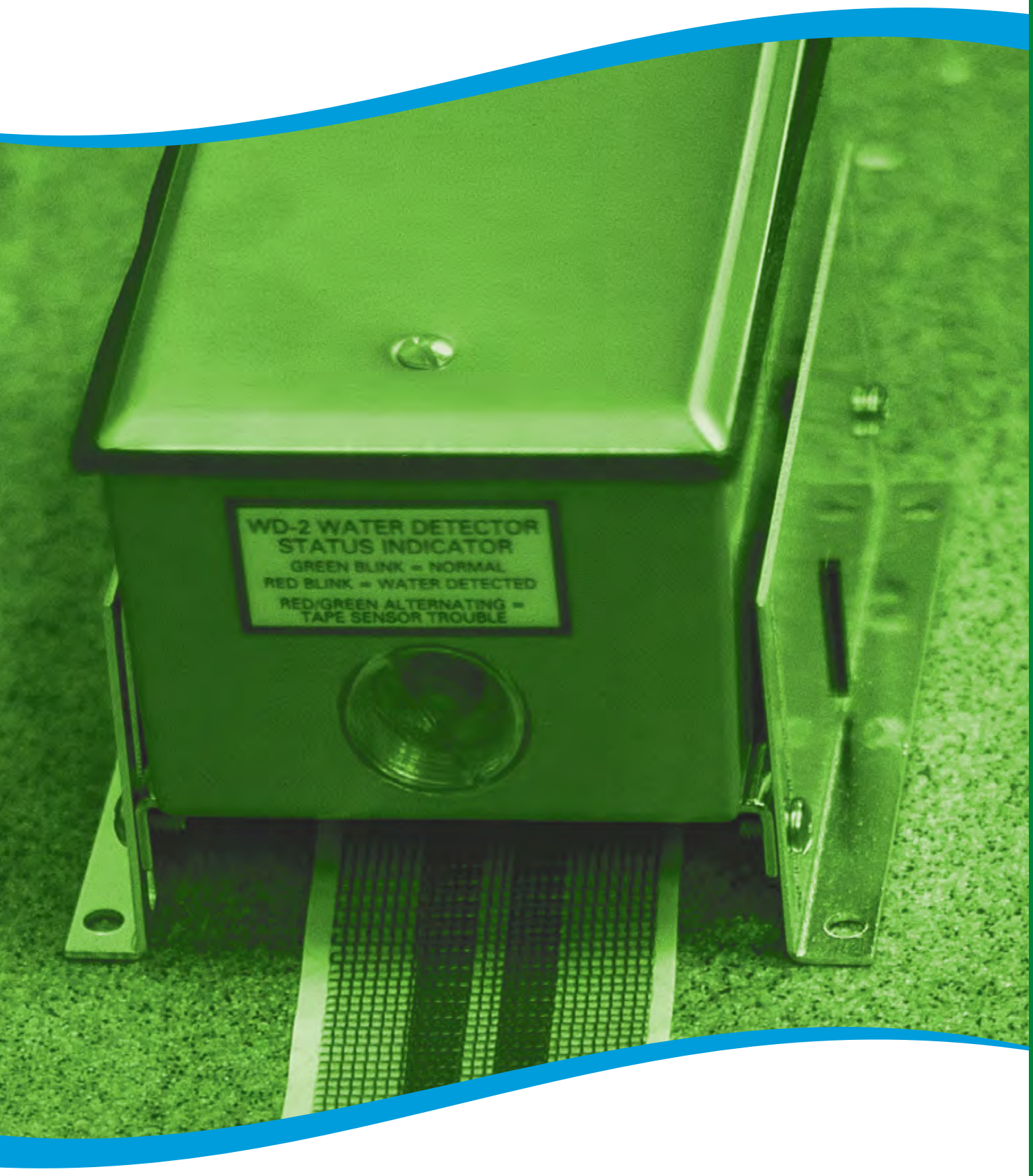
“Top-quality products that are always in stock.”



LEVEL

MADE IN USA

Products manufactured in the United States

NEW

Products that are new to the catalog

KCFS-LB pg. 507

DL14 pg. 497

WD1B pg. 512

Kele®

www.kele.com

Indicates New Products

ULTRASONIC LEVEL SWITCH, TRANSMITTER, AND CONTROLLER

DL14 SERIES ECHOPOD

DESCRIPTION

The **EchoPod DL14, 24 and 34 Series** ultrasonic level switches, transmitters and controllers provides non-contact measurement of fluid level in tanks up to 18' (5.5 m) in depth. The **EchoPod** is a compact multi-function sensor with the WebCal PC user interface for configuration and calibration. The **DLSeries** combines 4 relays, a 4-20 mA output, and control for 1 or 2 pumps or valves.The rugged PVDF enclosure is well suited for a wide range of corrosive, waste, or slurry type media. It can be broadly applied to atmospheric day tanks, process vessels, dispensers, pump lift stations and waste sumps. Level indication and control may be monitored via a local display or through the BAS.

DL14-00

FEATURES

- ***Provides switch, controller, and transmitter functions in one device***
- ***Replaces multi-point, conductivity, and pressure level devices***
- ***Free WebCal PC software provides fast and easy configuration***
- ***Well suited for corrosive and dirty applications***
- ***Maintenance free***
- ***Encapsulated, corrosion resistant submersible NEMA 4X enclosure***

APPLICATION

- ***Cooling tower tanks***
- ***Wastewater tanks***
- ***Diesel fuel tanks***
- ***Chemical feed tanks***
- ***Rinse tanks***

SPECIFICATIONS

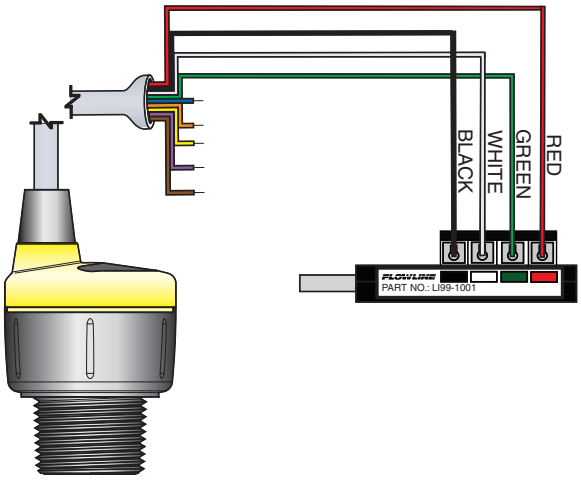
Supply Voltage	24 VDC, 35 mA maximum
Supply Watts	0.5W
Signal Output	4-20 mA, two wire loop
Maximum Output Impedance	400Ω @ 24 VDC
Contact Rating	1A maximum @ 24 VAC/VDC
Contact Type	4 - SPST relays
Deadband	
DL14	2" (5 cm)
DL24	4" (10 cm)
DL34	8" (20 cm)
Accuracy	
DL14	±0.125" (0.3 cm)
DL24/34	±0.2% of range
Temperature Effect	Automatic compensation
Measurement Range	
Dl14	Up to 49.2" (1.25m)
DL24	Up to 9.8' (3m)
DL34	Up to 18.0' (5.5m)
Beam Width	
DL14	2" (5 cm)
DL24	2" (5.08 cm)
DL34	3" (7.62 cm)
Configuration	Free WebCal software (USB port fob tool L99-1001 required)

