










Level Detection, Switching & Control

Level switches detect a change in state from dry or wet at specific points within the tank and correspondingly invert contacts to signal an alarm or control a pump or valve. Flowline level switches are offered in multi-point and single-point packages, as well as single-point sensor configurations. Multi-point packages are available in non-contact and contact types for installation through the top wall of the tank. Single-point packages are available for installation through the top or side wall of the tank. Single-point sensors have small relay or reed contacts, and depending upon the type, may be installed in the tank or threaded through the tank wall. Select the appropriate level switch type based upon your application liquid, control and installation requirements. For hazardous locations, select an intrinsically safe configuration.







Intrinsically Safe

The approach behind intrinsically safe equipment is to limit the electrical and thermal energy available to and generated by devices within the hazardous location. Therefore, intrinsically safe sensors are inherently low voltage designs that cannot cause sparks or ignition. Additionally, the power and signal wires of these sensors are protected by Zener safety barriers which limits their voltage and current.

Multi-Point Packages					Single-Point Packages			
Non-Contact		Contact						
EchoSwitch® II	Smart Trak™		Float-Point™	Switch-Pak™		Switch-Pro™		
								
LU7X	AX23	AXXX	AVX6	AV17	AX13	AX1X	AX13	AX1X
Pages 48-49	Pages 50-51	Pages 52-53	Pages 54-55	Page 62	Pages 56-57	Pages 58-59	Page 60	Page 61





	EchoSwitch	Smart Trak		Float-Point		Switch-Pak		Switch-Pro	
	LU7X	AX23	AXXX	AVX6	AV17	AX13	AX1X	AX13	AX1X
Type	Ultrasonic	Sensors + Controller	Sensors + Junction Box		Sensor + Alarm	Sensor + Controller	Sensor + Junction Box	Sensor + Controller	Sensor + Junction Box
Class	GP								
Install	Top Wall							Side Wall	
Range	26.2' (8m)	10' (3m)		6.5' (2m)	- - -	10' (3m)		- - -	
Function	Auto Fill or Empty, High & Low Alarm, Duplexing	Auto Fill or Empty	Auto Fill or Empty, High & Low Alarm		High & Low Alarm			High & Low Alarm	
Relay(s)	(3) SPDT	(1) SPDT	(1-4) SPST	(1-5) SPST	- - -	(1) SPDT	(1) SPST	(1) SPDT	(1) SPST
Points	- - -	Adjustable		Factory					
Voltage	95-250 VAC	120-240 VAC	12-36 VDC	240 VAC/VDC	9V Battery	120-240 VAC	12-36 VAC	120-240 VAC	12-36 VDC
Temperature	140°F (60°C)	176°F (80°C)		392°F (200°C)	302°F (150°C)	176°F (80°C)			
Pressure	30 PSI (2 bar)	Atmospheric		200 PSI (13.8 bar)	250 PSI (17.2 bar)	150 PSI (10 bar)			
Material	PVDF	PP, Ryton®		316 SS			PP, Ryton®, PFA		

Single-Point Sensors

Ultrasonic	Vibration	Buoyancy	Optic Leak	Capacitance	Mini-Float	High-Temp Float	Mini & High-Temp Float	Float Leak
								
LU10	LZ12	LV10	LO10	LP15	LP50	LV20	LV35/36	LV25/35
Page 63	Page 64	Page 65	Page 66	Page 67	Page 68	Page 69	Page 70	Page 71

Switch-Tek										
	LU10	LZ12	LV10	LO10	LP15	LP50	LV20	LH25	LV35/36	LH35
Type	Ultrasonic	Vibration	Buoyancy	Optic	Capacitance					
Class	IS									
Media	Chemical	Wastewater	Water	Various	Coating	Conductive	Water			
Install	Universal		Top Wall	Universal		Non-intrusive	Top Wall	Side Wall	Top Wall	Side Wall
Function	High or Low Alarm			Leak	High or Low Alarm					Leak
Relay	(1) SPST	(1) SPDT					(1) SPST			
Voltage	12-36 VDC	120 VAC/VDC		12-36 VDC			120 VAC/VDC			
Temperature	176°F (80°C)	194°F (90°C)		176°F (80°C)			149°F (65°C)	392°F (200°C)		221°F (105°C)
Pressure	150 PSI (10 bar)	25 PSI (2 bar)		150 PSI (10 bar)	- - -		10 PSI (0.7 bar)	500 PSI (34 bar)		50 PSI (3.5 bar)
Material	PP, PFA	Ryton®	PP, PVDF	PP, PFA	PP	PSO	PP, PVDF	316 SS		Valox 420

Relay Controllers

Compact	Remote
	
LC1X	LC0X
Page 74	Page 75
	
LC4X	LC9X
Page 73	Page 73

Switch-Pro			
	LC1X	LC0X	LC4X
Type	Controller	Junction Box	Controller
Class		GP	IS
Input	(1-2) Switch	(1-4) Switch	(1-3) Switch
Relay(s)	(1) SPDT	- - -	(1-2) SPDT
Strobe Alarm	Optional		- - -
Supply	120-240 VAC	- - -	120-240 VAC
Function	Auto Fill or Empty, High & Low Alarm	- - -	Auto Fill or Empty, High & Low Alarm
Enclosure	NEMA 4X		- - -





Faceplate



LU78-5005



LU77-5005

Application

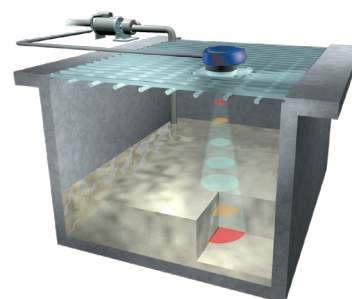
The general purpose ultrasonic level sensor provides continuous level detection up to 26.2' (8m) with 3 programmable relays for level switch or level control functions, and is configured via the integral push button display module. Each relay can be configured on a single set point (high level alarm 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.

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
- ✓ 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

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)
Dead band:	LU77: 4" (10cm) LU74/78: 8" (20cm)
Beam width:	LU77: 2" (5cm) LU74/78: 3" (7.6cm)
Configuration:	Push button
Memory:	Non-volatile
Display type:	LCD, 6-digit
Display units:	Inch, cm, percent, feet or meter
Supply voltage:	LU7_-50_5: 95-250 VAC
Power:	20 watts @ 120 VAC
Contact type:	(3) SPDT relays
Contact rating:	60 VA, 1A maximum
Contact fail-safe:	Open, close or hold last
Process temp.:	F: -4° 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:	CE, RoHS



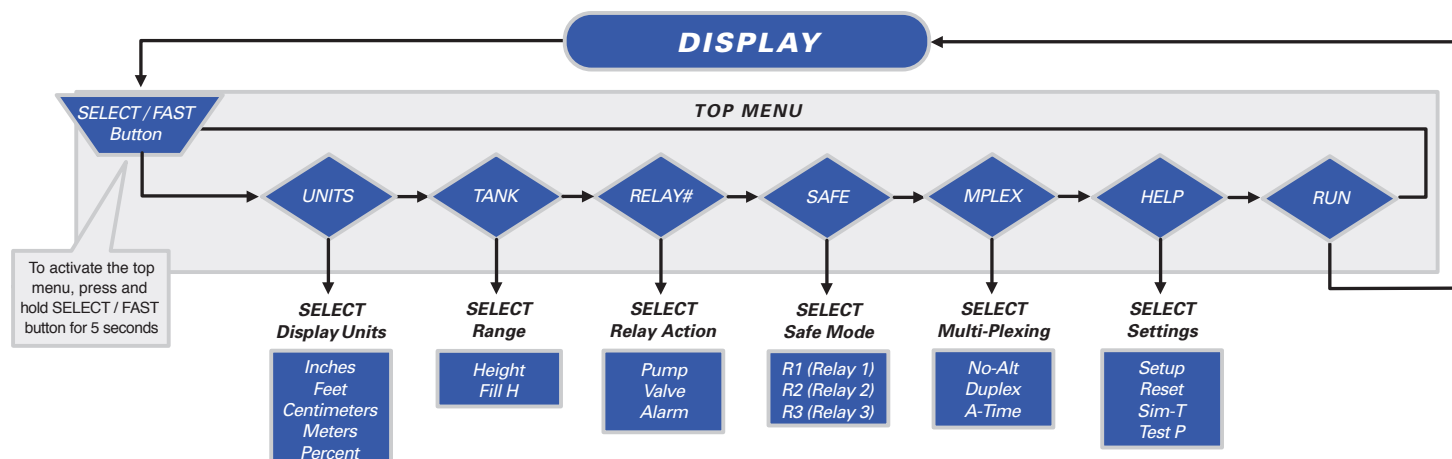
Automation

The integral three channel controller has powerful automation features including advanced pump and alarm control logic designed for day tank, process vessel and waste sump applications. From alarms to automatic fill or empty, pump duplexing and run dry protection, EchoSwitch II does it all. It's level made simple.

Non-Contact Multi-Point Level Control

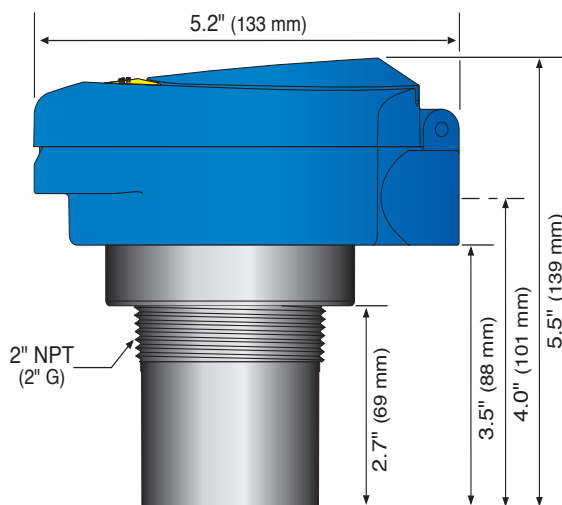
Level Switch

Configuration

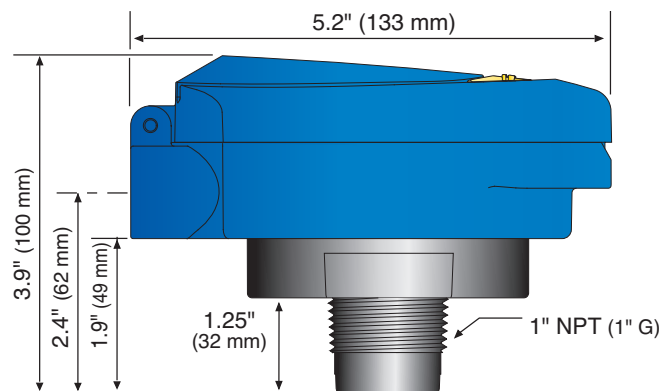


Dimensions

LU74/78 Side View



LU77 Side View



EchoSwitch

LU7 -50 5

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)

Ordering Notes

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



LM50-1001 for LU74/78



LM50-1001-1 for LU77



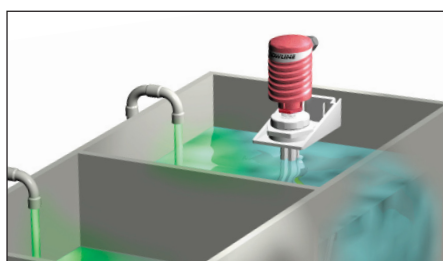
Smart Trak™ with Compact Level Controller

Application

The general purpose level switch package provides automatic tank filling or emptying up to 10' (3m) between two adjustable level switch points. The compact level controller with optional strobe provides one latching 16A relay for pump or valve control. Offered in three level sensor technologies, select the type based upon your application media. This polypropylene liquid level switch package is widely selected for sump, process and day tank level applications.

Features

- ✓ Fail-safe relay control of pumps or valves with 0-60 second delay
- ✓ Offered in 3 sensing technologies for broad application coverage: ultrasonic, vibration & buoyancy
- ✓ Easy setup with LED indicators for sensor, power and relay status
- ✓ Rugged polypropylene construction for use in corrosive liquid environments
- ✓ Adjustable level switch cars enable sensor adjustment in the field
- ✓ Invert switch changes relay state from NO to NC without rewiring

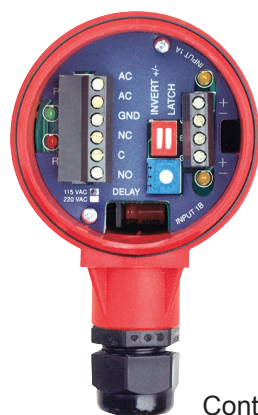


Relay Control

The AC powered relay controller has a latching 16A relay, adjustable time delay, LED indicators and NO or NC invert switch. The rugged NEMA 4X enclosure is made of UL approved fire retardant polypropylene and features a 300° swivel base for easy conduit alignment.



