



PRODUCT OVERVIEW

LEVEL MEASUREMENT

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Submersible Fuel Level Sensor L704

Profile

The L704 submersible fuel level sensor uses a high-reliability silicon piezoresistive pressure sensor with automatic temp compensation. It delivers exceptional accuracy (up to 0.1% FS) and long-term stability of 0.2% FS/year, significantly reducing re-calibration frequency and operational downtime. Engineered for strong compatibility, L704 supports various signal output, including 4 – 20mA, 0 – 10V analog, I²C and RS485/HART digital communications. This allows for direct integration into PLC, RTU, and IoT gateways without requiring additional converters.

For hazardous applications, the sensor is ATEX-certified and built with oil- and chemical-resistant materials to ensure safe on-site measurement in flammable oil environments. Durability is at the core of its design, featuring an IP68-rated fully sealed probe, 10g vibration resistance, and a service life exceeding 10 million load cycles. Its low-power design makes it the ideal choice for battery-powered or solar-powered remote monitoring systems. Furthermore, with fast response time, it enables real-time monitoring to prevent overflow or dry running. Maintenance is simplified by an anti-clogging design and easy-to-clean oil film surfaces, ensuring a long, reliable service life.



Characteristics

- ☆ High accuracy $\pm 0.25\%$ F.S , ensuring reliable data for critical fuel management
- ☆ Wide working temp and compensated temp ranges, suitable for extreme environments and outdoor water measurement
- ☆ Flexible output options for direct connection to PLC, RTU, SCADA, IoT gateways without additional converters
- ☆ Polarity protection, IP68 rating for long-term immersion in fluids, vibration resistance 10g, shock resistance 100g/11ms, service life >10 million load cycles
- ☆ ATEX-certified, meets explosion-proof standards
- ☆ Response time $\leq 3\text{ms}$ enables quick reaction to level changes

Applications

- ★ Power Stations
- ★ Automotive Fuel Tanks
- ★ Fuel Storage Tanks
- ★ Marine Fuel Systems
- ★ Agricultural Equipment
- ★ Fuel Dispensers (Pump Stations)
- ★ Remote Fuel Monitoring Systems
- ★ Oil & gas production
- ★ Underground Storage Tanks
- ★ Marine Fuel & Ballast Tanks
- ★ Mining Equipment Refueling

Specifications

Parameter	L704			
Pressure Type	Gauge pressure, absolute pressure			
Measuring Range	0 m-0.5 m ... 50 m			
Electrical Wire	2 wires	3 wires	4 wires	
Output	4-20mA(Hart optional)	0-10 V	I2C	RS485 Modbus RTU
Power Supply	12-30 V DC	12-30 V DC	3.3-5 V DC	5-30 V DC
Polarity protection	Yes			
Medium Temp.	-30°C to +65°C			
Ambient Temp	-40°C to +70°C			
Storage Temp.	-40°C to +70°C			
Temp compensation	0°C to +50°C(typical), -10°C to +60°C			
Accuracy	±0.1%F.S (by customized)	±0.25%F.S	±0.5%F.S	
Non-linearity (%FS)	≤0.1	≤0.2	≤0.4	
Hysteresis (%FS)	≤0.05	≤0.05	≤0.1	
Repeatability (%FS)	≤0.05	≤0.05	≤0.1	
Long-term Stability (%FS/year)	≤0.1	≤0.2	≤0.5	
Zero Temperature Drift (%FS/°C)	≤0.01	≤0.03	≤0.05	
Sensitivity Temp. Drift (%FS/°C)	≤0.1	≤0.03	≤0.05	
Overload Capacity	≤ 500%F.S			
Electrical Connection	Industrial terminal / Cable-out			
Response Time	≤ 3 ms (10%–90%)			
Measuring Medium	Fluids compatible with 304, 316L stainless steel or ceramic			
Load Resistance (Current, 2-wire)	$R \leq (U-10) / 0.02 - RD$ (U: supply voltage; RD: cable resistance)			
Current Consumption	Current (2-wire)	Signal current, max approx. 23 mA		
	Voltage Output (3-wire)	< 5 mA		
	I ² C (4-wire)	< 1.3 mA (customizable low power < 5 μA)		
	RS485 (4-wire)	< 5 mA (low power < 1.1 mA)		
Protection Rating	IP68			
Atmospheric Pressure	86 kPa - 106 kPa			
Vibration	10 g (@10 Hz - 2000 Hz)			
Shock Resistance	100 g / 11 ms			
Service Life	> 10 million load cycles (within measuring range)			

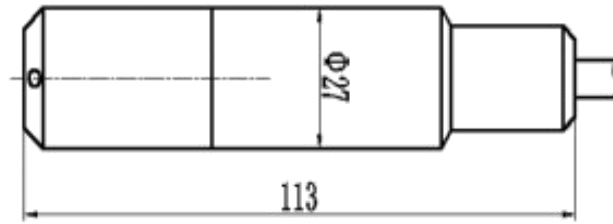
Reference Conditions:

