Submersible Liquid Level Transmitters
Type LS-10, LH-10

Applications

- Level measurement in water and wastewater treatment plants, wells, holding tanks, wet wells, rivers

Special Features

- Ranges from 50 InWC to 400 psi
- Rated IP 68 for permanent submersion
- Hastelloy® case available for aggressive media
- 4-20 mA 2-wire output signal, others available
- Lightning protection available
- Cable supports over 220 pounds of strain

The LS-10 liquid level transmitter is designed for economical and reliable performance in a wide variety of level measurement applications. The LS-10 provides a signal output of 4-20mA and an accuracy of 0.25% of span. Standard stocked pressure ranges are assembled with any length cable for fast delivery.

The high performance Type LH-10 provides 0.125% accuracy and is available with many custom features for special requirements. LH-10 options include lightning protection, temperature measurement, special output signals, plus FEP cable and Hastelloy® construction for aggressive media.

The LH-10 is available with a low power 0.5-2.5V output signal and 5VDC supply voltage. This is ideal for solar or battery powered installations.

The LH-10 includes a dual cable entry design that prevents ingress of moisture into the electronics even if the cable is damaged. Both types feature watertight vented cable that can withstand over 220 pounds of strain. This allows the transmitter to be supported without any additional cabling.

Compensation for atmospheric pressure changes is accomplished through a vent tube in the cable. Many accessories, including cable clamps, desiccant drying cartridges, additional weights, and junction boxes are available for specific installation requirements. Both models can be equipped with the LevelGuard attachment for protection in difficult environments.

Left: LS-10 level transmitter
Center: LH-10 high performance level transmitter
Right: LH-10 with optional Hastelloy case and FEP cable

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.

Specifications Type LS-10 / LH-10

Pressure ranges											
LS-10 or LH-10 pressure ranges	100 InWC	150 InWC	250 InWC	400 InWC	5 psi	10 psi	15 psi	25 psi	30 psi	50 psi	100 psi
Maximum pressure*	30 psi	30 psi	60 psi	72 psi	30 psi	60 psi	72 psi	145 psi	145 psi	240 psi	500 psi
Burst pressure**	35 psi	35 psi	70 psi	87 psi	35 psi	70 psi	87 psi	170 psi	170 psi	290 psi	600 psi
LH-10 pressure ranges[1)]	50 InWC	160 psi	200 psi	250 psi	300 psi	400 psi					
Maximum pressure*	14 psi	1,160 psi	1,160 psi	1,160 psi	1,160 psi	1,160 psi					
Burst pressure**	29 psi	1,390 psi	1,390 psi	1,390 psi	1,390 psi	1,390 psi					

[1)] Maximum range for LH-10 with FEP cable is 150 psi

		Type LS-10	Type LH-10
Materials			
■ Body		Stainless steel	Stainless steel {Hastelloy ®}
■ Pressure connection and diaphragm		Stainless steel	Stainless steel {Hastelloy ®}
■ Protective cap		PA	PA {Stainless steel} {Hastelloy ®}
■ Cable		PUR (polyurethane)	PUR {FEP, to 150 psi maximum}
Power supply U_B	DC V	$10 < U_B \leq 30$	$10 < U_B \leq 30$
			(14 ... 30 with 0 ... 10 V output signal)
			(5 ... 30 for battery powered operation,
			output signal 0.5 ... 2.5 V) [2)]
Output signal		4 ... 20 mA, 2-wire	4 ... 20 mA, 2-wire
			0 ... 20 mA, 3-wire
			{0 ... 5 V, 3-wire}
			{0 ... 10 V, 3-wire}
			{0.5 ... 2.5 V, 3-wire
			for battery powered operation} [3)]
			{Pt 100, 4-wire; IEC 60751}
			{Other signal outputs on request}

[2)] Power supply 5 ... 10 VDC with optional lightning protection

[3)] Available with pressure ranges ≥ 0 100inWC

Pt 100 RTD temperature sensor			
■ I max	mA	Not available	3
■ I mess	mA	Not available	1
Maximum load R_A			
■ Current output signal		$R_A < (U_B - 10V) / 0.02A – (0.043$ Ohm x cable length in feet)	
■ Voltage output signal		-	$R_A > 100$ kOhm
Isolation voltage	DC V	500 [4)]	500 [4)]

[4)] NEC Class 02 power supply (low voltage and low current max. 100 VA even in fault conditions)

Accuracy [5)]	% of span	≤ 0.25 (BFSL)	≤ 0.125 [6)] (BFSL)
	% of span	≤ 0.5 (limit point calibration)	≤ 0.25 [6)] (limit point calibration)

[5)] Including non-linearity, hysteresis, zero point and full scale error per IEC 61298-2
Limit point calibration method performed in vertical mounting position with pressure connection facing down.