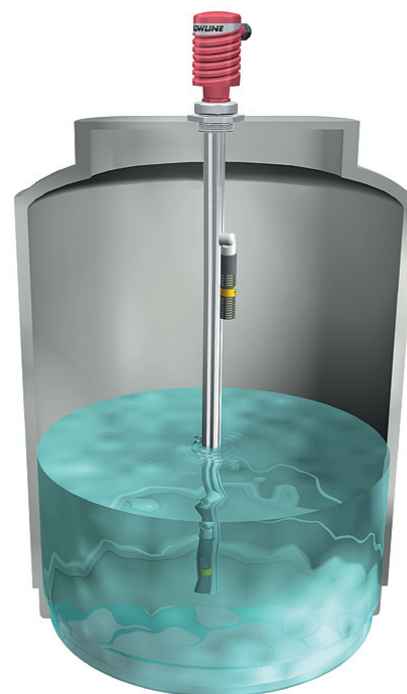
AV23-4313



Controller

Specifications

Length:	8" to 10' (20cm to 3m)
Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Orientation:	± 20° vertical
Switch points:	2 (field adjustable)
LED indication:	Power, relay & sensor
Supply voltage:	120 / 240 VAC @ 50-60 Hz
Consumption:	0.25A maximum
Strobe type:	-431X: N/A -432X: Xenon tube
Strobe flash:	-431X: N/A -432X: 1 per second
Contact type:	(1) SPDT relay, latching
Contact rating:	250 VAC @ 10A
Contact output:	Selectable NO / NC
Contact delay:	0-60 seconds
Contact latch:	Selectable ON / OFF
Process temp.:	F: -40° to 176° C: -40° to 80°
Ambient temp.:	F: -40° to 140° C: -40° to 60°
Pressure:	Atmospheric
Enclosure rating:	NEMA 4X (IP65)
Enclosure mat.:	-432X: PP, UL94VO & PC -431X: PP, UL94VO
Conduit entrance:	1/2" NPT
Wetted material:	PP (glass fill)
Process mount:	2" NPT (2" G)
Classification:	General purpose
Compliance:	CE



Adjustable Automatic Fill or Empty Level Control

Level Switch

Sensors

**Vibration**

- Applied in wastewater with light coating or scaling
- Available in Ryton®

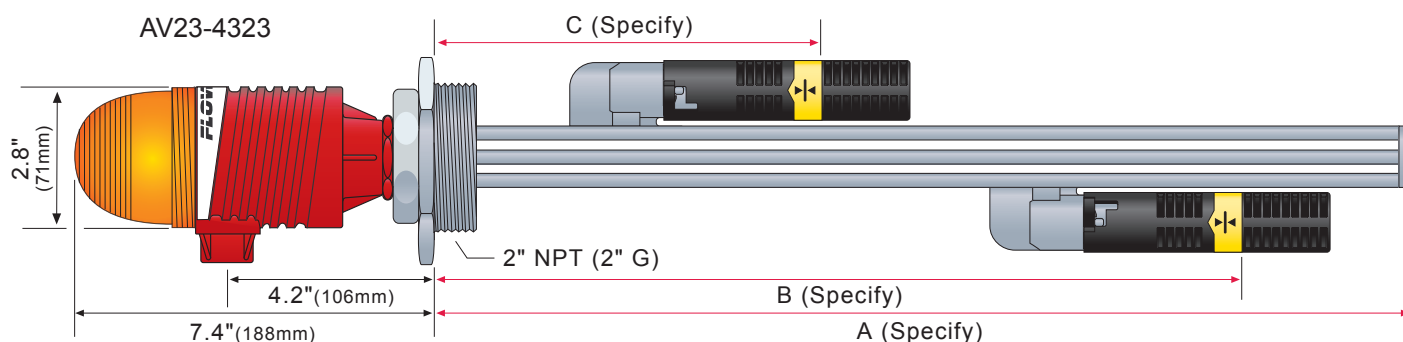
**Ultrasonic**

- Broadly applied in chemicals and light weight oils
- Available in PP or PFA

**Buoyancy**

- Applied in clean water and non-coating chemicals
- Available in PP or PVDF

Dimensions



Strobe Alert

The controller with Strobe Alert configuration flashes when the relay is energized to bring attention to process conditions such as the automatic emptying of waste into treatment.



Smart Trak

A 23-43 - - -

Sensor technology (1)

- Z Vibration
- U Ultrasonic
- V Buoyancy

Configuration

- 1 Controller only
- 2 Controller with Strobe Alert

Process mount

- 3 NPT (US)
- 7 G (Metric)

Dimensions (2) (3)

- A Specify
- B Specify
- C Specify

Ordering Notes

- 1) Select the best sensor technology based upon your application.
- 2) Specify the A, B, C dimensions at the end of the part number (ie: AZ23-4343-87"-76"-17"). The dimensions may be specified in 1/2" (1.3cm) increments. The track length or A-dimension may be specified from 12" to 10' (20cm to 3m). The sensor or B and C dimensions may be specified from 4" to 10' (10cm to 3m). For maximum field adjustability, specify all sensor dimensions equal to the A-dimension.
- 3) To calculate the track length adder, round up the A-dimension to the next foot (30 cm) and add \$20 per foot (30cm) to the price.

Smart Trak™ with Compact Junction Box

Application

The general purpose level switch package provides reliable, multi-point liquid level detection up to 10' (3m) with 1-4 adjustable level switch points and a compact junction box for integral wiring termination. Available in three level sensor technologies, select the sensor type based upon your application media. This PP liquid level switch package is widely applied in process, sump and day tank level applications for automatic filling or emptying with high level alarm and/or low level alarm.

Features

- ✓ Rugged polypropylene multi-point level switch package for corrosive liquids
- ✓ 60VA relay or 15VA dry contact selectable NO or NC via wiring
- ✓ Offered in 3 sensing technologies for broad application coverage: ultrasonic, vibration & buoyancy
- ✓ Adjustable level switch cars enable sensor adjustment in the field
- ✓ Polypropylene enclosure rated NEMA 4X with swivel base and terminal strip

AU35-4343

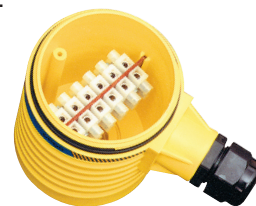


Specifications

Length:	8" to 10' (20cm to 3m)
Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Orientation:	± 20° vertical
Switch points:	1-4 (field adjustable)
Supply voltage:	AVX6: N/A AUX8: 12-36 VDC AZX8: 12-30 VDC
Consumption:	AVX6: N/A AUX8 / AZX8: 100 mA max
Contact type:	AVX6: SPDT reed(s) AUX8 / AZX8: SPST relays
Contact rating:	AVX6: 15 VA, 0.25A max. AUX8 / AZX8: 60 VA, 1A max.
Contact output:	Selectable NO / NC
Process temp.:	F: -40° to 176° C: -40° to 80°
Ambient temp.:	F: -40° to 140° C: -40° to 60°
Pressure:	Atmospheric
Enclosure rating:	NEMA 4X (IP65)
Enclosure mat.:	PP, UL94VO
Terminal strip:	12-pole, socket
Conduit entrance:	1/2" NPT
Wetted material:	PP (glass fill)
Process mount:	2" NPT (2" G)
Classification:	General purpose
Compliance:	CE

Junction Box

The compact junction box is constructed of UL approved fire retardant polypropylene and comes pre-wired with a 12-pole terminal strip.



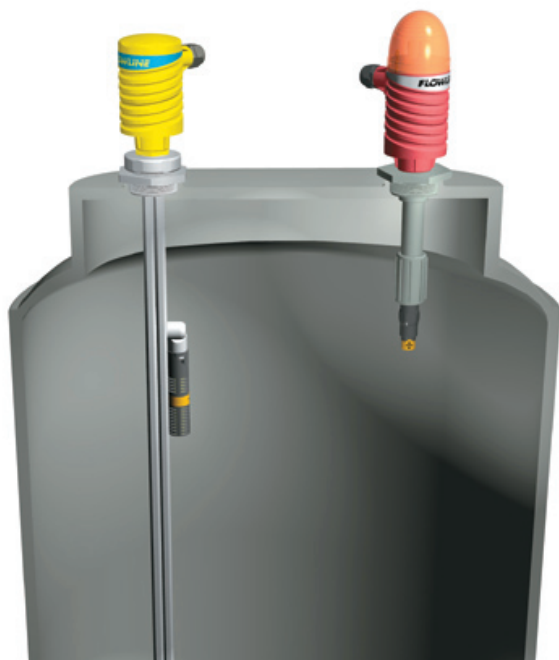
Junction Box

Relay Control

For process automation, package your switch assembly with our remote relay controllers. See page 73 for more details.



LC40-1001



Adjustable Multi-Point Level Detection

Level Switch

Sensors

**Vibration**

- Applied in wastewater with light coating or scaling
- Available in Ryton®

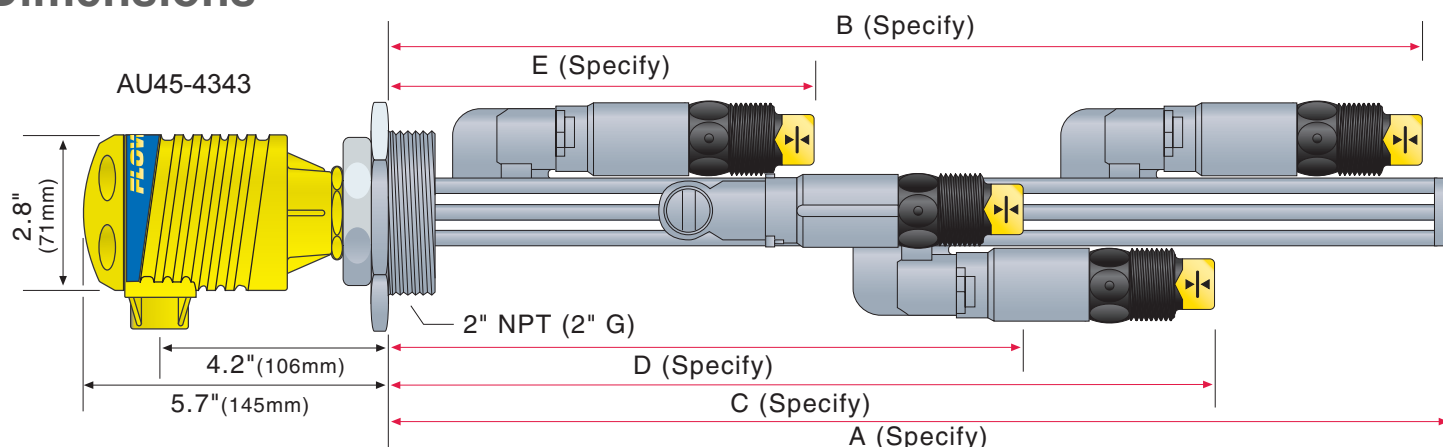
**Ultrasonic**

- Broadly applied in chemicals and light weight oils
- Available in PP or PFA

**Buoyancy**

- Applied in clean water and non-coating chemicals
- Available in PP or PVDF

Dimensions



Smart Trak

A -434 - - - - - -

Sensor technology (1)

- Z** Vibration
- U** Ultrasonic
- V** Buoyancy

Number of sensors

- 1** One sensor - add 1 x ST
- 2** Two sensors - add 2 x ST
- 3** Three sensors - add 3 x ST
- 4** Four sensors - add 4 x ST

Contacts (2)

- 6** SPDT reed
- 8** SPST relay

Process mount

- 3** NPT (US)
- 7** G (Metric)

Dimensions (3) (4)

- A** Specify
- B** Specify
- C** Specify (if applicable)
- D** Specify (if applicable)
- E** Specify (if applicable)



LM50-1001

Ordering Notes

- 1) Select the best sensor technology based upon your application.
- 2) Available only in the following configurations:
 Vibration = AZ_8
 Ultrasonic = AU_8
 Buoyancy = AV_6
- 3) Specify the applicable A, B, C, D, E dimensions at the end of the part number (ie: AZ28-4343-87"-76"-17"). The dimensions may be specified in 1/2" (1.3 cm) increments. The track length or A-dimension may be specified from 12" to 10' (20cm to 3m). The sensor or B, C, D, E dimensions may be specified from 4" to 10' (10cm to 3m). For maximum field adjustability, specify all sensor dimensions equal to the A-dimension.
- 4) To calculate the track length adder, round up the A-dimension to the next foot (30cm) and add \$20 per foot (30cm) to the price.