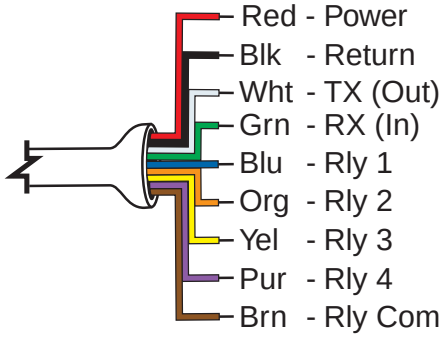
Fail Safe	Signal 4 mA, 20 mA, 21 mA 22 mA, or hold last signal Relay: Power loss Hold last signal Relay: Power on Hold last signal, open, closed
Resolution	
DL14	0.019" (0.05 cm)
DL24	0.039" (1 mm)
DL34	0.079" (2 mm)
Operating Temperature	20° to 160°F (-7° to 60°C)
Enclosure	Polycarbonate/ABS FR
Transmitter	PVDF
Cable jacket	Polyurethene
Enclosure Rating	Encapsulated, corrosion resistant, submersible, NEMA 4X
Process Connection	
DL14	1" NPT with Viton gasket
DL24	1" NPT (1" G) with Viton gasket
DL34	2" NPT (2" G) with Viton gasket
Cable Length	48" (1.2m)
Dimensions	
DL14	3.2"H x 2.0" diameter (8.1 x 5.1 cm)
DL24	4.9"H x 3.06" diameter (12.5 x 7.8 cm)
DL34	6.5"H x 3.06" diameter (16.5 x 7.8 cm)
Approvals	CE, RoHS
Warranty	1 year

ULTRASONIC LEVEL SWITCH, TRANSMITTER, AND CONTROLLER

DL14 SERIES ECHOPOD

WIRING



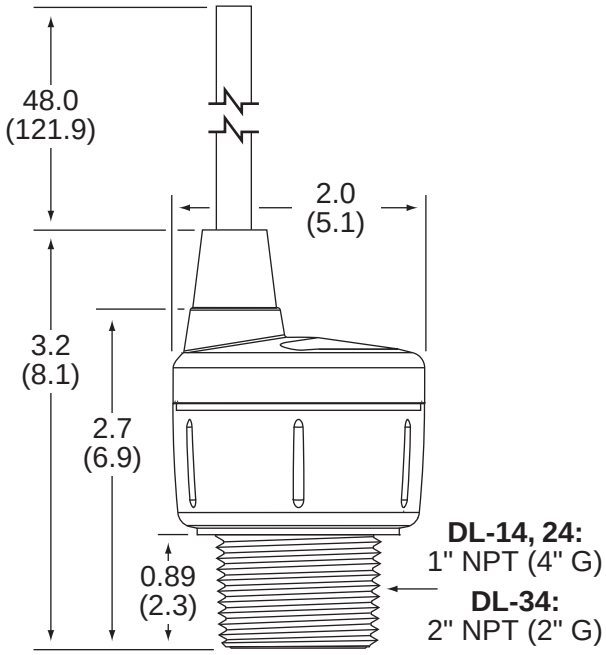


USB® Fob Interface

EchoPod communicates with WebCal through a USB® interface called a fob. Before plugging your fob into your computer's USB® port, be sure that you have installed WebCal on your computer.

Connect the red, green, white and black wires from EchoPod into the correct terminals on the fob. Tighten the screws on the terminals and plug your fob into the USB® port of your computer.

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION			
DL14	EchoPod level sensor, up to 49.2" (1.25m)			
DL24	EchoPod level sensor, up to 9.8' (3m)			
DL34	EchoPod level sensor, up to 18.0" (5.5m)			
	0	NPT process connection, DL14 & 24 - 1" NPT, DL34 - 2" NPT		
	1	Metric process connection, DL14 & 24 - 1" G, DL34 - 2" G		
		0	Without FOB USB adapter (order separately see related products)	
		1	Includes FOB USB adapter	
			C9	EchoPod sensor calibrated for one pump empty and Hi/Lo alarms
			C10	EchoPod sensor calibrated for one pump fill and Hi/Lo alarms
			C28	EchoPod sensor calibrated for two pump empty and Hi alarm
			C40	EchoPod sensor calibrated for four Hi alarms
			C48	EchoPod sensor calibrated for two Hi and two Lo alarms

Note: Specify alarm levels when ordering

RELATED PRODUCTS

LI99-1001 **Fob calibration key**

ULTRASONIC LEVEL TRANSMITTER
DL10

DESCRIPTION

The compact **Model DL10 Ultrasonic Level Transmitter** provides non-contact liquid level measurement up to 49.2" (1.25m) with reversible 4-20 mA output. The **Model DL10** is ideal for corrosive, sticky, and dirty media. Transmitters can be quickly configured using WebCal software. The software offers pre-programmed menus, tank setpoint graphics, and custom wiring diagrams. User can define loop failsafe, start-up condition, output at empty and specific tank levels.

FEATURES

- ***Ideal for small tank applications***
- ***Simple configuration***
- ***PC enclosure designed to be corrosion resistant***
- ***Minimal dead band optimizes filling capacity***
- ***Adjustable loop failsafe***
- ***2" (5.1 cm) beam diameter for restricted spaces***

APPLICATION

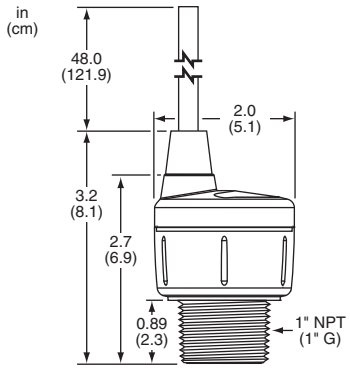
- ***Small atmospheric day tanks***
- ***Skid or process vessels***
- ***Lift stations***
- ***Drums***
- ***Sumps***
- ***Chemical feed applications***

SPECIFICATIONS

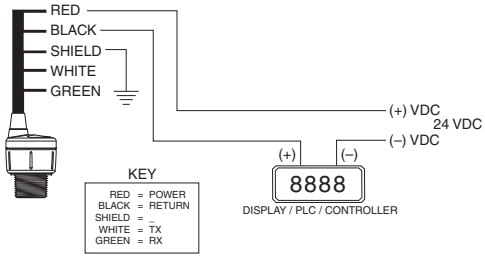
Supply Voltage	24 VDC, 25 mA
Signal Output	4-20 mA loop powered
Maximum Output Impedance	400Ω @ 24 VDC
Memory	Non-volatile
Deadband	2" (5.1 cm)
Accuracy	±0.125" (3 mm)
Operating Pressure	30 psig (206.9 kPa)
Process Temperature	20° to 140°F (-7° to 60°C)
Measurement Range	2" to 49.2" (50.8 to 1.25m)
Beam Width	2" (5.1 cm)
Fail Safe	4/20/21/22 mA or hold last
Resolution	0.019" (0.5 mm)
Temperature Compensation	Automatic
Operating Temperature	-31° to 140°F (-35° to 60°C)
Enclosure	Polycarbonate, NEMA 6P
Process Connection	1" NPT
Cable Length	48" (1.2m)
Dimensions	3.2"H x 2.0"W x 2.0"D (8.1 x 5.1 x 5.1 cm)
Approvals	CE, FM
Weight	3.0 lbs (1.4 kg)
Warranty	1 year

DL10

DIMENSIONS



TYPICAL WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION
DL10-00	Ultrasonic level transmitter
DL10-01	Ultrasonic level transmitter with fob

	RELATED PRODUCTS	PAGE
LI99-1001	Fob calibration key	**498**

ULTRASONIC LEVEL TRANSMITTER

LU2 SERIES

DESCRIPTION

The **LU2 Series** ultrasonic level transmitter provides non-contact liquid level measurement with a reversible 4-20 mA output. Models are available in three measurement ranges from 8.2' to 32.8' (2.5 to 10m), and an accuracy of ±0.2%. The **LU2 Series** is ideal for ultrapure, corrosive, waste, and slurry applications. Transmitters can be quickly configured using WebCal software. The software offers pre-programmed menus, tank set point graphics, and custom wiring diagrams. User can define loop failsafe, start-up condition, output at empty, and specific tank levels.

