EchoSwitch® LU74/77/78 Ultrasonic Level Switch

FLOWLINE®

Application

Faceplate

LU74 / 78

LU77

The general purpose ultrasonic level sensor provides continuous level detection up to 26.2' (8m) with 3 programmable relays for level switch or level control functions, a 4-20mA output and is configured via the integral push button display module. Each relay can be configured on a single set point (high level alarm or low level alarm) or latched on two set points for automatic fill or empty in simplex (one pump or valve), duplex (two pumps) or triplex (three pumps) level control modes with selectable time delay and fail-safe logic. The embedded level controller can lower cost by replacing external control hardware. This non-contact liquid level sensor is ideally suited for corrosive, sticky or dirty liquids, and is broadly selected for pump lift station, sump and day tank level applications.

RoHS Compliant CE IP65

Features

☑ Offered in 3 level detection ranges from 9.8' (3m) to 26.2' (8m)

☑ Configuration is simple via integral push button display module

☑ Three programmable relays for switch, pump control and fail-safety

- 1 pump or valve with 2 alarms
- 2 pumps (lead-lag) with 1 alarm
- 2 pumps (duplexing) with 1 alarm
- 3 independent switch point alarms

☑ 4-20 mA output can be used to provide local or remote level indication.

☑ LCD display indicates level height in engineering units and relay status

☑ Narrow 2" or 3" beam width for applications with limited measurement space

☑ Short 4" or 8" dead band maximizes the measurable filling capacity of the tank

☑ PVDF transducer and NEMA 4X polycarbonate enclosure for corrosive liquids

☑ Automatic temperature compensation for accurate measurement
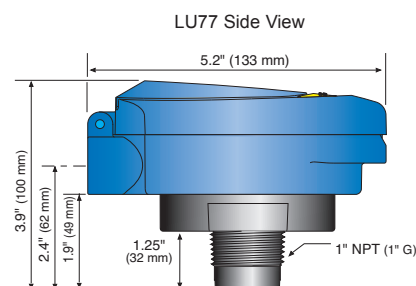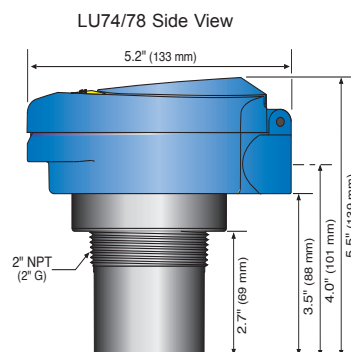
Success

Thermal electric power plants make electricity by converting water into high-pressure steam that drive turbines. Used steam then passes through cooling towers where it condenses back to water for recirculation. US power plants draw in more than 200 billion gallons of water per day. The reliable management of water cooling, containment and delivery is core to their process. Here, an EchoSwitch multi-point ultrasonic level switch-controller is mounted over a concrete sump. The sensor monitors water level and automatically empties the sump when full.

Specifications

Range:	LU77: 4" to 9.8' (10cm to 3m) LU74: 8" to 18.0' (20cm to 5.5m) LU78: 8" to 26.2' (20cm to 8m)
Repeatability:	0.25" (6.35mm)
Loop Output:	Isolated, Sinking 12 to 28 VDC
Dead band:	LU77: 4" (10cm) LU74/78: 8" (20cm)
Beam width:	LU77: 2" (5cm) LU74/78: 3" (7.6 cm)
Configuration:	Push button
Memory:	Non-volatile
Display type:	Level and relay status, 6 character
Display units:	Inch, cm, percent, feet or meter
LCD indication:	Level and relay status
Supply voltage:	95-250 VAC
Power:	20 watts @ 120 VAC
Contact type:	Relay 1, SPDT relay Relay 2 & 3, SPST, N.O. All commons connected together
Contact rating:	2A, 30 VDC 60W (DC), 125 VA 220 VDC, 250 VAC
Contact fail-safe:	Programmable / selectable
Process temp.:	F: -7° to 140° C: -20° to 60°
Temp. comp.:	Automatic
Ambient temp.:	F: -40° to 160° C: -40° to 71°
Pressure:	MWP = 30 PSI (2 bar)
Enclosure rating:	NEMA 4X (IP65)
Encl. material:	Polycarbonate
Encl. hardware:	Brass & stainless
Enclosure vent:	Water tight membrane
Trans. material:	PVDF
Conduit entrance:	Dual, 1/2" NPT
Process mount:	LU77: 1" NPT (1" G) LU74/78: 2" NPT (2" G)
Mount gasket:	Viton®
Classification:	General purpose
Compliance:	RoHS
Approvals:	CE

Dimensions

LU74/78 Side View

LU77 Side View

Fittings

For optimum performance, install the level sensor using the below recommended or direct equivalent fittings.

P/N	Description
LM52-1400	2" NPT x 1" NPT (Sch. 40)
LM52-2400	3" NPT x 2" NPT (Sch. 40)
LM52-2800	3" NPT x 2" NPT (Sch. 80)
LM52-3800	4" NPT x 2" NPT (Sch. 80)
LM52-1410	2" Socket x 1" NPT (Sch. 40)
LM52-2410	3" Socket x 2" NPT (Sch. 40)
LM52-3410	4" Socket x 2" NPT (Sch. 40)
LM52-2810	3" Socket x 2" NPT (Sch. 80)
LM52-3810	4" Socket x 2" NPT (Sch. 80)
LM52-2890	2" NPT Bulkhead Fitting, PVC
LM50-1001-1	1" NPT Bracket, Polypropylene
LM50-1001	2" NPT Bracket, Polypropylene

Ordering

LU7 ☐ -50 ☐ 4

Sensor range / size
- **7** — 3m (9.8')
- **4** — 5.5m (18.0')
- **8** — 8m (26.2')

Process mount (1)
- **0** — NPT (US)
- **6** — G (metric)

Notes

1) Install the level sensor using Flowline installation fittings or equivalents.