/A	N/A
	49	-	-	-	-
Options	50	Valve Size	N/A	N/A	N/A
	51	Valve material	N/A	N/A	N/A
	52	Air set	N/A	N/A	N/A
	53	Differential Pressure Regulator	N/A	N/A	N/A
	54	Gasket material	VTA	VTA	VTA
	55	NACE Requirements	No	No	No
Purchasing Data	56	Manufacturer	Will be finalized later	Will be finalized later	Will be finalized later
	57	Model	Will be finalized later	Will be finalized later	Will be finalized later
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NOTES : VTA : VENDOR TO ADVISE VTC: VENDOR TO CONFIRM

- The flow direction will be clearly stamped or cast on the body
- Bidder shall be submitted calculation sheet.

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح‌الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

DATA SHEETS FOR ROTAMETER

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
۰۵۳ - ۰۷۳ - ۹۱۸٤	BK	GCS	PEDCO	120	IN	DT	0018	D02

شماره صفحه: ۷ از ۱۲

D02

ROTAMETER					
General	1	Tag No.	**FG-2271**		
	2	Service	CHEMICAL (Corrosion Inhibitor)		
	3	P&ID No.	BK-GCS-PEDCO-120-PR-PI-0022-D06		
	4	Line Name	CHM-112-0020-AS00-3/4"-NP		
	5	Area Classification	ZONE 2, IIB T4		
	6	Piping Class	AS00		
	7	Line Size	3/4"		
	8	Enclosure Type	Safety glass(Borosilicate glass)		
	9	Schedule	SCH.40S		
Process Data	10	Fluid	CHEMICAL (Corrosion Inhibitor)		
	11	Phase	LIQUID		
	12	Flow Rate Min.	0.006 lit/hr		
	13	Flow Rate Operating.	-		
	14	Flow Rate Max.	0.033 lit/hr		
	15	Operating Temperature	AMB.		
	16	Operating Pressure	4.9		
	17	Design Temperature	55(°C)		
	18	Design Pressure	13.9 barg (Note 6)		
	19	Molecular Weight	198~202 (Note 6)		
	20	Operating Viscosity (CSt)	5.5 (Note 6)		
	21	Operating Density	860 (Note 6)		
	22	Color/Transparency	Colored fluid		
	23	Max. Allowable Press. Drop	20 mbar(VTC)		
	24	CP/CV	1.21 (Note 6)		
Meter	25	Function	Local Indicator-Gage Type (LZD)		
	26	Mounting	In Line - Vertical		
	27	Size (in)	VTA		
	28	Rating (lbs.)	300#(RF)		
	29	Process Connection	3/4", Flanged		
	30	Meter scale range	0~0.05 Lit/hr (VTC)		
	31	Meter Scale: Length & Type	VTA		
	32	Tube Material	Flange & Tube: 316L SS (VTC)		
	33	Float Material	316L SS		
	34	Scale Length	VTA		
	35	Accuracy	2% 0f F.S		
	36	Meter Type	Metal tube, Armored type with magnetic pick up (VTC)		
	37	Hydraulic Calib. Required	Yes		
	38	Weather Protection	IP65		
	39	Housing Material	Die Cast Aluminum		
Transmitter	40	RFI Protection	N/A		
	41	Output Signal	N/A		
	42	Instrument Range	N/A		
	43	Power Supply	N/A		
	44	Electrical Certification	N/A		
	45	Electrical Connection	N/A		
	46	Weather Protection	N/A		
	47	Tropicalization	N/A		
	48	Integral Indicator	N/A		
	49	-	-		
Options	50	Valve Size	N/A		
	51	Valve material	N/A		
	52	Air set	N/A		
	53	Differential Pressure Regulator	N/A		
	54	Gasket material	VTA		
	55	NACE Requirements	No		
Purchasing Data	56	Manufacturer	Will be finalized later		
	57	Model	Will be finalized later		
	58				
	59				

NOTES : VTA : VENDOR TO ADVISE VTC: VENDOR TO CONFIRM

- The flow direction will be clearly stamped or cast on the body
- Bidder shall be submitted calculation sheet.

