Submersible pressure transmitter for level measurement Model LS-10, standard version

Applications

- Level measurement in rivers and lakes
- Level measurement in vessel and storage systems
- Control of sewage lift and pumping stations
- Monitoring of sewage, settling and stormwater retention basins

Special features

- Robust
- Reliable
- Economical
- Cable supports up to 220 lbs. of strain
- Rated IP68 for permanent submersion

Submersible pressure transmitter model LS-10

Description

For simple measuring tasks
The model LS-10 submersible pressure transmitter has been optimised for simple measuring requirements in level measurement. It offers excellent quality, is cost-effective and reliable.

It has been designed to the current demands of the industry and has a 4 ... 20 mA output as standard, an accuracy of 0.5% and PUR cable. With IP 68 ingress protection, it is suitable for permanent level measurement up to 328 ft (100 m) water column.

Reliable and long-lasting
The submersible pressure transmitter features a hermetically-sealed and exceptionally robust stainless steel case. The proven, fully-welded construction ensures a long service life and permanent sealing.

Optional WIKA LevelGuard Anti-clog attachment for submersible level transmitters. For use in lift stations, wet wells and other difficult level applications. For more information request bulletin LG-1.

Data sheets showing similar products:
High-performance submersible pressure transmitter; model LH-20; see data sheet PE 81.56
Intrinsically safe submersible pressure transmitter; model IL-10; see data sheet PE 81.23

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Measuring ranges

Relative pressure						
bar	**Measuring range**	**0 ... 0.25**	**0 ... 0.4**	**0 ... 0.6**	**0 ... 1**	**0 ... 1.6**
	Overpressure limit	2	2	3	5	8
	Burst pressure	2.4	2.4	4	6	10
	Measuring range	**0 ... 2.5**	**0 ... 4**	**0 .. 6**	**0 ... 10**	
	Overpressure limit	8	10	10	10	
	Burst pressure	10	10	10	10	
inWC	**Measuring range**	**0 ... 100**	**0 ... 150**	**0 ... 250**		
	Overpressure limit	750	750	1,100		
	Burst pressure	950	950	1,600		
psi	**Measuring range**	**0 ... 5**	**0 ... 10**	**0 ... 15**	**0 ... 25**	**0 ... 50**
	Overpressure limit	30	45	70	120	150
	Burst pressure	35	60	90	180	150
	Measuring range	**0 ... 100**	**0 ... 160**			
	Overpressure limit	150	160			
	Burst pressure	150	160			
mH_2O	**Measuring range**	**0 ... 2.5**	**0 ... 4**	**0 ... 6**	**0 ... 10**	**0 ... 16**
	Overpressure limit	20	20	30	50	80
	Burst pressure	24	24	40	60	100
	Measuring range	**0 ... 25**	**0 ... 40**	**0 ... 60**	**0 ... 100**	
	Overpressure limit	80	100	100	100	
	Burst pressure	100	100	100	100	

The given measuring ranges are also available in mbar, kPa and MPa.

Output signal

Analogue signal
4 ... 20 mA

Load in Ω
≤ (power supply - 10 V) / 0.02 A - (cable length in m x 0.14 Ω)

Voltage supply

Power supply
DC 10 ... 30 V

Reference conditions

Temperature
59 ... 77 °F (15 ... 25 °C)

Atmospheric pressure
12.5 ... 15.4 psi (860 ... 1,060 mbar)

Humidity
45 ... 75 % relative

Power supply
DC 24 V

Accuracy data

Accuracy at reference conditions
≤ ±0.5 % of span

Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).

Non-linearity (per IEC 61298-2)
≤ ±0.2 % of span

Non-repeatability
≤ ±0.1 % of span

Temperature error at 32 ... 176 °F (0 ... 50 °C)

- Mean temperature coefficient of zero point
  Measuring ranges ≤ 3.6 psi: ≤ ±0.4 % of span/10 K
  Measuring ranges > 3.6 psi: ≤ ±0.2 % of span/10 K
- Mean temperature coefficient of span
  ≤ ±0.2 % of span/10 K

Long-term stability at reference conditions
≤ ±0.2 % of span/year

Operating conditions

Ingress protection (per IEC 60529)
IP 68

Permissible temperature ranges

- Medium: 14 ... 122 °F (-10 ... +50 °C)
- Ambient: 14 ... 122 °F (-10 ... +50 °C)
- Storage: -22 ... 176 °F (-30 ... +80 °C)

Immersion depth
up to 328 ft. (100 m)

Maximum tensile strength of the cable

- without strain relief: up to 350 N
- with strain relief: up to 1,000 N

Weight

- Level probe: approx. 0.4 lbs. (180 g)
- Cable: approx. 0.054 lbs/ft (80 g/m)
- Additional weight (accessories): approx. 1.11 lbs. (500 g)

Electrical connection

Short-circuit resistance
S_+ vs. U-

Reverse polarity protection
U_+ vs. U-

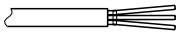
Insulation voltage
DC 500 V

Cable lengths

Available cable lengths					
Meter (m)	1.5	3	5	10	15
	20	25	30	40	50
	60	80	100		
Feet (ft)	5	10	20	30	40
	50				

Other cable lengths on request

Connection diagram

Cable outlet		
	**U_+**	brown
	U-	green
	Shield	grey

Materials

Wetted parts

- Case from stainless steel
- Sensor out of stainless steel
- Protection cap from PA
- Cable from PUR

