Switch-Tek™ LU10 Ultrasonic Level Switches

Part No. LU10-1305

Part No. LU10-1405

Overview

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. The submersible polypropylene (PP) liquid level sensor is universally mounted through the tank wall or inside the tank as a high level alarm or low level alarm.

Features

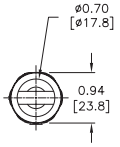
- CSA approved intrinsically safe for use in hazardous environments
- Submersible polypropylene (PP) sensor and cable
- 60VA relay selectable NO or NC via power supply wiring polarity
- Compatible with Switch-Pak installation fittings
- Able to mount through the side wall or top wall of tank
- Made in the USA

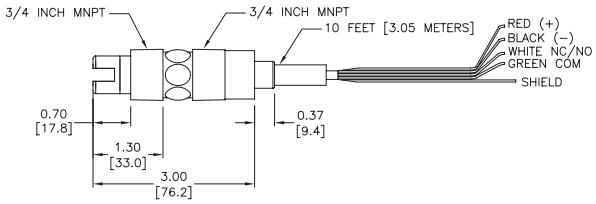
Switch-Tek™ LU10 Technical Specifications		
Model	**LU10-1305**	**LU10-1405**
Price		
Weight (lb)	0.7	0.7
Insertion Length	0.7 in [17.8 mm]	2.1 in [53.3 mm]
Orientation	Universal	
Accuracy	±1mm [0.04 in] in water	
Repeatability	±0.5 mm [0.02 in] in water	
Supply Voltage	12-36 VDC	
Consumption	25mA maximum	
Contact Type	(1) SPST relay	
Contact Rating	General purpose: 60VA @ 1A (125VAC max) Intrinsically safe: 32VDC @ 0.5 A	
Contact Output	Selectable NO / NC	
Process Temp.	-40°F to 176°F [-40°C to 80°C]	
Pressure	150psi [10bar] @ 25°C, derated @ 1.667 psi [0.113 bar] per °C above 25°C	
Sensor Rating	NEMA 6 (IP68)	
Sensor Material	PP (polypropylene)	
Cable Jacket Material	PP (polypropylene)	
Cable Type	4-conductor, #22AWG, shielded	
Cable Length	10ft (3m)	
Process Mount	3/4" NPT	
Classification	Intrinsically safe (Haz-Loc)	
Agency Approvals*	CSA: Class 1, Groups A, B, C, & D; Class II Groups E, F & G; Class III EEx: Class 1, Division 1, Groups A, B, C, & D; EEx ib IIC T6	
Intrinsically Safe (I.S.) Parameters	CSA: Vmax = 32V, Imax = 300mA, Pmax = 1.3 W; Ci = 0µF, Li = 0µH EEx: Ui = 32V; Ii = 300mA; Pi = 1.3 W; Ci = 0µF; Li = 0µH	
Certificates*	CSA: LR 79326; EEx: LCIE 01.E6048 X	
Compliance*	CE (EN61326, EN61010-1)	

** To obtain the most current agency approval information, see the Agency Approval Check-*

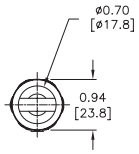
Dimensions

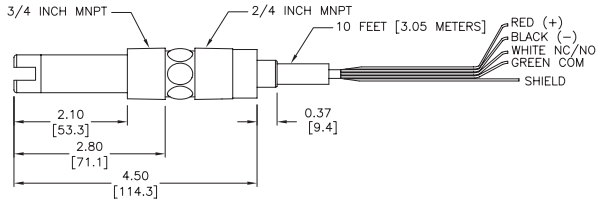
inches [mm]





Part No.LU10-1305





Part No.LU10-1405

See our website _____ for complete Engineering drawings.

Compatible Products

Switch-Pro™
Remote Level Controllers

LCXX

Switch-Pro™
Junction Box

LC06-1001

Switch-Pak™
Installation Fittings

LM45-1001-12

LM45-7001-0000

See the Switch-Pro® LCXX and Accessories pages at the end of the section for further details and pricing.