ROTAMETER

D02

General	1	Tag No.	**FG-2132A**	**FG-2132B**	**FG-2132C**
	2	Service	CHEMICAL (Methanol)	CHEMICAL (Methanol)	CHEMICAL (Methanol)
	3	P&ID No.	BK-GCS-PEDCO-120-PR-PI-0011-D06 (1 / 3)	BK-GCS-PEDCO-120-PR-PI-0011-D06 (2 / 3)	BK-GCS-PEDCO-120-PR-PI-0011-D06 (3 / 3)
	4	Line Name	CHM-112-0005A-FS00-3/4"-NP	CHM-112-0005B-FS00-3/4"-NP	CHM-112-0005C-FS00-3/4"-NP
	5	Area Classification	ZONE 2, IIB T4	ZONE 2, IIB T4	ZONE 2, IIB T4
	6	Piping Class	FS00	FS00	FS00
	7	Line Size	3/4"	3/4"	3/4"
	8	Enclosure Type	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)
	9	Schedule	SCH.40S	SCH.40S	SCH.40S
Process Data	10	Fluid	CHEMICAL (Methanol)	CHEMICAL (Methanol)	CHEMICAL (Methanol)
	11	Phase	LIQUID	LIQUID	LIQUID
	12	Flow Rate Min.	-	-	-
	13	Flow Rate Operating.	17.92 lit/hr	17.92 lit/hr	17.92 lit/hr
	14	Flow Rate Max.	21.5 lit/hr	21.5 lit/hr	21.5 lit/hr
	15	Operating	AMB.	AMB.	AMB.
	16	Operating Pressure	54.8	54.8	54.8
	17	Design Temperature	55(°C)	55(°C)	55(°C)
	18	Design Pressure	62.4 barg (Note 6)	62.4 barg (Note 6)	62.4 barg (Note 6)
	19	Molecular Weight	198~202 (Note 6)	198~202 (Note 6)	198~202 (Note 6)
	20	Operating Viscosity (CSt)	5.5 (Note 6)	5.5 (Note 6)	5.5 (Note 6)
	21	Operating Density	860 (Note 6)	860 (Note 6)	860 (Note 6)
	22	Color/Transparency	Colored fluid	Colored fluid	Colored fluid
	23	Max. Allowable Press. Drop	20 mbar(VTC)	20 mbar(VTC)	20 mbar(VTC)
	24	CP/CV	1.22 (Note 6)	1.22 (Note 6)	1.22 (Note 6)
Meter	25	Function	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)
	26	Mounting	In Line - Vertical	In Line - Vertical	In Line - Vertical
	27	Size (in)	VTA	VTA	VTA
	28	Rating (lbs.)	600#(RF)	600#(RF)	600#(RF)
	29	Process Connection	3/4", Flanged	3/4", Flanged	3/4", Flanged
	30	Meter scale range	0~30 Lit/hr (VTC)	0~30 Lit/hr (VTC)	0~30 Lit/hr (VTC)
	31	Meter Scale: Length & Type	VTA	VTA	VTA
	32	Tube Material	Flange & Tube: 316 SS (VTC)	Flange & Tube: 316L SS (VTC)	Flange & Tube: 316L SS (VTC)
	33	Float Material	316 SS	316L SS	316L SS
	34	Scale Length	VTA	VTA	VTA
	35	Accuracy	2% 0f F.S	2% 0f F.S	2% 0f F.S
	36	Meter Type	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)
	37	Hydraulic Calib. Required	Yes	Yes	Yes
	38	Weather Protection	IP65	IP65	IP65
	39	Housing Material	Die Cast Aluminum	Die Cast Aluminum	Die Cast Aluminum
Transmitter	40	RFI Protection	N/A	N/A	N/A
	41	Output Signal	N/A	N/A	N/A
	42	Instrument Range	N/A	N/A	N/A
	43	Power Supply	N/A	N/A	N/A
	44	Electrical Certification	N/A	N/A	N/A
	45	Electrical Connection	N/A	N/A	N/A
	46	Weather Protection	N/A	N/A	N/A
	47	Tropicalization	N/A	N/A	N/A
	48	Integral Indicator	N/A	N/A	N/A
	49	-	-	-	-
Options	50	Valve Size	N/A	N/A	N/A
	51	Valve material	N/A	N/A	N/A
	52	Air set	N/A	N/A	N/A
	53	Differential Pressure Regulator	N/A	N/A	N/A
	54	Gasket material	VTA	VTA	VTA
	55	NACE Requirements	No	No	No
Purchasing Data	56	Manufacturer	Will be finalized later	Will be finalized later	Will be finalized later
	57	Model	Will be finalized later	Will be finalized later	Will be finalized later
	58				
	59				