Float-Point™ with Compact Junction Box

Application

The general purpose level float switch package provides reliable, multi-point liquid level detection of relatively clean liquids such as water, diluted chemicals and light weight oils up to 8' (2.44m) with 1-5 reed switch outputs and a compact junction box for integral wiring termination. The stainless steel level float switch is selected for high temperature or pressure process tank level applications.

Features

- ✓ Multi-point float level switch package for high temp and pressure
- ✓ 60VA VA dry contacts selectable NO or NC via float orientation
- ✓ Rugged 316 stainless steel float, guide and process mounting plug
- ✓ Polypropylene enclosure rated NEMA 4X with swivel base for conduit alignment
- ✓ Assembled to your guide length and switch set point dimensions

Junction Box

The compact junction box is constructed of UL approved fire retardant polypropylene and comes pre-wired with a 12-pole terminal strip.



AV_6-S243
Junction box
with LM90-1001
liquid tight fitting



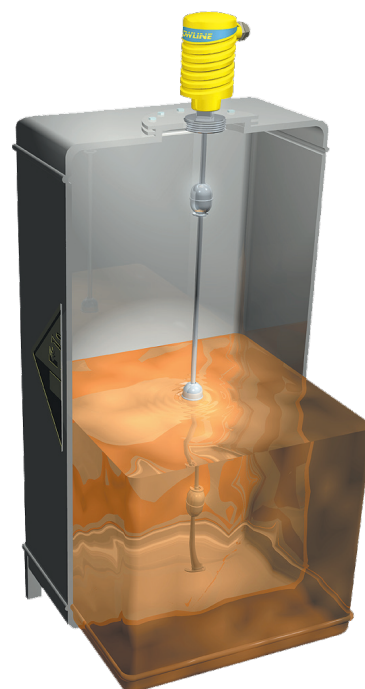
AV26-S243

Specifications

Length:	3" to 8' (7.6cm to 2.4m)
Accuracy:	± 3mm in water
Repeatability:	± 1 mm in water
Specific gravity:	0.55 minimum
Orientation:	± 20° vertical
Switch points:	1-5 (factory set)
Contact type:	SPST reed(s)
Contact rating:	240 VAC / VDC @ 60 VA
Contact output:	Normally open
Process temp.:	F: -40° to 392° C: -40° to 200°
Ambient temp.:	F: -40° to 140° C: -40° to 60°
Pressure:	200 psi (13.8 bar)
Enclosure rating:	NEMA 4X (IP65)
Enclosure mat.:	PP, UL94VO
Terminal strip:	12-pole, socket
Conduit entrance:	1/2" NPT
Wetted material:	316 SS
Process mount:	2" NPT
Classification:	General purpose
Compliance:	CE, RoHS
Approvals:	UL

Tech Tip

Float-Point is an excellent choice for high temperature applications up to 392° F (200° C). Use 1-5 float points based upon your level requirements. The reed contacts provide a reliable switch interface with external control devices such as a PLC, DCS or SCADA.



Relay Control

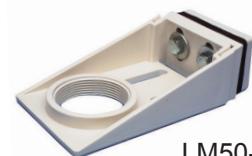
For process automation with pumps, valves and alarms, package your level switch assembly with our remote relay controllers offered in a 35 mm DIN package. See page 73 for more details.



LC40-1001

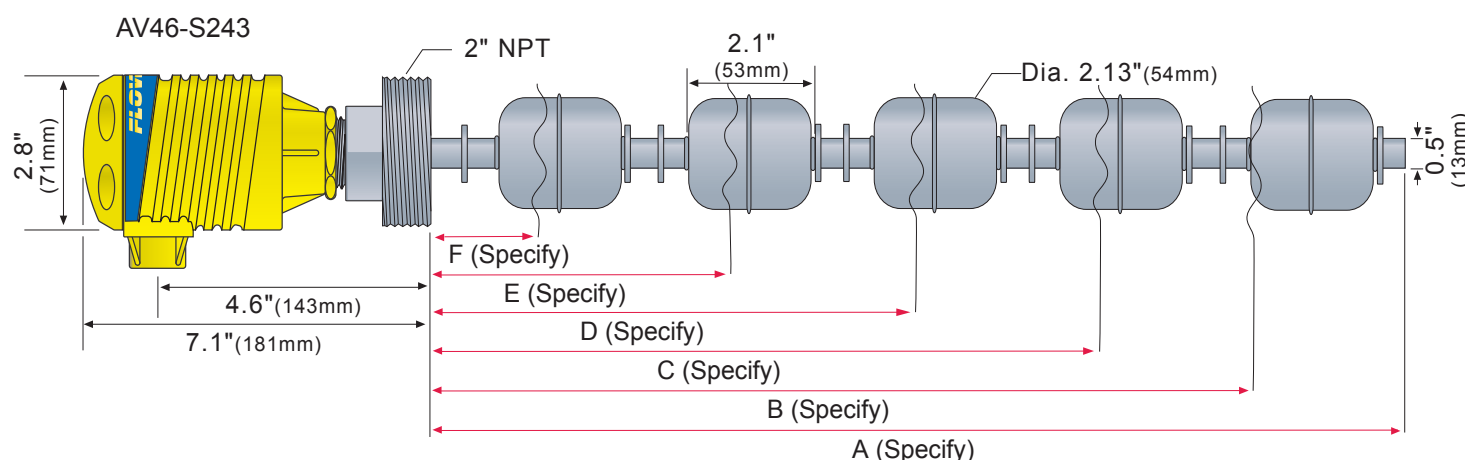
Side Mount

Order the LM50 side mount bracket for easy installation on open tanks. The adjustable polypropylene bracket bolts to the tank side wall or structural apparatus.



LM50-1001

Dimensions



Float-Point

AV 6-S243------

Number of floats

- 1 One float
- 2 Two floats
- 3 Three floats
- 4 Four floats
- 5 Five floats

Dimensions (1) (2)

- A Specify
- B Specify
- C Specify (if applicable)
- D Specify (if applicable)
- E Specify (if applicable)
- F Specify (if applicable)

Ordering Notes

- 1) Specify the applicable A, B, C, D, E dimensions at the end of the part number (ie: AV26-S243-70"-68"-10").
- 2) The dimensions may be specified in 1/2" (1.3 cm) increments. The guide length or A-dimension may be specified from 4" to 96" (10cm to 2.4m). The float or B, C, D, E dimensions may be specified from 1.5" to 94.5" (3.8cm to 2.40m) with a minimum distance of 2.5" (6.3cm) between each dimension. To calculate the guide length adder, round up the A-dimension to the next inch (2.5cm), multiply it by \$10 per inch (2.5cm), and add that sum to the price.

Orders for this custom built product are non-cancellable and/or non-returnable

Application

The general purpose level switch package provides reliable, high or low liquid level detection with a 16A compact relay controller for pump or valve control. The optional flash alarm brings attention to alarm conditions. Available in three level sensor technologies, select the sensor type based upon your application media. This polypropylene or PVDF liquid level switch package is broadly applied in bulk storage, sump and day tank level applications for high level control or low level control.

Features

- ✓ Polypropylene or PVDF single-point level switch package for corrosive liquids
- ✓ Fail-safe relay control of pumps or valves with 0-60 second delay
- ✓ Offered in 3 sensing technologies for broad application coverage: ultrasonic, vibration & buoyancy
- ✓ Polypropylene enclosure rated NEMA 4X with swivel base for conduit alignment
- ✓ Optional strobe brings immediate attention to level alarm conditions
- ✓ Invert switch changes relay state from NO to NC without rewiring

Tech Tip

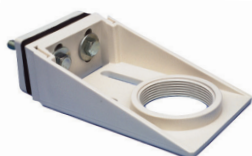
For applications with highly corrosive media such as hydrofluoric acid, select the PVDF wetted material option for years of lasting and reliable performance. The PVDF fitting is heat welded and custom assembled to your A-dimension with either a PVDF buoyancy or PFA ultrasonic sensor.



AU13-5223

Side Mount

Order the LM50 side mount bracket for easy installation on open tanks.



LM50-1001



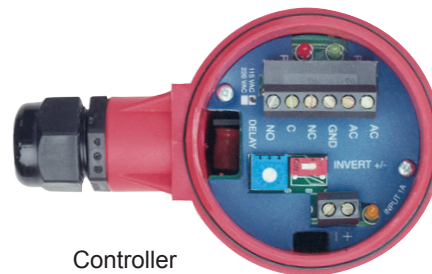
AU13-4213

Specifications

Length:	6' to 10' (15cm to 3m)
Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Orientation:	± 20° vertical
Switch points:	1 (factory set)
LED indication:	Sensor, power & relay
Supply voltage:	120 / 240 VAC @ 50-60 Hz.
Consumption:	0.25A maximum
Strobe type:	-X22X: N/A -X21X: Xenon tube
Strobe flash:	-X22X: N/A -X21X: 1 per second
Contact type:	(1) SPDT relay
Contact rating:	250 VAC @ 16A
Contact output:	Selectable NO / NC
Contact delay:	0-60 seconds
Process temp.:	F: -40° to 176° C: -40° to 80°
Ambient temp.:	F: -40° to 140° C: -40° to 60°
Pressure:	AV13: 25 psi (1.7 bar) AU13 / AZ13: 150 psi (10 bar)
Enclosure rating:	NEMA 4X (IP65)
Encl. material:	-X21X: PP, UL94VO & PC -X22X: PP, UL94VO
Conduit entrance:	1/2" NPT
Wetted material:	AV13-42XX: PP AU13-42XX: PP AU13-52XX: PVDF AU13-52XX: PVDF / PFA AZ13-42XX: PP-Ryton®
Process mount:	-X2X3: 2" NPT -X2X7: 1 1/2" G
Classification:	General purpose
Compliance:	CE

Relay Control

The AC powered relay controller has a 16A relay, adjustable time delay, LED indicators and NO or NC invert switch. The rugged NEMA 4X enclosure is made of UL approved fire retardant polypropylene and features a 300° swivel base for easy conduit alignment.



Controller

High or Low Level Control

Level Switch

Sensors



Vibration

- Applied in wastewater with light coating or scaling
- Available in Ryton®



Ultrasonic

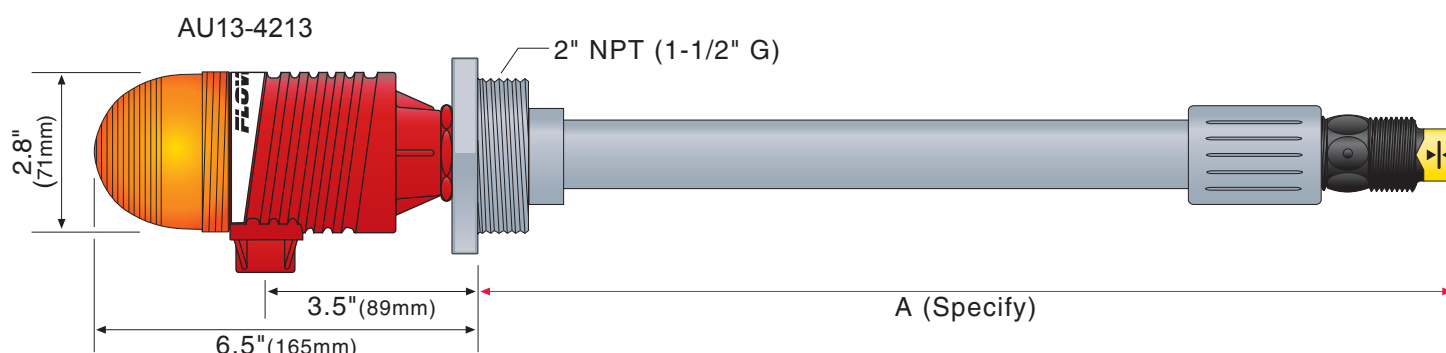
- Broadly applied in chemicals and light weight oils
- Available in PP or PFA



Buoyancy

- Applied in clean water and non-coating chemicals
- Available in PP or PVDF

Dimensions



Strobe Alert

The controller with Strobe Alert configuration flashes when the relay is energized during a high or low level alarm condition.