Switch-Tek™ LU10 Ultrasonic Level Switches

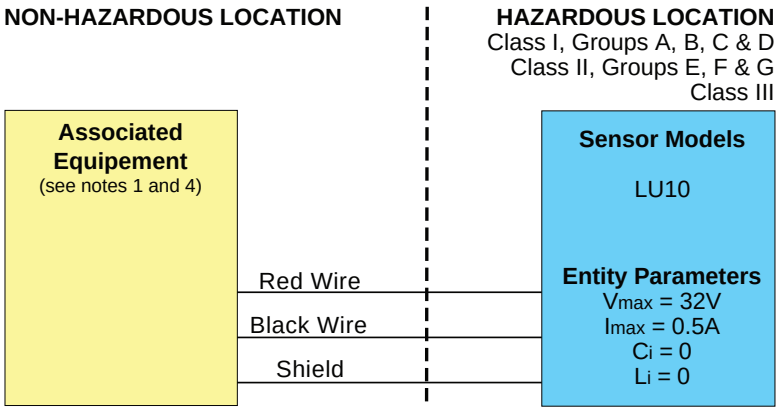
Intrinsically Safe (Haz-Loc) Wiring Information

Models LU10:

The LU10 level switch has been approved for use in Class I, Groups A, B, C & D; UNDER CERTIFICATE NUMBER LR 79326-4. The Entity parameter for the LU10 are:

Vmax = 32 VDC
Imax = 0.5 A
Ci = 0 µF
Li = 0 mH

Intrinsically Safe Control Drawing:



Notes:

1. CSA certified associated equipment with entity parameters.
2. $V_{max} \geq V_{oc}$, $I_{max} \geq I_{sc}$, $C_i + C_{cable} \leq C_a$., $L_i + L_{cable} \leq L_a$.
3. Installation should be in accordance with CEC Part I, or NFPA 70.
4. Associated equipment must be installed per manufacturers instructions

Sensor Drawing: LSD1
Rev. B 10-01-02

Switch-Tek™ LU10 Ultrasonic Level Switches

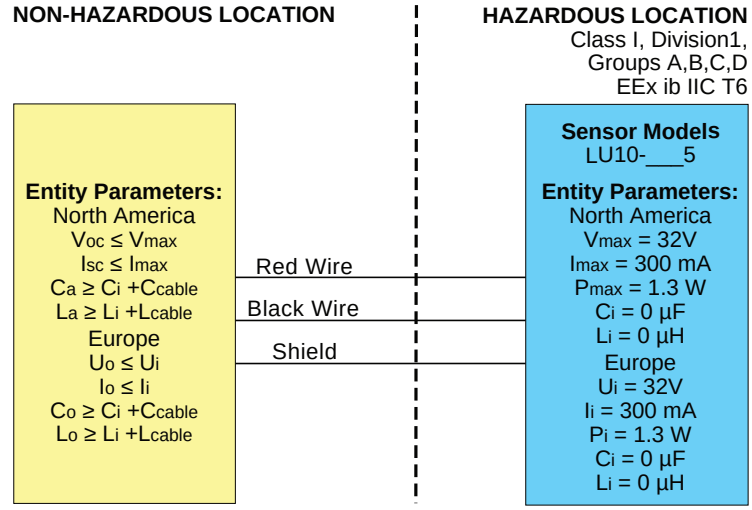
Intrinsically Safe (Haz-Loc) Wiring Information

Models LU10:

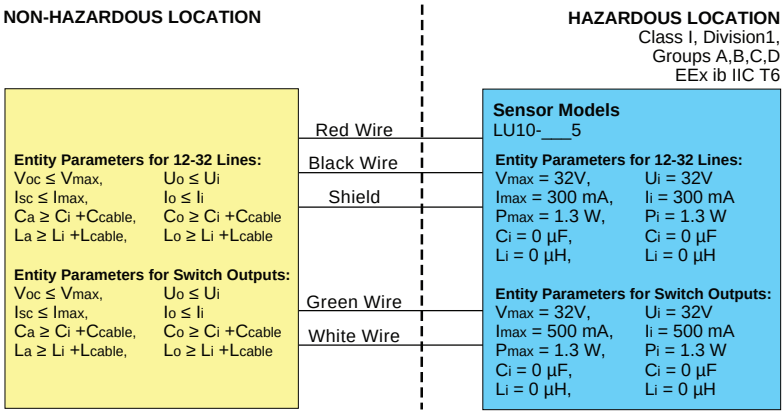
The LU10 level switch has been approved for use in Class I, Division 1, Groups A, B, C & D; EEx ib IIC T6; UNDER CERTIFICATE NUMBER LCIE 01.E6048X.
The Entity parameter for the LU10 are:

North America	Europe
Vmax = 32 VDC	Ui = 32 VDC
Imax = 0.5 A	Ii = 0.5 A
Pmax = 1.3 W	Pi = 1.3 W
Ci = 0 µF	Ci = 0 µF
Li = 0 µH	Li = 0 µH

Intrinsically Safe Control Drawing:



Sensor Drawing: U10900
Sheet 1 of 2
Rev. B 4-02-01



Notes: PARAMETERS DEPEND ON OUTPUT TYPE
1. Installation should be in accordance with CEC Part 1, or NFPA 70.
2. Associated Equipment shall be CSA certified with entity parameters connected in accordance with manufacturers instructions.

Sensor Drawing: U10900
Sheet 2 of 2
Rev. B 4-02-01

Switch-Pro™ Remote Level Controllers

Part No. LC40-1001

Part No. LC41-1001

Part No. LC42-1001

Overview

CSA approved, the Switch-Pro general purpose level controllers are offered in three configurations for alarms, pump and valve control. The LC40 accepts one level sensor input and provides one 10A relay for high level or low level alarm. The LC41 accepts two level sensor inputs and provides one latching 10A relay for automatic fill or empty control. The LC42 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 or low level alarm.

Features

- Fail-safe relay control of pumps or valves with 0-60 second delay
- Easy setup with LED indicators for sensor, power and relay status
- 35mm DIN rail mount or panel mount polypropylene (PP) enclosure with removable terminal strips
- Invert switch changes relay state from NO to NC without rewiring
- Mounts easily in control panel
- Connects to any Flowline level switch
- Interfaces directly with any horn, buzzer, valve, etc...
- Use LC41, LC42 version for automatic fill/empty operations
- Made in the USA

Switch-Pro LC Series Technical Specifications			
Model	***LC40-1001***	***LC41-1001***	***LC42-1001***
Price			
Weight (lb)	1.9	1.9	1.9
Supply Voltage	120VAC @ 50-60 Hz (can be field configured for 240VAC)		
Consumption	5W maximum		
Sensor Inputs	(1) two wire level switch	(2) two wire level switches	(3) two wire level switches
Sensor Supply	13.5 VDC @ 27mA		
LED Indication	Sensor (green), power (green) & relay (red)		
Contact Type	(1) SPDT relay (non-latching)	(1) SPDT relay (latching)	(2) SPDT relays, (one non-latching, one latching)
Contact Rating	250VAC @ 10A		
Contact Output	Selectable NO / NC		
Contact Latch	N/A	Selectable ON / OFF	Selectable ON / OFF
Contact Delay	0-60 seconds		
Ambient Temperature	-40°F to 158°F [-40°C to 70°C]		
Enclosure Mounting	35mm DIN rail or thru-hole panel mount		
Enclosure Material	PP (polypropylene), UL94VO		
Classificaton	General purpose		
Compliance*	CE (EN61326, EN61010-1); CSA LR 79326		

*T

Switch-Pro™ Remote Level Controllers

Wiring

LC40 series: 1 sensor input, 1 relay output.

Typical Application:
High level or low level alarm

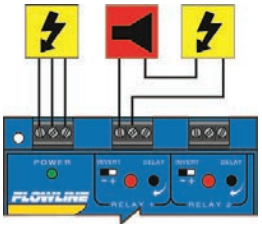
LC41 series: 2 sensor inputs, 1 relay output. The relay included is a latching relay.

Typical Application:
Automatic fill or empty

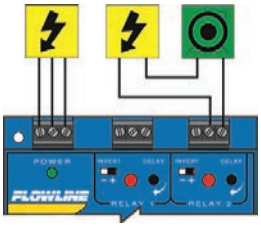
LC42 series: 3 sensor input, 2 relay outputs. One relay is latching and the other is a single input relay.

