

Document Title: Equipment Data Sheets and Design Specifications

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PO Number: 4500257847

Material Requisition Number: KXL1399-CH2M-I-MR-0001

Tag Nos. : 125-BDLSS-B0-LSHH-0302, 126-FXVLY-B0-LSHH-0302



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Rev No.	Rev Date yyyy-mm-dd	Reason for Issue	Contractor Originator	Contractor Reviewer	Contractor Approver
01	2019-06-17	Issued For Approval	A. Patil	A. Patil	C. Penney

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: kloca

Date: 06/25/2019



PROJECT: Keystone XL Pipeline
Canadian Pump Stations
INSTRUMENT DATA SHEET

LEVEL SWITCH

REV	BY	DATE	REVISION
A	AK	27-Apr-18	Issued for Review
B	AK	10-May-18	Issued for Review
C	SW	29-May-18	Issued for Quote
0	BY	19-Sep-18	Issued for Purchase

DATASHEET No.		SH1 1 OF 2
KXL1399-CH2M-I-DS-0008		REV:
JOB NUMBER:		0
M.000837		DATE:
19-Sep-18		
REQUISITION No.		PO No.
25472-101-MRA-JL10-Z0001		
BY	CHK'D	APPR.
SW	AK	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.	7 kPag (1.0 psig)
	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	
	TRANSDUCER	31	Fail-Safe				Yes		
32		Model Number				FTL51-C8KL4/0 / FTL-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.				FTL-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]