Switch-Pak

A 13- 2 -

Sensor technology (1)

- Z Vibration
- U Ultrasonic
- V Buoyancy

Wetted material (2)

- 4 PP
- 5 PVDF

Configuration

- 1 Controller with Strobe Alert
- 2 Controller only

Process mount

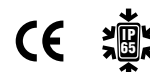
- 3 2" NPT (US)
- 7 1 1/2" G (Metric)

Dimensions (3) (4)

- A Specify (PP)
- (PVDF)

Ordering Notes

- 1) Select the best sensor technology based upon your application.
- 2) Vibration only available in PP/Ryton configuration.
- 3) Specify the A-dimension at the end of the part number (ie: AV13-4223-17"). The dimension may be specified in 1/2" (1.3cm) increments from 6" to 10' (15cm to 3m).
- 4) To calculate the length adder, round up the A-dimension to the next foot (30cm), multiply it by the selected material, and add that sum to the price. For PP, add \$10 per foot (30cm). For PVDF, add \$40 per foot (30cm).



Switch-Pak™ with Compact Junction Box

Application

The general purpose level switch package provides reliable, high or low liquid level detection with one relay or reed switch output and a compact junction box for integral wiring termination. Available in three level sensor technologies, select the sensor type based upon your application media. This PP or PVDF liquid level switch package is broadly applied in bulk storage, sump and day tank level applications as a high level alarm or low level alarm.

Features

- ✓ Polypropylene or PVDF single-point level switch package for corrosive liquids
- ✓ 60VA relay or 15VA dry contact selectable NO or NC via wiring
- ✓ Offered in 3 sensing technologies for broad application coverage: ultrasonic, vibration & buoyancy
- ✓ Polypropylene enclosure rated NEMA 4X with swivel base and terminal strip

Tech Tip

For applications with highly corrosive media such as hydrofluoric acid, select the PVDF wetted material option for years of lasting and reliable performance. The PVDF extension fitting is heat welded and custom assembled to your A-dimension with either a PVDF buoyancy or PFA ultrasonic sensor.



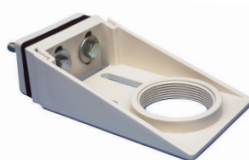
AV16-5243



AU15-4243

Side Mount

Order the LM50 side mount bracket for easy installation on open tanks.



LM50-1001

Specifications

Length:	6" to 10' (15cm to 3m)
Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Orientation:	± 20° vertical
Switch points:	1 (factory set)
Supply voltage:	AV16: N/A AU18: 12-36 VDC AZ18: 12-30 VDC
Consumption:	AV16: N/A AU18 / AZ18: 25 mA max
Contact type:	AV16: (1) SPDT reed AU18 / AZ18: (1) SPST relay
Contact rating:	AV16: 15 VA, 0.25A max AU18 / AZ18: 60 VA, 1A max.
Contact output:	Selectable NO / NC
Process temp.:	F: -40° to 176°, C: -40° to 80°
Ambient temp.:	F: -40° to 140°, C: -40° to 60°
Pressure:	AV16: 25 psi (1.7 bar) AU18 / AZ18: 150 psi (10 bar)
Enclosure rating:	NEMA 4X (IP65)
Enclosure mat.:	PP, UL94VO
Terminal strip:	6-pole, socket
Conduit entrance:	1/2" NPT
Wetted material:	AV16-424X: PP AU18-424X: PP AU18-524X: PVDF AU16-524X: PVDF AZ18-424X: PP-Ryton®
Process mount:	-X243: 2" NPT -X247: 1 1/2" G
Classification:	General purpose
Compliance:	CE

Relay Control

For process automation with pumps, valves and alarms, package your level switch assembly with our remote relay controllers offered in a 35 mm DIN package. See page 73 for more details.



LC40-1001

High or Low Level Detection

Level Switch

Sensors



Vibration

- Applied in wastewater with light coating or scaling
- Available in Ryton®



Ultrasonic

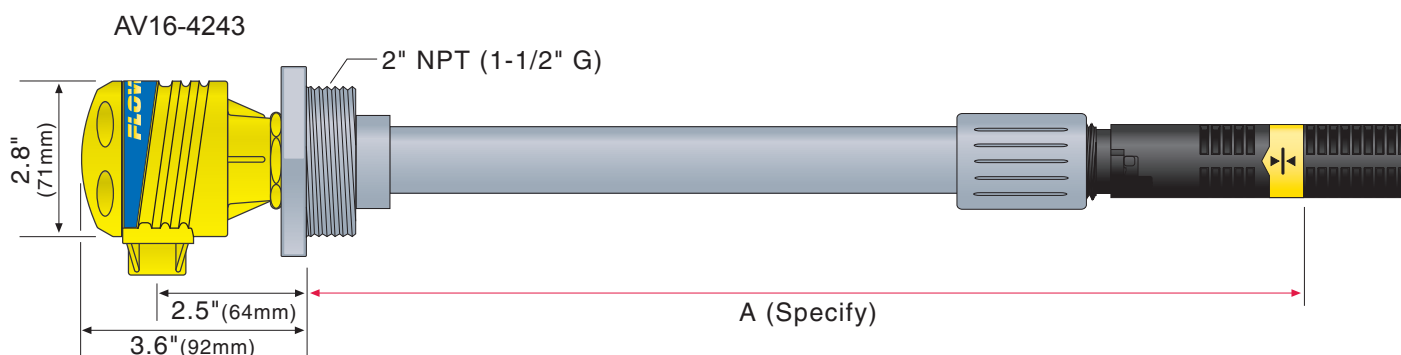
- Broadly applied in chemicals and light weight oils
- Available in PP or PFA



Buoyancy

- Applied in clean water and non-coating chemicals
- Available in PP or PVDF

Dimensions



Junction Box

The compact junction box is constructed of UL approved fire retardant polypropylene with a 6-pole terminal strip.



Switch-Pak

A 1 - 24 -

Sensor technology (1)

- Z Vibration
- U Ultrasonic
- V Buoyancy

Contacts (2)

- 6 SPDT reed
- 8 SPST relay

Wetted material (3)

- 4 PP
- 5 PVDF

Process mount

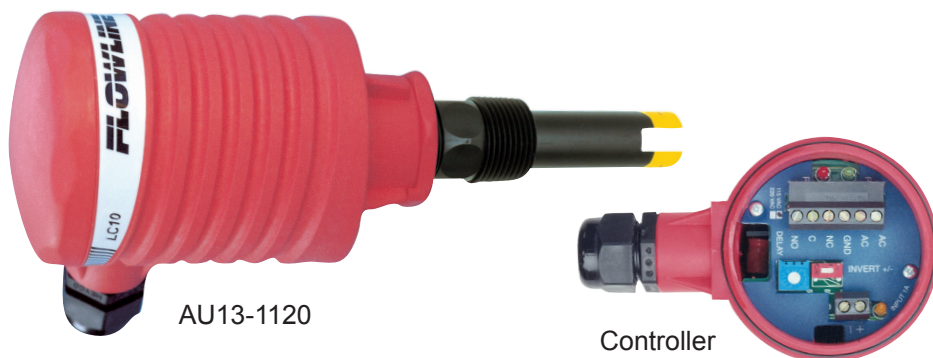
- 3 2" NPT (US)
- 7 1 1/2" G (Metric)

Dimensions (4) (5)

- A Specify (PP)
- (PVDF)

Ordering Notes

- 1) Select the best sensor technology based upon your application.
- 2) Available only in the following configurations:
Vibration = AZ18
Ultrasonic = AU18
Buoyancy = AV16
- 3) PVDF is available in ultrasonic and buoyancy configurations
- 4) Specify the A-dimension at the end of the part number (ie: AV16-4243-17"). The dimension may be specified in 1/2" (1.3cm) increments from 6" to 10' (15cm to 3m).
- 5) To calculate the length adder, round up the A-dimension to the next foot (30cm), multiply it by the selected material, and add that sum to the price. For PP, add \$10 per foot (30cm). For PVDF, add \$40 per foot (30cm).



AU13-1120

Controller

Application

Intended for side wall installation, the general purpose level switch package provides reliable liquid level detection with a 16A compact level controller for pump or valve control. The optional flash alarm brings attention to alarm conditions. Offered in two level sensor technologies, select the type and material based upon your application media. This liquid level switch package is widely applied in bulk storage and process tank level applications for high level control or low level control.

Tech Tip

The AC powered relay controller has a 16A relay, adjustable time delay, LED indicators and NO or NC invert switch. The NEMA 4X enclosure is made of UL approved fire retardant PP with a 300° swivel base.

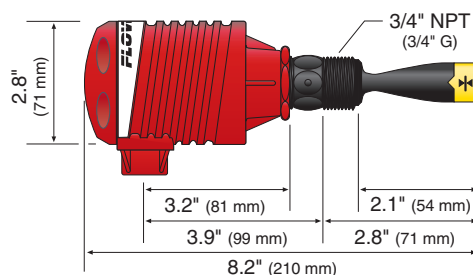
Features

- ✓ Rugged polypropylene, Ryton® or PFA sensor for corrosive liquid applications
- ✓ Fail-safe relay control of pumps or valves with 0-60 second delay
- ✓ Polypropylene enclosure rated NEMA 4X with swivel base for conduit alignment
- ✓ Optional strobe brings immediate attention to level alarm conditions
- ✓ Invert switch changes relay state from NO to NC without rewiring
- ✓ Offered in 2 sensing technologies for broad application coverage: ultrasonic & vibration

Specifications

Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
LED indication:	Sensor, power & relay
Supply voltage:	120 / 240 VAC @ 50-60 Hz.
Consumption:	0.25A maximum
Strobe type:	-X12X: N/A -X11X: Xenon tube
Strobe flash:	-X12X: N/A -X11X: (1) per second
Contact type:	(1) SPST relay
Contact rating:	250 VAC @ 16A
Contact output:	Selectable NO / NC
Contact delay:	0-60 seconds
Process temp.:	F: -40° to 176° C: -40° to 80°
Ambient temp.:	F: -40° to 140° C: -40° to 60°
Pressure:	150 psi (10 bar) @ 25° C., derated @ 1.667 psi (0.113 bar) per °C. above 25° C.
Enclosure rating:	NEMA 4X (IP65)
Enclosure mat.:	-X11X: PP, UL94VO & PC -X12X: PP, UL94VO
Conduit entrance:	1/2" NPT
Wetted material:	AZ13-11XX: Ryton® AU13-11XX: PP AU13-21XX: PFA
Process mount:	3/4" NPT (3/4" G)
Mount. gasket:	Viton®
Classification:	General purpose
Compliance:	CE

AZ13-1120



Switch-Pro

A 13- 1

Sensor technology (1)

- Z Vibration
- U Ultrasonic

Wetted material (2)

- 1 PP/Ryton
- 2 PFA

Configuration

- 1 Controller with Strobe Alert
- 2 Controller only

Process mount

- 0 NPT (US)
- 4 G (Metric)

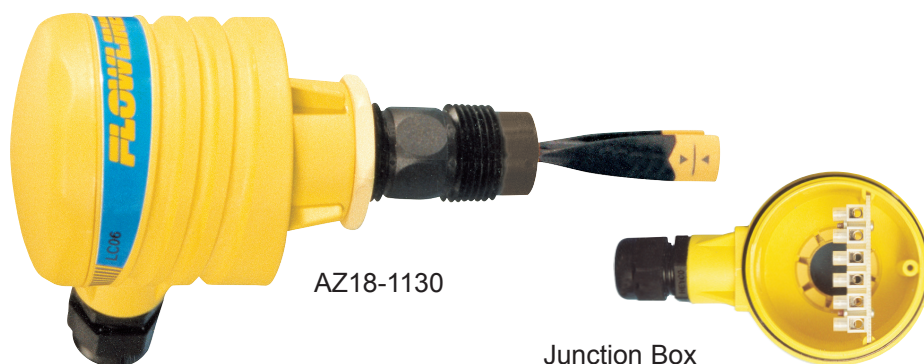
Ordering Notes

- 1) Select the best sensor technology based upon your application.
- 2) PFA is available in ultrasonic configuration.



