

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 CONTROL VALVES WITH POSITIONER AND LEVEL TRANSMITTER CONTROLLER FOR SINJHORO PLANT
Tender Enquiry No PROC-FC/CB/P&P/SINJ-4451/219
Due Date
Evaluation Criteria FULL

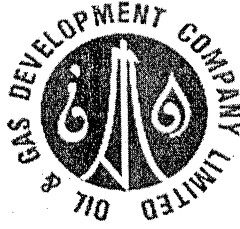
SCHEDULE OF REQUIREMENT

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 controller (Electronic Unit Fisher DLC 3010) As per specification attached	Number	2					
2	Pressure Control Valve (With Smart Positioner),as per Data sheet attached.	Number	1					

Note:

1. Standard warranty and guarantee for all the items should be provided.
2. Items to be supplied in original OEM Packing and must be new & free from any defect.
3. All ambiguity on part numbers of the supplied items should be cleared prior to submission of proposal
4. In case of superseded part number **OR equivalent quoted items**, 100% compliance to fits and tolerances is required. Technical literature should also be provided. Bidder must provide documentary proof that supplied items are exact replacement of parts mentioned in SOR.
5. Offered item and their make, model and part number are exactly functional replacement of specified SOR items in all aspects of specifications, size, installation and functionality. No additional software/hardware and workmanship will be required for installation and operation. All items must replace the specified SOR items without any modification / system shutdown. At any stage any or all of the items found contradicted to the said conditions the supplier shall be liable to replace any/all the supplied items with specified model, part numbers and specs as mentioned in the SOR free of cost to OGDCL.
6. All items to be supplied must be newly manufactured and free from defects.
7. Standard test quality control certificates should be provided (where applicable).
8. **The delivery period must be quoted to the most minimum possible extent however delivery period should not exceed 24 weeks from the date of establishment of letter of credit**
9. Payment will be made on following payment milestones:
 - a. **Seventy (70%) percent of Material LC/Purchase Order Price shall be paid by OGDCL on shipment of the complete material.**
 - b. **Thirty (30%) percent of the Material LC/Purchase Order Price shall be released under the L/C upon delivery of Complete Equipment/material at Karachi Port, Pakistan and after inspection/acceptance of material confirming complete delivery on submission of balance payment invoice.**
10. The bid validity period of **180 days** is required from the date of bid submission/opening. Bid bond amounting to USD 1,000/- or equivalent Pak rupees should be enclosed with the technical bid. Bank guarantee is only acceptable from banks as listed in attachment # 06 for both performance and bid bond.
11. Certificate of incorporation and fair price certificate showing name/designation/contact details of the person signing it must be enclosed with the bid.
12. **The charges at Karachi Sea/Airport should be included in the freight cost of CFR delivery along with corresponding charges such as delivery order/port handling & container rentals for free time etc. However, this freight cost should not include custom duties and taxes at Karachi Seaport/Airport which shall be paid by OGDCL.**

PROC-FC/PROP/P&P/SINJ-4451/2019



**OIL & GAS
DEVELOPMENT
COMPANY LIMITED**

Rev	Date	Description	Initial	Initial	Initial	Signature
Rev	Date	Description	Prepared by	Checked by	Approved By	
2	19-Jan-19	Re-Issued For Review	SOH	BA	AJ	
1	11-Dec-18	Re-Issued For Review	SOH	BA	AJ	
0	29-11-18	Issued For Review	SOH	BA	AJ	