LU2 Series

FEATURES

- ***8.2', 24.6', 32.8' (2.5, 7.5, or 10m) ranges available***
- ***Simple configuration***
- ***Polycarbonate enclosure designed to be corrosion resistant and submersible***
- ***Minimal deadband optimizes the filling capacity of tanks and sumps***
- ***Adjustable loop failsafe***
- ***2" (5.1 cm) beam diameter for applications with restricted space***

APPLICATIONS

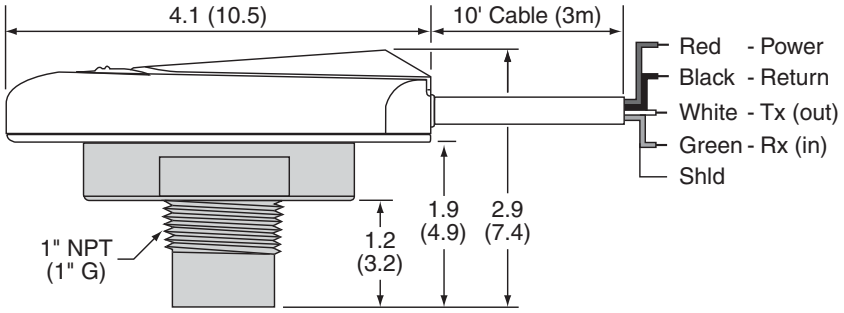
- ***Cooling tower sumps***
- ***Tanks***
- ***Wells***
- ***Ice storage***
- ***Waste sumps***
- ***Process vessels***

SPECIFICATIONS

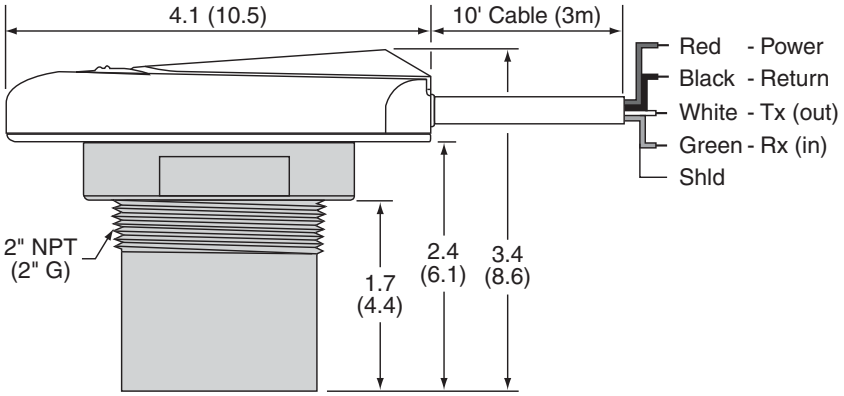
Supply Voltage	24 VDC
Signal Output	4-20 mA two-wire
Maximum Output Impedance	500Ω @24VDC
Memory	Non-volatile
Deadband	
LU27	4" (10 cm) from sensor
LU28/29	8" (20 cm) from sensor
Accuracy	±0.2% of span in air
Operating Pressure	30 psig (206.9 kPa)
Process Temperature	-4° to 140°F (-20° to 60°C)
Measurement Range	
LU27	4" to 8.2' (10 cm to 2.5m)
LU28	8" to 24.6' (20 cm to 7.5m)
LU29	8" to 32.8' (20 cm to 10m)
Beam Width	
LU27	2" (5.1 cm)
LU28/29	3" (7.6 cm)

Fail Safe	Selectable: 4 mA, 20 mA, 21 mA 22 mA, or hold last signal
Resolution	
LU27	0.019" (0.5 mm)
LU28/29	0.079" (2.0 mm)
Operating Temperature	-31° to 140°F (-35° to 60°C)
Enclosure	Polycarbonate
Enclosure Rating	NEMA 6P (UL 50 Type 6P)
Process Connection	
LU27	1" NPT
LU28/29	2" NPT
Cable Length	10' (3m) length
Dimensions	2.9"H x 4.1"W x 4.1"D (7.4 x 10.5 x 10.5 cm)
Approvals	CE, FM, RoHS
Warranty	1 year

DIMENSIONS



LU27



LU28/29

ORDERING INFORMATION

MODEL	DESCRIPTION
LU27-01	Ultrasonic level transmitter with fob, 8.2 ft (2.5m)
LU27-01-B	Ultrasonic level transmitter with fob, 8.2 ft (2.5m) with bracket
LU27-01-B-C	Ultrasonic level transmitter with fob, 8.2 ft (2.5m) with bracket, custom calibration
LU27-01-C	Ultrasonic level transmitter with fob, 8.2 ft (2.5m) custom calibration
LU28-01	Ultrasonic level transmitter with fob, 24.6 ft (7.5m)
LU28-01-B	Ultrasonic level transmitter with fob, 24.6 ft (7.5m) with bracket
LU28-01-B-C	Ultrasonic level transmitter with fob, 24.6 ft (7.5m) with bracket, custom calibration
LU28-01-C	Ultrasonic level transmitter with fob, 24.6 ft (7.5m) custom calibration
LU29-01	Ultrasonic level transmitter with fob, 32.8 ft (10m)
LU29-01-B	Ultrasonic level transmitter with fob, 32.8 ft (10m) with bracket
LU29-01-B-C	Ultrasonic level transmitter with fob, 32.8 ft (10m) with bracket, custom calibration
LU29-01-C	Ultrasonic level transmitter with fob, 32.8 ft (10m) custom calibration

	RELATED PRODUCTS	PAGE
LI99-1001	Fob calibration key	**498**
LM50-1001	2" Mounting bracket (included with "B" option)	**396**
LM50-1001-1	1" mounting bracket (included with "B" option)	**501**

ULTRASONIC LEVEL TRANSMITTERS

LU8 SERIES

DESCRIPTION

The general purpose **LU8 Series** ultrasonic level transmitter provides non-contact liquid level measurement up to 32.8' (10m), with an accuracy of ±0.2%. Setup is fast and easy using the push button menu and LCD display. The **LU8 Series** features fail-safe intelligence with diagnostic feedback for easy troubleshooting. The electronics are housed in a rugged NEMA 4X enclosure–ideal for ultrapure, corrosive, waste, and slurry applications.

