Submersible pressure sensor
For general applications
Model LS-10

for further approvals,
see page 4

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 rainwater retention basins

Special features

- Robust
- Reliable
- Economical

Submersible pressure sensor model LS-10

Description

For simple measuring requirements
The model LS-10 submersible pressure sensor 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 features a 4 ... 20 mA output signal, an accuracy of 0.5 % and a cable from PUR as standard. With IP68 ingress protection, it is suitable for permanent level measurement up to 100 m water column.

Reliable and durable
The submersible pressure sensor features a hermetically sealed and exceptionally robust stainless steel case. The proven, all-welded construction ensures a long service life and permanent leak tightness.

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Specifications

Accuracy specifications		
Non-linearity per IEC 61298-2	≤ ±0.2 % of span	
Accuracy	→ See “Max. measured error per IEC 61298-2”	
Max. measured error per IEC 61298-2	≤ ±0.5 % of span	
Non-repeatability per IEC 61298-2	≤ ±0.1 % of span	
Mean temperature coefficient at 0 ... 50 °C [32 ... 122 °F]		
Zero point	Measuring ranges ≤ 0.25 bar	≤ ±0.2 % of span/10 K
	Measuring ranges > 0.25 bar	≤ ±0.4 % of span/10 K
Span	≤ ±0.2 % of span/10 K	
Long-term stability per DIN 16086	≤ ±0.2 % of span/year	
Reference conditions	Per IEC 61298-1	

Measuring ranges, gauge pressure

bar	
0 ... 0.25	0 ... 2.5
0 ... 0.4	0 ... 4
0 ... 0.6	0 .. 6
0 ... 1	0 ... 10
0 ... 1.6	

psi	
0 ... 5	0 ... 50
0 ... 10	0 ... 100
0 ... 15	0 ... 160
0 ... 25	

inWC	
0 ... 100	0 ... 250
0 ... 150	

mH_2O	
0 ... 2.5	0 ... 25
0 ... 4	0 ... 40
0 ... 6	0 ... 60
0 ... 10	0 ... 100
0 ... 16	

Further details on: Measuring range	
Units	bar, psi, inWC, mH_2O, mbar, MPa, kPa
Overpressure limit	2-fold

Output signal	
Signal type	4 ... 20 mA
Load in Ω	≤ (supply voltage - 10 V) / 0.02 A - (cable length in m x 0.14 Ω)
Voltage supply	
Supply voltage	DC 10 ... 30 V

Electrical connection													
Connection type	Cable outlet												
Cable length													
Metres (m)	1.5	3	5	10	15	20	25	30	40	50	60	80	100
Feet (ft)	5	10	20	30	40	50							
Tension force of cable													
Without strain relief	To 350 N												
With strain relief	To 1,000 N												
Pin assignment	→ See below												
Ingress protection (IP code) per IEC 60529	IP68												
Short-circuit resistance	S_+ vs. U-												
Reverse polarity protection	U_+ vs. U-												
Insulation voltage	DC 500 V												

Other cable lengths on request.

Pin assignment

Cable outlet		
	**U_+**	Brown
	U-	Green
	Shield	Grey

Material	
Material (wetted)	
Protective cap	PA
Case	Stainless steel
Sensor	Stainless steel
Cable	PUR

Operating conditions	
Medium temperature limit	-10 ... +50 °C [14 ... 122 °F]
Ambient temperature limit	-10 ... +50 °C [14 ... 122 °F]
Storage temperature limit	-30 ... +80 °C [-22 ... +176 °F]
Immersion depth	To 100 m [328 ft]
Ingress protection (IP code) per IEC 60529	→ See “Electrical connection”
Weight	
Submersible pressure sensor	Approx. 180 g [0.4 lb]
Cable	Approx. 80 g/m [0.054 lb/ft]
Additional weight (→ see “Accessories”)	Approx. 500 g [1.1 lb]

Packaging and instrument labelling	
Packaging	Individual packaging
Instrument labelling	■ WIKA product label, glued ■ Customer-specific product label on request

Approvals

Logo	Description	Country
CE	**EU declaration of conformity**	European Union
	EMC directive EN 61326 emission (group 1, class B) and immunity (industrial application)	
	RoHS directive	
CSA	**CSA** ■ Safety (e.g. electr. safety, overpressure, ...) ■ Hazardous areas	Canada
EAC	**EAC**	Eurasian Economic Community
	EMC directive	
GOST	**GOST** Metrology, measurement technology	Russia
KazInMetr	**KazInMetr** Metrology, measurement technology	Kazakhstan
-	**MTSCHS** Permission for commissioning	Kazakhstan
BelGIM	**BelGIM** Metrology, measurement technology	Belarus
UkrSEPRO	**UkrSEPRO** Metrology, measurement technology	Ukraine
Uzstandard	**Uzstandard** Metrology, measurement technology	Uzbekistan
-	**CRN** Safety (e.g. electr. safety, overpressure, ...)	Canada

Manufacturer's information and certificates

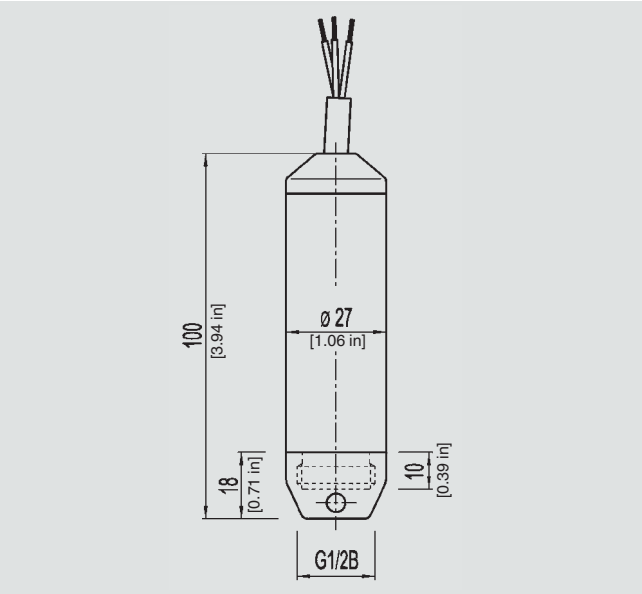
Logo	Description
-	China RoHS directive

Safety-related characteristic values

Safety-related characteristic values	
MTTF	> 100 years

→ For approvals and certificates, see website

Dimensions in mm [in]



Accessories

Model	Description	Order number
	**Cable strain relief clamp** The cable strain relief clamp ensures easy and secure mechanical fastening of the submersible pressure sensor's cable. It serves to guide the cable to prevent mechanical damage and to reduce the action of tensile stresses.	14052336
	**Additional weight** The additional weight increases the dead weight of the submersible pressure sensor. It simplifies the lowering in monitoring wells, narrow shafts and deep wells. It effectively reduces negative environmental influences of the medium (e.g. turbulent flows) on the measuring result. Stainless steel 316L, approx. 500 g [1.1 lb], length (L) 130 mm [0.51 in]	14052341
	**Terminal box** The terminal box, with IP67 ingress protection and waterproof ventilation element, provides a moisture-free electrical termination for the submersible pressure sensor. It should be mounted in dry environment or directly in the control cabinet.	14052339
	**Filter element** The filter element prevents dirt and moisture from entering the capillary tube. The waterproof diaphragm also offers a reliable protection for the submersible pressure sensor in the harshest environments.	14052344

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