PETROCHEMICAL ENGINEERING CONSULTANT



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TIE-IN OF BITRISM AND GUNDANWARI AT SINJHORO PLANT

TITLE

**PROCESS / MECHANICAL DATASHEET FOR PRESSURE CONTROL VALVE
(PCV-102)**

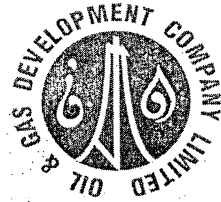
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		TIE-IN OF BITRISM AND GUNDANWARI AT SINJHORO PLANT								
Oil & Gas Development Company Limited		DOCUMENT TITLE		Data Sheet For Pressure Control Valve				Petrochemical Engineering Consultants		
CLIENT		DOCUMENT NO.		2738-PRO-DS-001		Revision-2		CONSULTANT		
GENERAL	1	Tag Number			PCV-102					
	2	Service / Location			Inlet Separator					
	3	Line Size			4-inch (1500#)					
	4	Area Classification			Zone IIB					
	5	Ambient Temperature	Min.	Max.	32	°F	130	°F		
	6	Allowable Sound Pressure Level	dBA		85 @ 1 m from the Valve					
	7	Tightness Requirements			ANSI V with metal seat					
	8	Available gas supply press.	Min.	Max.	500	psi-g	2000	psi-g		
	9	Fail Safe Position			Open					
	10	P&ID Drawing Number			2738-PID-001					
PIPE LINE	11	Line Size and Schedule	Inlet	Outlet	4-inch / 80 Schedule		4-inch / 80 Schedule			
	12	Pipe Material			CS					
	13	Pipe Insulation			None					
PROCESS CONDITION	14	Process Fluid			Gas					
	15	Upstream Condition			Gas					
	16	Differential Pressure for Actuator Sizing			2000		psi			
	17	Flow	MMScfd		CASE-1	CASE-2		CASE-3		
	18	Inlet Pressure	psig		2000	1100		500		
	19	Outlet Pressure (NOTE - 9)	psig		25					
	20	Inlet Temperature	°F		130					
	21	Molecular Mass	MW		22.1					
	22	Inlet gas Compressibility factor			0.8792					
	23	Inlet Viscosity	cP		0.01502					
24	Inlet gas Specific heat ratio			1.515						
25	Inlet vapor pressure	psia								
CALCULATED RESULTS	26	Flow Co-efficient Cv			-		VTS			
	27	Travel			%		VTS			
	28	Sound Pressure Level			dBA		VTS			
BODY AND TRIM	29	MFR	Model	-	-	VTS		VTS		
	30	Body Type	Globe							
	31	Body Size	Trim Size	VTS	VTS					
	32	Rated Cv	Characteristic	VTS	Linear					
	33	End Connection & Rating			RF 1500#					
	34	Body Material			A216 Gr. WCB					
	35	Bonnet Type	Material	Standard	A216 Gr. B					
	36	Flow Direction			VTS					
	37	Lubricator	Isolat. Valve	No	No					
	38	Guiding	No. of Ports	VTS	VTS					
	39	Trim Type			VTS					
	40	Rate Travel			VTS					
	41	Plug/Ball/Disk Material			SS					
	42	Seat Material			SS					
	43	Cage	Stem Mater.	VTS	VTS					
	44	Gasket Material			316SS Sp. Wound					
	45	NACE MR01-75			N/A					
46										
47										
ACTUATOR	48	MFR	Model	-	-	VTS		VTS		
	49	Type			Diaphragm Operated					
	50	Size	Area	VTS	VTS					
	51	Fail Safe Position			Open					
	52	Handwheel Location			Required, Side mounted					
	53	Bench Range			VTS					
	54	Stroke Time Sec's			VTS					
	PNEUMATIC POSITIONER	56	MFR	Model	-	-	VTS		VTS	
		57	Signal : Inlet	Outlet	3-15 Psig					
		58	Increase Signal Valve			VTS				
59		Cam Characteristic			VTS					
60		Bypass	Gauges	N/R	YES					
61		Smart E/P Type			N/R					
62		Certification / IP Rating			N/R					
63		MFR	Model	-	-					
64		Type			N/R					
65		When De-energizes			N/R					
SOLENOID VALVE	66	Certification / IP Rating / Voltage			N/R					
	67	MFR	Model	-	-					
	68	Type			N/R					
	69	Tag Open			N/R					
	70	Tag Close			N/R					
	71	Certification / IP Rating / Voltage			N/R					
	72	MFR	Model	-	-					
	73	Set Pressure			VTS					
	74	Filter	Gauges	Required	Required					
	75	HydroPressure			ASME/IEC/BS6755 Pt. 1					
SWITCHES	76	Leakage			ANSI B16. 104					
	77	Manufacturer			Fisher/Flowserve/Masonellan or equivalent					
	78	Model								
	79	Purchase Order Number								
	80	Price	Item Number							
	81	Serial Number								
	INSTRUMENT GAS SET	72	MFR	Model	-	-				
		73	Set Pressure			VTS				
		74	Filter	Gauges	Required	Required				
		75	HydroPressure			ASME/IEC/BS6755 Pt. 1				
76		Leakage			ANSI B16. 104					
77		Manufacturer			Fisher/Flowserve/Masonellan or equivalent					
78		Model								
79		Purchase Order Number								
80		Price	Item Number							
81		Serial Number								
TESTS	75	HydroPressure			ASME/IEC/BS6755 Pt. 1					
	76	Leakage			ANSI B16. 104					
	77	Manufacturer			Fisher/Flowserve/Masonellan or equivalent					
	78	Model								
	79	Purchase Order Number								
	80	Price	Item Number							
	81	Serial Number								
	PURCHASE	77	Manufacturer			Fisher/Flowserve/Masonellan or equivalent				
		78	Model							
		79	Purchase Order Number							
80		Price	Item Number							
81		Serial Number								

NOTES :

- VTS: Vendor to Specify
- Bolting Material SSS04.
- Control valve to be supplied with stainless steel wire and tag with stamping of tag no. (PCV-102) in 5mm lettering.
- Vendor to select best suitable and Guarantee compatibility of proposed/ selected material of construction for subject service.
- Material Testing certificate shall be part of scope of supply.
- At full opening, PCV shall have minimum possible pressure drop.
- Corrosion proof painting to be considered.
- Complete Control system as per attached P&ID to be offered complete in all respect including Control valve, electronic controller, interconnecting tubing etc.

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0	29-11-18	Issued For Review	SOH	BA	AJ	
Rev	Date	Description	Initial	Initial	Initial	Signature
			Prepared by	Checked by	Approved By	



R.F/



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TIE-IN OF BITRISM AND GUNDANWARI AT SINJHORO PLANT

TITLE	PROCESS / MECHANICAL DATASHEET FOR RESTRICTION ORIFICE (RO-101)				
PREPARED	CHECKED	APPROVED	REV		
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	Client: OGDCL Project: TIE-IN OF BITRISM AND GUNDANWARI AT SINJHORO PLANT PROCESS / MECHANICAL DATASHEET FOR RESTRICTION ORIFICE (RO-101)	Project No. 2738 Sheet 2 of 2		
Document No. 2738-PRO-DS-002				
APPLICABLE TO : () PROPOSAL (X) PURCHASE () AS BUILT				
FOR	O.G.D.C.L	UNIT	Inlet Separator	
SITE	Sinjhora	NO. REQUIRED	1	
SERVICE	Hydrocarbon	MODEL	-	
MANUFACTURER	-	SERIAL NO.	-	
FLUID DATA	1	Tag Number	RO-101	
	2	Service	Diff. Pressure RO	
	3	Line Size	2-inch	
	4	Fluid State	Gas	
	5	Normal Flow	MMSCFD	6.9
	6	Inlet Pressure	PSIG	1140
	8	Outlet Pressure	PSIG	25
	9	Temperature	°F	130
	10	Specific Gravity		0.762
	11	Comp. Factor Z (at Normal Pressure)		0.8135
	12	CP/CV		1.556
	13	Op. Viscosity Up Stream	cP	0.01507
	14	Base Press (psia)	Base Temp °F	14.7 60
	15	Design Pressure	PSIG	1300 @ 180 °F
	METER	16	Type of meter	Not required
17		Diff. Pressure	Not required	
18		Static Press. Range	Not required	
19		Calibration Units	Not required	
20		Beta = d/D		0.2483
21		Orifice Bore Diameter		0.482"
22		Line I.D		1.939"
23		Flange Rating		600#
24		Vent or Drain Hole		Not required
25		Plate Thickness		Note-1
26		Pipe Schedule		80
27		Concentric/Other		Cocentric
28		Sq. Edged / Other		Sq. Edge
29		Flange Taps / Other		Not required
30		Flange R.F / Other		Not required
31		Flange Type W.N/ Other		Not required
32		Material		UNS S31803
33		Calc. Seller / Other		Seller
34		Item no.		
NOTES :				
1	Thickness calculation to be in accordance with BS 1042 PT 1.5			