LU8 Series

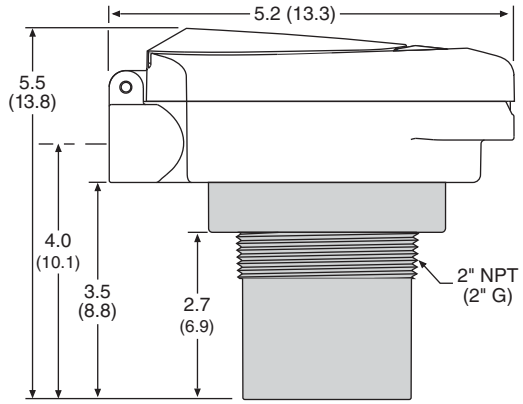
FEATURES

- ***16.4', 26.2', 32.8' (5, 8, or 10m) ranges available***
- ***Simple configuration***
- ***Polycarbonate/ABS enclosure rated NEMA 4X (IP65)***
- ***Fail-safe intelligence***
- ***3" (7.6 cm) beam diameter for applications with restricted space***
- ***Six segment LCD display indicates liquid level in inches or centimeters***

SPECIFICATIONS

Supply Voltage	12-28 VDC
Signal Output	4-20 mA, two-wire
Maximum Output Impedance	500Ω @ 24 VDC
Memory	Non-volatile
Deadband	
LU81	4" (10 cm)
LU83	8" (20 cm)
LU84	12" (30 cm)
Accuracy	±0.2% of span in air
Operating Pressure	30 psig (206.9 kPa)
Process Temperature	-4° to 140°F (-20° to 60°C)
Measurement Range	
LU81	4" to 16.4' (10 cm to 5m)
LU83	8" to 26.2' (20 cm to 8m)
LU84	12" to 32.8' (30 cm to 10m)
Beam Width	3" (7.6 cm)
Fail Safe	Selectable: 4mA, 20 mA, 21 mA, 22 mA, or hold last signal
Resolution	
LU81/83	0.039" (1 mm)
LU84	0.078" (2 mm)
Temperature Compensation	Automatic
Operating Temperature	-40° to 160°F (-40° to 71°C)
Enclosure Rating	NEMA 4X (IP65)
Process Connection	2" NPT
Dimensions	5.5"H X 5.2"W X 5.2"D (13.8 X 13.3 X 13.3 cm)
Approvals	CE
Weight	3.0 lbs (1.4 kg)
Warranty	1 year

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
LU81-5101	Ultrasonic level transmitter, 16.4 ft (5m)
LU81-5101-B	Ultrasonic level transmitter, 16.4 ft (5m) with bracket
LU83-5101	Ultrasonic level transmitter, 26.2 ft (8m)
LU83-5101-B	Ultrasonic level transmitter, 26.2 ft (8m) with bracket
LU84-5101	Ultrasonic level transmitter, 32.8 ft (10m)
LU84-5101-B	Ultrasonic level transmitter, 32.8 ft (10m) with bracket

	RELATED PRODUCTS	PAGE
LI99-1001	Fob calibration key	**498**

ULTRASONIC LEVEL SWITCH
LU77/78

FLOWLINE

DESCRIPTION

The **Model LU77/78** ultrasonic level switch provides non-contact liquid level measurement up to 24.6' (7.5m) with integral three-channel relay control. Each relay can be configured for a single setpoint alarm or two latched setpoints for automatic fill or empty in simplex, duplex, or triplex control modes. Calibration is quick and easy using a sequence of push-button entries. Local LCD indication reveals level values and relay status. The **LU77/78** is designed with a NEMA 4X enclosure, suitable for outdoor applications.

MADE IN USA

LU77

FEATURES

- ***Select sensing range of 8.2' (2.5m) or 24.6' (7.5m)***
- ***LCD display with digital push-button calibration***
- ***NEMA 4X enclosure***
- ***Non-volatile memory***
- ***3" maximum beam width***
- ***Integral timer for pump or valve delay***
- ***Pump simplex, duplex, or triplex control modes***

LU78

APPLICATIONS

- ***Cooling tower sumps***
- ***Tanks***
- ***Wells***
- ***Water/waste sumps***
- ***Process vessels***
- ***Lift stations***
- ***Day tanks***

RoHS CE

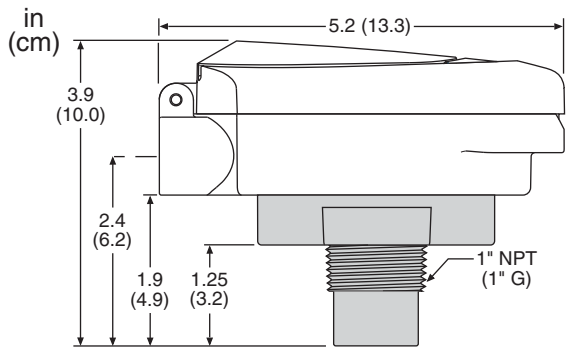
SPECIFICATIONS

Supply Voltage	95-250 VAC
Memory	Non Volatile
Relay Output	3 SPDT, 60 VA, 1A maximum
Deadband	
LU77	4" (10.1 cm)
LU78	8" (20.3 cm)
Repeatability	±0.25" (6.35 mm)
Operating Pressure	30 psig (206.9 kPA)
Process Temperature	-4 to 140°F (-20° to 60°C)
Measurement Range	
LU77	4" to 8.2' (10 cm to 2.5m)
LU78	8" to 24.6' (20 cm to 7.5m)
Beam Width	3" (7.6 cm) diameter
Fail Safe	Selectable: open, closed or last hold
Operating Temperature	-4° to 140°F (-20° to 60°C)
Enclosure	PVDF, Polycarbonate
Enclosure Rating	NEMA 4X (IP65)
Conduit Connection	Dual, 1/2" NPT
Process Connection	
LU77	1" NPT
LU78	2" NPT
Dimensions	5.2"H x 5.2"W x 3.9"D (13.3 x 13.3 x 10.0 cm)
Approvals	CE, RoHS
Warranty	1 year

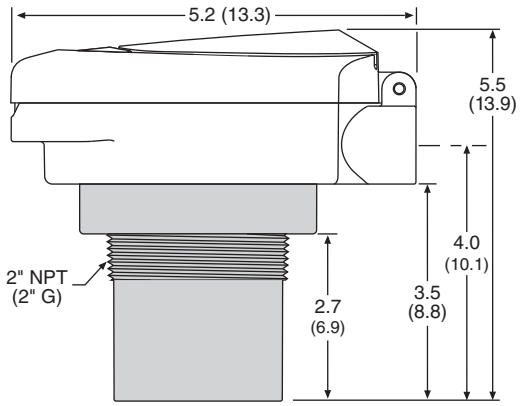
ULTRASONIC LEVEL SWITCH

LU77/78

DIMENSIONS



LU77

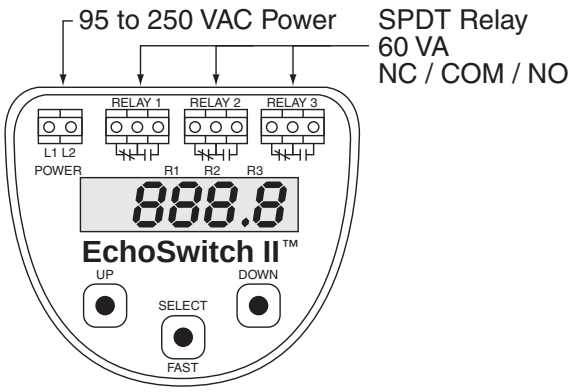


LU78

CONFIGURATION

The **LU77/78** is configured using three push buttons. To access the configuration menu, hold down the **SELECT** button for five seconds. The display will scroll through the top level of the configuration menu [units, tank, relay 1, relay 2, relay 3, safe, mplex, help, run]. Press the **SELECT** button to choose the displayed menu item. Use the **UP** and **DOWN** buttons to set parameters. Hold down the **SELECT** button to save. Select EXIT to return to the main configuration menu.

