

OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT, ISLAMABAD
FOREIGN SECTION C

(To be completed, filled in, signed and stamped by the principal)

ANNEXURE 'A'

Material LEVEL TRANSMITTERS (GUIDED WAVE RADAR,EXTERNAL CAGED DISPLACER & NON CONTACT RADAR) FOR NEW
Tender Enquiry No DCS AT DAKHNI PLANT
Due Date PROC-FC/CB/P&P/DKN-3026/2017
Evaluation Criteria FULL

SCHEDULE OF REQUIREMENT

Sr No	Description	Unit	Quantity	Unit Price (FOB)	Total Price (FOB)	Unit Price C & F BY SEA	Total Price C & F BY SEA	Deviated From Tender Spec. If Any
1	Level Transmitter Tag: 100-LIT-15, Max. Pressure: Atm, Max. Temperature: 60-130°F, Specific Gravity: 0.7-0.9, Level Transmit Height: 4900 mm, Sclae Range: 0-6000 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1 ✓					
2	Level Transmitter Tag: 100-LIT-16, Max. Pressure: Atm, Max. Temperature: 60-130°F, Specific Gravity: 0.7-0.9, Level Transmit Height: 4900 mm, Sclae Range: 0-6000 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1 ✓					
3	Level Transmitter Tag: 100-LIT-17, Max. Pressure: Atm, Max. Temperature: 60-130°F, Specific Gravity: 0.7-0.9, Level Transmit Height: 4900 mm, Sclae Range: 0-6000 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1 ✓					
4	Level Transmitter Tag: 20-LT-16, Max. Pressure: 1140 PSIG, Max. Temperature: 135 °F, Specific Gravity: 1.05, Level Transmit Height: 1619 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 600# RF, Flange Material: A-216-WCB.	Number	1 ✓					
5	Level Transmitter Tag: 30-LT-15, Max. Pressure: 10 PSIG, Max. Temperature: 395 °F, Specific Gravity: 0.976, Level Transmit Height: 724 mm, Sclae Range: 0-1500 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1					
6	Level Transmitter Tag: 40-LT-01, Max. Pressure: 135 PSIG, Max. Temperature: 187 °F, Specific Gravity: 0.904, Level Transmit Height: 1378 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1					
7	Level Transmitter Tag: 40-LT-05, Max. Pressure: 15 PSIG, Max. Temperature: 230 °F, Specific Gravity: 0.961, Level Transmit Height: 1079 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1					
8	Level Transmitter Tag: 60-LT-15, Max. Pressure: 600 PSIG, Max. Temperature: 140°F, Specific Gravity: 0.701, Level Transmit Height: 914 mm, Sclae Range: 0-1500 mm, Flange Connection Size & Rating: 3" 300# RF, Flange Material: A-216-WCB.	Number	1					
9	Level Transmitter Tag: 60-LT-16, Max. Pressure: 307 PSIG, Max. Temperature: 539°F, Specific Gravity: 0.485, Level Transmit Height: 1184 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 300# RF, Flange Material: A-216-WCB.	Number	1					
10	Level Transmitter Tag: 806-LT-01, Max. Pressure: 205 PSIG, Max. Temperature: 150 °F, Specific Gravity: 0.67, Level Transmit Height: 1750 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1					
11	Level Transmitter Tag: 806-LT-02, Max. Pressure: 150 PSIG, Max. Temperature: 150 °F, Specific Gravity: 0.67, Level Transmit Height: 1750 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1					
12	Level Transmitter Tag: 830-LT-02, Max. Pressure: 1 PSIG, Max. Temperature: 450 °F, Specific Gravity: 0.871, Level Transmit Height: 1172 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1					