Sliding Stem Valve Specification

Customer: **ARABIAN GAS DEVELOPMENT CO.** **SALE OFFICE REFERENCE:**
 Contact: **Customer Reference: Pressure Control Valve** **SALE OFFICE REFERENCE:**
 Item: **2** Rev: Qty: **1** Quot: **013-NM-184930-000004 / 0001** Lead Time: Day(s)
 Tags: **PCV-102** Date Last Modified: **12/05/2013** Rev: **A**
 Description: **NPT 4 HPT 5" 2" 87 DVC6200 Factory Mfg. DVC6200, DVC1000 Process Level**
 Service Description:

<p>Service: Size and Type: NPS 4 HPT Body Style: Globe Design Temp: 130 deg F Design Press: 2000 psig End Connect/In/Out: 4 CL1500/RF Flg/RF Flg Material: WCC Steel Ports: 1 Flow Direction: Up</p> <p>Trim Number: 207A Cage Matl: S17400 SST Retainer Matl: Bushing Matl: Seat Ring Matl: S41600 SST VALVE PLUG Material: S41600 SST Guiding: Cage Balance: Balanced Shutoff Class: ANSI CL V Port Size: 2 7/8 Inch Characteristic: Whisper III, Level D3 Stem Material: S20910 SST Stem Size: 1 Inch</p> <p>Bonnet Style: Plain Boss Size: 5 Packing: Single PTFE Access: No Bolt, Bonnet: SA-193-B7 Studs/2H Nuts NCF2 PackFlg/Bltg: SST Pkg Flg, SST Studs & Nuts</p> <p>Actuator: Spring & Diaphragm Type/Size: 657/87 Travel: 2 Inch Bench Set: 6-17 psi Push Down To: PDTC Supply: Air To Actuator: 0 to 40 psig Fails Valve: Open Handwheel: Top Mounted Handwheel</p>	<p>Positioning Type: DVC6200, Auto Calibrate-AC Input Signal: 4 to 20 mA dc Access: 67CFR Filter/Regulator Gauges: 0-60 psig/0-4 bar Action: Direct Certification: FM, Explosion Proof/Intrinsic Safe/Nonincendive</p> <p>Controller Type: Action: Measure Element: Range: Output: Mounting: Airset: Mounting:</p> <p>Transducer: Input Signal: Output Signal: Action: Mounting: Airset: Certifications:</p> <p>Line In: 4 in, SCH 80 Line Out: 4 in, SCH 80 Insulation: None Service Cond: Process Fluid: Critical Pressure: Shutoff Drop: 2000 psi</p> <p style="text-align: right;">Max Rated Cv: 37.1</p>
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Variable Name	Unit	CASE-1	CASE-2	CASE-3	
Volumetric Flow Rate Gas (Qg)	MMscfd	15.00000000	15.00000000	15.00000000	
Inlet Pressure (P1)	psig	2000.000	1100.000	500.000	
Outlet Pressure (P2)	psig	25.000	25.000	25.000	
Inlet Temperature (T1)	deg F	130.0000	130.0000	130.0000	
M / Gg	M	22.100	22.100	22.100	
Specific heats ratio (gamma)		1.515	1.515	1.515	
Dynamic Viscosity (Mu)	cP	0.015	0.015	0.015	
Sizing Coefficient (Cv)		8.988	16.267	35.107	
% Open		23	43	94	
Valve LpA(LpA Valve 1m)	dB(A)	88	87	85	

NOTES:
 We have offered Top Mounted Handwheel
 Kindly recheck before placing the order.

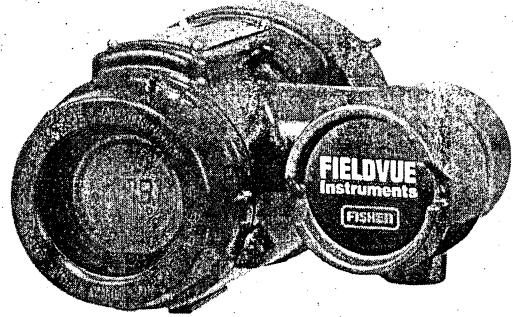


Fisher™ FIELDVUE™ DLC3010 Digital Level Controller

The FIELDVUE DLC3010 digital level controller is used with level sensors to measure liquid level, the level of the interface between two liquids, or liquid specific gravity (density). Changes in level or specific gravity exert a buoyant force on a displacer, which rotates a torque tube shaft. The digital level controller converts this rotational motion to an electronic signal.

The DLC3010 is a communicating, microprocessor-based instrument that can be configured to sense the level, interface level, or density of liquids. In addition to the normal function of providing a 4 to 20 milliampere current signal, the DLC3010, using HART[®] communications protocol, gives easy access to information critical to process operation. You can obtain information about the process, instrument, or sensor using the 475 or 375 Field Communicator. The DLC3010 can be used in analog or HART digital signaling mode with the Emerson Process Management DeltaV[™] system.