To return to operational mode, press **SELECT** when **RUN** appears on the display.



ORDERING INFORMATION

MODEL	DESCRIPTION
LU77-5005	Ultrasonic level switch, up to 8.2 ft (2.5m)
LU77-5005-B	Ultrasonic level switch, up to 8.2 ft (2.5m) with mounting bracket
LU78-5005	Ultrasonic level switch, up to 24.6 ft (7.5m)
LU78-5005-B	Ultrasonic level switch, up to 24.6 ft (7.5m) with mounting bracket

RELATED PRODUCTS

LM50-1001	2" Mounting bracket (included with "B" option)
LM50-1001-1	1" mounting bracket (included with "B" option)

DESCRIPTION

The **MLS Serie**s multi-level switch can be customized to meet application requirements. The unit can be configured with up to four independent switch points and stem lengths up to 48" (122 cm). The **MLS Series** is mounted vertically and shipped in the normally open position. For normally closed operation, simply invert the float.

MLS

FEATURES

- ***Up to four independent switch points***
- ***50 VA SPST switch operation (120-240 VAC)***
- ***Easy installation***
- ***Hermetically sealed***

OPERATION

Mounting

The **MLS Series** multi-point vertically mounted liquid level float switch is available with a variety of threaded or flanged mountings. These devices can be installed from the bottom or top of the tank. The switches should be mounted in an area clear of turbulence or direct streams. Contact Kele for flanged mounting options. For threaded mounting apply either Teflon® tape or appropriate thread sealant to mounting threads to prevent galling. Engage thread by hand to avoid damage. Using a wrench, rotate the unit clockwise until threads are tight in mounting.

Preventive Maintenance

Periodic inspections are a necessary means to keep your level control in good working order. The MLS Series is a safety device that protects the valuable equipment it serves. A systematic program of preventive maintenance should be implemented when the MLS Series multi-level float switch is placed into service. Please review the operations and installation manual for proper maintenance.

Theory of Operation

Switching action is achieved through the use of a magnet inside the float assembly and its interaction with a switch mechanism. Separating the float magnet and the switch is a non-magnetic pressure barrier. As the liquid level changes, the float along with the float magnet moves. The magnetic field of the float magnet causes a change of state of the switch, making or breaking an electrical circuit.

SPECIFICATIONS

Operating Pressure	
Stainless steel	300 psig (20.6 bar)
Buna-N	150 psig (10.3 bar)
Specific Gravity	
Buna-N	0.80
Stainless steel	0.95
Operating Temperature	
Stainless steel	-40° to 300°F (-40° to 149°C)
Buna-N	-40° to 180°F (-40° to 82°C)
Wetted Materials	Brass stem, Buna-N float, 316 SS stem, Buna-N float, 316 SS stem, 316 SS float
Mounting Orientation	Vertical (± 30°)
Process Connection	1/2" NPT(M), 1" NPT(M)
Dimensions	Up to 48" L x 1.0" diameter
Approvals	cURus
Warranty	1 year

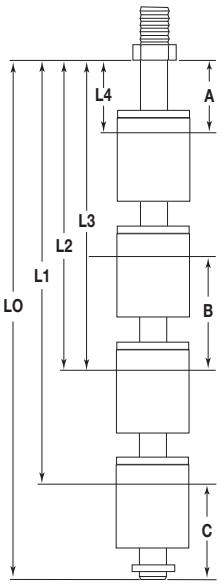
MULTI-LEVEL SWITCH

MLS SERIES

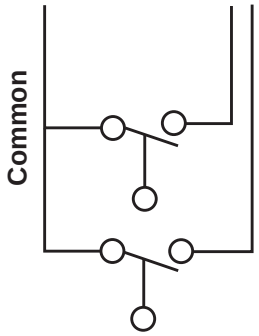
MLS ACTUATION LEVELS

A = Minimum distance from actuation point to bottom of mounting.
B = Minimum distance between actuation levels.
C = Minimum distance from end of unit to lowest actuation point.

Notes:
1. A, B, and C dimensions are based on a specific gravity of 1.0.
2. Minimum distances
   A= 1" (2.5 cm)
   B= 1.75" (4.4 cm)
   C= 1" (2.5 cm)
3. Actuation levels are calibrated on descending fluid level, with water as the fluid, unless otherwise specified.
4. Standard tolerance on actuation levels is ± 1/8" (3mm).



SWITCH WIRING



Wiring Options	Wire Color
Common Wire	Black
	NO or NC
L1	Red
L2	Yellow
L3	Blue
L4	Brown
L5	Orange

Notes: All SPST switches are set normally open in their "dry", "no level" condition unless specified otherwise. "White-Red" and "White-Yellow" denote single white wire with red or yellow stripes.

FLOAT SIZES AND OPERATING SPECIFICATONS

Float Materials	Dimensions	Temperature	Pressure	Minimum Specific Gravity
316 stainless steel	1" × 1"	-40° to +300° F	300 psig	0.95
Buna-N	1" × 1"	-40° to +180° F	150 psig	0.80

ORDERING INFORMATION

MODEL	DESCRIPTION
MLS	Multi-level switch
	STEM & FLOAT MATERIALS
1	Brass stem/Buna-N float
2	316 Stainless stem/Buna-N float
3	316 Stainless stem/316 Stainless float
	MOUNTING TYPE
05	1/2" NPT
10	1" NPT
	OVERALL LENGTH
LO	Total length in inches, (maximum 48", minimum is L1 + 1")
	ACTUATIOIN LEVELS
L1	First float switch point. Specify in (inches)
L2	Second float switch point. Specify in (inches), blank if none
L3	Third float switch point. Specify in (inches), blank if none
L4	Forth float switch point. Specify in (inches), blank if none
	ENCLOSURE
	None
1	Cast aluminum NEMA 4/7/9 (only with 1" NPT)

MLS | 1 | - | 05 | - | 47 | - | L1(36)L2(22) | - | ☐

Example: **MLS-1-05-47-L1(36)L2(22)** Two float level switch with brass stem/Buna-N float, 1/2" NPT mounting, 47" total length.

For liquids other than water, consult Kele Technical Support.

DESCRIPTION

The **KCFS Series** float switches provide a cost effective solution for applications such as condensate drip pan monitoring. The **KCFS-SC** features a spring clip and the **KCFS-LB** an L bracket for mounting.

FEATURES

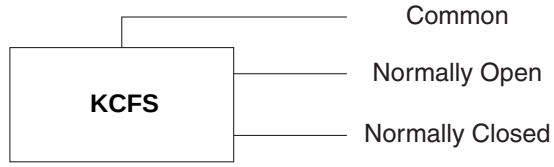
- ***Simple installation***
- ***Low cost***
- ***SPDT contacts***

KCFS-SC **KCFS-LB**

SPECIFICATIONS

Switch	5A @ 125 VAC 3A @ 250 VAC	**Dimensions**	3.5" (8.9 cm) clip to float
Operating Temperature	Maximum 150°F (70°C)	**Wiring Terminations**	6" (15 cm) leads 18 AWG
Mounting Orientation	Horizontal	**Warranty**	1 year

WIRING



ORDERING INFORMATION

MODEL	DESCRIPTION
KCFS-LB	Float switch with L bracket mount
KCFS-SC	Float switch with spring clip mount

