

# 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 1mH<sub>2</sub>O to 200 mH<sub>2</sub>O
- 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

## Application

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



CE

## Technical data

### Measuring range

Nominal pressure [mH <sub>2</sub> O]	1	2	4	5	8	10	12	15	20	25	30	40	50	60	80	100	120	150	180	200
Overpressure [mH <sub>2</sub> 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 <sup>5</sup>	
Long Term Stability	0.2 %FS	

### Electrical @25°C

Output signal / Supply	2-wire 4...20mA / V <sub>S</sub> = 9... 30VDC
	2-wire HART+4...20mA / V <sub>S</sub> = 12... 30VDC
	3-wire 1...5VDC / V <sub>S</sub> = 9... 30VDC
	3-wire 0.5...4.5VDC / V <sub>S</sub> = 9... 30VDC
	3-wire 0...10VDC / V <sub>S</sub> = 15... 30VDC
	3-wire 0.5...4.5VDC / V <sub>S</sub> = 5VDC
	4-wire I2C / V <sub>S</sub> = 3.3...5VDC
4-wire MODBUS RTU / V <sub>S</sub> = 9...30VDC	
Insulation Resistance	100 MΩ@100VDC
EMC Test	IEC61000-6-2/IEC61000-6-3
Reverse polarity protection	No damage - no function

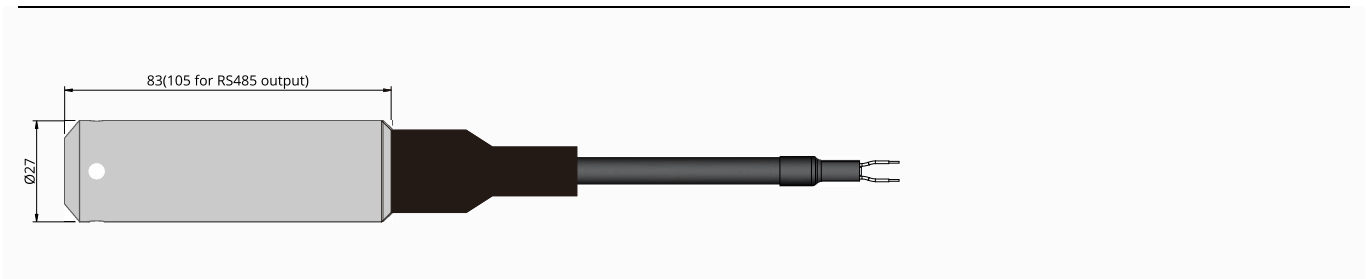
### Physical Specifications

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	1...5VDC 3-wire	0.5...4.5VDC 3-wire	RS485 4-wire
+Vcc	Red	Red	Red	Red
OUT/RS485A/SDA	Green	Yellow	Yellow	Yellow
GND	NA	Green	Green	Green
RS485 B/SCL				Blue

## Ordering code

Model	Range	Type	Output	Cable	Cable length	Protection cap
<b>LT1090</b>	<b>01</b> 1mH <sub>2</sub> O	<b>G</b> Gauge	<b>42</b> 4...20mA	<b>C1</b> PUR	<b>XXX</b> Cable length in m	<b>S</b> Stainless steel
	<b>02</b> 2mH <sub>2</sub> O	<b>A</b> Absolute	<b>15</b> DC1...5V	<b>C2</b> PE		
	<b>03</b> 4mH <sub>2</sub> O		<b>04</b> DC0.5...4.5V	<b>C3</b> PTFE		
	<b>04</b> 5mH <sub>2</sub> O		<b>25</b> DC0.5...2.5V			
	<b>05</b> 8mH <sub>2</sub> O		<b>05</b> DC0...5V			
	<b>06</b> 10mH <sub>2</sub> O		<b>01</b> DC0...10V			
	<b>07</b> 12mH <sub>2</sub> O		<b>10</b> DC1...10V			
	<b>08</b> 15mH <sub>2</sub> O		<b>H2</b> 4...20mA+HART			
	<b>09</b> 20mH <sub>2</sub> O		<b>IC</b> I2C interface			
	<b>10</b> 25mH <sub>2</sub> O		<b>R4</b> MODBUS RTU			
	<b>11</b> 30mH <sub>2</sub> O					
	<b>12</b> 40mH <sub>2</sub> O					
	<b>13</b> 50mH <sub>2</sub> O					
	<b>14</b> 60mH <sub>2</sub> O					
	<b>15</b> 80mH <sub>2</sub> O					
	<b>16</b> 100mH <sub>2</sub> O					
	<b>17</b> 120mH <sub>2</sub> O					
	<b>18</b> 150mH <sub>2</sub> O					
	<b>19</b> 180mH <sub>2</sub> O					
	<b>20</b> 200mH <sub>2</sub> O					
	<b>Cx</b> Custom					

Accuracy	Label
<b>A1</b> 0.1%FS	<b>S</b> Standard
<b>A2</b> 0.25%FS(Standard)	<b>N</b> Neutral packing
<b>A3</b> 0.5%FS	<b>C</b> Custom label

## Accessory

Code A1: Cable strain relief clamp