NOTES : VTA : VENDOR TO ADVISE VTC: VENDOR TO CONFIRM

- The flow direction will be clearly stamped or cast on the body
- Bidder shall be submitted calculation sheet.

D02

ROTAMETER					
General	1	Tag No.	**FG-2134A**	**FG-2134B**	**FG-2134C**
	2	Service	CHEMICAL (Methanol)	CHEMICAL (Methanol)	CHEMICAL (Methanol)
	3	P&ID No.	BK-GCS-PEDCO-120-PR-PI-0009-D07 (1 / 3)	BK-GCS-PEDCO-120-PR-PI-0009-D07 (2 / 3)	BK-GCS-PEDCO-120-PR-PI-0009-D07 (3 / 3)
	4	Line Name	CHM-112-0004A-FS00-3/4"-NP	CHM-112-0004B-FS00-3/4"-NP	CHM-112-0004C-FS00-3/4"-NP
	5	Area Classification	ZONE 2, IIB T4	ZONE 2, IIB T4	ZONE 2, IIB T4
	6	Piping Class	FS00	FS00	FS00
	7	Line Size	3/4"	3/4"	3/4"
	8	Enclosure Type	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)
	9	Schedule	SCH.40S	SCH.40S	SCH.40S
Process Data	10	Fluid	CHEMICAL (Methanol)	CHEMICAL (Methanol)	CHEMICAL (Methanol)
	11	Phase	LIQUID	LIQUID	LIQUID
	12	Flow Rate Min.	-	-	-
	13	Flow Rate Operating.	6.32 lit/hr	6.32 lit/hr	6.32 lit/hr
	14	Flow Rate Max.	7.58 lit/hr	7.58 lit/hr	7.58 lit/hr
	15	Operating	AMB.	AMB.	AMB.
	16	Operating Pressure	54.8	54.8	54.8
	17	Design Temperature	55(°C)	55(°C)	55(°C)
	18	Design Pressure	62.4 barg (Note 6)	62.4 barg (Note 6)	62.4 barg (Note 6)
	19	Molecular Weight	198~202 (Note 6)	198~202 (Note 6)	198~202 (Note 6)
	20	Operating Viscosity (CSt)	5.5 (Note 6)	5.5 (Note 6)	5.5 (Note 6)
	21	Operating Density	860 (Note 6)	860 (Note 6)	860 (Note 6)
	22	Color/Transparency	Colored fluid	Colored fluid	Colored fluid
	23	Max. Allowable Press. Drop	20 mbar(VTC)	20 mbar(VTC)	20 mbar(VTC)
	24	CP/CV	1.22 (Note 6)	1.22 (Note 6)	1.22 (Note 6)
Meter	25	Function	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)
	26	Mounting	In Line - Vertical	In Line - Vertical	In Line - Vertical
	27	Size (in)	VTA	VTA	VTA
	28	Rating (lbs.)	600#(RF)	600#(RF)	600#(RF)
	29	Process Connection	3/4", Flanged	3/4", Flanged	3/4", Flanged
	30	Meter scale range	0~11 Lit/hr (VTC)	0~11 Lit/hr (VTC)	0~11 Lit/hr (VTC)
	31	Meter Scale: Length & Type	VTA	VTA	VTA
	32	Tube Material	Flange & Tube: 316 SS (VTC)	Flange & Tube: 316L SS (VTC)	Flange & Tube: 316L SS (VTC)
	33	Float Material	316 SS	316L SS	316L SS
	34	Scale Length	VTA	VTA	VTA
	35	Accuracy	2% 0f F.S	2% 0f F.S	2% 0f F.S
	36	Meter Type	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)
	37	Hydraulic Calib. Required	Yes	Yes	Yes
	38	Weather Protection	IP65	IP65	IP65
	39	Housing Material	Die Cast Aluminum	Die Cast Aluminum	Die Cast Aluminum
Transmitter	40	RFI Protection	N/A	N/A	N/A
	41	Output Signal	N/A	N/A	N/A
	42	Instrument Range	N/A	N/A	N/A
	43	Power Supply	N/A	N/A	N/A
	44	Electrical Certification	N/A	N/A	N/A
	45	Electrical Connection	N/A	N/A	N/A
	46	Weather Protection	N/A	N/A	N/A
	47	Tropicalization	N/A	N/A	N/A
	48	Integral Indicator	N/A	N/A	N/A
	49	-	-	-	-
Options	50	Valve Size	N/A	N/A	N/A
	51	Valve material	N/A	N/A	N/A
	52	Air set	N/A	N/A	N/A
	53	Differential Pressure Regulator	N/A	N/A	N/A
	54	Gasket material	VTA	VTA	VTA
	55	NACE Requirements	No	No	No
Purchasing Data	56	Manufacturer	Will be finalized later	Will be finalized later	Will be finalized later
	57	Model	Will be finalized later	Will be finalized later	Will be finalized later
	58				
	59				