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13	Level Transmitter Tag: 830-LT-03, Max. Pressure: 0.25 PSIG, Max. Temperature: 450°F, Specific Gravity: 0.871, Level Transmit Height: 4120 mm, Sclae Range: 0-6000 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1
14	Level Transmitter Tag: 902-LT-01, Max. Pressure: 5 PSIG, Max. Temperature: 100-400°F, Specific Gravity: 0.681, Level Transmit Height: 2946 mm, Sclae Range: 0-4000 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1
15	Level Transmitter Tag: 902-LT-02, Max. Pressure: 5 PSIG, Max. Temperature: 100-400°F, Specific Gravity: 0.98, Level Transmit Height: 1260 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1
16	Level Transmitter Tag: 903-LT-02, Max. Pressure: 20 PSIG, Max. Temperature: 140°F, Specific Gravity: 0.981, Level Transmit Height: N/A, Sclae Range: N/A, Flange Connection Size & Rating: 3" 300# RF, Flange Material: A-216-WCB.	Number	1
17	Level Transmitter Tag: 910-LIT-01, Max. Pressure: Atm, Max. Temperature: 125 °F, Specific Gravity: 0.8, Level Transmit Height: 8100 mm, Sclae Range: 0-9000 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1
18	Level Transmitter Tag: 910-LIT-02, Max. Pressure: Atm, Max. Temperature: 125 °F, Specific Gravity: 0.8, Level Transmit Height: 8100 mm, Sclae Range: 0-9000 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1
19	Level Transmitter Tag: 910-LIT-03 Max. Pressure: Atm, Max. Temperature: 125 °F, Specific Gravity: 0.8, Level Transmit Height: 8100 mm, Sclae Range: 0-9000 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1
20	Level Transmitter Tag: 910-LIT-04, Max. Pressure: Atm, Max. Temperature: 125 °F, Specific Gravity: 0.8, Level Transmit Height: 8100 mm, Sclae Range: 0-9000 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1
21	Level Transmitter Tag: 910-LIT-05, Max. Pressure: Atm, Max. Temperature: 125 °F, Specific Gravity: 0.8, Level Transmit Height: 1900 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1
22	Level Transmitter Tag: 911-LT-01, Max. Pressure: 240 PSIG, Max. Temperature: 140°F, Specific Gravity: 0.486, Level Transmit Height: 3200 mm, Sclae Range: 0-4000 mm, Flange Connection Size & Rating: 3" 300# RF, Flange Material: A-216-WCB.	Number	1
23	Level Transmitter Tag: 911-LT-02, Max. Pressure: 240 PSIG, Max. Temperature: 140°F, Specific Gravity: 0.486, Level Transmit Height: 3200 mm, Sclae Range: 0-4000 mm, Flange Connection Size & Rating: 3" 300# RF, Flange Material: A-216-WCB.	Number	1
24	Level Transmitter Tag: 911-LT-03, Max. Pressure: 240 PSIG, Max. Temperature: 140°F, Specific Gravity: 0.486, Level Transmit Height: 3200 mm, Sclae Range: 0-4000 mm, Flange Connection Size & Rating: 3" 300# RF, Flange Material: A-216-WCB.	Number	1
25	Level Transmitter Tag: 911-LT-04, Max. Pressure: 240 PSIG, Max. Temperature: 140°F, Specific Gravity: 0.486, Level Transmit Height: 3200 mm.	Number	1