Switch-Pro™ with Compact Junction Box

Level Switch



AZ18-1130

Junction Box

Specifications

Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Supply voltage:	AZ18: 12-30 VDC AU18: 12-36 VDC
Consumption:	25 mA maximum
Contact type:	(1) SPST relay
Contact rating:	AU18 / AZ18: 60 VA, 1A max.
Contact output:	Selectable NO / NC
Process temp.:	F: -40° to 176° C: -40° to 80°
Ambient temp.:	F: -40° to 140° C: -40° to 60°
Pressure:	150 psi (10 bar)
Enclosure rating:	NEMA 4X (IP65)
Enclosure mat.:	PP, UL94VO
Terminal strip:	6-pole, socket
Conduit entrance:	1/2" NPT
Wetted material:	AZ18-113X: Ryton® AU18-113X: PP AU18-213X: PFA
Process mount:	3/4" NPT (3/4" G)
Mount. gasket:	Viton®
Classification:	General purpose
Compliance:	CE

Application

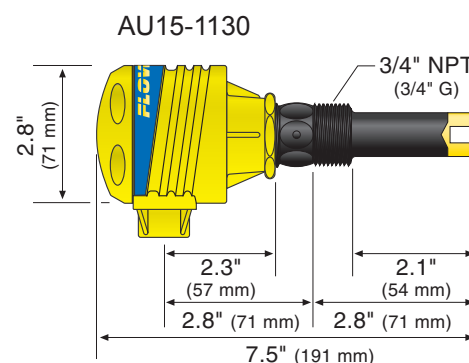
Intended for side wall installation, the general purpose level switch package provides reliable liquid level detection with one 1A relay and a compact junction box for integral wiring termination. Available in two level sensor technologies, select the type and material based upon your application media. This liquid level switch package is widely applied in bulk storage and process tank level applications as a high level alarm or low level alarm.

Features

- ✓ Rugged polypropylene, Ryton® or PFA sensor for corrosive liquid applications
- ✓ 60VA relay selectable NO or NC via power supply wiring polarity
- ✓ Polypropylene enclosure rated NEMA 4X with swivel base and terminal strip
- ✓ Offered in 2 sensing technologies for broad application coverage: ultrasonic & vibration

Tech Tip

The NEMA 4X enclosure is made of UL approved fire retardant polypropylene and features a 300° swivel base for easy conduit alignment. The power and switch conductors are prewired to the terminal strip.



Switch-Pro

A 18- 13

Sensor technology (1)

- Z Vibration
- U Ultrasonic

Wetted material (2)

- 1 PP/Ryton
- 2 PFA

Process mount

- 0 NPT (US)
- 4 G (Metric)

Ordering Notes

- 1) Select the best sensor technology based upon your application.
- 2) Vibration only available in Ryton wetted material.



Float-Point™ 55-Gallon Drum Alarm

Application

The general purpose, battery powered drum alarm provides reliable liquid level monitoring of 55-gallon drums. The stainless steel float assembly is available in three configurations including high alarm, low alarm or high and low level alarm. In the event of an alarm condition, the battery powered LED will actuate to alert the user. Select the compact alarm which is mounted on the float stem, or the remote alarm which is separated from the float stem with a 72" (1.82m) cable.

Features

- ✓ Portable, 9V battery powered LED alarm with test switch
- ✓ Single or two-point alarm for 55, 30 and 20 gallon drums
- ✓ Rugged 316 stainless steel float, stem and mounting plug
- ✓ NEMA 4 enclosure available in compact and remote types



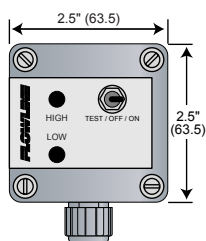
Specifications

Orientation:	Vertical
Alarm:	LED alarm standard
Supply voltage:	9 volt battery
LED indication:	High / low alarm
Process temp.:	F: -40° to 302° C: -40° to 150°
Pressure:	250 psi (17.23 bar)
Float material:	316 Stainless steel
Stem/fitting mat:	316 Stainless steel
Grip rings:	P-15-7 Mo SS
Float SG:	0.73 (+/- 0.02)
Contact rating:	30 watts SPST 240 VAC (0.14A resistive) 120 VAC (0.28A resistive) 120 VDC (0.07A resistive) 24 VDC (0.28A resistive)
Wire type:	2 or 4 conductor, #22 AWG (-S401, -S501, -S601 only)
Wire length:	6' (1.82m) (-S401, -S501, -S601 only)
Wire jacket mat:	Halar jacketed (-S401, -S501, -S601 only)
Process mount:	3/4" NPT
Enclosure rating:	NEMA 4
Enclosure mat:	Polycarbonate
Classification:	General purpose
Compliance:	CE, RoHS
Approvals:	UL

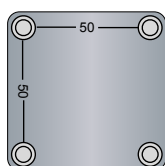


Dimensions

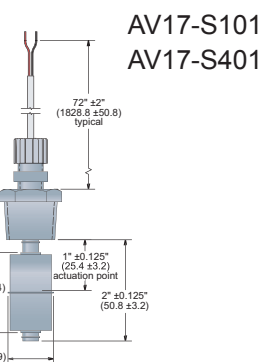
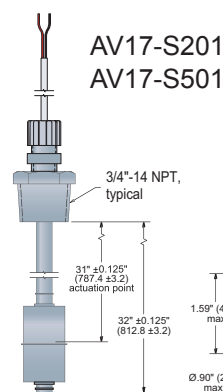
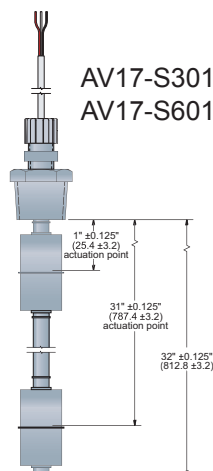
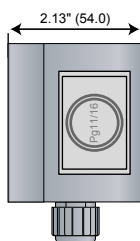
Alarm Front



Alarm Back



Alarm Side



Float-Point

AV17-S01

Compact Mount Alarm

- 1 High alarm
- 2 Low alarm
- 3 High & low alarm

Remote Mount Alarm (1)

- 4 High alarm
- 5 Low alarm
- 6 High & low alarm

Ordering Notes

- 1) Select the compact or remote mount alarm type based on the preferred LED viewing location.

Switch-Tek™ Ultrasonic Level Switch

Level Switch

Application

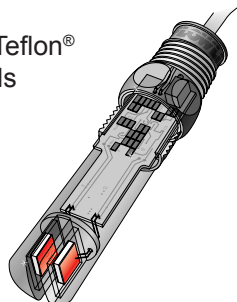
CSA approved for hazardous environments, the intrinsically safe ultrasonic point level switch provides reliable liquid level detection of chemical, solvent, hydrocarbon and petroleum based liquids with a 1A relay output. Media examples include fuel, acetone and hydrochloric acid. The submersible polypropylene or PFA liquid level sensor is universally mounted through the tank wall or inside the tank as a high level alarm or low level alarm.

Features

- ✓ CSA approved intrinsically safe for use in hazardous environments
- ✓ Submersible polypropylene or PFA Teflon® sensor and cable for corrosive liquids
- ✓ 60VA relay selectable NO or NC via power supply wiring polarity
- ✓ Compatible with Smart Trak and Switch-Pak installation fittings



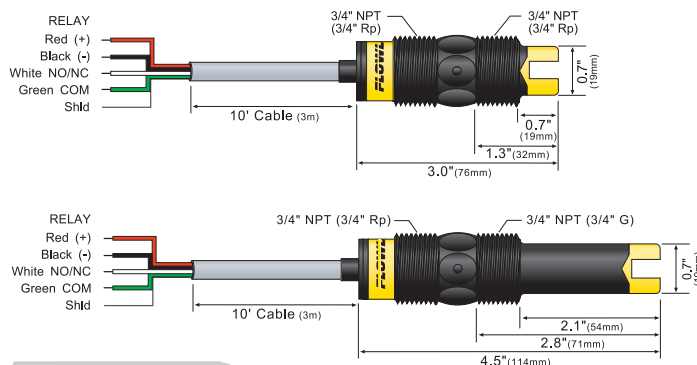
LU10-1305



LU10-1405

Specifications

Orientation:	Universal
Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Supply voltage:	12-36 VDC
Consumption:	25 mA maximum
Contact type:	(1) SPST relay
Contact rating:	GP: 60 VA IS: 32 VDC @ 0.5A
Contact output:	Selectable NO / NC
Process temp.:	F: -40° to 176° C: -40° to 80°
Pressure:	150 psi (10 bar) @ 25° C., derated @ 1.667 psi (0.113 bar) per °C. above 25° C.
Sensor rating:	-1XX5: NEMA 6 (IP68) -2XX5: NEMA 4X (IP65)
Sensor material:	-1XX5: PP -2XX5: PFA
Cable jack. mat.:	-1XX5: PP -2XX5: PFA
Cable type:	4-conductor, #22 AWG, shielded
Cable length:	10' (3m)
Process mount:	3/4" NPT (3/4" G / Rp)
Mount. gasket:	Viton®
Classification:	Intrinsically safe
Certificate:	CSA, LR 79326
Compliance:	CE
Approvals:	Class I, Groups A, B, C & D; Class II, Groups E, F & G; Class III
Parameters:	Vmax = 32V, Imax = 300 mA, Pmax = 1.3W, Ci = 0 µF, Li = 0 µH



Tech Tip

Select the PFA sensor for use in highly corrosive and/or ultrapure applications such as wafer etching.



LU10-2305

Ultrasonic

LU10- 5

Sensor material (1)

- 1 PP
- 2 PFA

Sensor length

- 3 Short
- 4 Long

Process mount (2)

- 0 NPT (US)
- 2 G / Rp (Metric)

Ordering Notes

- To special order a 25' (7.6m) or 50' (15.2 m) sensor cable, place the cable length at the end of the part number (ie: LU10-1305-25'). For PP, add \$20 for 25' (7.6m) or \$40 for 50' (15.2m) to the price. For PFA, add \$75 for 25' (7.6m) or \$150 for 50' (15.2m) to the price.
- The short metric level sensor has conical Rp threads on both sides of the wrench flat. The long Metric level sensor has straight G threads on the sensing side and conical Rp threads on the cable side of the wrench flat.

Switch-Tek™ Vibration Level Switch

Application

The general purpose vibration point level switch provides reliable liquid level detection of dirty liquids such as those with light to medium coating, scaling or foaming characteristics with a 1A relay output. Media examples include wastewater, diluted caustic soda and light weight oil. For optimum performance, the liquid level switch automatically adjusts for coating build up, and if necessary, outputs a proactive maintenance alarm to request cleaning. The submersible Ryton® liquid level sensor is universally mounted through the tank wall or inside the tank as a high level alarm or low level alarm.

Features

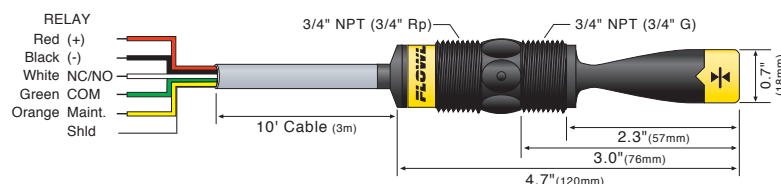
- ✓ Automatic coating adjustment optimizes sensor performance
- ✓ Submersible Ryton® sensor with polypropylene cable for corrosive liquids
- ✓ Coating alarm proactively alerts user when cleaning is required
- ✓ 60VA relay selectable NO or NC via power supply wiring polarity
- ✓ Compatible with Smart Trak and Switch-Pak installation fittings

LZ12-1405



Specifications

Orientation:	Universal
Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Supply voltage:	12-28 VDC
Consumption:	25 mA maximum
Contact type:	(1) SPST relay
Contact rating:	60 VA, 1A maximum
Contact output:	Selectable NO / NC
Maint. alarm:	NPN transistor, 10 mA maximum
Process temp.:	F: -40° to 176° C: -40° to 80°
Pressure:	150 psi (10 bar) @ 25° C., derated @ 1.667 psi (0.113 bar) per °C. above 25° C.
Sensor rating:	NEMA 6 (IP68)
Sensor material:	Ryton®
Grommet mat.:	Viton®
Cable jack. mat.:	Polypropylene
Cable type:	5-conductor, shielded
Cable length:	10' (3m)
Process mount:	3/4" NPT (3/4" G)
Mount. gasket:	Viton®
Classification:	General purpose
Compliance:	CE



Intelligence

Using self-learning technology, the sensor automatically adjusts to increased build-up on the forks for maximum performance. If the coating becomes substantial, the sensor will actuate a transistor alarm for proactive maintenance.



Vibration

LZ12-14 5

Process mount (1) (2)

- 0 NPT (US)
- 2 G (Metric)



Ordering Notes

- 1) To special order a 25' (7.6m) or 50' (15.2 m) sensor cable, place the cable length at the end of the part number (ie: LZ12-1405-25). Add \$20 for 25' (7.6m) or \$40 for 50' (15.2m) to the price.
- 2) The metric level sensor has straight G threads on the sensing side and conical Rp threads on the cable side of the wrench flat.