NOTES : VTA : VENDOR TO ADVISE VTC: VENDOR TO CONFIRM

- The flow direction will be clearly stamped or cast on the body
- Bidder shall be submitted calculation sheet.

D02

ROTAMETER

General	1	Tag No.	**FG-2142**	**FG-2152**	
	2	Service	CHEMICAL (Methanol)	CHEMICAL (Methanol)	
	3	P&ID No.	BK-GCS-PEDCO-120-PR-PI-0012-D07	BK-GCS-PEDCO-120-PR-PI-0013-D07 (1/3)	
	4	Line Name	CHM-112-0006-FS00-3/4"-NP	CHM-112-0007-FS00-3/4"-NP	
	5	Area Classification	ZONE 2, IIB T4	ZONE 2, IIB T4	
	6	Piping Class	FS00	FS00	
	7	Line Size	3/4"	3/4"	
	8	Enclosure Type	Safety glass(Borosilicate glass)	Safety glass(Borosilicate glass)	
	9	Schedule	SCH.40S	SCH.40S	
Process Data	10	Fluid	CHEMICAL (Methanol)	CHEMICAL (Methanol)	
	11	Phase	LIQUID	LIQUID	
	12	Flow Rate Min.	-	-	
	13	Flow Rate Operating.	44.43 lit/hr	50.2 lit/hr	
	14	Flow Rate Max.	53.31 lit/hr	60.25 lit/hr	
	15	Operating	AMB.	AMB.	
	16	Operating Pressure	54.1	54.1	
	17	Design Temperature	55(°C)	55(°C)	
	18	Design Pressure	62.4 barg (Note 6)	62.4 barg (Note 6)	
	19	Molecular Weight	198~202 (Note 6)	198~202 (Note 6)	
	20	Operating Viscosity (CSt)	5.5 (Note 6)	5.5 (Note 6)	
	21	Operating Density	860 (Note 6)	860 (Note 6)	
	22	Color/Transparency	Colored fluid	Colored fluid	
	23	Max. Allowable Press. Drop	20 mbar(VTC)	20 mbar(VTC)	
	24	CP/CV	1.22 (Note 6)	1.22 (Note 6)	
Meter	25	Function	Local Indicator-Gage Type (LZD)	Local Indicator-Gage Type (LZD)	
	26	Mounting	In Line - Vertical	In Line - Vertical	
	27	Size (in)	VTA	VTA	
	28	Rating (lbs.)	600#(RF)	600#(RF)	
	29	Process Connection	3/4", Flanged	3/4", Flanged	
	30	Meter scale range	0~75 Lit/hr (VTC)	0~75 Lit/hr (VTC)	
	31	Meter Scale: Length & Type	VTA	VTA	
	32	Tube Material	Flange & Tube: 316L SS (VTC)	Flange & Tube: 316L SS (VTC)	
	33	Float Material	316L SS	316L SS	
	34	Scale Length	VTA	VTA	
	35	Accuracy	2% 0f F.S	2% 0f F.S	
	36	Meter Type	Metal tube, Armored type with magnetic pick up (VTC)	Metal tube, Armored type with magnetic pick up (VTC)	
	37	Hydraulic Calib. Required	Yes	Yes	
	38	Weather Protection	IP65	IP65	
	39	Housing Material	Die Cast Aluminum	Die Cast Aluminum	
Transmitter	40	RFI Protection	N/A	N/A	
	41	Output Signal	N/A	N/A	
	42	Instrument Range	N/A	N/A	
	43	Power Supply	N/A	N/A	
	44	Electrical Certification	N/A	N/A	
	45	Electrical Connection	N/A	N/A	
	46	Weather Protection	N/A	N/A	
	47	Tropicalization	N/A	N/A	
	48	Integral Indicator	N/A	N/A	
	49	-	-	-	
Options	50	Valve Size	N/A	N/A	
	51	Valve material	N/A	N/A	
	52	Air set	N/A	N/A	
	53	Differential Pressure Regulator	N/A	N/A	
	54	Gasket material	VTA	VTA	
	55	NACE Requirements	No	No	
Purchasing Data	56	Manufacturer	Will be finalized later	Will be finalized later	
	57	Model	Will be finalized later	Will be finalized later	
	58				
	59				