The connection for HART communication may be made at any point in the field wiring that meets the HART impedance requirements. Configuration, calibration, diagnostics, parameter review, signal monitoring and alert monitoring are all available



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through the HART protocol. Information from the field can be integrated into control systems or be received on a single loop basis.

The DLC3010 digital level controller is designed to directly replace standard pneumatic and electronic level transmitters. It mounts on a wide variety of Fisher 249 caged and cageless level sensors.

DLC3010 Digital Level Controller Specifications

Available Configurations

DLC3010 Digital Level Controller:
Mount on caged and cageless 249 sensors. See
tables 4 and 5 and sensor description.

Function: Transmitter

Communications Protocol: HART

Input Signal

Level, Interface, or Density: Rotary motion of torque
tube shaft proportional to changes in liquid level,
interface level, or density that change the buoyancy
of a displacer.

Process Temperature: Interface for 2- or 3-wire
100 ohm platinum RTD for sensing process
temperature, or optional user-entered target
temperature to permit compensating for changes in
specific gravity

Output Signal

Analogue: 4 to 20 milliamperes DC (J direct
action—increasing level, interface, or density
increases output; or J reverse action—increasing
level, interface, or density decreases output)

High saturation: 20.5 mA

Low saturation: 3.8 mA

High alarm: 22.5 mA

Low Alarm: 3.7 mA

Only one of the above high/low alarm definitions is
available in a given configuration. NAMUR NE43
compliant when high alarm level is selected.

Digital: HART 1200 Baud FSK (frequency shift keyed)

HART impedance requirements must be met to
enable communication. Total shunt impedance
across the master device connections (excluding the
master and transmitter impedance) must be between

230 and 600 ohms. The transmitter HART receive
impedance is defined as:

R_x: 42Kohms and

C_x: 14 nF

In point-to-point configuration, analog and digital
signalling are available. The instrument may be
queried digitally for information, or placed in Burst
mode to regularly transmit unsolicited process
information digitally. In multi-drop mode, the output
current is fixed at 4 mA, and only digital
communication is available.

Performance

Performance Criteria	DLC3010 Digital Level Controller ⁽¹⁾	w/ 3-Inch 249W, Using a 14-inch Displacer	w/ All Other 249 Sensors
Independent Linearity	± 0.25% of output span	± 0.8% of output span	± 0.5% of output span
Hysteresis	< 0.2% of output span	---	---
Repeatability	± 0.1% of full scale output	± 0.5% of output span	± 0.3% of output span
Dead Band	< 0.05% of input span	---	---
Hysteresis plus Deadband	---	< 1.0% of output span	< 1.0% of output span

NOTE At full design span, reference conditions.
1. To lever assembly rotation inputs.

Note: At effective proportional band (PB) < 100%
linearity, dead band, repeatability, power supply
effect, and ambient temperature influence are
potentially derated by the factor (100%/PB)

Operating Influences

Power Supply Effect: Output changes < ± 0.2% of full
scale when supply varies between minimum and
maximum voltage specifications.

-continued-

Table of Contents

DLC3010 Specifications	2
Features	7
Principle of Operation	9
249 Level Sensor Specifications	10
249 Level Sensors	10

Installation	12
Ordering Information	12
Construction	13
Heat Insulator	13
DLC3010 Digital Level Controller	13

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Principle of Operation

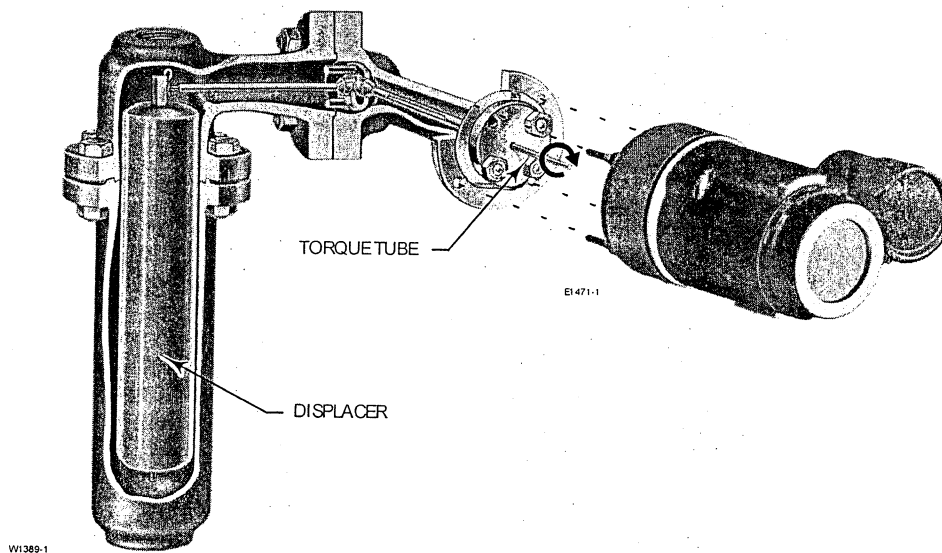
The DLC3010 digital level controller is a loop-powered instrument that measure changes in liquid level, level of an interface between two liquids, or density of a liquid. A level, density, or interface level change in the measured fluid causes a change in the displacer buoyancy (figure 5). This change is transferred to the torque tube assembly. As the measured fluid changes, the torque tube assembly rotates.

The rotary motion of the torque tube is transferred to the digital level controller lever assembly (figure 5). The rotary motion moves a magnet attached to the lever assembly, changing the magnetic field that is sensed by the Hall-effect sensor. The sensor converts the magnetic field signal to a varying electronic signal, which is processed digitally to provide linearity corrections, sensitivity adjustment, and temperature compensation.