Switch-Tek™ Vertical Buoyancy Level Switch

Level Switch

Application

The general purpose buoyancy point level switch provides reliable liquid level detection of relatively clean water and chemical solutions with a 15VA reed switch output. Media examples include boric acid and ultrapure water. The baffle body eliminates level switch chatter caused by turbulence. The submersible polypropylene or PVDF liquid level sensor is mounted vertically inside the tank as a high level alarm or low level alarm.

Features

- ✓ Baffle body and stabilized float dampen out switch chatter
- ✓ Submersible polypropylene or PVDF sensor and cable for corrosive liquids
- ✓ 15VA dry contact selectable NO or NC state via wiring selection
- ✓ Compatible with Smart Trak and Switch-Pak installation fittings



LV10-1301

Specifications

Orientation:	± 20° vertical
Accuracy:	± 2mm in water
Repeatability:	± 1mm in water
Specific gravity:	0.8 minimum
Contact type:	(1) SPDT reed
Contact rating:	15 VA, 0.25A maximum
Contact output:	Selectable NO / NC
Process temp.:	F: -40° to 176° C: -40° to 80°
Pressure:	25 psi (2 bar) @ 25° C, derated @ 1.667 psi (0.113 bar) per °C above 25° C
Sensor rating:	NEMA 6 (IP68)
Sensor material:	-13X1: Polypropylene -53X1: PVDF
Cable jack. mat.:	-13X1: Polypropylene -53X1: PFA
Cable type:	3-conductor, shielded
Cable length:	10' (3m)
Process mount:	3/4" NPT (3/4" Rp)
Classification:	General purpose
Compliance:	CE

Relay Control

For process automation with pumps, valves and alarms, package your buoyancy level switch with our remote relay controllers offered in a 35 mm DIN package. See page 73 for more details.



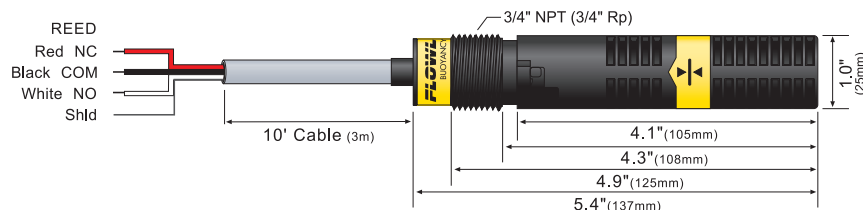
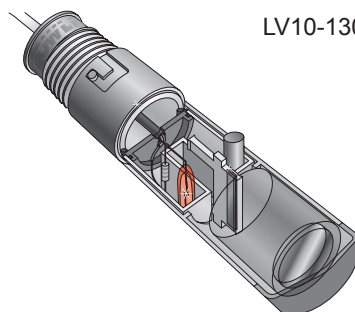
LC40-1001

Tech Tip

For years of reliable service in highly corrosive media, select the PVDF material option. The rugged sensor features a PVDF body with a PFA cable.



LV10-5301



Buoyancy

LV10- 3 1

Sensor material (1)

- 1 PP
- 5 PVDF

Process mount

- 0 NPT (US)
- 5 Rp (Metric)

Ordering Notes

- To special order a 25' (7.6m) or 50' (15.2 m) level sensor cable, place the cable length at the end of the part number (ie: LV10-1305-25'). For PP, add \$20 for 25' (7.6m) or \$40 for 50' (15.2m) to the price. For PFA, add \$75 for 25' (7.6m) or \$150 for 50' (15.2m) to the price.

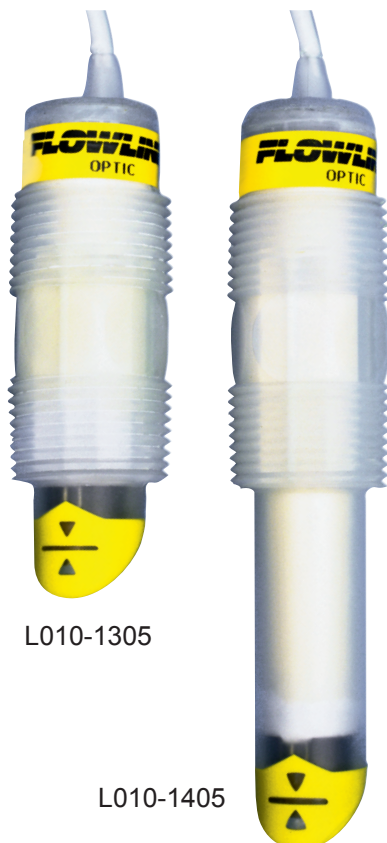
Switch-Tek™ Optic Leak Detection Switch

Application

The general purpose optic leak switch provides reliable leak detection in and around secondary containment sumps, tanks and piping systems with a 1A relay output. Media examples include sulfuric acid, water and diesel. The submersible polypropylene or PFA liquid leak detection sensor is mounted through the wall or within the interstitial space.

Features

- ✓ Submersible polypropylene or PFA Teflon® sensor and cable for corrosive liquids
- ✓ 60VA relay selectable NO or NC via power supply wiring polarity
- ✓ Fail-safe leak sensor inverts wet to alert user for maintenance



L010-1305

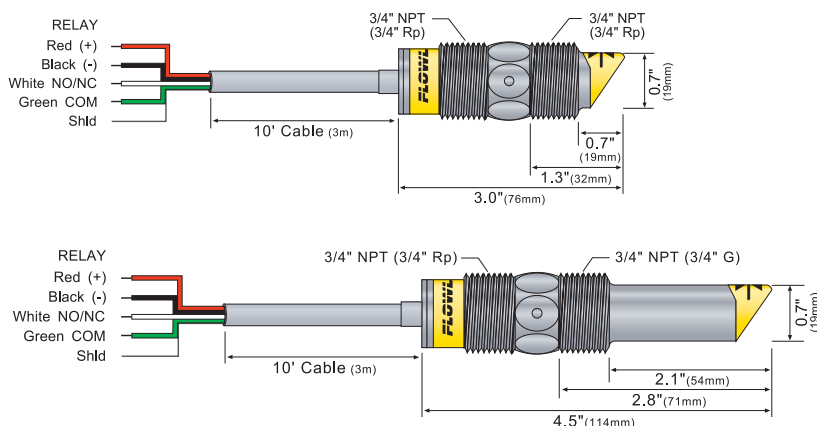
L010-1405

Specifications

Orientation:	Universal
Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Supply voltage:	12-36 VDC
Consumption:	25 mA maximum
Contact type:	(1) SPST relay
Contact rating:	60 VA, 1A maximum
Contact output:	Selectable NO / NC
Process temp.:	F: -40° to 176° C: -40° to 80°
Pressure:	150 psi (10 bar) @ 25° C, derated @ 1.667 psi (0.113 bar) per °C above 25° C
Sensor rating:	NEMA 6 (IP68)
Sensor material:	-1XX5: Polypropylene -2XX5: PFA
Cable jack. mat.:	-1XX5: Polypropylene -2XX5: PFA
Cable type:	4-conductor, shielded
Cable length:	10' (3m)
Process mount:	3/4" NPT (3/4" G)
Mount. gasket:	Viton®
Classification:	General purpose
Compliance:	CE

Tech Tip

The optic leak detection switch is easily placed in the interstitial space of double wall tanks or threaded into a collection trap in secondary containment piping.



Optic

L010- 5

Sensor material (1)

- 1 PP
- 2 PFA

Sensor length

- 3 Short
- 4 Long

Process mount (2)

- 0 NPT (US)
- 2 G / Rp (Metric)

Ordering Notes

- To special order a 25' (7.6m) or 50' (15.2 m) level sensor cable, place the cable length at the end of the part number (ie: L010-1305-25'). For PP, add \$20 for 25' (7.6m) or \$40 for 50' (15.2m) to the price. For PFA, add \$75 for 25' (7.6m) or \$150 for 50' (15.2m) to the price.
- The short Metric level sensor has conical Rp threads on both sides of the wrench flat. The long Metric level sensor has straight G threads on the sensing side, and conical Rp threads on the cable side of the wrench flat.

Switch-Tek™ Guard Capacitance Level Switch

Level Switch

Application

The general purpose guard capacitance point level switch provides reliable high or low liquid level detection of water based conductive liquids with light coating, crystallizing or scaling characteristics with a 1A relay output. Media examples include copper sulfate and brine. The RF guard circuit eliminates the coating signal path between the active and reference electrodes. The submersible polypropylene liquid level sensor is universally mounted through non-metallic tank walls or inside the tank as a high level alarm or low level alarm.

Features

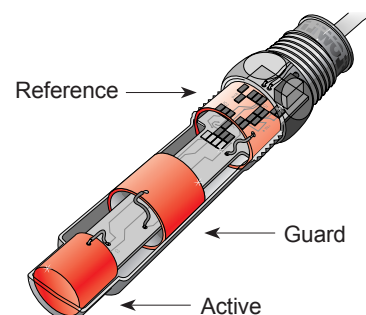
- ✓ Guard circuit optimizes performance in coating type media
- ✓ Submersible polypropylene sensor body and cable for corrosive liquids
- ✓ 60VA relay selectable NO or NC via power supply wiring polarity
- ✓ Compatible with Smart Trak and Switch-Pak installation fittings

Specifications

Orientation:	Universal
Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Dielectric range:	> 20 constants
Conductive range:	> 100 µ
Supply voltage:	12-36 VDC
Consumption:	25 mA maximum
Contact type:	(1) SPST relay
Contact rating:	60 VA, 1A maximum
Contact output:	Selectable NO / NC
Process temp:	F: -40° to 176° C: -40° to 80°
Pressure:	150 psi (10 bar) @ 25° C, derated @ 1.667 psi (0.113 bar) per °C above 25° C.
Sensor rating:	NEMA 6 (IP68)
Sensor material:	Polypropylene
Cable jack. mat.:	Polypropylene
Cable type:	4-conductor, shielded
Cable length:	10' (3m)
Process mount:	3/4" NPT (3/4" G)
Mount. gasket:	Viton®
Classification:	General purpose
Compliance:	CE

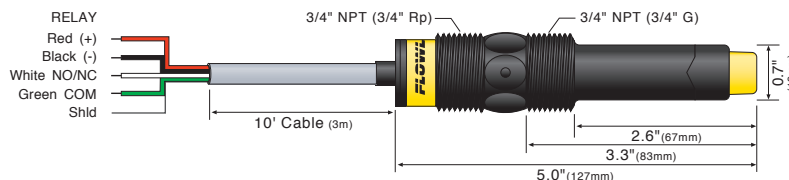


LP15-1405



Tech Tip

For best performance in coating liquids, install the sensor horizontally through the side wall of a non-metallic tank.



Capacitance

LP15-14□5

Process mount (1) (2)

- 0 NPT (US)
- 2 G / Rp (Metric)

Ordering Notes

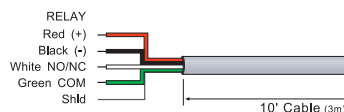
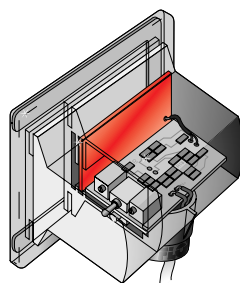
- To special order a 25' (7.6m) or 50' (15.2m) level sensor cable, place the cable length at the end of the part number (ie: LP15-1405-25'). Add \$20 for 25' (7.6m) or \$40 for 50' (15.2m) to the price.
- The metric level sensor has straight G threads on the sensing side and conical Rp threads on the cable side of the wrench flat.

Application

The general purpose non-intrusive capacitance level switch provides reliable liquid level detection of water based conductive liquids with non-coating and/or scaling characteristics with a 1A relay output. Media examples include hydrochloric, sulfuric acid and water. The liquid level sensor is bracket mounted on the exterior wall of non-metallic tanks and applied as a high level alarm or low level alarm.