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	Sclae Range: 0-4000 mm, Flange Connection Size & Rating: 3" 300# RF, Flange Material: A-216-WCB.		
26	Level Transmitter Tag: LT-15, Max. Pressure: 10 PSIG, Max. Temperature: 300°F, Specific Gravity: 1, Level Transmit Height: 1640 mm, Sclae Range: 0-2500 mm, Flange Connection Size & Rating: 3" 150# RF, Flange Material: A-216-WCB.	Number	1
27	Level Transmitter Tag: LT-7, Equipment: WH Boiler Max. Pressure: , Max. Temperature: N/A, Specific Gravity: N/A, Level Transmit Height: N/A, Sclae Range: N/A, Flange Connection Size & Rating: 4" 150# RF, Flange Material: A-216-WCB.	Number	1
28	Tag: 100-LT-01, Max. Pres: 1265 PSIG, Max. Temp: 200 °F, Specific Gravity: 0.681, Flange Centre to Centre Distance: 26 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
29	Tag: 100-LT-02, Max. Pres: 1265 PSIG, Max. Temp: 200 °F, Specific Gravity: 0.981, Flange Centre to Centre Distance: 24 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
30	Tag: 100-LT-03, Max. Pres: 1265 PSIG, Max. Temp: 200 °F, Specific Gravity: 0.681, Flange Centre to Centre Distance: 26 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
31	Tag: 100-LT-04, Max. Pres: 1265 PSIG, Max. Temp: 200 °F, Specific Gravity: 0.981, Flange Centre to Centre Distance: 24 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
32	Tag: 100-LT-05, Max. Pres: 1265 PSIG, Max. Temp: 200 °F, Specific Gravity: 0.681, Flange Centre to Centre Distance: 26 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
33	Tag: 100-LT-06, Max. Pres: 1265 PSIG, Max. Temp: 200 °F, Specific Gravity: 0.981, Flange Centre to Centre Distance: 24 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
34	Tag: 100-LT-07, Max. Pres: 30 PSIG, Max. Temp: 100 °F, Specific Gravity: 0.681, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 150# RF.	Number	1
35	Tag: 100-LT-08, Max. Pres: 2050 PSIG, Max. Temp: 200 °F, Specific Gravity: 0.681, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 900# RF.	Number	1
36	Tag: 100-LT-09, Max. Pres: 2050 PSIG, Max. Temp: 200 °F, Specific Gravity: 0.981, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 900# RF.	Number	1
37	Tag: 20-LT-02, Max. Pres: 1265 PSIG, Max. Temp: 140 °F, Specific Gravity: Upper 0.616, Lower: 0.990, Flange Centre to Centre Distance: 45.75 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
38	Tag: 20-LT-04, Max. Pres: 1265 PSIG, Max. Temp: 130 °F, Specific Gravity: Upper 0.541, Lower: 0.998, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
39	Tag: 20-LT-05, Max. Pres: 1265 PSIG, Max. Temp: 130 °F, Specific Gravity: Upper 0.541, Lower: 0.998, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
40	Tag: 20-LT-06, Max. Pres: 1265 PSIG, Max. Temp: 140 °F, Specific Gravity: 1.11, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
41	Tag: 30-LT-01, Max. Pres: 65 PSIG, Max. Temp: 140 °F, Specific	Number	

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	Gravity:Upper 0.650, Lower: 1.005, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 150# RF.		
42	Tag: 30-LT-02, Max. Pres: 65 PSIG, Max. Temp: 140 °F,Specific Gravity: 0.65, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 150# RF.	Number	1
43	Tag: 50-LT-01, Max. Pres: 1000 PSIG, Max. Temp: -25 °F,Specific Gravity: Upper: 0.650, Lower: 1.130, Flange Centre to Centre Distance: 14 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
44	Tag: 50-LT-02, Max. Pres: 1000 PSIG, Max. Temp: -25 °F,Specific Gravity: 0.65, Flange Centre to Centre Distance: 29.53 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
45	Tag: 50-LT-03, Max. Pres: 545 PSIG, Max. Temp: -48 °F,Specific Gravity: Upper: 0.640, Lower: 0.690, Flange Centre to Centre Distance: 14 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
46	Tag: 50-LT-04, Max. Pres: 545 PSIG, Max. Temp: -48 °F,Specific Gravity: Upper: 0.650, Lower: 1.130, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
47	Tag: 60-LT-01, Max. Pres: 660 PSIG, Max. Temp: 165 °F,Specific Gravity: Upper: 0.730, Lower: 1.000, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
48	Tag: 60-LT-012, Max. Pres: N/A, Max. Temp: N/A , Specific Gravity:N/A, Flange Centre to Centre Distance: N/A, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
49	Tag: 60-LT-013, Max. Pres: N/A, Max. Temp: N/A , Specific Gravity:N/A, Flange Centre to Centre Distance: N/A, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 600# RF.	Number	1
50	Tag: 60-LT-02, Max. Pres: 660 PSIG, Max. Temp: 165 °F,Specific Gravity: Upper: 0.730, Lower: 1.000, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
51	Tag: 60-LT-03, Max. Pres: 335 PSIG, Max. Temp: 565 °F,Specific Gravity: 0.573, Flange Centre to Centre Distance: 20 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
52	Tag: 60-LT-04, Max. Pres: 335 PSIG, Max. Temp: 140 °F,Specific Gravity: Upper: 0.552, Lower: 0.990, Flange Centre to Centre Distance: 14 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
53	Tag: 60-LT-05, Max. Pres: 335 PSIG, Max. Temp: 140 °F,Specific Gravity: Upper: 0.552, Lower: 0.990, Flange Centre to Centre Distance: 14 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
54	Tag: 60-LT-06, Max. Pres: 510 PSIG, Max. Temp: -25 / 325 °F,Specific Gravity: 0.428, Flange Centre to Centre Distance: 30 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
55	Tag: 60-LT-07, Max. Pres: 513 PSIG, Max. Temp: -25 °F,Specific Gravity: 0.518, Flange Centre to Centre Distance: 14 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
56	Tag: 60-LT-09, Max. Pres: 225 PSIG, Max. Temp: 390 °F,Specific Gravity: 0.519, Flange Centre to Centre Distance: 30 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
57	Tag: 60-LT-10, Max. Pres: 225 PSIG, Max. Temp: 165 °F,Specific Gravity: 0.519, Flange Centre to Centre Distance: 14 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1