The signal is interpreted as a buoyancy change by reference to the stored torque rate, coupling point, and moment arm data. The buoyancy change in turn is interpreted as a level, interface, or density change by reference to stored displacer volume, specific gravity, and displacer length data. In level or interface modes, the correction for displacer motion is then added, as well as user-supplied offset to change the PV reference from the bottom of the displacer or correct for a coupling point error.

The resultant primary variable (PV) is then compared to PV alarm thresholds (if enabled) and used to set status bits and/or trigger the analog alarm current. If the alarm is not triggered, the PV is used to generate 4-20 mA analog and 0-100% range digital signals by reference to the stored upper and lower range values. The resultant analog command is limited at the saturation values to allow discrimination between saturated and alarm signals.

Figure 5. Cutaway View of Fisher 249 Displacer Sensor with FIELDVUE DLC3010 Digital Level Controller



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249 Level Sensors Specifications

Input Signal

Liquid Level or Liquid-to-Liquid Interface Level: From 0 to 100 percent of displacer length
Liquid Density: From 0 to 100 percent of displacement force change obtained with given displacer volume—standard volumes are J 980 cm³ (60 inches³) for 249C and 249CP sensors or J 1640 cm³ (100 inches³) for most other sensors; other volumes available depending upon sensor construction

Sensor Displacer Lengths

See tables 4 and 5 footnotes

Sensor Working Pressures

Consistent with applicable ASME pressure/temperature ratings for the specific sensor constructions shown in tables 4 and 5

Caged Sensor Connection Styles

Cages can be furnished in a variety of end connection styles to facilitate mounting on vessels; the

equalizing connection styles are numbered and are shown in figure 7.

Mounting Positions

Most level sensors with cage displacers have a rotatable head. The head may be rotated through 360 degrees to any of eight different positions, as shown in figure 8.

Construction Materials

See tables 2, 4, and 5

Operative Ambient Temperature

See table 3.

For ambient temperature ranges, guidelines, and use of optional heat insulator, see figure 2.

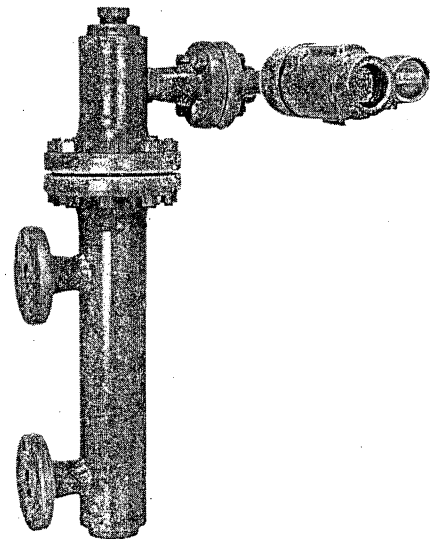
Options

J Heat insulator J Gauge glass for pressures to 29 bar at 232_C (420 psig at 450_F), and J Reflex gauges for high temperature and pressure applications

249 Level Sensors

249 level sensors used with the DLC3010 digital level controller are available in both caged and cageless configurations. Figure 6 shows a DLC3010 mounted on a caged 249 sensor. Caged sensors provide more stable operation than do cageless sensors for vessels with internal obstructions or considerable internal turbulence. Cageless sensors are generally used on specific gravity and interface control applications requiring large displacers that are more easily accommodated by flange connections up to 8 inches. The availability of many different displacer stem lengths permits lowering the displacer down to the most advantageous depth in the vessel.

Figure 6. FIELDVUE DLC3010 Digital Level Controller and Fisher 249B Level Sensor



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13

Table 2. Displacer and Torque Tube Materials

Part	Standard Material	Other Materials
Displacer	304 Stainless Steel	316 Stainless Steel, N10276, N04400, Plastic, and Special Alloys
Displacer Stem, Driver Bearing, Displacer Rod and Driver	316 Stainless Steel	N10276, N04400, other Austenitic Stainless Steels, and Special Alloys
Torque Tube	N05500 ⁽¹⁾	316 Stainless Steel, N06600, N10276

1. N05500 is not recommended for spring applications above 232_C (450_F). Contact your Emerson Process Management sales office or application engineer if temperatures exceeding this limit are required.

Table 3. Allowable Process Temperatures for Common Fisher 249 Sensor Pressure Boundary Materials

MATERIAL	PROCESS TEMPERATURE	
	Min.	Max.
Cast Iron	-29_C (-20_F)	232_C (450_F)
Steel	-29_C (-20_F)	427_C (800_F)
Stainless Steel	-198_C (-325_F)	427_C (800_F)
N04400	-198_C (-325_F)	427_C (800_F)
Graphite Laminate/SST Gaskets	-198_C (-325_F)	427_C (800_F)
N04400/PTFE Gaskets	-73_C (-100_F)	204_C (400_F)

Table 4. Caged Displacer Sensors⁽¹⁾

TORQUETUBE ORIENTATION	SENSOR	STANDARD CAGE, HEAD, AND TORQUE TUBE ARM MATERIAL	EQUALIZING CONNECTION		PRESSURE RATING ⁽²⁾	
			Style	Size (NPS)		
Torque tube arm rotatable with respect to equalizing connections	249 ⁽³⁾	Cast Iron	Screwed	1-1/2 or 2	CL125 or 250	
			Flanged	2		
	249B, 249BF ⁽⁴⁾	Steel	Screwed or optional socket weld	1-1/2 or 2	CL600	
			Raised face or optional ring type joint flanged	1-1/2		CL150, 300, or 600
				2		
			249C ⁽³⁾	316 Stainless Steel		Screwed
	Raised face flanged	1-1/2			CL150, 300, or 600	
		249K	Steel	Raised face or optional ring type joint flanged		1-1/2 or 2
	2				CL150, 300, or 600	
	249L	Steel	Ring type joint flanged	2 ⁽⁵⁾		CL2500

1. Standard displacer lengths for all styles (except 249) are 14, 32, 48, 60, 72, 84, 96, 108 and 120 inches. The 249 uses a displacer with a length of either 14 or 32 inches.
 2. DIN flange connections available in EMA (Europe, Middle East and Africa).
 3. Not available in EMA.
 4. 249BF available in EMA only. Also available in DIN size DN40 with PN10 to PN100 flanges and size DN50 with PN10 to PN63 flanges.
 5. Top connection is 1-inch ring-type joint flanged for connection styles F1 and F2.