[6)] For pressure ranges < 0 ... 100inWC accuracy ≤ 0.25% of span (BFSL)
. ≤ 0.5% of span (limit point calibration)

Non-linearity	% of span	≤ 0.2 (BFSL) per IE-61298-2	
Non-repeatability	% of span	≤ 0.1	≤ 0.1
1-year stability	% of span	≤ 0.2 (at reference conditions)	≤ 0.2 (at reference conditions)
Permissible temperature of			
■ Medium [7)]		+14 ... +122 °F / -10 ... +50 °C	+14 ... +122 °F / -10 ... +50 °C
			{+14 ... +185 °F (-10 ... +85 °C) with
			FEP-cable option}
■ Storage [7)]		-22 ... +176 °F / -30 ... +80 °C	-22 ... +176 °F / -30 ... +80 °C

[7)] Also complies with EN 50178, Tab. 7, Type C, Class 4KH Operation, 1K4 Storage, 1K3 Transport

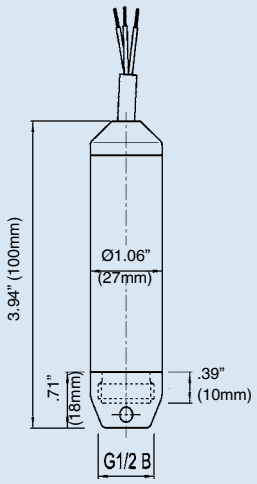
Compensated temperature range		0 ... +50 °C / +32 ... +122 °F	0 ... +50 °C / +32 ... +122 °F
Temperature coefficients (TC) within compensated temperature range:			
■ Mean TC of zero	% of span	≤ 0.2 / 10 K (< 0.4 for 50 InWC)	
■ Mean TC of range	% of span	≤ 0.2 / 10 K	≤ 0.2 / 10 K

Specifications		Type LS-10 / LH-10
CE-conformity		2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)
Wiring protection		Protected against reverse polarity, overvoltage and short circuiting on the instrument side | {Lightning protection EN 61000-4-5; 1.5J}
Weight		
■ Level transmitter	lb	Approx. 0.4
■ Cable	oz per foot	Approx. 1.0
■ Additional weight	lb	Approx. 1.1

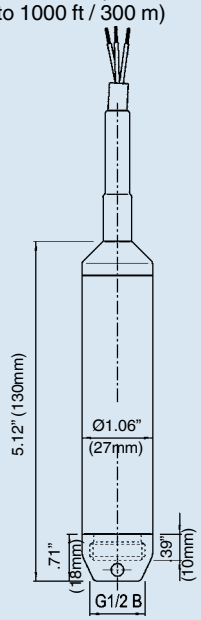
Items in curved brackets { } are optional extras for additional price.

Dimensions in inches (mm) - Ingress Protection NEMA 6P (IP 68 per IEC 60 529)

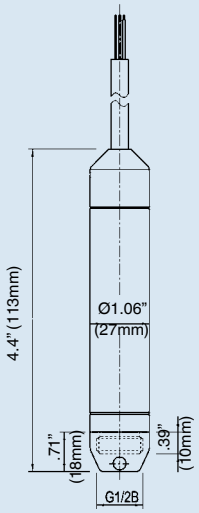
LS -10
(Immersion depth
up to 325 ft /100 m)



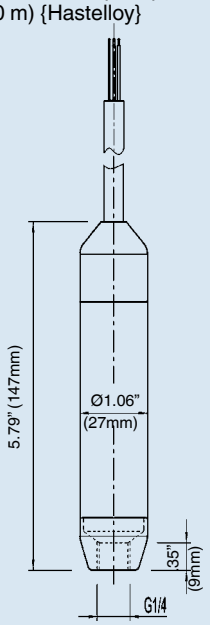
LH-10 with PUR-cable
(Immersion depth
up to 1000 ft / 300 m)



LH-10 with
FEP-cable *)
(Immersion depth
up to 325 ft / 100 m)



LH-10 with FEP-cable *)
(Immersion depth up to 325 ft /
100 m) {Hastelloy}



No additional support is required for installation as the cable can withstand over 220 lbs of strain (110 lbs for FEP cable)