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58	Tag: 60-LT-11, Max. Pres: 272 PSIG, Max. Temp: 175 °F, Specific Gravity: 0.976, Flange Centre to Centre Distance: 158 Inches, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 300# RF.	Number	1
59	Tag: 60-LT-12, Max. Pres: 277 PSIG, Max. Temp: 125 °F, Specific Gravity: 0.464, Flange Centre to Centre Distance: 16.5 Inch, Flange Connection Size & Rating (Top & Bottom): 2 Inch/ 2 Inch, 300#RF.	Number	1
60	Tag: 60-LT-2000A, Max. Pres: 300 PSIG, Max. Temp: 225 °F, Specific Gravity: 0.975, Flange Centre to Centre Distance: 14 Inch, Flange Connection Size & Rating(Top & Bottom): 2 Inch/ 2Inch, 300#RFN/A.	Number	1
61	Tag: 60-LT-2000B, Max. Pres: 325 PSIG, Max. Temp: 250 °F, Specific Gravity: 0.975, Flange Centre to Centre Distance: 18 Inch, Flange Connection Size & Rating (Top & Bottom): 2 Inch/ 2 Inch, 300#RFA.	Number	1
62	Tag: 801-LT-01, Max. Pres: 90 PSIG, Max. Temp: 100 °F, Specific Gravity: 1.000, Flange Centre to Centre Distance: N/A, Flange Connection Size & Rating(Top & Bottom): 2" / 2", 150# RF.	Number	1
63	Tag: LT-06, Max. Pres: N/A, Max. Temp: N/A , Specific Gravity:N/A, Flange Centre to Centre Distance: N/A, Flange Connection Size & Rating(Top & Bottom): N/A.	Number	1
64	Tag: LT-18, Max. Pres: N/A, Max. Temp: N/A , Specific Gravity:N/A, Flange Centre to Centre Distance: N/A, Flange Connection Size & Rating(Top & Bottom): N/A.	Number	1
65	Tag: LT-9, Max. Pres: N/A, Max. Temp: N/A , Specific Gravity:N/A, Flange Centre to Centre Distance: N/A, Flange Connection Size & Rating(Top & Bottom): N/A.	Number	1
66	Tag: LT-90, Max. Pres: N/A, Max. Temp: N/A , Specific Gravity:N/A, Flange Centre to Centre Distance: 24 Inches, Flange Connection Size & Rating(Top & Bottom): 2"/2", 150#.	Number	1

1. THE BIDS MUST BE ACCOMPANIED BY A BID BOND IN THE FORM OF A CASH DEPOSIT, A BANK DRAFT OR A **BANK GUARANTEE ISSUED BY SCHEDULED BANK OF PAKISTAN OR A BRANCH OF FOREIGN BANK OPERATING IN PAKISTAN FOR AN AMOUNT OF USD 6000.00 (US DOLLARS SIX THOUSAND ONLY) OR EQUIVALENT PAK RUPEES** WITH TECHNICAL BID AND VALID FOR 150 DAYS FROM THE DATE OF OPENING OF BIDS. THE BANK GUARANTEE WILL BE ISSUED BY A SCHEDULED BANK IN ACCORDANCE WITH THE FORMAT AS PER ANNEXURE-C OF THE TENDER DOCUMENTS.
2. DELIVERY PERIOD IS 04 MONTHS AFTER LC ESTABLISHMENT.

