Model LT1090 series

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



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: ±0.25%FSO(Typ.)
- Calibrated and temperature compensated
- Stainless steel pressure sensor
- Output 4...20mA, DC1...5V, DC 0.5...4.5V, MODBUS RTU
- D 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

1	2	4	5	8	10	12	15	20	25	30	40	50	60	80	100	120	150	180	200
1.5	3	6	7	12	15	15	20	30	35	40	50	60	70	100	110	130	170	190	210
Performance																			
0.25	0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity (best straight line) + Hysteresis + Repeatability																		
-10 t	-10 to 50°C																		
-10 t	-10 to 50°C																		
±0.7	±0.75[Typ.], ±1.5[Max.]																		
±0.7	±0.75[Typ.], ±1.5[Max.]																		
20 g	20 g RMS(20 to 2000Hz)																		
100 g	100 g(10ms)																		
10x1	10x10 ⁵																		
0.2 %FS																			
Electrical @25°C																			
2-wire 420mA / V ₅ = 10 30VDC																			
2-wire HART+420mA / Vs = 1230VDC																			
	0.25 ⁴ -10 t ±0.7 ⁴ 20 g 100 g 10x1 0.2 %	1.5 3 0.25%FS@ -10 to 50°C -10 to 50°C ±0.75[Typ. 20 g RMS(2 100 g(10m 10×10 ⁵ 0.2 %FS	1.5 3 6 0.25%FS@25°C(-10 to 50°C ±0.75[Typ.], ±1.5 ±0.75[Typ.], ±1.5 20 g RMS(20 to 2 100 g(10ms) 10x10 ⁵ 0.2 %FS	1.5 3 6 7 0.25%FS@25°C(Typ.) -10 to 50°C ±0.75[Typ.], ±1.5[Max 20 g RMS(20 to 2000H 100 g(10ms) 10x10 ⁵ 0.2 %FS	1.5 3 6 7 12 0.25%FS@25°C(Typ.) 0.5% -10 to 50°C	1.5 3 6 7 12 15 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Typ.) -10 to 50°C - - ±0.75[Typ.], ±1.5[Max.] ± - - ±0.75[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) - - 100 g(10ms) 10x10 ⁵ 0.2 %FS - - 2-wire 420mA / Vs = 10 30VD - -	1.5 3 6 7 12 15 15 0.25%FS@25°C(Typ.) 0.5%FS@25°C(M. -10 to 50°C ±0.75[Typ.], ±1.5[Max.] ±0.75[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) 100 g(10ms) 10x10 ⁵ 0.2 %FS	1.5 3 6 7 12 15 15 20 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) -10 to 50°C ±0.75[Typ.], ±1.5[Max.] ±0.75[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) 100 g(10ms) 10x10 ⁵ 0.2 %FS	1.5 3 6 7 12 15 15 20 30 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) -10 to 50°C ±0.75[Typ.], ±1.5[Max.] ±0.75[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) 100 g(10ms) 10x10 ⁵ 0.2 %FS	1.5 3 6 7 12 15 15 20 30 35 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Lin -10 to 50°C ±0.75[Typ.], ±1.5[Max.] ± ±0.75[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) 100 g(10ms) 100 g(10ms) 10x10 ⁵ 0.2 %FS	1.5 3 6 7 12 15 15 20 30 35 40 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity -10 to 50°C ±0.75[Typ.], ±1.5[Max.] ±0.75[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) 100 g(10ms) 10x10 ⁵ 2-wire 420mA / Vs = 10 30VDC	1.5 3 6 7 12 15 15 20 30 35 40 50 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity (best *10 to 50°C -10 to 50°C -10 to 50°C *Linearity (best *10.75[Typ.], ±1.5[Max.] ±0.75[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) 100 g(10ms) 100 g(10ms) 10x10 ⁵ 0.2 %FS 2-wire 420mA / Vs = 10 30VDC	1.5 3 6 7 12 15 15 20 30 35 40 50 60 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity (best straig -10 to 50°C -10 to 50°C ±0.75[Typ.], ±1.5[Max.] ±0.75[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) 100 g(10ms) 100 g(10ms) 10x10 ⁵ 0.2 %FS 2-wire 420mA / Vs = 10 30VDC	1.5 3 6 7 12 15 15 20 30 35 40 50 60 70 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity (best straight linearity (best straight line	1.5 3 6 7 12 15 15 20 30 35 40 50 60 70 100 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity (best straight line) + Hy -10 to 50°C ±0.75[Typ.], ±1.5[Max.] #UNTS[Typ.], ±1.5[Max.] 20 g RMS(20 to 2000Hz) IOU do 100 g(10ms) 100x10 ⁵ O.2 %FS 2-wire 420mA / Vs = 10 30VDC	1.5 3 6 7 12 15 15 20 30 35 40 50 60 70 100 110 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity (best straight line) + Hysteres -10 to 50°C -10 to 50°C	1.5 3 6 7 12 15 15 20 30 35 40 50 60 70 100 110 130 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity (best straight line) + Hysteresis + R -10 to 50°C -10 to 50°C	1.5 3 6 7 12 15 15 20 30 35 40 50 60 70 100 110 130 170 0.25%FS@25°C(Typ.) 0.5%FS@25°C(Max.) *Linearity (best straight line) + Hysteresis + Repeat -10 to 50°C -10 to 50°C -	1.5 3 6 7 12 15 15 20 30 35 40 50 60 70 100 110 130 170 190 *Linearity (best straight line) + Hysteresis + Repeatability -10 to 50°C -10 to 50°C

