

Document Title: Equipment Data Sheets and Design Specifications

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CODE 1: Work may proceed.



Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods or materials developed or selected by the supplier and does not relieve the supplier from full compliance with contractual obligations.

Name: JV040785

Date: 12/15/2020

Material Requisition Number: 25472-101-MRA-JL10-Z0001

Tag Nos. : 122-LKSDE-B0-LSHH-0302, 123-MTRSP-B0-LSHH-0302,
124-OYENS-B0-LSHH-0302, 127-PIAPT-B0-LSHH-0302,
128-GRSSY-B0-LSHH-0302



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Rev No.	Rev Date yyyy-mm-dd	Reason for Issue	Contractor Originator	Contractor Reviewer	Contractor Approver
01	2020-10-20	Issued For Review	M. Panchal	A. Patil	J. Clark
02	2020-12-03	Issued For Review	A. Patil	A. Patil	J. Clark

 		LEVEL SWITCH				DATASHEET No.		SHT 1 OF 2	
						KXL1399-CH2M-I-DS-0008		REV: 0	
		REV	BY	DATE	REVISION	JOB NUMBER:		DATE:	
		A	AK	27-Apr-18	Issued for Review	M.000837		19-Sep-18	
		B	AK	10-May-18	Issued for Review				
PROJECT: Keystone XL Pipeline Canadian Pump Stations INSTRUMENT DATA SHEET		C	SW	29-May-18	Issued for Quote	REQUISITION No.		PO No.	
		0	BY	19-Sep-18	Issued for Purchase	25472-101-MRA-JL10-Z0001			
						BY SW	CHK'D AK	APPR. AK	

GENERAL	1	Tag Number				See Attached List (SHT 2 of 2)			
	2	Service Description				Sump Tank B0-OST-01 High-High Level Switch			
	3	P & ID Number				See Attached List (SHT 2 of 2)			
	4	Line / Equipment Number				See Attached List (SHT 2 of 2)			
PROCESS	5	Process Fluid	Fluid State			Diluted Bitumen / Synthetic Crude Oil		Liquid	
	6	Fluid Condition				Dirty			
	7	Specific Gravity at operating temperature				0.748 - 0.942			
	8	Viscosity at operating temperature				1.13 cSt to 920 cSt			
	9	Dielectric constant				N/A			
	10	Unusual Conditions				Oil Sump Tank / Tank Installed Above Grade			
	11	% solids				None			
	12	Pressure	Min.	Normal	Max.	-0.7kPag (-0.10 psig)		Atm.	
	13	Temperature	Min.	Normal	Max.	0 °C (32 °F)		65 °C (149 °F)	
TRANSMITTER	14	Type of Measurement				Vibration (Tuning Fork style)			
	15	Location				Top of Nozzle of Sump Tank			
	16	Range				Point Measurement (Note 6)			
	17	Calibration Range				N/A			
	18	Face/Process Connection Material				316L SS			
	19	Blind or Indicating				N/A			
	20	Mounting				Direct Mounted			
	21	Housing Material				Aluminum			
	22	Power Supply				24V DC (Loop Power)			
	23	Electrical Area Classification				CSA Class I, Zone 1, Gr.IIA			
	24	Enclosure Type: Integral / Remote				Integral			
	25	Conduit Connection Size				3/4" NPT			
	26	Enclosure Rating				NEMA 4X			
	27	Output				Analog, 8/16 mA (Note 4)			
	28	Signal Lights				Yes: Green / Red (Note 6)			
	29	Accuracy	Repeatability			N/A		N/A	
30									
TRANSDUCER	31	Fail-Safe				Yes			
	32	Model Number				FTL51-C8KL4/0 / FTL51-TGM2BB5E5C+Z1			
	33	Material	Body			316L SS			
	34		Flange			NPS 6 - PN20 FF, 304SS, c/w NPT 3/4" Center Tap			
	35								
	36	Vessel I.D.	Vessel Length			1600 mm (63") - Note 10		6170 mm (243")	
	37	Insertion Length				1130 mm (44.5") (Note 5)			
	38	Inactive Length				Nozzle + Riser = 830 mm (33")			
	39	Gland Size & Material							
	40	Process Connection	Size			NPT 3/4"			
	41		Type			Threaded, 316LSS			
	42		Rating			PN 20			
	43		Face			FF			
	44	Transducer Temperature Rating				-50°C to 150 °C (-58 °F to 302 °F)			
45	Vibration Resistance				10 to 55 Hz (0.01", 100 cycles)				
46	Orientation				Vertical Mounted				
PURCHASE	47	Manufacturer				Endress + Hauser			
	48	Transmitter Model No.				FTL51-TGM2BB5E5C+Z1 + 4201804 (NPS 6 PN20 FF Flange)			
	49								

Notes:
1. Supply 316SS Tag, nameplate containing tag number, model/serial number, body ratings, operating conditions/limitations.
2. Sump Tank dimensions: Tank = 1629 mm (64") OD. FSHH Nozzle to Tank CL 1630mm (64.1")
3. Ambient Temperature: -40 °C to 40 °C (-40 °F to 104 °F). Design Temperature 65 °C (149 °F).
4. Level switch with output signal of 8mA or 16 mA. Output signal on power failure or in the event of damage sensor is <3.6 mA.
5. Switch to actuate at "High-High Alarm". High-High is 1300 mm from bottom of the sump tank and the signal output is 8mA
6. The LSHH to have 2 switches for fault and level/density change. Green LED to indicate operational status, Red LED to indicate switching status, flashes in the event of corrosion damage on sensor or if the electronic are defective.

[illegible]