(PS-1259) (1/8)

Detail of Specification for Level transmitter (~~1220~~ Contact Reader)

TRANSMITTER:

Measurement Type: Level;
Type: Contact Radar Type
Measuring Principle: Time Domain Reflectometry (TDR)
Local Indication: Yes (Integral)
Scale Range: (mm) See Sheet 2
Calibration Range: (mm) As per Level Transmit Height
Accuracy: ±5 mm
Transmitter Output: 4-20mA with HART Protocol
Power Supply: 24 VDC (Loop Powered)
Electrical Connection: M20 x 1.5

SENSING PROBE:

Probe Material: 316 SS
Probe Type: Coaxial, perforated / VTA*
Probe Length: as per Level Transmit Height

Housing Material: Stainless Steel
Electrical Classification: EEx'd' IIC T4
Enclosure Protection: NEMA 4X / IP65 Corrosion Resistant

ACCESSORIES:

Cable Gland Required: No
SS Tag Required: Yes
NACE Compliance: Yes
Electrical Entry Plugs Required: Yes

TERMS & CONDITIONS:

1. Vendor shall confirm that the Level Transmitter flange outer diameter shall match with process flange diameter.
2. Vendor shall provide SS Tag attached with SS Screws or SS wire. Tag shall contain Tag Number and Model Number of Transmitter.
3. Vendor shall provide Ex'e' plugs for each Electrical Entry.
4. Vendor shall provide probe type according to process pressure and temperature.
5. All wetted parts shall conform to NACE MR-0175 / ISO 15156 (latest edition).
6. End connection flange rating shall be as per ASME B16.5 standard.

*VTA = Vendor to Advice

Detail specification for Level transmitter (Non Contact Radar)

1260

18

TRANSMITTER

Measurement Type Level
Type Non-Contact Radar Type
Measuring Principle Frequency Modulating Continuous Wave

Local Indication Yes (Remote)
Transmitter Mounting Top Mounting
Calibration Range 0-3660 mm
Power Supply 24 VDC (Loop Powered)
Output Signal 4-20mA with HART Protocol
Accuracy ±1 mm
Electrical Connection M 20 x 1.5
Process Connection 4"-150 # RF
Flange Material A-105N Carbon Steel
Material Exposed to Tank inside Stainless Steel
Manufacturer / Model VTA

ANTENNA

Antenna Type Horn Antenna
Antenna Size VTA
Antenna Operating Frequency VTA
Antenna Material VTA

TRANSMITTER HOUSING

Housing Material Cast Aluminum / Manufacturer Standard
Electrical Classification EEx'd' IIC T4
Enclosure Protection IP65

ACCESSORIES

Cable Gland Required No
SS Tag Required Yes
Electrical Entry Plugs Required Yes
NACE Compliance Yes

TERMS & CONDITIONS:

- 1. Vendor shall confirm that the selection of Level transmitter flange outer diameter to match with process flange diameter
- 2. Vendor shall provide SS Tag attached with SS Screws or SS wire. Tag shall contain Tag Number and Model Number of Transmitter.
- 3. Vendor shall provide Ex'd' plugs for each Electrical Entry
- 4. Vendor to advise for the selection of Antenna size & type according to tank height and fluid of application
- 5. All wetted parts shall conform to NACE MR-0175 / ISO 15156 (latest edition).
- 6. Vendor shall provide all necessary material for mounting on process flange connection such as gaskets, bolts in 316 SS material etc.
- 7. VTA = Vendor to Advice

Detail of items level transmitters *Non Contact R type* (PS-1264)