Output signal / Supply	2-wire 420mA / Vs = 10 30VDC
	2-wire HART+420mA / Vs = 12 30VDC
	3-wire 15VDC / V _s = 10 30VDC
	3-wire 0.54.5VDC / Vs = 5VDC
	3-wire 010VDC / Vs = 15 30VDC
	3-wire $0.54.5$ VDC proportional output / V _S = 5VDC
	3-wire 420mA(Level)+420mA(Temp.) / Vs = 1230VDC
	4-wire I2C / V _S = 3.35VDC
	4-wire MODBUS RTU / V _S = 1030VDC
Insulation Resistance	100 MΩ@100VDC
EMC Test	IEC61000-6-2/IEC61000-6-3

Reverse polarity protection No damage – no function Physical Specifications

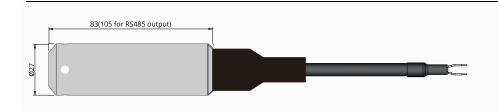
Housing 316 stainless steel Diaphragm 316L stainless steel Cable sheath PUR, PE, PTFE Oil Filling Silicone oil Protection IP68 Weight ~250g (without cable)

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Dimensions (All dimensions in mm)



Electrical connections

Cable outlet	420mA 2-wire	2 way 420mA 3-wire	15VDC 3-wire	0.54.5VDC 3-wire	RS485 4-wire
+Vcc OUT/RS485A/SDA/Temp. GND/Level RS485 B/SCL	Red Green NA	Red Yellow Green	Red Yellow Green	Red Yellow Green	Red Yellow Green Blue