Table 5. Cageless Displacer Sensors⁽¹⁾

Mounting	Sensor	Standard Head ⁽²⁾ , Wafer Body ⁽⁶⁾ , and Torque Tube Arm Material	Flange Connection	Pressure Rating ⁽³⁾
Mount on top of vessel	249BP ⁽⁴⁾	Steel	NPS4 raised face or optional ring type joint	CL150, 300, or 600
			NPS6 or 8 raised face	CL150 or 300
	249CP	316 Stainless Steel	NPS3 raised face	CL150, 300, or 600
			249P ⁽⁵⁾	Steel or Stainless Steel
NPS6 or 8 raised face	CL150, 300, 600, 900, 1500, or 2500			
Mount on side of vessel	249VS	Cast Iron, Cast Steel or CF8M (316 Stainless Steel)	For NPS4 raised face or flat face	CL125, 150, 250, 300, 900, or 1500 (EN PN 10 to DIN PN 160)
			For NPS4 butt weld end, XXS	CL2500
Mount on top of vessel or on customer supplied cage	249W	WCC (steel) or CF8M	For NPS3 raised face	CL150, 300, or 600
		LCC (steel) or CF8M	For NPS4 raised face	CL150, 300, or 600

1. Standard displacer lengths are 14, 32, 48, 60, 72, 84, 96, 108, and 120 inches.
 2. Not used with side-mounted sensors.
 3. DIN flange connections available in EMA (Europe, Middle East and Africa).
 4. Not available in EMA.
 5. 249P available in EMA only.
 6. Wafer Body only applicable to 249W.

~~18~~
14

Figure 8. Typical Mounting Positions for FIELDVUE DLC3010 Digital Level Controller on Fisher 249 Sensors

SENSOR	LEFT-OF-DISPLACER	RIGHT-OF-DISPLACER
CAGED		
CAGELESS		

1 Not available for NPS2 CL300 and 600 249C.

Construction

Refer to the specifications tables. Review the descriptions below each specification and in the referenced tables and figures; specify the desired choice whenever there is a selection to be made.

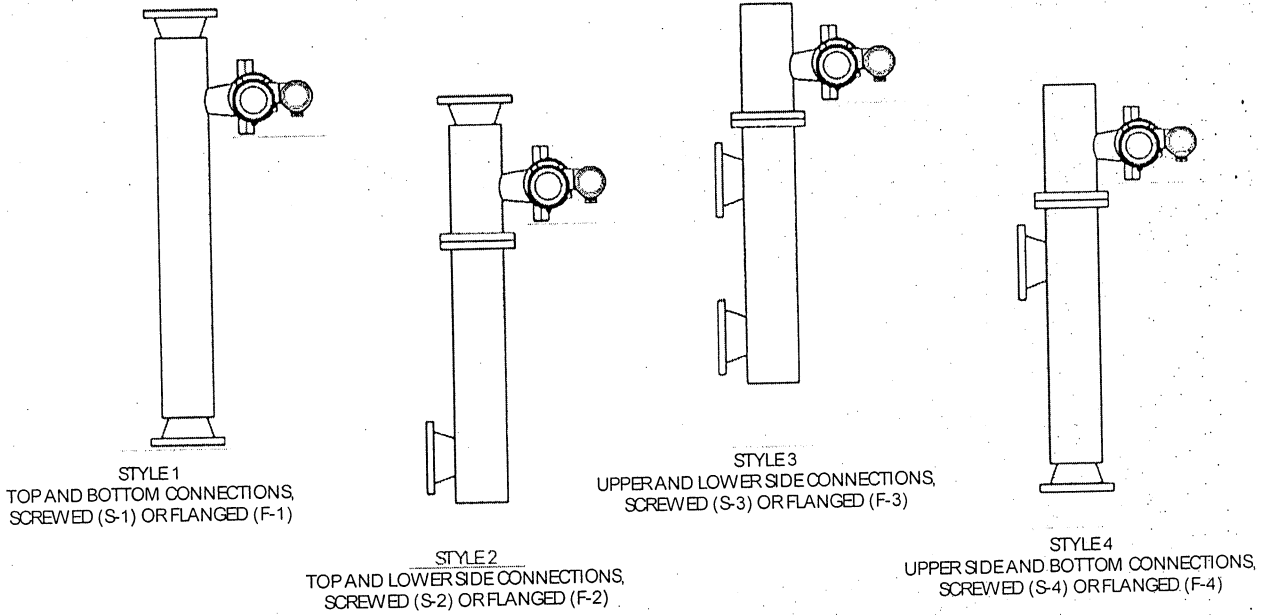
Heat Insulator

DLC3010 Digital Level Controller

If the DLC3010 and the 249 sensor are ordered as an assembly, and a heat insulator is required for the application, order the heat insulator as a 249 sensor option. If the DLC3010 is ordered separately, the heat insulator is available as a kit.

Handwritten notes:
 P-15/15

Figure 7. Style Number of Equalizing Connections



Installation

A 249 sensor may be shipped with the DLC3010 digital level controller installed or they may be shipped separately.