S.No	TAG NUMBERS	P&ID NUMBER	EQUIPMENT /VESSEL TAG NUMBER	MAX. PRESSURE (PSIG)	MAX. TEMPERATURE (°F)	SPECIFIC GRAVITY	LEVEL TRANSMIT HEIGHT (mm)	SCALE RANGE (mm)	FLANGE CONNECTION SIZE & RATING	FLANGE MATERIAL	REMARKS
1	830-LT-03	2310-PB-2075 (Hot Oil System)	830-FB-01 (Dump Storage Tank)	0.25	450	0.871	4120	0-6000	4" 150# RF	A-216-WCB	Existing Level Switch Tag No LS-7 shall be replaced with LT wit high and low alarm settings.
2	LT-7	0180-A1-12 (OLD SRU)	Waste Heat Boiler Deaerator	Not Available	Not Available	Not Available	Not Available	Not Available	4" 150# RF	A-216-WCB	settings.
3	100-LIT-15	2310-PB-2070 (Stock Tanks)	100-FB-01 (Stock Tank)	Atm	60-130	0.7 - 0.9	4900	0-6000	4" 150# RF	A-216-WCB	
4	100-LIT-16	2310-PB-2070 (Stock Tanks)	100-FB-02 (Stock Tank)	Atm	60-130	0.7 - 0.9	4900	0-6000	4" 150# RF	A-216-WCB	
5	100-LIT-17	2310-PB-2070 (Stock Tanks)	100-FB-03 (Stock Tank)	Atm	60-130	0.7 - 0.9	4900	0-6000	4" 150# RF	A-216-WCB	
6	910-LT-01	2310-PB-2060 (Crude Oil Storage Tanks)	910-FB-01 (Crude Oil Storage Tank)	Atm	125	0.8	8100	0-9000	4" 150# RF	A-216-WCB	
7	910-LT-02	2310-PB-2060 (Crude Oil Storage Tanks)	910-FB-02 (Crude Oil Storage Tank)	Atm	125	0.8	8100	0-9000	4" 150# RF	A-216-WCB	
8	910-LT-03	2310-PB-2060 (Crude Oil Storage Tanks)	910-FB-03 (Crude Oil Storage Tank)	Atm	125	0.8	8100	0-9000	4" 150# RF	A-216-WCB	
9	910-LT-04	2310-PB-2060 (Crude Oil Storage Tanks)	910-FB-04 (Crude Oil Storage Tank)	Atm	125	0.8	8100	0-9000	4" 150# RF	A-216-WCB	
10	910-LT-05	2310-PB-2060 (Crude Oil Storage Tanks)	910-FB-05 (Crude Oil Storage Tank)	Atm	125	0.8	1900	0-2500	4" 150# RF	A-216-WCB	

Detail Specification of Level transmitter Displacer type (PS-1263)

(1/2)

GENERAL INFORMATION:

Level / Interface Measurement Level
Sour Service Yes
Level Transmit Height As per Center to Center Distance

BODY:

Cage Material Carbon Steel
Connection Location (Top - Bottom) Side - Side
Cage Mounting External
Rotatable Head Yes

DISPLACER:

Sensor Type External Caged Displacer
Dimension (mm) VTA
Insertion Depth VTA
Displacer Extension VTA
Displacer Material 316 SS
Torque Tube Material Stainless Steel

TRANSMITTER:

Type Electronic
Indicator Yes
Mounting Integral
Electrical Connection M 20 x 1.5
Output Signal 4-20 mA with HART Protocol
Power Supply (Loop Powered) 24 VDC
Output Action on Level Rise Increase
Output Accuracy 0.5 % of Full Scale

(1/2)

ENCLOSURE:

Enclosure Material	Cast Aluminium
Enclosure Protection Rating	NEMA 4X / IP65 Corrosion Resistant
Tropicalization	Yes
Electrical Classification	EE x 'd' IIC T 4

ACCESSORIES:

SS Tag Required	Yes
Cable Gland Required	No
Drain Connection Size	3/4" NPT (F)
NACE Compliance	Yes

TERMS & CONDITIONS:

1. Vendor shall provide SS Tag attached with SS Screws or SS Wire. Tag shall contain Tag No. & Model No.
2. Pressure and temperature rating shall be compatible with mentioned process pressure & temperature.
3. End connection flange rating shall be as per ASME B16.5 standard.
4. Vendor shall provide Ex'd' metallic plugs for spare electrical connection.
5. Approval for Electrical / Hazardous Area Classification shall be from CENELEC, ATEX, Factory Mutual (FM), IEC or (CSA).
6. Vendor shall ensure that displacer measuring range shall be greater than the mentioned level transmit height.
7. Vendor shall provide drain connection with plugs.
8. All wetted parts shall conform to NACE MR-0175 / ISO 15156 (latest edition).
9. *VTA = Vendor To Advise