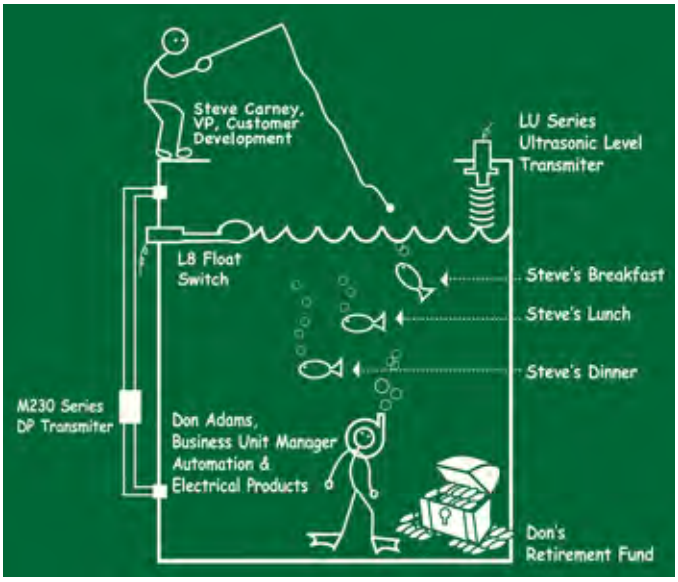
On the Level

Level measurement is done in many ways in the industrial world. However, due to the more limited scope (and budget) of most BAS installations, we commonly deal with only four:

- ***the float switch,***
- ***the differential pressure switch,***
- ***the differential pressure transmitter,***
- ***and the ultrasonic level transmitter.***

Float switches are the simplest. They float on top of the liquid, and through a magnetic coupling they operate a switch to signal whether the liquid level is above or below the point at which they are mounted. Of course, there is a small distance between the level at which the switch changes state on rising fluid and the level at which it changes state on falling fluid, to prevent rapid cycling. This distance is known as the float's deadband.

Differential pressure switches operate just like float switches, but instead of floating on top of the liquid, they sense level through a pressure connection beneath the surface. The distance from the pressure connection to the surface of the liquid is directly proportional to the difference in pressure between the two points. ***Differential pressure transmitters*** work on the same principle, but they produce a linear signal that indicates level over a calibrated range instead of a simple on/off indication.



Ultrasonic level transmitters mount at some distance above the top of the liquid. They transmit a signal down toward the liquid and listen for its echo to return then calculate the distance covered by measuring the elapsed time. These can produce a linear signal that is proportional to level over a range, and can also be equipped with relays for alarm or control.

FLOAT LEVEL SWITCHES

FS7 SERIES

DESCRIPTION

The **FS7 Series Float Level Switches** provide an economic solution to monitoring the most common liquid levels applications in tanks and other vessels. Magnets within the float actuate the sealed reed switch on rising or falling levels. These switches are mounted in the vertical position and are shipped in the normally open position. The switch action can easily be reversed (normally closed position) by removing the float, rotating it 180° (end-to-end), and replacing the float on the stem.

FS7-BN

FS7-SS

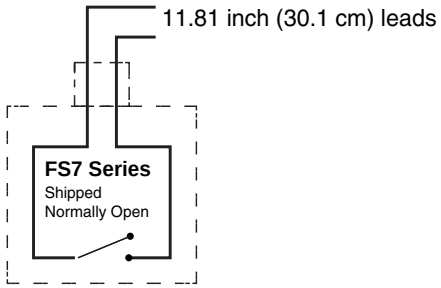
FEATURES

- ***Low cost***
- ***50 VA SPST switch operation (120-240 VAC)***
- ***Easy installation***
- ***Vertical mounting***

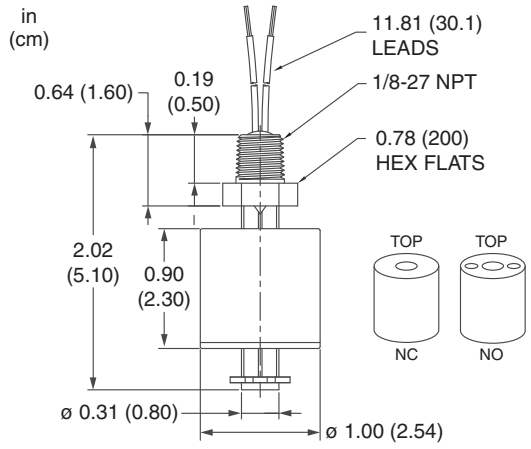
APPLICATIONS

- ***Condensate vessels***
- ***Storage tanks***
- ***Humidifiers and de-humidifiers***
- ***Chemical storage***
- ***Chillers***

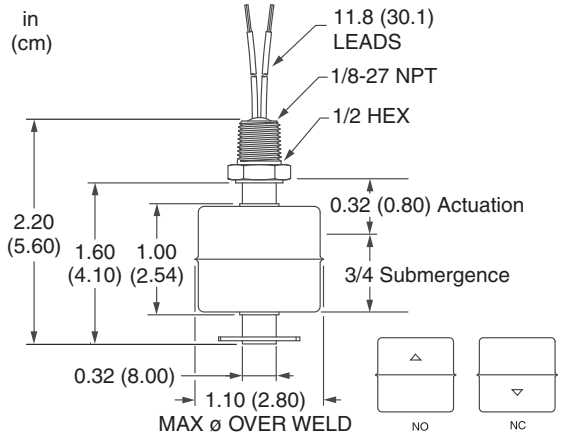
WIRING



DIMENSIONS



ACTUATION LEVELS



SPECIFICATIONS

Model Number	Material (stem/ float)	Specific Gravity	Temperature Limits	Operating Pressure	Installation	Mounting Connection	Dimensions	Weight
FS7-BN	PS/Buna-N	0.7	-4° to 176°F (-20° to 80°C)	57 psig	Vertical	1/8" NPT	2.0"L Ø x 1.0"	0.4 oz (11g)
FS7-SS	SS/SS	0.7	-4° to 248°F (-20° to 120°C)	170 psig	Vertical	1/8" NPT	2.2"L Ø x 1.1"	1.0 oz (28g)

Note: PS = Polysulfone, SS = 316 Stainless steel.

ORDERING INFORMATION

MODEL	DESCRIPTION
FS7-BN	Vertical float switch, Polysulfone stem / Buna-N float, 11.81" (30 cm) leads
FS7-SS	Vertical float switch, 316 Stainless Steel stem / 316 Stainless Steel float, 11.8" (30 cm) leads

DESCRIPTION

The **F-7 Series Float Level Switches** provide an economical solution to monitoring liquid levels in tanks and other vessels. Magnets within the float actuate the hermetically sealed reed switch on rising or falling levels. Switches are available in horizontal or vertical mounting configurations. Vertical floats are shipped in the normally open position. The switch action can easily be reversed by removing the float, rotating it 180° (end-to-end), and replacing the float on the stem. The operation of the horizontal floats can be changed by rotating the entire switch 180°.

