Submersible Level Transmitter for Fuel and Chemicals Industries

IQLT-C Series

Introduction

IQLT-C series are submersible level transmitters with the fully welded structure. The product utilizes a piezoresistive sensor with proven long term stability and reliability and a special digital compensation circuit that is housed in a rugged stainless steel housing. It offers an integrated structure, supports standard outputs, and cable options of multiple material for a wide range of operation temperature. Specifically, IQLT-C-PF is mostly used in the level monitoring of refined oils, such as gasoline,diesel, kerosene, etc.; IQLT-C-PC is mostly used in the level monitoring of chemicals, such as methanol, ethanol, diesel exhaust fluid (DEF), diesel engine coolant, etc. Both two level transmitters are also applicable for other environments with high requirements for wear resistance, protection, or explosion-proof.

Applications

- Gasoline, diesel, methanol, ethanol storage tank
- Biofuel tank
- Chemicals storage tank
- Ballast tank
- Underground water level in mining areas
- Wastewater level
- Agricultural irrigation equipment
- Fertilizer storage tank

Features

- Low power consumption
- Wide operation temperature range
- For harsh operating conditions
- Mulitple output signals available
- Integrated temperature measurement
- Magnetic end cap for movable tanks
- NPT1/4 male thread for process connection available
- Approved for use in hazardous areas

Specifications

Range	Level Measurement: 0mH$_2$O~2mH$_2$O…200mH$_2$O
	Pressure Measurement:0mbar~200mbar...350bar
Pressure Type	gauge, absolute, sealed gauge
Overpressure	≤ 2 times FS
Accuracy	see Accuracy
Long-term Stability	≤ ±0.2% FS/ year
Compensated Temperature	-10℃ ~60℃
Operation Temperature	IQLT-C-PF Level Transmitter: -20℃ ~80℃ (PUR cable); -10℃ ~70℃ (PVC/PE cable)
	IQLT-C-PC Level Transmitter: -30℃ ~80℃
Storage Temperature	IQLT-C-PF Level Transmitter: -30℃ ~85℃ (PUR cable); -20℃ ~85℃ (PVC/PE cable)
	IQLT-C-PC Level Transmitter: -40℃ ~85℃
Vibration	20g, 20Hz~2000Hz
Shock	20g, 11ms
Protection Rating	IP68
Weight	≤280g (not including cable weight)

Accuracy

Pressure Measurement

Pressure Type	Range	Accuracy
Gauge G	0mbar~200mbar≤X<350mbar	±1%FS
	350mbar≤X≤1bar	±0.5%FS
	1bar<X≤35bar	±0.25%FS
		±0.5%FS
Absolute A	0mbar~700mbar<X≤1bar	±1%FS
	1bar<X≤10bar	±0.5%FS
	10bar<X≤350bar	±0.25%FS
		±0.5%FS
Sealed gauge S	35bar<X≤350bar	±0.25%FS
		±0.5%FS

Level Measurement

Pressure Type	Range	Accuracy
Gauge G	0mH2O ~2mH2O≤X<3.5mH$_2$O	±1%FS
	3.5mH2O≤X≤10mH$_2$O	±0.5%FS
	10mH2O<X≤200mH$_2$O	±0.25%FS
		±0.5%FS
Absolute A	7mH$_2$O<X≤10mH$_2$O	±1%FS
	10mH$_2$O<X≤100mH$_2$O	±0.5%FS
	100mH$_2$O<X≤200mH$_2$O	±0.25%FS
		±0.5%FS

Note: the accuracy is between compensated temperature range (-10℃ ~ 60℃);

Test standard:GB/T 17614.12-2015/IEC 60770-1:2020

Output Signals

Output Signal	Supply Voltage	Output Format	Load Resistance	Insulation Resistance
4mA~20mA (E)	12V~28V DC	2-wire	≤(U-12)/0.02 (Ω)	20MΩ@500V DC
1V~5V (F)	15V~28V DC	3-wire	≥10kΩ	
0V~5V (J)				
0V~10V (V)				
0.5V~4.5V (K2)				
0.5V~4.5V (K1)	5V~10V DC			
0.5V~2.5V (W)	3.2V~5V DC			
RS485 MODBUS ASC II (R4)	3.6V~28V DC	4-wire	RS485 bus can cascade up to 99 equipments	
RS485 MODBUS_RTU (R8)				

Certificate

Logo	Description	Countries and Regions
CE	EU Declaration of Conformity EMC instructions, electromagnetic radiation and immunity standards pressure equipment instructions	EU
RoHS COMPLIANT	RoHS conformity	EU
Ex	Technical requirements for equipment in potentially explosive environment	EU
IECEx	Explosion-proof electrical product certification system	Global
C SP US	Safety certification for electronic products saled in North American market	North America

