XLS-1 — Ultrasonic Level Sensor

- No Moving Parts
- Zero Maintenance
- Ignores Condensation on Sensor
- Will Not Sense Foam as Liquid
- Microcontroller-Based Electronics

XLS-1 ultrasonic level sensors are compatible with water-based and hydrocarbon-based liquids, and are perfect for applications where condensation may affect other sensing technologies. The XLS-1 is an ideal solution for sensing liquid level in generators, water tanks, radiators, printers, and other industrial applications. XLS-1 ultrasonic level switches expand the Gems catalog of solid-state level sensors.

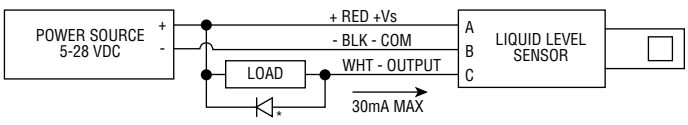
Specifications

Probe Length	1.25″ (including threads)
Fluid Compatability	Water, Water-based medias, Hydrocarbon-based chemicals, not compatible with high-viscosity liquids
Materials	
Housing	316L Stainless Steel
O-Ring Seal*	EPDM; NBR, Silicon, Kalrez® or Chemraz® available (Consult Factory)
Connector Housing	30% Glass-filled Polyester
Performance	
Accuracy	±1 mm from centerline
Repeatibility	±1 mm
Temperatures	
Fluid	-40°F to +257°F (-40°C to +125°C)
Ambient	-40°F to +185°F (-40°C to +85°C)
Pressures	
Operating	0 to 250 psig
Burst	1000 psig
Environmental	
Ingress	IP67 Per IEC60529 IP6K9K Per DIN40050-9 (sensor only)
Vibration	Per IEC 60068-2-6; 20 m/s², 10-55 Hz; MIL-STD-202G, Method 204D, 10G, 57-2000 Hz
Shock	Per IEC 60068-2-27; 15G, 11ms
Audio Frequency Immunity	Per MIL 461D, CS101
EMC Immunity	IEC 61326-1; EN61000-4-(2 thru 6)
Input Power	5-28 VDC regulated power, max supply current 20 mA
Outputs	Open collector, sinking or sourcing output Open collector specs 30 VDC, 30mA max
Electrical Interface	3 Pin Deutsch DT Series Connector, 18 AWG wire or cable
Mechanical Interface	1/4″ NPT, 1/2″ NPT, M12x1.0, M12x1.5, 1/2″-20, G1/4″, others available upon request
Mounting Orientation	Mounted Horizontally ±60 degrees
Approvals	CE (EMC 2004/108/EC) and RoHS, UL/cUL Recognized
Calibration	None required

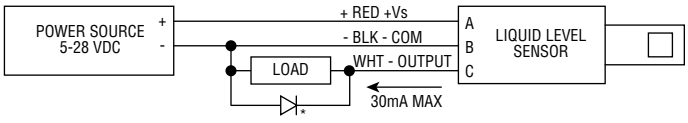
* Where applicable.

Wiring Diagram

Sinking



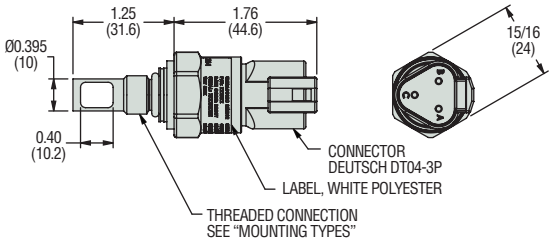
Sourcing



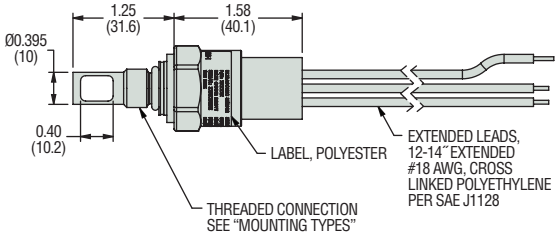
* For inductive loads, use diode suppression.