Detail of Level Transmitter Displacer type (126)

S.No	TAG NUMBERS	P&ID NUMBER	EQUIPMENT / VESSEL TAG NUMBER	MAXIMUM PRESSURE (PSIG)	MAXIMUM TEMPERATURE (°F)	SPECIFIC GRAVITY	FLANGE CENTER TO CENTER DISTANCE (INCHES)	FLANGE CONNECTION SIZE & RATING (TOP AND BOTTOM)
1	20-LT-02	E-3588-20005A (Sh 1 of 2) (Gas Treatment System)	FA-201 (Sour Gas K.O Drum)	1265	140	Upper : 0.617 Lower : 0.990	45.75	2" / 2" 600#
2	20-LT-04	E-3588-20005A (Sh 2 of 2) (Gas Treatment System)	FA-202 (Absorber Inlet K.O Drum)	1265	130	Upper : 0.541 Lower : 0.998	20	2" / 2" 600#
3	20-LT-05	E-3588-20005A (Sh 2 of 2) (Gas Treatment System)	FA-202 (Absorber Inlet K.O Drum)	1265	130	Upper : 0.541 Lower : 0.998	20	2" / 2" 600#
4	20-LT-06	E-3588-20005A (Sh 2 of 2) (Gas Treatment System)	DA-202 (Glycol Absorber)	1265	140	1.11	20	2" / 2" 600#
5	30-LT-01	E-3588-30005A (Glycol Re-generation System)	FA-301 (Glycol Flash Drum)	65	140	Upper : 0.650 Lower : 1.005	20	2" / 2" 150#
6	30-LT-02	E-3588-30005A (Glycol Re-generation System)	FA-301 (Glycol Flash Drum)	65	140	0.65	20	2" / 2" 150#
7	801-LT-01	2310-PB-2116 (Cooling Towers)	CT-8000 (Cooling Tower)	90	100	1.000	Not Available	2" / 2" 150#
8	60-LT-012	2310-PB-2111 (LP & MP Separators)	FA-607 (MP Separator)	Not Available	Not Available	Not Available	Not Available	2" / 2" 600#
9	60-LT-013	2310-PB-2111 (LP & MP Separators)	FA-608 (LP Separator)	Not Available	Not Available	Not Available	Not Available	2" / 2" 600#
10	LT-06	0180-A1-12 (OLD SRU)	Waste Heat Boiler Deaerator	Not Available	Not Available	Not Available	Not Available	Not Available
11	LT-9	0180-A1-13 (OLD SRU)	E-702 (Sulfur Condenser)	Not Available	Not Available	Not Available	Not Available	Not Available
12	LT-18	0180-A1-20 (OLD SRU)	D-2 (Condensate Drum)	Not Available	Not Available	Not Available	Not Available	Not Available
13	LT-90	0180-A1-20 (OLD SRU)	D-1 (Deaerator & Storage Drum)	Not Available	Not Available	Not Available	24	2" / 2" 150#
14	100-LT-01	2310-PB-2053 (Sh 1 of 2) (Gas Separator Station)	100-FA-01 (HP Separator)	1265	200	0.681	26	2" / 2" 600#

