

Model LT1090 series

OEM Submersible Level Transmitter
Stainless steel sensor
Mass production, automated calibration

Materontek
Sensing and Internet of Things

The LT1090 submersible level transmitter has been designed for level measurement in contact with the medium in harsh operating conditions. It offers an accuracy of 0.25 %FS and with an ingress protection of IP 68, is suitable for permanent level measurements up to 120 m water column.

Features

- ❑ Measuring ranges from 1mH₂O to 200 mH₂O
- ❑ IP68, Submersible level measurement
- ❑ Simple level measurement
- ❑ Accuracy: $\pm 0.25\%$ FSO(Typ.)
- ❑ Calibrated and temperature compensated
- ❑ Stainless steel pressure sensor
- ❑ Output 4...20mA, DC1...5V, DC 0.5...4.5V, MODBUS RTU
- ❑ Optional dual output standard signal for level and temperature

Application

- ❑ Drinking water systems
- ❑ Ground water monitoring
- ❑ Domestic water tanks
- ❑ Rain spillway basin



CE

Technical data

Measuring range

Nominal pressure [mH ₂ O]	1	2	4	5	8	10	12	15	20	25	30	40	50	60	80	100	120	150	180	200
Overpressure [mH ₂ O]	1.5	3	6	7	12	15	15	20	30	35	40	50	60	70	100	110	130	170	190	210

Performance

Accuracy*	0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.)	*Linearity (best straight line) + Hysteresis + Repeatability
Operating Temperature	-10 to 50°C	
Compensated Temperature Range	-10 to 50°C	
Temp. coeff - Zero	± 0.75 [Typ.], ± 1.5 [Max.]	
Temp. coeff - Span	± 0.75 [Typ.], ± 1.5 [Max.]	
Vibration	20 g RMS(20 to 2000Hz)	
Shock	100 g(10ms)	
Cycles	10x10 ⁵	
Long Term Stability	0.2 %FS	

Electrical @25°C

Output signal / Supply	2-wire 4...20mA / V _S = 10... 30VDC
	2-wire HART+4...20mA / V _S = 12... 30VDC
	3-wire 1...5VDC / V _S = 10... 30VDC
	3-wire 0.5...4.5VDC / V _S = 5VDC
	3-wire 0...10VDC / V _S = 15... 30VDC
	3-wire 0.5...4.5VDC proportional output / V _S = 5VDC
	3-wire 4...20mA(Level)+4...20mA(Temp.) / V _S = 12...30VDC
	4-wire I2C / V _S = 3.3...5VDC
	4-wire MODBUS RTU / V _S = 10...30VDC
Insulation Resistance	100 MΩ@100VDC
EMC Test	IEC61000-6-2/IEC61000-6-3
Reverse polarity protection	No damage – no function

Physical Specifications

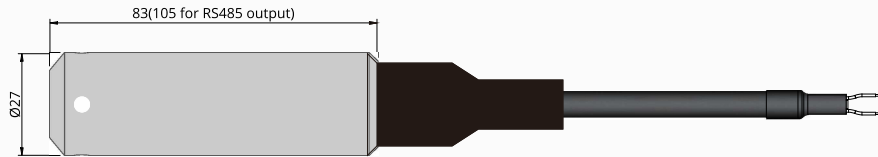
Housing	316 stainless steel
Diaphragm	316L stainless steel
Protection cap	Stainless steel
Cable sheath	PUR, PE, PTFE
Oil Filling	Silicone oil
Protection	IP68
Weight	~250g (without cable)

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Dimensions (All dimensions in mm)



Electrical connections

Cable outlet	4...20mA 2-wire	2 way 4...20mA 3-wire	1...5VDC 3-wire	0.5...4.5VDC 3-wire	RS485 4-wire
+Vcc	Red	Red	Red	Red	Red
OUT/RS485A/SDA/Temp.	Green	Yellow	Yellow	Yellow	Yellow
GND/Level	NA	Green	Green	Green	Green
RS485 B/SCL					Blue

Ordering code

Model	Range	Type	Output	Cable	Cable length
LT1090	01 1mH ₂ O	G Gauge	42 4...20mA / V _S = 12...30VDC	C1 PUR	XXX Cable length in m
	02 2mH ₂ O	A Absolute	15 DC1...5V / V _S = 12...30VDC	C2 PE	
	03 4mH ₂ O		04 DC0.5...4.5V / V _S = 5VDC	C3 PTFE	
	04 5mH ₂ O		45 DC0.5...4.5V proportional output / V _S = 5VDC		
	05 8mH ₂ O		25 DC0.5...2.5V / V _S = 3.3...5VDC		
	06 10mH ₂ O		05 DC0...5V / V _S = 12...30VDC		
	07 12mH ₂ O		01 DC0...10V / V _S = 15...30VDC		
	08 15mH ₂ O		10 DC1...10V / V _S = 15...30VDC		
	09 20mH ₂ O		H2 4...20mA+HART / V _S = 12...30VDC		
	10 25mH ₂ O		IC I2C interface / V _S = 3.3...5VDC		
	11 30mH ₂ O		R1 MODBUS RTU(Level) / V _S = 12...30VDC		
	12 40mH ₂ O		R2 MODBUS RTU(Level+Temp.) / V _S = 12...30VDC		
	13 50mH ₂ O		R3 MODBUS RTU(Level+Temp.) / V _S = 3.6...5VDC		
	14 60mH ₂ O		R4 2-way 4...20mA(Level+Temp.) / V _S = 12...30VDC		
	15 80mH ₂ O				
	16 100mH ₂ O				
	17 120mH ₂ O				
	18 150mH ₂ O				
	19 180mH ₂ O				
	20 200mH ₂ O				
	Cx Custom				

Protection cap	Accuracy	Label
S Stainless steel	A1 0.1%FS	S Standard
	A2 0.25%FS(Standard)	N Neutral packing
	A3 0.5%FS	C Custom label

Accessory

Code A1: Cable strain relief clamp