Features

- ✓ Non-intrusive level detection through plastic or fiberglass walls
- ✓ Installed with polyethylene, polypropylene or PVDF adhesive 3M mounting brackets
- ✓ Rugged PSO enclosure rated NEMA 4X with conduit connector
- ✓ 60VA relay selectable NO or NC via power supply wiring polarity

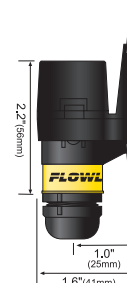
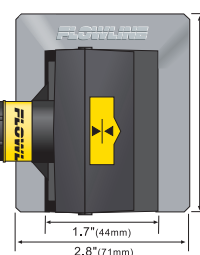


Specifications

Accuracy:	± 1mm in water
Repeatability:	± 0.5mm in water
Dielectric range:	> 20 constants
Conduct. range:	> 100 µ
Supply voltage:	12-36 VDC
Consumption:	25 mA maximum
Contact type:	(1) SPST relay
Contact rating:	60 VA, 1A maximum
Contact output:	Selectable NO / NC
Process temp.:	F: -40° to 176° C: -40° to 80°
Enclosure rating:	NEMA 4X (IP65)
Enclosure mat.:	PSO
Cable jack. mat.:	Polypropylene
Cable type:	4-conductor, shielded
Cable length:	10' (3m)
Conduit entrance:	1/2" NPT
Tank mat. comp.:	Non-metallic
Tank mounting:	Bracket w/3M adhesive, plastic thermal weld
Bracket material:	-6005: Polyethylene -1005: Polypropylene -5005: PVDF
Classification:	General purpose
Compliance:	CE

Front View

Side View



Tech Tip

With two simple calibration adjustments, the non-intrusive switch set point will be customized to your specific tank wall thickness and application media.



Capacitance

LP50-□005

Bracket material (1) (2)

- 1 PP
- 5 PVDF
- 6 PE

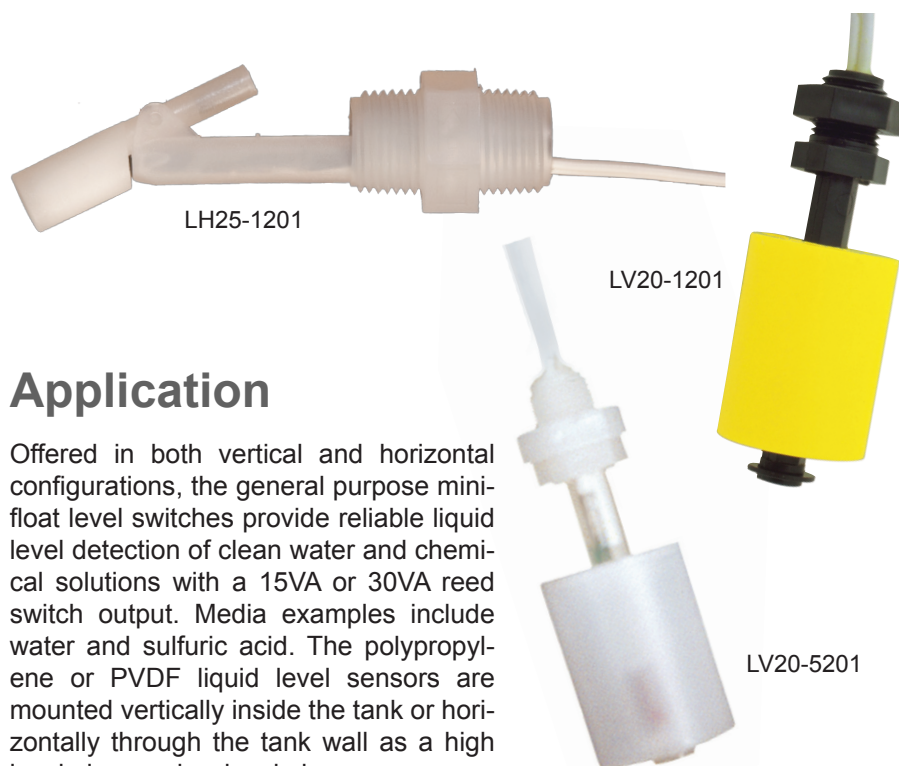


Ordering Notes

- 1) Select the bracket material that matches the tank wall. Each level sensor comes with one bracket. Additional brackets may be ordered separately. See page 84 for more details.
- 2) To special order a 25' (7.6m) or 50' (15.2 m) level sensor cable, place the cable length at the end of the part number (ie: LP50-6005-25'). Add \$20 for 25' (7.6m) or \$40 for 50' (15.2m) to the price.

Switch-Tek™ Mini-Float Level Switch

Level Switch

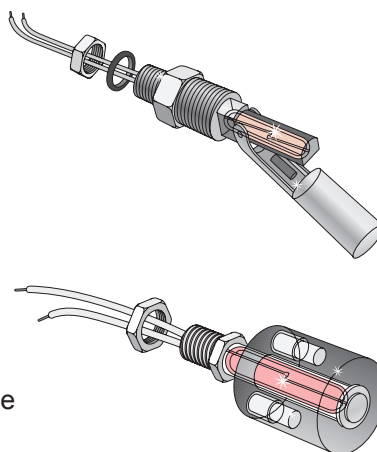


Application

Offered in both vertical and horizontal configurations, the general purpose mini-float level switches provide reliable liquid level detection of clean water and chemical solutions with a 15VA or 30VA reed switch output. Media examples include water and sulfuric acid. The polypropylene or PVDF liquid level sensors are mounted vertically inside the tank or horizontally through the tank wall as a high level alarm or low level alarm.

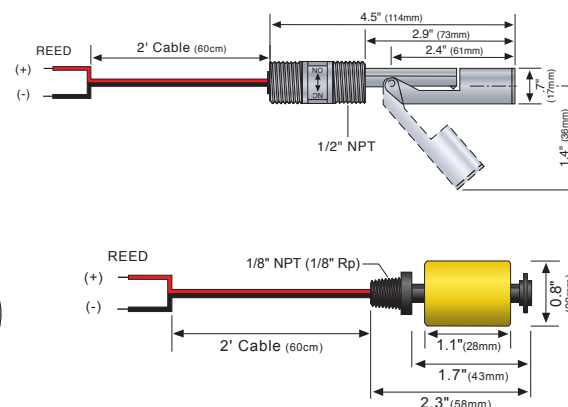
Features

- ✓ Simple low-cost level switch solution for basic applications
- ✓ Offered in both vertical and horizontal mounting configurations
- ✓ Dry contact reed switch selectable NO or NC via float orientation
- ✓ Small polypropylene or PVDF sensor body with PVC, TFE or polymeric cable



Specifications

Orientation:	LV20: $\pm 20^\circ$ vertical LH25: $\pm 20^\circ$ horizontal
Accuracy:	± 5 mm in water
Repeatability:	± 2 mm in water
Specific gravity:	LV20: 0.8 minimum LH25: 0.6 minimum
Contact type:	(1) SPST reed
Contact rating:	LV20: 15 VA, 0.25A max. LH25: 30 VA, 0.5A max.
Contact output:	Selectable NO / NC
Process temp.:	LV20 F: -40° to 176° C: -40° to 80° LH25 F: -40° to 221° C: -40° to 105°
Pressure:	LV20: 10 psi (0.7 bar) LH25: 100 psi (6.9 bar)
Sensor rating:	NEMA 6 (IP68)
Sensor material:	LV20-12X1: Polypropylene LV20-52X1: PVDF LH25-1201: Polypropylene LH25-5201: PVDF
Wire jack. mat.:	LX2X-12X1: PVC LX2X-52X1: TFE LH25: Polymeric
Wire type:	2-conductor
Wire length:	2' (61cm)
Process mount:	LV20: 1/8" NPT LH25: 1/2" NPT
Classification:	General purpose
Compliance:	CE



Mini-Float

Vertical

Sensor material (1)

- 1 PP
5 PVDF

LV20- 201

Horizontal

Sensor material (1)

- 1 PP
5 PVDF

LH25- 201

Ordering Notes

- 1) To special order 25' (7.6m) or 50' (15.2 m) sensor wires, place the wire length at the end of the part number (ie: LV20-1201-25'). Add \$10 for 25' (7.6m) or \$20 for 50' (15.2m) to the price.



Switch-Tek™ High-Temp Float Level Switch



Specifications

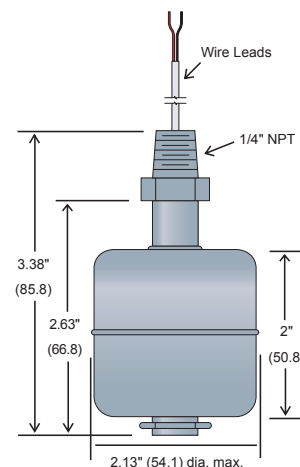
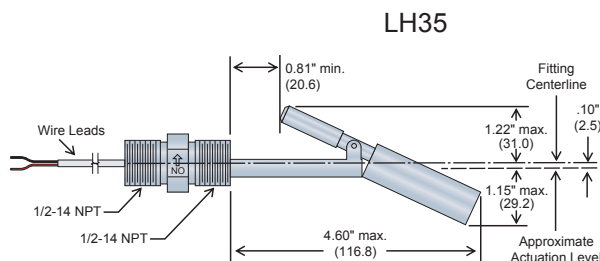
Orientation:	LV3X: ±20° vertical LH35: ±20° horizontal
Accuracy:	± 3mm in water
Repeatability:	± 1mm in water
Specific gravity:	LV3X: 0.7 minimum LH35: 0.6 minimum
Contact type:	(1) SPST reed
Contact rating:	LX35: 30 VA, 0.5A max. LV36: 100 VA, 1.5A max.
Contact output:	Selectable NO / NC
Process temp.:	F: -40° to 392° C: -40° to 200°
Pressure:	LV35: 300 psi (20.7 bar) LV36: 500 psi (34.5 bar) LH35: 500 psi (34.5 bar)
Sensor rating:	NEMA 6 (IP68)
Sensor material:	316 SS
Wire jack. mat.:	Polymeric
Wire type:	2-conductor
Wire length:	2' (61cm)
Process mount:	LV35: 1/8" NPT LV36: 1/4" NPT LH35: 1/2" NPT
Classification:	General purpose
Compliance:	CE, RoHS

Application

Offered in both vertical and horizontal configurations, the general purpose high-temp float level switches provide reliable liquid level detection of relatively clean water, diluted chemicals and light weight oils with a 30VA or 100VA reed switch output. Media examples include hot deionized water and cooking oil. The stainless steel liquid level sensors are mounted vertically inside the tank or horizontally through the tank wall as a high level alarm or low level alarm.

Features

- ✓ 316 SS level sensor for high temperature and pressure applications
- ✓ Dry contact reed switch selectable NO or NC via float orientation
- ✓ Offered in both vertical and horizontal mounting configurations



LV35/36

Float

Vertical

Maximum pressure (1)

- 5 300 psi (20.7 bar)
6 500 psi (34.5 bar)

LV3 -S201

Horizontal

Maximum pressure (1)

- 5 500 psi (34.5 bar)

LH3 -S201

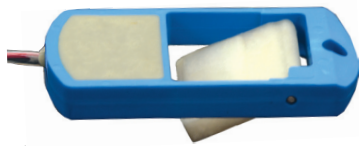
Ordering Notes

- 1) The normally open or closed contact output is selectable based on the installed orientation of the float.



Switch-Tek™ Interstitial Leak Detection Switch**Level Switch****Specifications**

Orientation:	Horizontal
Contact type:	(1) SPST reed
Contact rating:	30 watts 240 VAC (0.14A resistive) 120 VAC (0.28A resistive) 120 VDC (0.07A resistive) 24 VDC (0.28A resistive)
Contact output:	NC (opens on rise)
Process temp.:	F: -40° to 221° C: -40° to 105°
Pressure:	50 psi (3.4 bar)
Sensor rating:	NEMA 6 (IP68)
Float material:	Foamed polypropylene
Body material:	Valox 420
Pivot pin mat.:	Stainless steel
Wire type:	2 conductor, #22 AWG
Wire length:	10' (3m)
Wire jacket mat.:	Halar jacketed
Classification:	General purpose
Compliance:	CE
Approvals:	UL



Switch Open



Switch Closed

Application

The general purpose float leak switch provides reliable leak detection in and around secondary containment sumps and tanks with a 1A relay output. The flat body Valox leak sensor is ideal for placement in hard to reach interstitial areas with limited space. In the event of a leak, the foam polypropylene float will rise to signal the presence of unwanted liquid in the containment vessel. The leak detection switch is typically mounted flat on the bottom of the sump floor or secondary containment tank wall.