Typical Application:
Automatic fill or empty with high level or low level alarm

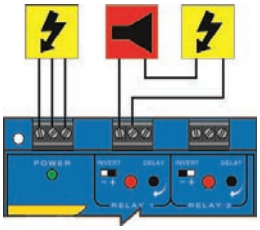
Low Level Alarm Output Wiring Example (One level sensor input required):



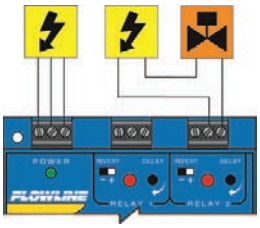
Automatic Fill Output Wiring Example (Two level sensor inputs required):



High Level Alarm Output Wiring Example (One level sensor input required):



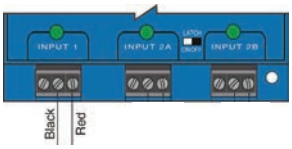
Automatic Empty Output Wiring Example (Two level sensor inputs required):



Symbol Key:

Power: 
Pump: 
Horn: 
Valve: 

Level Sensor Input Wiring Example:

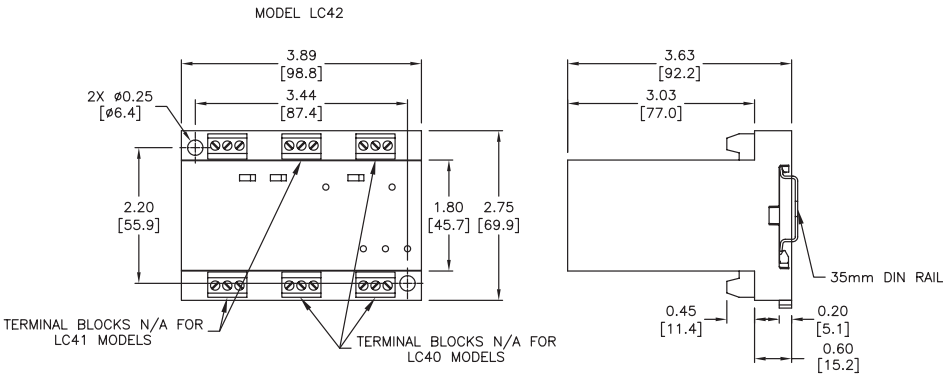


LZ12
LU10
LP15
LV10*

LV10 series can be wired using the White and Black wires for NO operations or the Red and Black wires for NC operations.

Dimensions

inches [mm]



See our website _____ for complete Engineering drawings.

Compatible Products

ProSense Float Level Switches

Switch-Tek™ Level Switch Sensors

Level Switch Accessories

Level Sensor Accessories					
Part No.	***Item Photo***	***Description***	***Quantity***	***Weight (lb)***	***Price***
LM45-1001-12		Flowline Switch-Pak level sensor extension installation fitting, polypropylene (PP) construction, 12 inch insertion length, 2 inch NPT male process connection, 3/4 inch NPT female sensor threads, 3/4 inch NPT male electrical junction box threads	1	1.1	
LM45-7001-0000		Flowline Switch-Pak level sensor extension installation fitting kit, polyvinyl chloride (PVC) construction, includes (1) fitting with 2 inch NPT male process connection, 3/4 inch NPT male electrical junction box threads and 3/4 inch PVC pipe socket; (1) fitting with 3/4 inch NPT female sensor threads and 3/4 inch female PVC pipe socket. Purchase 3/4 inch schedule 40 PVC pipe separately, cut to desired length and solvent weld to fittings in this kit.	1	0.7	
LC06-1001		Flowline Switch-Pro compact electrical junction box, polypropylene (PP) construction, screw cover with O-ring gasket, NEMA 4X rated, 3/4 inch NPT female mounting threads with 300 degree swivel base, 1/2 inch NPT female conduit entrance, removable 6-pole terminal strip	1	0.7	
LM90-1001		Cable gland, 1/2 inch NPT male thread, Buna N sealing gland accommodates a cable diameter range of 0.180 to 0.400 inches (4.6 to 10.2 mm), nylon housing, IP68 protection level	1	0.4	

Accessory Field Assembly Example

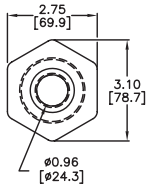
Order the following parts for field assembly: (1)
LC06-1001 - Junction box
(1) LM90-1001 - Cable gland
(1) LU10 Series ultrasonic level switch