Dimensions

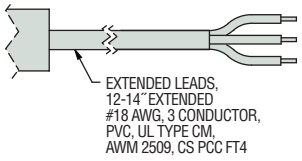
3-PIN Deutsch Connector



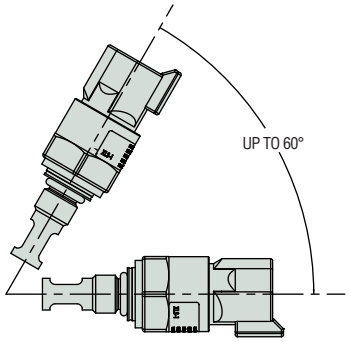
3-Wire Output



PVC Cable

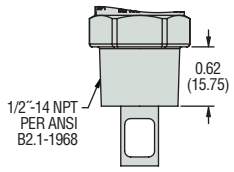
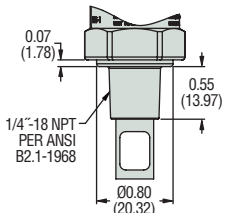
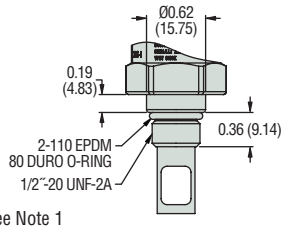


Mounting Attitude

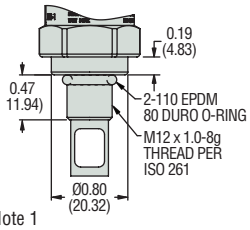
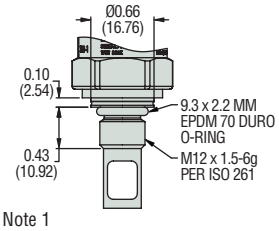
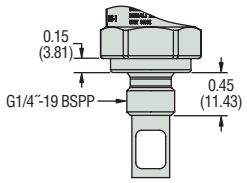


Mounting Types

SAE

1/2″-14 NPT	1/4″-18 NPT	1/2″-20 per SAE J1926-3
		 See Note 1

BSP & Metric

M12 x 1.0	M12 x 1.5 per ISO6149-3	G1/4″-19 BSPP
 See Note 1	 See Note 1	 See Note 2

inch
(mm)

How To Order

Select a Part Number based on mounting type, connection and actuation condition.

Actuation Condition	Electrical Connection	Mounting Type					
		M12 x 1.0 (TYPE 10)[1]	1/2″-14 NPT (TYPE 12)	1/4″-18 NPT (TYPE 14)	M12 x 1.5 per ISO6149-3 (TYPE 15)[1]	1/2″-20 per SAE J1926-3 (TYPE 20)[1]	G1/4″-19 BSPP (TYPE 24)[2]
Wet Sink	Integral 3-pin Deutsch® Connector	247670	247690	247700	247680	247660	250010
	18 AWG, 12″-14″ Extended Flying Leads	247740	247780	247800	247760	247720	250020
	12″-14″ PVC Cable	247750	247790	247810	247770	247730	250030
Dry Sink	Integral 3-pin Deutsch® Connector	247675	247695	247715	247685	247665	250005
	18 AWG, 12″-14″ Extended Flying Leads	247745	247785	247805	247765	247725	250015
	12″-14″ PVC Cable	247755	247795	247815	247775	247735	250025
Wet Source	Integral 3-pin Deutsch® Connector	250830	250820	250840	250850	250870	250890
	18 AWG, 12″-14″ Extended Flying Leads	250930	250920	250940	250950	250970	250990
	12″-14″ PVC Cable	251030	251020	251040	251050	251070	251090
Dry Source	Integral 3-pin Deutsch® Connector	250835	250825	250845	250815	250875	250895
	18 AWG, 12″-14″ Extended Flying Leads	250935	250925	250945	250855	250975	250995
	12″-14″ PVC Cable	251035	251025	251045	250915	251005	250955

Notes:
1. Supplied with EPDM O-ring. Consult factory for alternate O-ring materials.
2. Designed for use with Dowty Bonded Seal. Not supplied.