NOTES :

VTA : VENDOR TO ADVISE

VTC: VENDOR TO CONFIRM

- The flow direction will be clearly stamped or cast on the body
- Bidder shall be submitted calculation sheet.

D02

ROTAMETER					
General	1	Tag No.	**FG-2272**		
	2	Service	FLARE GAS		
	3	P&ID No.	BK-GCS-PEDCO-120-PR-PI-0022-D07		
	4	Line Name	FL-112-0040-AN07-2"-PT		
	5	Area Classification	ZONE 2, IIB T4		
	6	Piping Class	AN07		
	7	Line Size	2"		
	8	Enclosure Type	Safety glass(Borosilicate glass)		
	9	Schedule	SCH.160		
Process Data	10	Fluid	FLARE GAS		
	11	Phase	GAS		
	12	Flow Rate Min.	26 Kg/hr		
	13	Flow Rate Operating.	26 Kg/hr		
	14	Flow Rate Max.	31 Kg/hr		
	15	Operating	19 /37		
	16	Operating Pressure	4.9		
	17	Design Temperature	55(°C)		
	18	Design Pressure	18.2		
	19	Molecular Weight	24.5		
	20	Operating Viscosity (CSt)	0.011		
	21	Operating Density	5.77		
	22	Color/Transparency	Transparency		
	23	Max. Allowable Press. Drop	10 mbar(VTC)		
	24	CP/CV	1.245		
Meter	25	Function	Local Indicator-Gage Type (LZD)		
	26	Mounting	In Line - (Note)		
	27	Size (in)	VTA		
	28	Rating (lbs.)	300#(RF)		
	29	Process Connection	2", Flanged		
	30	Meter scale range	0~22 Lit/hr (VTC)		
	31	Meter Scale: Length & Type	VTA		
	32	Tube Material	Flange & Tube: 316L SS (VTC)		
	33	Float Material	316L SS		
	34	Scale Length	VTA		
	35	Accuracy	2% 0f F.S		
	36	Meter Type	Metal tube, Armored type with magnetic pick up (VTC)		
	37	Hydraulic Calib. Required	Yes		
	38	Weather Protection	IP65		
	39	Housing Material	Die Cast Aluminum		
Transmitter	40	RFI Protection	N/A		
	41	Output Signal	N/A		
	42	Instrument Range	N/A		
	43	Power Supply	N/A		
	44	Electrical Certification	N/A		
	45	Electrical Connection	N/A		
	46	Weather Protection	N/A		
	47	Tropicalization	N/A		
	48	Integral Indicator	N/A		
	49	-	-		
Options	50	Valve Size	N/A		
	51	Valve material	N/A		
	52	Air set	N/A		
	53	Differential Pressure Regulator	N/A		
	54	Gasket material	VTA		
	55	NACE Requirements	No		
Purchasing Data	56	Manufacturer	Will be finalized later		
	57	Model	Will be finalized later		
	58				
	59				