Features

- ✓ Valox sensor body with PP float and Halar® jacketed cable for corrosive liquids
- ✓ Flat, low profile sensor with minimal float rise for applications with limited space
- ✓ Dry contact, normally closed reed switch opens to signal the presence of liquid

Relay Control

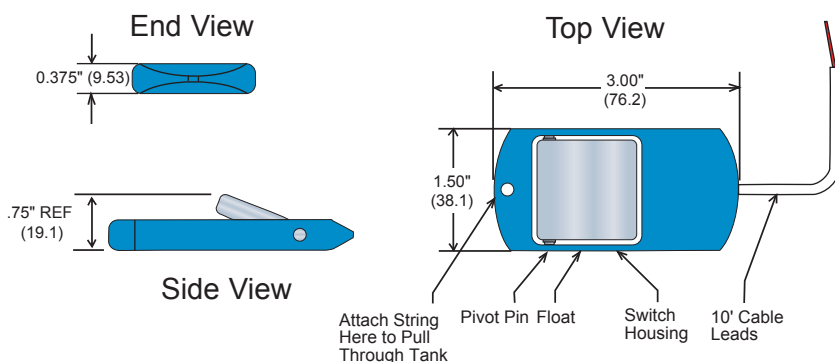
For process automation with pumps, valves and alarms, package your leak detection switch with our remote relay controllers offered in a 35 mm DIN package. See page 73 for more details.



LC40-1001

Tech Tip

To position the sensor under hard to reach locations, tie a string or wire through the cut out on the sensor body and pull it into place. To permanently locate the sensor, affix it with a screw or zip tie.

Dimensions**Float****LH29-1001**

Strobe Alert™ Compact Flash Alarm

Specifications



LC10-1004



Strobe shown mounted on LC10 relay controller

Supply voltage:	LC09: 12-36 VDC LC10: 120 VAC @ 50-60 Hz. LC10-E: 240 VAC @ 50-60 Hz.
Consumption:	3 watts max.
Strobe color:	Amber
Strobe type:	Xenon tube
Strobe flash:	1 per second
Strobe life:	10M cycles
Electronics temp.:	F: -40° to 158° C: -40° to 70°
Enclosure rating:	NEMA 4X (IP65)
Encl. material:	Polycarbonate
Encl. compatibility:	LC05, LC06, LC10, LC11 and LC30 enclosures
Wire type:	2-wire, #22 AWG
Wire length:	5" (12.7 cm)
Wire jacket mat.:	Polymeric
Classification:	General purpose
Certificate:	CSA: LR 79326

Application

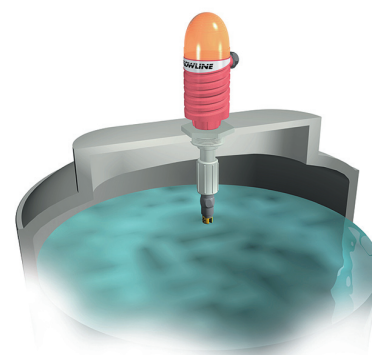
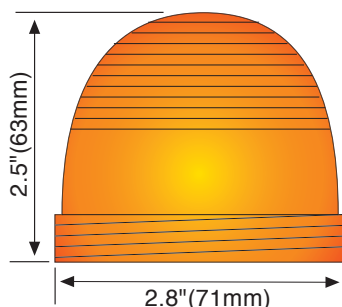
Offered in both AC and DC powered configurations, the compact flash alarm brings immediate attention to process alarm conditions. Strobe Alert is compatible with any of our round level or flow compact relay controllers and junction boxes. Select the appropriate supply voltage for your application.

Features

- ✓ High intensity amber flash alarm visually alerts on-site personnel
- ✓ Rugged NEMA 4X polycarbonate enclosure for harsh environments
- ✓ Mounts directly on any Flowline round compact enclosure

Tech Tip

The alarm is commonly applied in tank spill prevention, pump or process protection applications. We recommend the use of secondary audible alarms in critical processes.

LC06-10X1
Junction Box

Strobe Alert

LC - 1004

Supply voltage (1) (2)

09 12-36 VDC
10 120 VAC

Ordering Notes

- 1) To factory configure the LC10-1004 for 240 VAC, place an E at the end of the P/N (ie: LC10-1004-E).
- 2) For field mount and conduit termination, order a LC06-10X1 junction box.

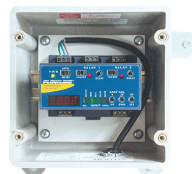
Switch-Pro™ Remote Level Controller

Level Switch



LC40-1001

LM94-1001



Specifications

Supply voltage:	120 / 240 VAC, 50-60 Hz.
Consumption:	5 watts maximum
Sensor inputs:	LC40/90: (1) level switch LC41: (2) level switches LC42/92: (3) level switches
Sensor supply:	13.5 VDC @ 27 mA
LED indication:	Sensor, power & relay
Contact type:	LC40/90: (1) SPDT relay LC41: (1) SPDT relay, latching LC42/92: (2) SPDT relays, (one latching)
Contact rating:	250 VAC @ 10A
Contact output:	Selectable NO / NC
Contact latch:	LC40/90: N/A LC41: Selectable ON / OFF LC42/92: Selectable ON / OFF
Contact delay:	0-60 seconds
Ambient temp.:	F: -40° to 140° C: -40° to 60°
Enclosure type:	35mm DIN rail
Enclosure mat.:	PP, UL94VO
Classification:	LC4X: General purpose LC9X: Associated apparatus
Compliance:	CE (LC4X only)
Approvals:	CSA, LR 79326
Safety:	Class 1, Groups A, B, C & D; Class II, Groups E, F & G; Class III
Parameters:	Voc = 17.47 VDC; Isc = 0.4597A; Ca = 0.494 µF; La = 0.119 mH

Application

Available in CSA approved, general purpose (LC4X) or isolation (LC9X) with built-in intrinsic safety barriers for use with associated apparatus, the level controller is offered in three configurations for pump and valve control. The LC40/90 accepts one level sensor input and provides one 10A relay. The LC41 accepts two level sensor inputs and provides one latching 10A relay for automatic fill or empty control. The LC42/92 accepts three level sensor inputs with one latching 10A relay output for automatic fill or empty control, and a second non-latching 10A relay for high level alarm or low level alarm. For field mount installation, add a single or dual indicator NEMA box.

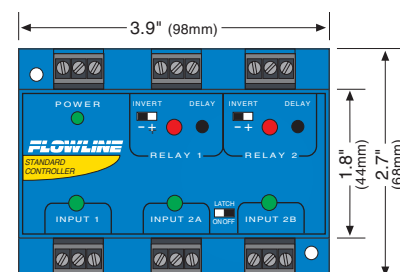
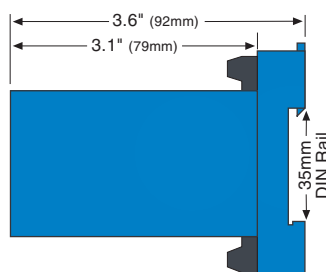
Features

- ✓ Fail-safe relay control of pumps or valves with 0-60 second delay
- ✓ Optional built-in intrinsic safety barriers for hazardous applications (LC9X)
- ✓ Easy setup with LED indicators for sensor, power and relay status
- ✓ 35 mm DIN rail mount polypropylene enclosure with removable terminal strips
- ✓ Invert switch changes relay state from NO to NC without rewiring

The intrinsically safe ultrasonic level switch is CSA approved for hazardous areas. See page 63 for details.



LU10-1305



Switch-Pro

LC -1001

Classification (1) (2)

- 4 General purpose
- 9 Isolation (hazardous)

Contact(s) / input(s) (3)

- 0 1 Relay / 1 sensor
- 1 1 Latching relay / 2 sensors
- 2 2 Relays (1 latching) / 3 sensors

Ordering Notes

- 1) Select the classification based on your general purpose or isolation (intrinsic safety for associated apparatus) requirements.
- 2) For field mount installation in a NEMA 4X polycarbonate enclosure, order the LM94-1001 (single controller box) or the LM95-1001 (two controller box).
- 3) LC91 not available.

Switch-Pro™ Compact Level Controller

Application

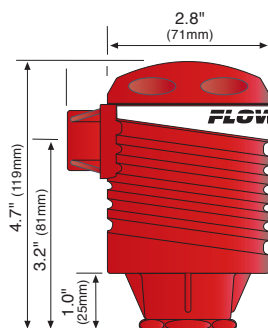
The general purpose level controller is offered in two configurations for pump and valve control. The LC10 accepts one level sensor input and provides one 16A relay for high level control or low level control. The LC11 accepts two level sensor inputs and provides one latching 16A relay for automatic fill or empty control. The optional flash alarm brings attention to level alarm conditions. Package this level controller with our liquid level switch sensors and fittings.

Features

- ✓ Fail-safe relay control of pumps or valves with 0-60 second delay
- ✓ Optional strobe brings immediate attention to level alarm conditions
- ✓ Polypropylene enclosure rated NEMA 4X with swivel base for conduit alignment
- ✓ Easy setup with LED indicators for sensor, power and relay status
- ✓ Invert switch changes relay state from NO to NC without rewiring



LC10-1002



Specifications

Supply voltage:	120 / 240 VAC, 50-60 Hz.
Consumption:	0.25A maximum
Sensor inputs:	LC10: (1) level switch LC11: (2) level switches
Sensor supply:	13.5 VDC @ 27 mA
LED indication:	Sensor, power & relay
Strobe type:	-10X1: N/A -10X2: Xenon tube
Strobe flash:	-10X1: N/A -10X2: (1) per second
Contact type:	LC10: (1) SPDT relay LC11: (1) SPDT relay, latching
Contact rating:	250 VAC @ 16A
Contact output:	Selectable NO / NC
Contact delay:	0-60 seconds
Contact latch:	LC10: N/A LC11: Selectable ON / OFF
Ambient temp.:	F: -40° to 140° C: -40° to 60°
Enclosure rating:	NEMA 4X (IP65)
Enclosure mat.:	-10X1: PP, UL94VO -10X2: PP, UL94VO & PC
Conduit entrance:	1/2 NPT
Enclosure mount:	3/4" NPT (3/4" Rp)
Classification:	General purpose
Compliance:	CE
Approvals:	CSA, LR 79326

Tech Tip

The AC powered relay controller has a 16A relay, adjustable time delay, LED indicators and NO or NC invert switch. The rugged NEMA 4X enclosure is made of UL approved fire retardant polypropylene with a swivel base for easy conduit alignment.



LC11-1001

Switch-Pro

LC1 -10

Contact / input(s) (1)

- 0 1 Relay / 1 sensor
- 1 1 Latching relay / 2 sensors

Enclosure mount

- 0 NPT (US)
- 5 Rp (Metric)

Configuration

- 1 Controller only
- 2 Controller with Strobe Alert

Ordering Notes

- 1) The level controller is compatible with level switch packages (junction box type) and level switch sensors.



Switch-Pro™ Compact Junction Box

Level Switch

Application

Offered in small and large sizes, the compact junction box is ideal for sensor wiring and conduit termination. The junction box is universally compatible with our level switch, flow switch and fitting products. The small enclosure has 6 poles and is typically used with a single level or flow switch sensor. The large enclosure has 12 poles for multiple level switches and is typically used with Smart Trak.

Features

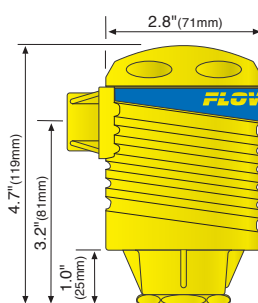
- ✓ Polypropylene enclosure rated NEMA 4X with 300° conduit swivel base
- ✓ Compatible with Flowline sensors, installation fittings and alarms
- ✓ Removable terminal strips with upper and lower screw poles
- ✓ Offered in large and small sizes for single and multi-point installations



LC05-1001



LC06-1001

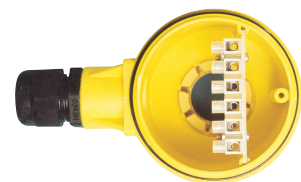


Specifications

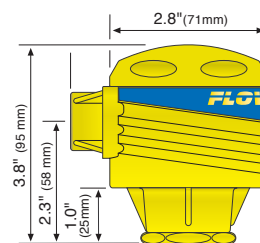
Sensor inputs:	LC05: 1-4 sensors LC06: 1-2 sensors
Terminal strip:	LC05: 12 pole socket LC06: 6 pole socket
Enclosure rating:	NEMA 4X (IP65)
Encl. material:	PP, UL94VO
Encl. mount:	1001: 3/4" NPT 1051: 3/4" Rp
Encl. rotation:	300° swivel base
Conduit entrance:	Single, 1/2" NPT
Temp. rating:	F: -40° to 158° C: -40° to 70°
CE compliance:	EN 61326 EMC EN 61010-1 safety



LC05-1001



LC06-1001



Switch-Pro

LC0 -10 1

Size / terminals (1)

- 5 Large / 12 pole (1-4 sensors)
6 Small / 6 pole (1-2 sensors)

Enclosure mount

- 0 NPT (US)
5 Rp (Metric)

Ordering Notes

- 1) For a liquid tight cable connection, order the the LM90-1001 connector.