FEATURES

- ***Low cost***
- ***50 VA SPST switch operation (120-240 VAC)***
- ***Hermetically sealed***
- ***Easy installation***
- ***Vertical or horizontal mounting***

APPLICATION

- ***Condensate vessels***
- ***Storage tanks***
- ***Humidifiers and de-humidifiers***
- ***Chemical storage***
- ***Chillers***

F7-BT

F7-HIP

F7-HPP

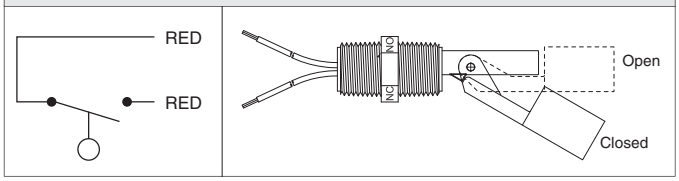
F7-HSS

F7-LL

F7-SS

F7-PS

WIRING



SPECIFICATIONS

Model Number	Material (stem/ float)	Specific Gravity	Temperature Limits	Operating Pressure	Installation	Mounting Connection	Dimensions	Weight
F7-BT	PS/Buna-N	0.75	-40° to 180°F (-40° to 82°C)	150 psig	Vertical	1/8" NPT	2.21"L Ø x 1.0"	1.6 oz (45g)
F7-PS	PS/PS	0.65	-40° to 225°F (-40° to 107°C)	50 psig	Vertical	1/8" NPT	2.21"L Ø x 1.0"	1.6 oz (45g)
F7-SS	SS/SS	0.90	-40° to 300°F (-40° to 149°C)	400 psig	Vertical	1/8" NPT	2.06"L Ø x 1.0"	3.2 oz (91g)
F7-LL	PS/Buna-N	0.75	-40° to 180°F (-40° to 82°C)	150 psig	Vertical	1/8" NPT	1.62"L Ø x 1.13"	1.6 oz (45g)
F7-HPP	PP/PP	0.55	-40° to 150°F (-40° to 66°C)	100 psig	Horizontal (Ext)	1/2" NPT	4.24"L Ø x 0.69"	1.4 oz (40g)
F7-HIP	PP/PP	0.55	-40° to 150°F (-40° to 66°C)	100 psig	Horizontal (Int)	5/8"-11	3.94"L Ø x 0.69"	1.4 oz (40g)
F7-HSS	SS/SS	0.80	-40° to 300°F (-40° to 149°C)	300 psig	Horizontal (Ext)	1/2" NPT	4.24"L Ø x 0.69"	3.3 oz (94g)

Note: PS = Polysulfone, PP = Polypropylene, SS = 31 Stainless steel.

ORDERING INFORMATION

MODEL	DESCRIPTION
F7-BT	Vertical float switch, Polysulfone stem / Buna-N float
F7-PS	Vertical float switch, Polysulfone stem / Polysulfone float
F7-SS	Vertical float switch, 316 Stainless Steel stem / 316 Stainless Steel float
F7-LL	Vertical low level float switch, Polysulfone stem / Buna-N float
F7-HPP	External horizontal float switch, Polypropylene stem / Polypropylene float
F7-HIP	Internal horizontal float switch, Polypropylene stem / Polypropylene float
F7-HSS	External horizontal float switch, 316 Stainless Steel stem / 316 Stainless Steel float

STAINLESS STEEL FLOAT LEVEL SWITCH

F8-SSL

DESCRIPTION

The **Model F8-SSL Stainless Steel Float Level Switch** is designed for high pressure or high temperature level monitoring applications. Magnets within the float actuate the hermetically sealed reed switch on rising or falling levels. The unit is mounted vertically and shipped in the normally open position. For normally closed operation, simply invert the float.

FEATURES

- ***High pressure and high temperature performance***
- ***50 VA SPST switching***
- ***Hermetically sealed***
- ***Easy installation***
- ***Vertical mounting***
- ***Normally open or closed operation***

F8-SSL

ORDERING INFORMATION

MODEL	DESCRIPTION
F8-SSL	Vertical float switch

SPECIFICATIONS

Contact Rating	50 VA, SPST, NO/NC
Specific Gravity	0.75
Operating Temperature	-40° to 300°F (-40° to 149°C)
Wetted Materials	316 Stainless Steel (stem/float)
Mounting Orientation	Vertical
Process Connection	1/4" NPT(M)
Dimensions	2.06" L x 1.0" diameter
Approvals	cURus, File E203716
Wiring Terminaltions	2 Red lead wires
Weight	3.2 oz (91g)
Warranty	1 year

MECHANICAL FLOAT SWITCH

NG2DW1500B

DESCRIPTION

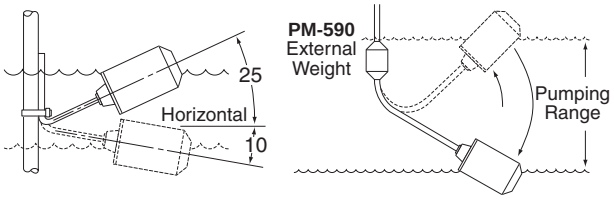
The Model NG2DW1500B is an economical mechanical float switch. The switch can be installed by tie-wrapping it to a support structure or by adding an external weight to the cable. The unit is ultrasonically welded and potted for a complete seal. SPDT contacts are included so the unit can be used to empty or fill a tank or sump.

FEATURES

- ***SPDT mechanical switch***
- ***10A contacts rated for 1/4 hp***
- ***Float suitable for sewage and high temperature***
- ***CPE-jacketed 15' (4.6m) cord***
- ***Extra cord weight available***

NG2DW1500B

TYPICAL INSTALLATION



ORDERING INFORMATION

MODEL	DESCRIPTION
NG2DW1500B	Mechanical float switch
PM-590	External weight 1.27 lb (0.58 kg)

SPECIFICATIONS

Contact Rating	10A 120/240 VAC, 1/4 hp 120/240 VAC
Contact Configuration	SPDT
Operating Temperature	140°F (60°C) maximum
Wetted Materials	ABS plastic
Operation Angle	25 degrees above, 10 degrees below horizontal
Wiring	
Tank full	Black-red closed
Tank empty	Black-white closed
Cable Length	15' (4.6m)
Cable Type	16/3 CPE jacketed
Dimensions	4.6"H x 2.6" diameter (11.7 X 6.6 cm)
Approvals	cURus File E93774, CSA
Weight	1.65 lb (0.7 kg)
Warranty	1 year

GENERAL-PURPOSE FLOAT SWITCH

L8

DESCRIPTION

The **Model L8** is an excellent, low-cost, general-purpose float switch. It is magnetically actuated for long life and decreased maintenance, with a high resistance to chemicals.

L8

FEATURES

- ***UL recognized component, CE approved***
- ***Polyphenylene sulfide float***
- ***Magnetically actuated***
- ***Good for specific gravities 0.6 and greater***
- ***1" NPT(M) mounting***

SPECIFICATIONS

Contact Rating	5A @ 125/250 VAC	**Dimensions**	8.31" L (21.1 cm)
Contact Type	SPDT	**Wiring Terminations**	18 AWG, 18" (460 mm) long
Operating Pressure	150 psig (10.34 bar)	**Red**	Normally closed
Specific Gravity	0.6 minimum	**Blue**	Normally open
Operating Temperature	212°F (100°C) maximum	**Black**	Common
Mounting	Horizontal with index arrow pointing down	**Approvals**	CE, UL 508 for US and Canada.
		Weight	0.65 lb (0.3 kg)
Process Connection	1" NPT	**Warranty**	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
L8	General-purpose float switch

KELE WATER DETECTOR

WD-1B

DESCRIPTION

The **WD-1B** water detector features gold-plated probes and microchip technology for dependable detection of conductive liquids. The **Model WD-1B** can be operated from 11-27 VAC/VDC. For application flexibility, SPDT contacts are provided to connect to a monitoring system. A height-adjustable, cast-aluminum, weatherproof enclosure is standard. A green LED visible outside the box indicates power. A red LED indicates water detected. The **Model WD-1B** is also available with an external tape style sensor, the Model WD-2-T.