When shipping a skid mounted system, where the displacer cannot be restrained, it is recommended that the transmitter be uncoupled and the lever assembly locked to prevent damage. The transmitter must be re-coupled at commissioning, and a zero-trim will be required.

Dimensions for the DLC3010 and 249 sensor product construction are shown in figure 9 and tables 6 and 7. Dimensions of other combinations are available upon request.

Ordering Information

When ordering, specify:

- Process temperature and pressure and ambient air temperature
- Application
- Liquid level service (specific gravity)
- Interface level service (specific gravity of both liquids and minimum differential gap or span required)
- Density service (minimum and maximum specific gravity required)

TENDER NO. PROC-FC/CB/P&P/SINJ-4451/2019

**CONTROL VALVES WITH POSITIONER AND LEVEL
TRANSMITTER CONTROLLER FOR SINJHORO PLANT**

**TABLE OF CONTENTS
CONSISTING OF FOLLOWING SECTIONS**

SECTION - I

- A. Schedule of Requirement (Annexure-A)
- B. Terms and Conditions (Attachment # 01)
- C. Payment Terms (Attachment # 02)
- D. Performance Bond Format (Attachment # 03)
- E. Delivery Period (Attachment # 04)
- F. Corporate and Financial Information (Attachment # 05)
- G. List of banks for bid and performance bond guarantees(Attachment # 06)

SECTION – II

**MASTER SET OF PRESS TENDER DOCUMENTS-FOREIGN AVAILABLE ON OGDCL WEBSITE:
WWW.OGDCL.COM FOR REMAINING TERMS & CONDITIONS ALONG WITH ANNEXURES I.E
BID BOND FORMAT, DATA SUMMARY SHEET, BIDDING FORM, INTEGRITY & ETHICS PACT
ETC WHICH ARE ALSO MANDATORY PART OF TECHNICAL AND COMMERCIAL PROPOSALS**

**(NOTE: IN CASE OF ANY CONFLICT BETWEEN
SECTION I & SECTION II, SECTION I SHALL PREVAIL
OVER THE TENDER DOCUMENT)**

TENDER NO. PROC-FC/CB/P&P/SINJ-4451/2019

TERMS & CONDITIONS

1. The case will be processed on single stage – two envelop bidding procedure as per PPRA Rules.
2. Bid shall remain valid for a period of 180 Days from the date of technical Bid Opening.
3. Commercial evaluation will be made on complete package. Incomplete bid will be rejected and will not be considered for evaluation. Bidders should quote for all the items in schedule of requirement.
4. The bidders are required to submit a Bid bond amounting to **USD 1000/-** or equivalent Pak rupees in shape of Bank Guarantee/pay Order upfront along with the technical bid. Any bid without bid bond shall be rejected without any right to appeal.
5. Bid Bond shall remain valid for a period of 210 Days from the date of technical Bid Opening. **The Bid Bond shall only be issued by Pakistani Scheduled Banks listed in Attachment-06 other than that is not acceptable**
6. OGDCL may arrange Third Party Pre-Shipment Inspection at its own cost.
7. Within ten (10) days of the receipt of notification of intent to award the Contract from OGDCL, the successful Bidder shall furnish a Performance Bond in the Form of Bank Guarantee (**Attachment-03**) for an amount of US\$ ten (10) percent (%) of the Contract Price as a guarantee for the due and faithful performance of the Contract. The said Performance Bond shall be valid upto eighteen (18) months from the date of shipment. The performance Bond shall only be issued by Pakistani Scheduled Banks listed in **Attachment-06** other than that *is not acceptable*. Failure of the successful Bidder to comply with the requirements of Instruction shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Bond, in which event OGDCL may make the award to the next lowest evaluated Bidder or call for new Bids.
8. **The bidder must provide a “certificate of compliance/acceptance” (attachment # 06) of complete tender document along with the technical bid.**
9. Only those clarifications will be entertained which are received ten (10) days before technical bid opening. Any clarification received after that shall not be responded.
10. Payment will be made as per Attachment No. 02.
11. **Corporate and financial information of the company needs to be submitted with the technical bid as per Attachment # 05.**
12. **Copy of Certificate of incorporation to be enclosed with the technical bid.**
13. **Blacklisting affidavit on letterhead of LC beneficiary and local agent to be enclosed with the technical bid.**

PAYMENT TERMS

The payment shall be made as follow:-

- a. Seventy (70%) percent of Material LC/Purchase Order Price shall be paid by OGDCL on shipment of the complete material. The payment under the L/C shall be effected upon submission of following documents upon each shipment of material component:
 - I. Original Clean on-board ocean vessel Master bills of lading.
 - II. Original detailed invoice showing material description, quantity unit price and total price strictly in line with the Contract.
 - III. Packing list
 - IV. Certificate and list of measurements and weight gross/net.
 - V. Mill Inspection/Quality Certificate.
 - VI. Insurance declaration.
 - VII. Warranty Certificate
 - VIII. Certificate of origin.
 - IX. Third Party Inspection report/certificate issued by any one of the following (if required)
 1. M/s Bureau Veritas Pakistan (Pvt) Ltd
 2. M/s SGS Pakistan (Private) Limited
 3. M/s TÜV Rheinland Arabia LLC Pakistan
 4. M/s Applus Velosi Pakistan
 5. TUV Austria Bureau of Inspection & Certification (Pvt.) Ltd. Pakistan
- b. Thirty (30%) percent of the Material LC/Purchase Order Price shall be released under the L/C upon delivery of complete equipment/material and after inspection/acceptance of material confirming complete delivery upon submission of supplier's original invoice duly verified by OGDCL.