NOTES : VTA : VENDOR TO ADVISE VTC: VENDOR TO CONFIRM

- The flow direction will be clearly stamped or cast on the body
- Bidder shall be submitted calculation sheet.
- FG-2272 shall be installed on slope line (not vertical) so vendor shall select suitable type.

ROTAMETER

D02

General	1	Tag No.	**FG-3201**		
	2	Service	CHEMICAL		
	3	P&ID No.	BK-PPL-PEDCO-320-PR-PI-0001-D04		
	4	Line Name	CHM-112-0007-FS00-3/4"-NP		
	5	Area Classification	ZONE 2, IIB T4		
	6	Piping Class	FS00		
	7	Line Size	3/4"		
	8	Enclosure Type	Safety glass(Borosilicate glass)		
	9	Schedule	SCH.40S		
Process Data	10	Fluid	CHEMICAL (Methanol)		
	11	Phase	LIQUID		
	12	Flow Rate Min.	-		
	13	Flow Rate Operating.	12.53 lit/hr		
	14	Flow Rate Max.	15.03 lit/hr		
	15	Operating	AMB.		
	16	Operating Pressure	54.8		
	17	Design Temperature	55(°C)		
	18	Design Pressure	62.4 barg (Note 6)		
	19	Molecular Weight	198~202 (Note 6)		
	20	Operating Viscosity (CSt)	5.5 (Note 6)		
	21	Operating Density	860 (Note 6)		
	22	Color/Transparency	Colored fluid		
	23	Max. Allowable Press. Drop	20 mbar(VTC)		
	24	CP/CV	1.22 (Note 6)		
Meter	25	Function	Local Indicator-Gage Type (LZD)		
	26	Mounting	In Line - Vertical		
	27	Size (in)	VTA		
	28	Rating (lbs.)	600#(RF)		
	29	Process Connection	3/4", Flanged		
	30	Meter scale range	0~22 Lit/hr (VTC)		
	31	Meter Scale: Length & Type	VTA		
	32	Tube Material	Flange & Tube: 316 SS (VTC)		
	33	Float Material	316 SS		
	34	Scale Length	VTA		
	35	Accuracy	2% 0f F.S		
	36	Meter Type	Metal tube, Armored type with magnetic pick up (VTC)		
	37	Hydraulic Calib. Required	Yes		
	38	Weather Protection	IP65		
	39	Housing Material	Die Cast Aluminum		
Transmitter	40	RFI Protection	N/A		
	41	Output Signal	N/A		
	42	Instrument Range	N/A		
	43	Power Supply	N/A		
	44	Electrical Certification	N/A		
	45	Electrical Connection	N/A		
	46	Weather Protection	N/A		
	47	Tropicalization	N/A		
	48	Integral Indicator	N/A		
	49	-	-		
Options	50	Valve Size	N/A		
	51	Valve material	N/A		
	52	Air set	N/A		
	53	Differential Pressure Regulator	N/A		
	54	Gasket material	VTA		
	55	NACE Requirements	No		
Purchasing Data	56	Manufacturer	Will be finalized later		
	57	Model	Will be finalized later		
	58				
	59				

NOTES : VTA : VENDOR TO ADVISE VTC: VENDOR TO CONFIRM

- The flow direction will be clearly stamped or cast on the body
- Bidder shall be submitted calculation sheet.