Approvals, directives and certificates

Approval

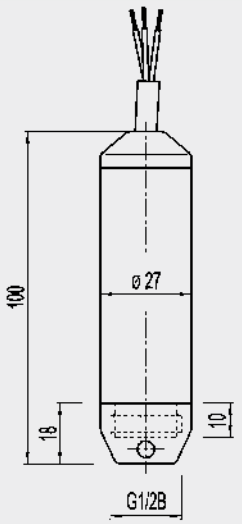
- CSA
- GOST-R

for further approvals, see local website

CE conformity
EMC directive 2004/108/EC, EN 61326 emission (group 1, class B) and immunity (industrial application)

Dimensions in mm

Cable outlet
Cable from PUR

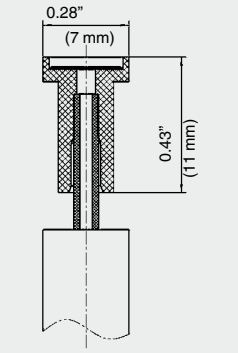


Accessories

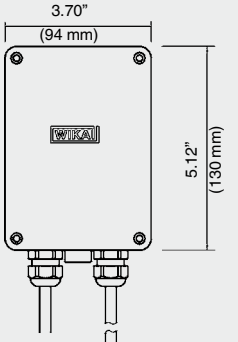
	Description	Order number
	**Cable strain relief clamp** The cable strain relief clamp enables easy and secure mechanical fastening of the submersible pressure transmitter's cable at the measuring point. It acts as a guide for the cable, in order to avoid mechanical damage and to reduce the tensile stress.	14052336
	**Additional weight** The additional weight increases the dead weight of the submersible pressure transmitter. It simplifies the lowering into monitoring wells, narrow shafts and deep wells. It effectively reduces negative environmental influences on the measuring result from the measured medium (e.g. turbulent flow). CrNi-Stahl 316L, approx. 500 g, length (L) 130 mm	14052341
	**Junction box** The junction box, with IP 67 ingress protection and watertight ventilation element, provides a moisture-free electrical termination for the submersible pressure transmitter. It should be mounted in dry environment or directly in the switch cabinet.	14052339
	**Filter element** The filter element prevents dirt and moisture from entering the venting tube. The watertight diaphragm also offers a reliable protection for the submersible pressure transmitter.	14052344

Ordering information
Model / Measuring range / Cable length / Accessories

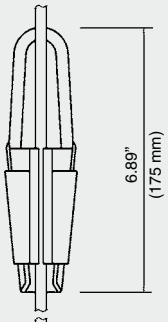
Accessories
Dimensions in inches (mm)



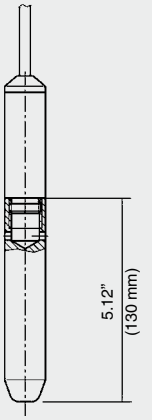
Vent tube filter
Part# 7193131
The optional Teflon® vent tube filter protects the vent opening and protects against the entry of dirt and moisture.



Cable junction box
Part# 2459686
The cable junction box is rated NEMA 4 / IP 67 and is suitable for mounting outside tanks or shafts or inside dry control boxes. Can be wall or DIN rail mounted.

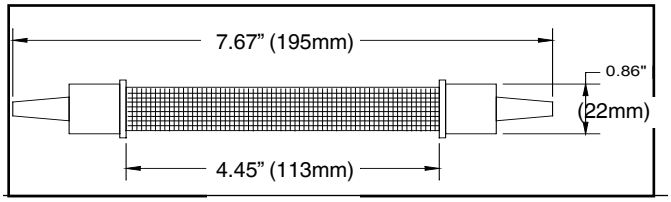


Cable clamp
Part# 2074257
The cable clamp secures the cable without bending or kinking that can damage the cable vent tube or outer jacket.

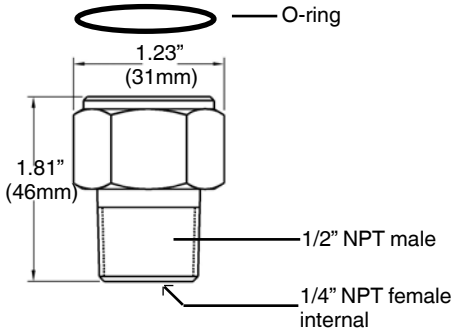


Additional weight
Part# 1524399
The additional weight replaces the protective cap and helps to stabilize the transmitter in turbulent conditions. Weight: approximately 1.1 lb, 316 SS.

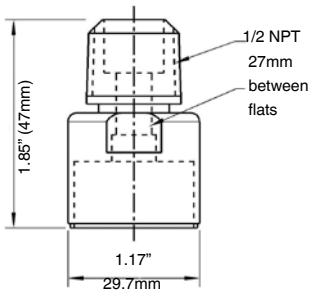
Desiccant drying cartridge part # 9836700
The desiccant drying cartridge helps prevent moisture buildup inside the vent tube.



NPT adapter Part# 1631322
The 316 SS G1/2 adapter replaces the removable protective cap and converts the threads to 1/2"NPT male external, 1/4" female internal threads. Includes O-ring.



Conduit adapter Part# 50476114
316 SS 1/2" NPT male cable conduit adapter.
Must be factory installed.



LevelGuard Anti-clog attachment Part # 50077091

The stainless steel LevelGuard attachment must be factory installed and calibrated.

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