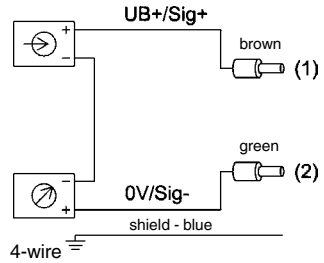
*) FEP-cable and lightning protection EN 61000-4-5; 1,2J on request

100 mm = 3.937 inches

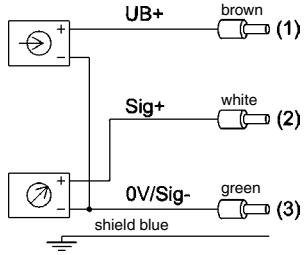
Wiring

Vented PUR-cable
tensile strength 220 Lbs
(110 lbs with FEP-cable)

2-wire

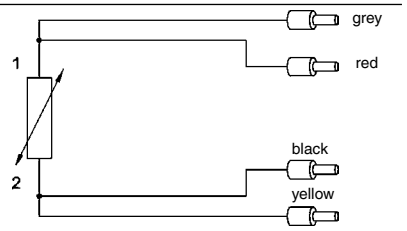


3-wire

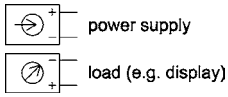


4-wire

Pt 100 RTD temperature
sensor

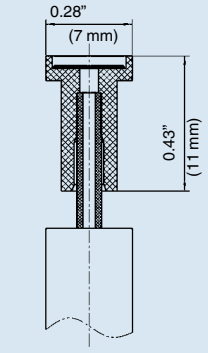


Legend:

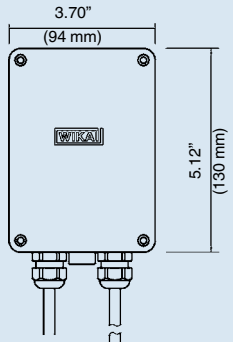


Sig+	output signal positive
UB+	power supply positive
0V	power supply negative
Sig -	output signal negative

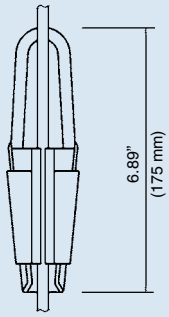
Accessories
Dimensions in inches (mm)



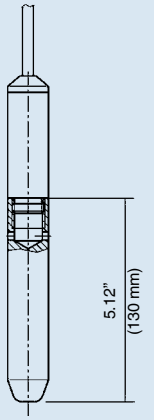
Vent tube filter Part# 7193131
The optional Teflon® vent tube filter protects the vent opening and protects against the entry of dirt and moisture. .



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.

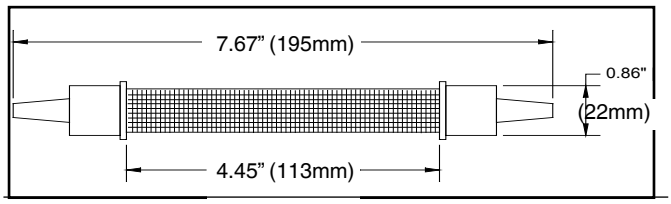


Cable clamp Part# 2074257
The cable clamp secures the cable without bending or kinking that can damage the cable vent tube or outer jacket.

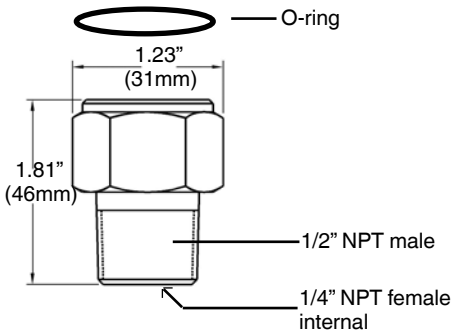


Additional weight Part# 1524399
The additional weight replaces the protective cap and helps to stabilize the transmitter in turbulent conditions. Weight: approximately 1.1 lb, 316 SS.

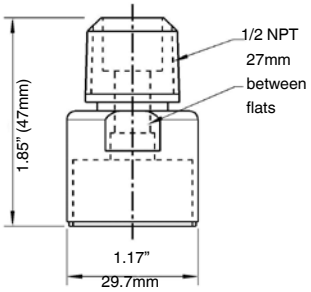
Desiccant drying cartridge part # 9836700
The desiccant drying cartridge helps prevent moisture buildup inside the vent tube.



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.

WIKA LS-10, LH-10
Distributor
ThermX Southwest
7370 Opportunity Road, Suite S
San Diego, CA 92111-1414
(800) 284-3769
www.thermx.com

WIKA Instrument Corporation
1000 Wiegand Boulevard
Lawrenceville, GA 30043