



**Document Title:** Equipment Data Sheets and Design Specifications

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

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



People for Process Automation

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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				SHT 1 OF 2	
REV	BY	DATE	REVISION	DATASHEET No.	
A	AK	27-Apr-18	Issued for Review	KXL1399-CH2M-I-DS-0008	
B	AK	10-May-18	Issued for Review	JOB NUMBER: M.000837	
C	SW	29-May-18	Issued for Quote	DATE: 19-Sep-18	
0	BY	19-Sep-18	Issued for Purchase	REQUISITION No. 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)	7 kPag (1.0 psig)
	14	Type of Measurement			Vibration (Tuning Fork style)		
TRANSMITTER	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		
TRANSDUCER	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						
	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		
PURCHASE	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			NPT 3/4"		
	40	Process Connection	Size		Threaded, 316LSS		
	41		Type		PN 20		
	42		Rating		FF		
	43		Face				
	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		
	47	Manufacturer			Endress + Hauser		
	48	Transmitter Model No.			FTL-TGM2BB5E5C+Z1 + 4201804 (NPS 6 PN20 FF Flange)		
	49						

Notes:

- Supply 316SS Tag, nameplate containing tag number, model/serial number, body ratings, operating conditions/limitations.
- Sump Tank dimensions: Tank = 1629 mm (64") OD. FSHH Nozzle to Tank CL 1630mm (64.1")
- Ambient Temperature: -40 °C to 40 °C (-40 °F to 104 °F). Design Temperature 65 °C (149 °F).
- 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.
- Switch to actuate at "High-High Alarm". High-High is 1300 mm from bottom of the sump tank and the signal output is 8mA
- 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.

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**Additional Comments:**