15	100-LT-02	2310-PB-2053 (Sh 1 of 2)	100-FA-01	1265	200	0.981	24	2" / 2"
		(Gas Separator Station)	(HP Separator)					600#
		2310-PB-2053 (Sh 1 of 2)	100-FA-02					2" / 2"
16	100-LT-03			1265	200	0.681	26	
		(Gas Separator Station)	(HP Separator)					600#
17	100-LT-04	2310-PB-2053 (Sh 1 of 2)	100-FA-02	1265	200	0.981	24	2" / 2"
		(Gas Separator Station)	(HP Separator)					600#
18	100-LT-05	2310-PB-2053 (Sh 1 of 2)	100-FA-03	1265	200	0.681	26	2" / 2"
		(Gas Separator Station)	(Test Separator)					600#
		2310-PB-2053 (Sh 1 of 2)	100-FA-03					2" / 2"
19	100-LT-06			1265	200	0.981	24	
		(Gas Separator Station)	(Test Separator)					600#
20	100-LT-07	2310-PB-2053 (Sh 1 of 2)	100-FA-04	30	100	0.681	20	2" / 2"
		(Gas Separator Station)	(LP Separator)					150#
21	100-LT-08	2310-PB-2053 (Sh 2 of 2)	100-V-2102B	2050	200	0.681	20	2" / 2"
		(Sweet Gas Separator Station)	(Sweet Gas Separator)					900#
22	100-LT-09	2310-PB-2053 (Sh 2 of 2)	100-V-2102B	2050	200	0.981	20	2" / 2"
		(Sweet Gas Separator Station)	(Sweet Gas Separator)					900#
23	50-LT-01	E-3588-50005A (Sh 1 of 3)	FA-501	1000	-25	Upper : 0.650	14	2" / 2"
		(Dew Point Reduction System)	(Cold Separator)			Lower : 1.130		600#
		E-3588-50005A (Sh 1 of 3)	FA-501					2" / 2"
24	50-LT-02			1000	-25	0.65	29.53	
		(Dew Point Reduction System)	(Cold Separator)					600#
25	50-LT-03	E-3588-50005A (Sh 1 of 3)	FA-504	545	-48	Upper : 0.640	14	2" / 2"
		(Dew Point Reduction System)	(NGL Feed Drum)			Lower : 0.690		300#
26	50-LT-04	E-3588-50005A (Sh 1 of 3)	FA-504	545	-48	Upper : 0.650	20	2" / 2"
		(Dew Point Reduction System)	(NGL Feed Drum)			Lower : 1.130		300#
27	60-LT-01	E-3588-60005A-D1	FA-601 (NGL Fractionator Feed	660	165	Upper : 0.730	20	2" / 2"
		(NGL Fractionator)	Drum)			Lower : 1.000		300#
28	60-LT-02	E-3588-60005A-D1	FA-601 (NGL Fractionator Feed	660	165	Upper : 0.730	20	2" / 2"
		(NGL Fractionator)	Drum)			Lower : 1.000		300#
29	60-LT-03	E-3588-60005A-D1	DA-601	335	565	0.573	20	2" / 2"
		(NGL Fractionator)	(NGL Fractionator)					300#
30	60-LT-04	E-3588-60005A-D1	FA-602 (NGL Fractionator O/H	335	140	Upper : 0.552	14	2" / 2"
		(NGL Fractionator)	Drum)			Lower : 0.990		300#
31	60-LT-05	E-3588-60005A-D1	FA-602 (NGL Fractionator O/H	335	140	Upper : 0.552	14	2" / 2"

		(NGL Fractionator)	Drum)			Lower : 0.990		300#
32	60-LT-06	E-3588-60005B-D1	DA-602	510	-25 / 325	0.428	30	2" / 2"
		(NGL Fractionator)	(De-Ethaniser)					300#
33	60-LT-07	E-3588-60005B-D1	FA-603	513	-25	0.518	14	2" / 2"
		(NGL Fractionator)	(De-Ethaniser O/H Drum)					300#
34	60-LT-12	E-3588-60005B-D1	EA-605	Not Available	Not Available	Not Available	Not Available	Not Available
		(NGL Fractionator)	(De-Ethaniser O/H Drum)					
35	60-LT-09	E-3588-60005C-D1	DA-602	225	390	0.519	30	2" / 2"
		(NGL Fractionator)	(De-Butaniser)					300#
36	60-LT-10	E-3588-60005C-D1	FA-604	225	165	0.519	14	2" / 2"
		(NGL Fractionator)	(De-Butaniser O/H Drum)					300#
37	60-LT-11	E-3588-60005D-D1	DA-604 (NGL Fractionator Off	272	175	0.976	158	2" / 2"
		(NGL Fractionator)	Gas Amine Scrubber)					300#
38	60-LT-2000A	E-3588-60005E-D1	Stripper	Not Available	Not Available	Not Available	Not Available	Not Available
		(NGL Fractionator)						
39	60-LT-2000B	E-3588-60005E-D1	Stripper	Not Available	Not Available	Not Available	Not Available	Not Available
		(NGL Fractionator)						

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