Temperature: 20°C to 25°C

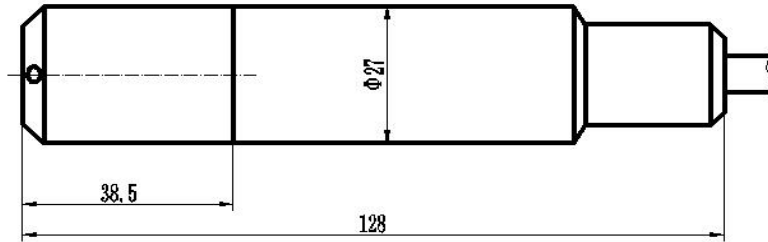
Power Supply Voltage: 24 V ± 0.24 V; 5 V ± 0.05 V

Installation Orientation: Product tested with vertical downward orientation

Dimension and Drawing



Analog signal



RS485 signal

Electrical Connections

Electrical Connections

Industrial terminal					
Diagram	Terminal No.	Current (2-wire)	Voltage(3-wire)	I2C(4-wire)	RS485(4-wire)
	1	PE	PE	SDA	RS485B
	2	/	Vout	SCL	RS485A
	3	Iout	GND	GND	GND
	4	Vcc	Vcc	Vcc	Vcc

Diagram	Wire color	Current (2-wire)	Dual current (3-wire)	Voltage (3-wire)	Dual voltage (4-wire)	I2C (4-wire)	RS485 (4-wire)
	Red	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc
	Green	Iout	PIout	GND	GND	GND	GND
	Yellow	/	TIout	Vout	PVout	SCL	RS485A
	Blue	/	/	/	TVout	SDA	RS485B
	Black	PE	PE	PE	PE	PE	PE

Part Number Code Table For Pressure Range

000	0-1.0	009	0-1.9	018	0-8	027	0-50
001	0-1.1	010	0-2.0	019	0-10	X	Customized
002	0-1.2	011	0-2.1	020	0-12		
003	0-1.3	012	0-2.5	021	0-15		
004	0-1.4	013	0-3	022	0-20		
005	0-1.5	014	0-4	023	0-25		
006	0-1.6	015	0-5	024	0-30		
007	0-1.7	016	0-6	025	0-35		
008	0-1.8	017	0-7	026	0-40		

Order Information

Selection	L704	010	E5	S10	H	1	1	G	Mo
P/N	(Model)								
Range	Refer to <i>PART NUMBER CODE TABLE FOR RESSURE RANGE</i> on previous page and select your requested range code here.								
Output	E5=4-20 mA E6=0-5 V E7=0-10 V E21=0.5-4.5 V non-ratiometric E0=1-5 V E11=RS485(MODBUS) E61=0-10 mA E56=0-20 mA E14=4-20 mA+HART E13=I ² C X= By Customized								
Power Supply	S3=24 V DC S5=12V S6=5 V DC S31=3.3 V DC S4=3 V DC S46=3.3-5 V DC S35=5-30V DC S10=12-30 V DC X= By Customized								
Level Unit	B=Bar	P=PSI	H=H ₂ O	F=m Fuel					
Accuracy	1=0.5%F.S	2=0.25%F.S	3=0.1%F.S (by customized)						
Cable Length	1=Cable 1m	2=Cable 2m	3=Cable 3m	X=Cable x m					
Pressure Type	G=Gauge Pressure		A=Absolute Pressure		S=Sealed Pressure				

Others Function (Optional)

Mo = Without junction box Mi =With junction box, without display
 Mz = 4-digit LCD display (only for 4–20 mA DC output)
 Ms = 4-digit LED display (only for 4–20 mA DC output)
 S= With lightning protection i = Intrinsically safe type X = By customized

Notes:

- When selecting a model, please ensure the compatibility of the measured medium with the product's contact materials, such as seals and cables. For detailed information regarding media compatibility, please consult our technical team.
- To ensure long-term stability and accuracy, it is recommended to select a level sensor with a range of 120% of the actual measurement height. The maxi pressure must remain within the specified measurement range.
- For reliable outdoor operation, we recommend ordering sensors with integrated lightning protection. Ensuring the product and power supply are reliably grounded during installation will significantly reduce the risk of lightning damage.
- When choosing products with a digital display, the operating ambient temperature range is -30°C to 70°C, and the power supply must be no less than 15VDC.
- For flammable or explosive environments, safety barriers must be installed according to regulations, and cable connections must be reliably sealed. Before powering on, ensure the sensor's internal cavity is isolated from the environment. During cleaning or maintenance, the power must be disconnected before disassembly, and the unit should be moved to a safe environment for processing. On-site live operation is strictly prohibited.