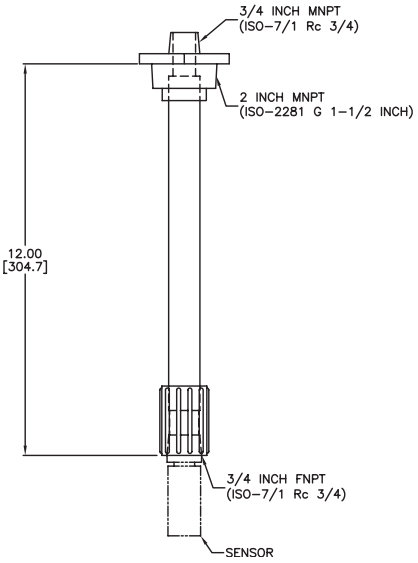
Level Switch Accessory Drawings

Dimensions

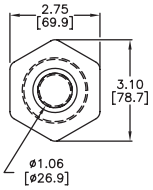
inches [mm]

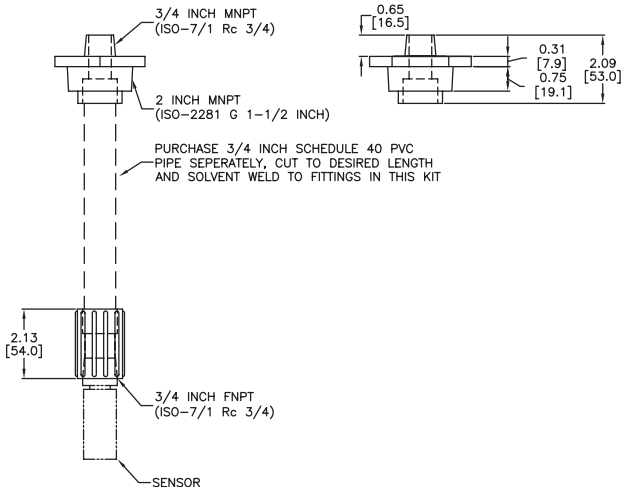
LM45-1001-12



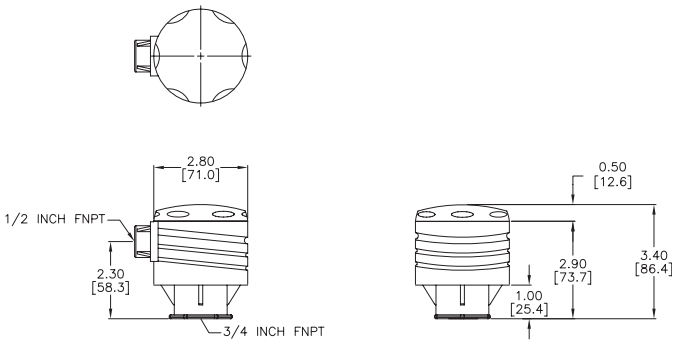


LM45-7001-0000





LC06-1001



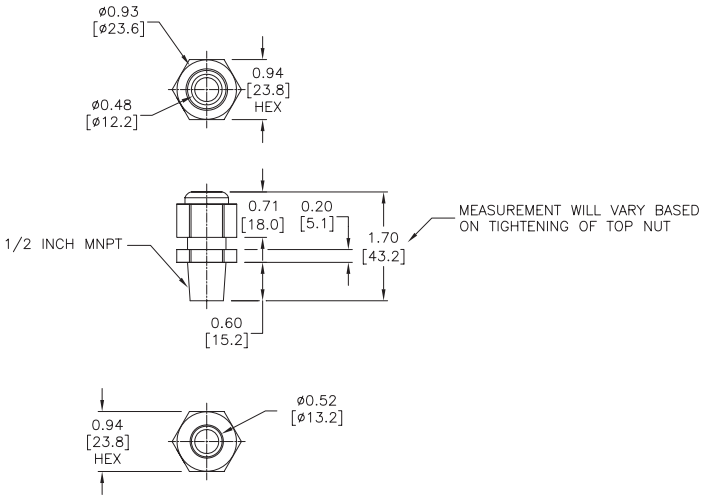
See our website _____ for complete Engineering drawings.

Level Switch Accessory Drawings

Dimensions

inches [mm]

LM90-1001



See our website _____ for complete Engineering drawings.