Ordering code

	—	0.1.1	C.1.1.	
				Cable length
	U			XXX Cable length in m
02 2mH ₂ O	A Absolute	15 DC15V / V _s = 1230VDC	C2 PE	
03 4mH ₂ O		04 DC0.54.5V / V _s = 5VDC	C3 PTFE	
04 5mH2O		45 DC0.54.5V proportional output / Vs = 5VDC		
05 8mH2O		25 DC0.52.5V / V _s = 3.35VDC		
06 10mH ₂ O		05 DC05V / V _s = 1230VDC		
07 12mH ₂ O		01 DC010V / V _s = 1530VDC		
08 15mH ₂ O		10 DC110V / V _S = 1530VDC		
09 20mH ₂ O		H2 420mA+HART / Vs = 1230VDC		
10 25mH2O		IC I2C interface / V _S = 3.35VDC		
11 30mH ₂ O		R1 MODBUS RTU(Level) / Vs = 1230VDC		
12 40mH ₂ O		R2 MODBUS RTU(Level+Temp.) / Vs = 1230VDC		
13 50mH2O		R3 MODBUS RTU(Level+Temp.) / Vs = 3.65VDC		
14 60mH2O		R4 2-way 420mA(Level+Temp.) / Vs = 1230VDC		
15 80mH2O				
16 100mH ₂ O				
17 120mH2O				
18 150mH2O				
19 180mH2O				
20 200mH2O				
Cx Custom				
	 04 5mH₂O 05 8mH₂O 06 10mH₂O 07 12mH₂O 08 15mH₂O 09 20mH₂O 10 25mH₂O 11 30mH₂O 12 40mH₂O 13 50mH₂O 14 60mH₂O 15 80mH₂O 16 100mH₂O 17 120mH₂O 18 150mH₂O 19 180mH₂O 20 200mH₂O 	Range Type 01 1mH ₂ O G Gauge 02 2mH ₂ O A Absolute 03 4mH ₂ O 04 04 5mH ₂ O 05 05 8mH ₂ O 06 06 10mH ₂ O 07 07 12mH ₂ O 09 09 20mH ₂ O 09 10 25mH ₂ O 10 11 30mH ₂ O 11 13 50mH ₂ O 12 13 50mH ₂ O 13 14 60mH ₂ O 15 15 80mH ₂ O 16 17 120mH ₂ O 18 18 150mH2O 18 19 180mH2O 19 20 200mH2O 14	Range Type Output 01 1mH ₂ O G Gauge 42 420mA / Vs = 1230VDC 02 2mH ₂ O A Absolute 15 DC15V / Vs = 1230VDC 03 4mH ₂ O 04 DC0.54.5V / Vs = 5VDC 04 5mH ₂ O 45 DC0.54.5V proportional output / Vs = 5VDC 05 8mH ₂ O 25 DC0.52.5V / Vs = 3.35VDC 06 10mH ₂ O 05 DC05V / Vs = 1230VDC 07 12mH ₂ O 01 DC010V / Vs = 1530VDC 08 15mH ₂ O 10 DC110V / Vs = 1530VDC 09 20mH ₂ O 10 DC110V / Vs = 1230VDC 10 25mH ₂ O 10 DC110V / Vs = 1230VDC 10 25mH ₂ O 1C 12C interface / Vs = 3.35VDC 11 30mH ₂ O R1 MODBUS RTU(Level) / Vs = 1230VDC 12 12 40mH ₂ O R2 MODBUS RTU(Level+Temp.) / Vs = 3.65VDC 13 50mH ₂ O R4 2-way 420mA(Level+Temp.) / Vs = 1230VDC	Range Type Output Cable 01 1mH20 G Gauge 42 420mA / Vs = 1230VDC C1 PUR 02 2mH20 A Absolute 15 DC15V / Vs = 1230VDC C2 PE 03 4mH20 04 DC0.54.5V / Vs = 5VDC C3 PTFE 04 5mH20 45 DC0.54.5V proportional output / Vs = 5VDC C3 PTFE 04 5mH20 25 DC0.52.5V / Vs = 3.35VDC C3 PTFE 05 8mH20 05 DC02.5V / Vs = 1230VDC C3 PTFE 06 10mH20 05 DC02.5V / Vs = 1230VDC C3 PTFE 08 15mH20 01 DC110V / Vs = 1530VDC C3 C3 C4 C3.0VDC C3 C3 C4 C3.0VDC C4 C3.0VDC C4 <

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