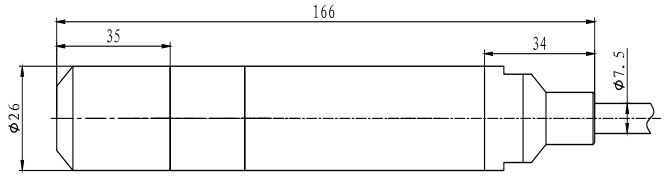
Intrinsic Safety Parameters

Output Signal	Supply Voltage	Ui	Ii	Li	Ci	Pi
4mA~20mA (E)	12V~28V DC	28V DC	100mA DC	1.44μH	0μF	0.7W
1V~5V (F)	15V~28V DC	28V DC	150mA DC	1.44μH	66nF	0.9W
0V~5V (J)						
0V~10V (V)						
0.5V~4.5V (K2)						
0.5V~4.5V (K1)	5V~10V DC	10V DC	200mA DC	1.44μH	0.428μF	0.56W
0.5V~2.5V (W)	3.2V~5V DC	6V DC	100mA DC	1.44μH	0.318μF	0.2W
RS485 MODBUS ASC II (R4)	3.6V~28V DC	25.4V DC	90mA DC	1.44μH	13.2nF	0.56W
RS485 MODBUS_RTU (R8)						

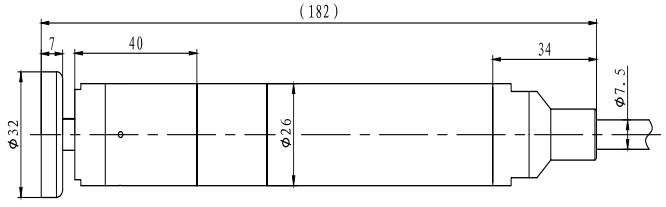
Outline Dimensions

unit:mm

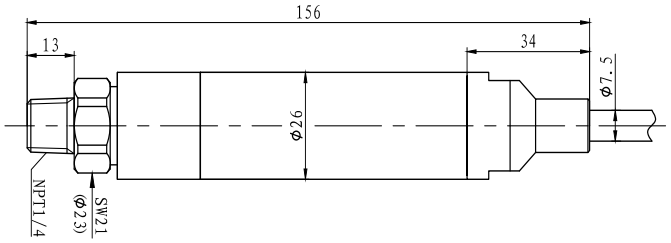
Stainless Steel/POM End Cap(LD1/LD2)



Magnetic End Cap（LD3）



NPT1/4 Male Thread（C6）



Electrical Connection

Cable Color	2-wire	3-wire	4-wire
Red	+V	+V	+V
White	null	+OUT	RS485B
Black	+OUT	GND	GND
Yellow/Green	null	null	RS485A

Materials

Isolated Diaphragm: SS 316L

Pressure Port: SS 316L

Housing: SS 316L

Cable Jacket: PUR/PE/PVC for IQLT-C-PF

PFA for IQLT-C-PC

Sealing Element: HNBR for IQLT-C-PF

FFKM for IQLT-C-PC

Ordering Guide

IQLT-C-	Submersible Level Transmitter									
	Code	Application								
	PF	fuels								
	PC	chemicals								
		Code	Cable Material							
		P1	PE							
		P2	PUR	(for MPM426WPF only)						
		P3	PVC							
		P4	PFA	(for MPM426WPC only)						
			Code	Process Connection						
			LD1	end cap, SS 316L						
			LD2	end cap, POM						
			LD3	end cap,magnetic,SS 316L						
			C6	NPT1/4 male thread						
				Range	Level Measurement: 0mH_2O~2mH_2O...200mH_2O					
					Pressure Measurement: 0mbar~200mbar...350bar					
				[0~XmH_2O]L	X: actual measured range, L: cable length, recommended cable length L=X+(1~2)m for level transmitter					
				[0~Xbar]L						
					Code	Pressure Type				
					G	gauge				
					A	absolute				
					S	sealed gauge				
						Code	Accuracy①			
						A1	±0.25%FS			
						A2	±0.5%FS			
						A3	±1%FS			
							Code	Output Signal		
							E	4mA~20mA DC		
							J	0V~5V DC		
							F	1V~5V DC		
							V	0V~10V DC		
							K1	0.5V~4.5V DC(5V~10V DC power)		
							K2	0.5V~4.5V DC(15V~28V DC power)		
							W	0.5V~2.5V DC(3.2V~5V DC power)		
							R8	RS485 MODBUS_RTU protocol with temperature output		
							R4	RS485 MODBUS ASC II with temperature output (customized protocol)		
								Code	Connection Box②	
								null	no connection box	
								Yb	Aluminum connection box without display	
								Yc	MS200 waterproof connection box	
								Yd	PD140 lightening-proof connection box	
								Ye	connection box (with or without display)	
									Code	Display Indicator (with Ye connection box only)
									null	no display indicator
									M1	0%~100% linear indicator
									M6	4 digits LED digital indicator
									M7	4 digits LCD digital indicator

IQLT-C-	PF	P2	LD1	[0~5mH_2O]6	G	A2	E	Ye	M6	Complete Type Specification

Ordering Notes

1. " ① ", see "Accuracy" on Page 2 for details.
2. " ② ", all connection boxes are non-explosion-proof accessories;
3. 4~20mA output is available only when ordering the transmitter with M6 or M7 indicator, power supply should ≥17V DC.
4. Environmental temperature should be -20°C ~ 70°C when ordering the transmitter with M6 indicator, environmental temperature should be -10 °C ~ 60°C when ordering the transmitter with M7 indicator, indicator setting can refer to our indicator lectotype, which can be found on our company's website.
5. The measured media should be compatible with the wetted material and the measured media density except water needs to be specified on contract.
6. If the product is installed in a thunderstorm area, a lightning protection device is required and be sure that the product and the power are reliably earthed, which can efficiently prevent the level sensor from lightning damage.
7. If metrology verification certificate is needed or there are other requirements, please contact us.