PERFORMANCE BANK GUARANTEE

Oil & Gas Development Company
Limited OGDCL House, Jinnah Avenue,
Blue Area, Islamabad, (Pakistan)

Dear Sir,

Ref; our Bank Guarantee No. _____ in the sum of _____ Account _____ in consideration of you having entered into Contract No. _____ Dated _____ with _____ C
alled Contractor and in consideration for value received from CONTRACTOR. We hereby agree and undertake as followings:

1 To make unconditional payment to you as called upon of (10%) ten percent of the Contract value of the contract price mentioned in the said contract, on your written FIRST and SIMPLE demand without further recourse, question or reference to CONTRACTOR or any other person in the event of default, non-performance or non-fulfillment by CONTRACTOR of his obligations, liabilities, responsibilities under the said contract of which you shall be the sole judge.

2 The accept written intimation from you as conclusive and sufficient evidence of the existence of the default or breach as aforesaid on the part of CONTRACTOR and to make payment immediately and forthwith upon receipt of your FIRST and SIMPLE written demand.

3 This Performance Bond shall remain valid and in full force and effect upto _____ or issue of statement of discharge by your authorized representative or return of original guarantee whichever is earlier.

4 DEMURRAGE DUE TO DELAY IN RECEIPT / NEGOTIATION OF ORIGINAL SHIPPING DOCUMENTS.

If clean documents are not negotiated within Negotiation Period allowed in Letter of Credit or documents are with held by Bank on account of any discrepancy:

- If the Demurrage, if any incurred due to late negotiation of the Clean Documents and paid by OGDCL will be realized from the beneficiary of L/C, by encashing this Performance Bond to the extent of demurrage amount. In case demurrage amount exceeds the total value of this Performance Bond the balance amount will be payable by the beneficiary.

1 That no grant of time or other indulgence to, amendment in the terms of the Contract by Agreement between the parties, or imposition or Agreement with CONTRACTOR in respect of the performance of his obligations under the said Agreement, with or without notice to us, shall in any manner discharge or otherwise affect this Guarantee and our liabilities and commitments there under.

2 This is an independent and direct obligation guarantee and shall be binding on us and our successors interest and shall be Irrevocable.

3 This guarantee shall not be affected by any change in the constitution of the Guarantor Bank or the constitution of the Contractor.

4 The Guarantor Bank Warrants and represents that it is fully authorized, empowered and competent to issue this guarantee.

(BANKERS)

DELIVERY PERIOD
TIME IS OF ESSENCE

SUPPLY OF EQUIPMENT/MATERIAL

The Supplier is required to deliver the complete equipment/material in **24 Weeks** from the date of establishment of letter of credit on CFR by Sea Karachi Port basis.

FORMAT OF CORPORATE & FINANCIAL INFORMATION

PART - I
GENERAL INFORMATION

1. Name (Full Company Name):
 - Postal Address :
 - Telephone:
 - Facsimile:
 - e-mail:
 - Website Address:
 - 1.1 Has the Company operated under any other name? If yes please give name, date of change and reason for change.
2. Type of Entity/Firm:
 - Corporation/Stock Company
 - Public Limited
 - Private Limited
 - Partnership
 - Proprietorship
3. Shareholders information/pattern with names and addresses of majority shareholders.
4. Place of Incorporation/Registration:
5. Year of Incorporation/Registration:
(Please provide copies of Incorporation/Registration Certificates and Memorandum & Articles of Association)
6. Company's National Tax No.
7. Company's Core Business Areas and their annual sales revenue/earnings during last five (5) years.
8. Name & Address of Owners/Directors
9. Valid Registration Certificate with Pakistan Engineering Council (PEC) where applicable.

PART - II

FINANCIAL STRENGTH

1. Provide details with regard to the financial standing of the applicant including copies of last three (3) years Audited profit & loss account and balance sheet. Also, please fill the financial summary as per below table;

S. No.	Description	Years		
		2014	2015	2016
1	Sales Revenue			
2	Paid Up Capital			
3	Profit Before Tax			
4	Profit After Tax			
5	Current Assets			
6	T. Asset			
7	Owner Equity			
8	Long Term Debt			
9	Current Liability			
10	Total Liabilities			

2. Bank(s) credit worthiness certificates (Latest Period) of applicant organization and available credit ceiling/limits with Account Number/Title.
3. Detail record with regard to litigation/arbitration proceedings or any other dispute related to project undertaken/being undertaken by the Bidder their Sub-Contractors and Suppliers (Specially with OGDCL it Joint Venture Partners or other public and private organizations working in the Oil & Gas sector of Pakistan) during past five (05) years.
4. Any information including brochures, references and other documentary evidence of technical qualification, capability and experience of the Applicant to execute the Project.

The undersigned on behalf of _____ hereby declare that the statements made and the information provided official herewith is complete, true and correct in every detail.

Signature

Official Seal of the Company

COMPLIANCE CERTIFICATE
(On official letter head)

Subject : TENDER NO. PROC-FC/CB/P&P/SINJ-4451/2019 FOR CONTROL VALVES WITH POSITIONER AND LEVEL TRANSMITTER CONTROLLER FOR SINJHORO PLANT

We have read and understood the tender documents completely and confirm total compliance with the technical and commercial requirement of the tender document.

Signed on behalf of _____

LIST OF BANKS FOR BID AND PERFORMANCE BONDS

Sr. No.	Bank Name
1	ALLIED BANK
2	ASKARI BANK
3	BANK AL HABIB
4	BANK ALFALAH LTD
5	DUBAI ISLAMIC BANK
6	FAYSAL BANK
7	HABIB BANK LTD
8	HABIB METROPOLITAN BANK
9	MEEZAN BANK LIMITED
10	MCB BANK
11	NATIONAL BANK OF PAKISTAN
12	STANDARD CHARTERED BANK
13	UNITED BANK LTD

Note: That bank guarantees are only acceptable from above listed banks.