WD-1B

FEATURES

- ***Weatherproof enclosure***
- ***Easy to install***
- ***SPDT alarm contacts***
- ***11-27 VAC/DC(50/60 Hz)***
- ***Reliable operation***
- ***LEDs for power and alarm indication (green, red)***
- ***Adjustable detection level***

OPERATION

The **Model WD-1B** can be used with any contact-closure monitoring panel. The SPDT contacts may be wired normally open or normally closed, allowing wiring flexibility to handle most installations.

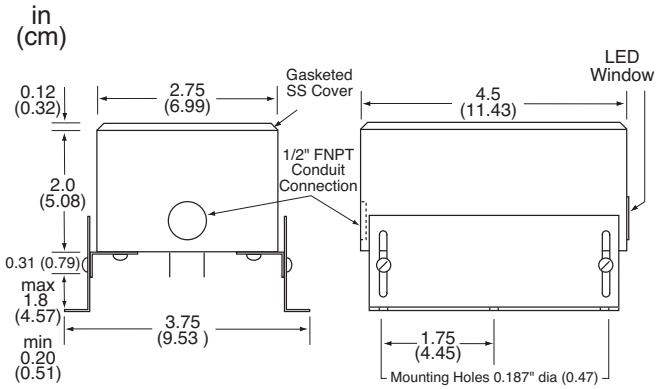
MOUNTING

Secure by applying a silicone adhesive to the mounting feet and placing the sensor in the area to be protected. For more permanent installations, fasten the sensor using the 0.19"(0.48 cm) holes provided in the mounting feet with #6 or #8 screws. The legs are adjustable 1.5" (3.81 cm) for precise water level signaling.

SPECIFICATIONS

Supply Voltage	11 -27 VAC/VDC
Supply Current	
VDC	10 mA typical, 30 mA maximum
VAC	30 mA typical, 70 mA maximum
Relay Outputs	SPDT contacts rated, 1A @ 24 VAC/VDC, 1/2A @ 120 VAC
Operating Temperature	32° to 158°F (0° to 70°C)
Enclosure Rating	Cast aluminum, weather resistant with adjustable legs
Dimensions	4.23"H X 3.75"W X 4.5"W (10.7 X 9.5 X 11.4 cm)
Approvals	CE
Weight	0.98 lb (6.44 kg)
Warranty	18 Months

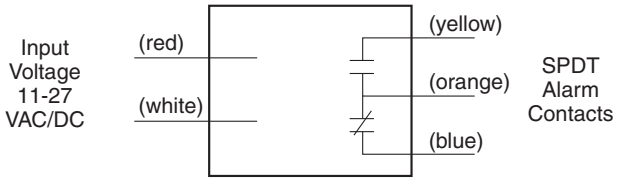
DIMENSIONS



Probe height adjustable 0" to 1.5" (0 to 3.8 cm)

WIRING

The **WD-1B** is provided with a 1/2" FNPT conduit connection in the end of the enclosure. Terminations are made to the color-coded wires with field-supplied connectors. All interconnect wiring should be 18 AWG or larger.



If grounded AC power is used, the grounded power supply lead must be connected to the white lead on the **WD-1B**, or the unit may fail to operate.

ORDERING INFORMATION

MODEL	DESCRIPTION
WD-1B	Water detector
WD-1B-C	Water detector with normally-energized relay (alarms when power is lost or water is detected)

RELATED PRODUCTS

WD-2-T	Water detector (tape style sensor)

TAPE STYLE WATER DETECTOR

WD-2-T

DESCRIPTION

The **Model WD-2-T** tape style water detector uses a self-adhesive sensor tape with copper fiber electrodes and a durable netted cover for dependable detection of conductive liquids anywhere along the length of tape. The **Model WD-2-T** includes a tape integrity self-check feature, which activates a trouble output if the tape is unplugged, broken, or cut. Alarm relays may be independently jumpered to energize or de-energize upon water or trouble detection.

WD-2

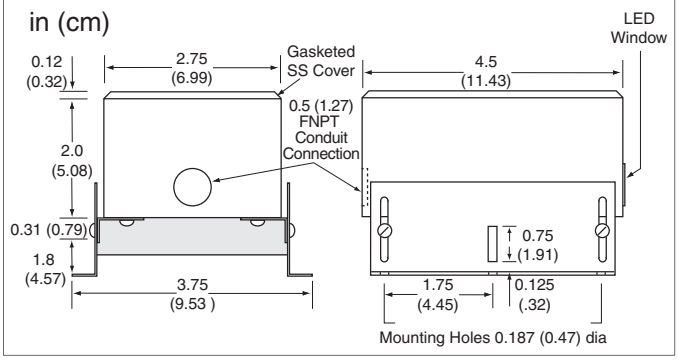
FEATURES

- ***Weather resistant enclosure***
- ***Designed to minimize external noise pickup***
- ***SPDT alarm and trouble relay contacts***
- ***Relay action jumper selectable***
- ***Continuous tape integrity self-check***
- ***Power/Alarm/Trouble status LED (green, red, green/red)***
- ***Sensor tape lengths of 10' (3.1m), 25' (7.6m), 50' (15.2m), 100' (30.5m)***
- ***Floor or under-pipe mounting***
- ***Able to convert to two alarm relays***

OPERATION

The **Model WD-2-T** can be used with any contact-closure monitoring device, wiring to either the normally open or normally closed contacts for flexibility.

DIMENSIONS



SPECIFICATIONS

Supply Voltage	11 -27 VAC/VDC	**Dimensions**	4.23"H x 3.75"W x 4.5"D (10.7 x 9.5 x 11.4 cm)
Supply Current		**Weight**	
VDC	15mA typical, 60 mA maximum	**WD-2**	0.98 lb (6.44 kg) (without tape)
VAC	35 mA typical, 120 mA maximum	**WD-2-T-10**	1.8 lb (0.8 kg)
Relay Type	SPDT	**WD-2-T-25**	2.2 lb (1.0 kg)
Relay Output Rating	1A @ 24 VAC/VDC, 1/2A @ 120 VAC	**WD-2-T-50**	3.0 lb (1.4 kg)
Operating Temperature	Detector: 32° to 158°F (0° to 70°C) Tape: 32° to 180F (0° to 82°C)	**WD-2-T-100**	4.6 lb (2.1 kg)
Sensor Electrodes	3 mil copper fiber, 1/4" gap	**Warranty**	18 Months
Enclosure	Cast aluminum, weather resistant		

INSTALLATION

Floor Mounting

Mount the **Model WD-2-T** box adjacent to the area to be protected. Unroll the sensor tape, remove vinyl release layer from the back, and hand press onto a surface that is dry and free of all debris and dust.

Note 1: Once the sensor is activated (wet), the contacts will remain in alarm until the netted cover is completely dry.

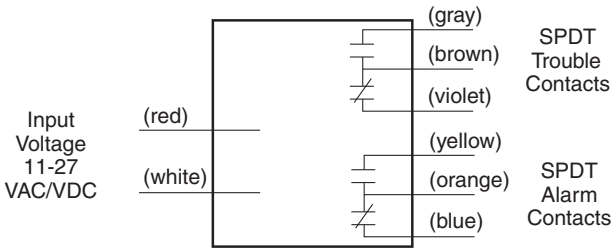
Note 2: To convert the tape integrity check relay to a second alarm relay, remove the jumper in the lower right corner of the circuit board. If the sensing tape is not used, install the jumper labeled “NO TBL CHK.”

TAPE STYLE WATER DETECTOR

WD-2-T

WIRING

The **Model WD-2-T** is provided with a 1/2" FNPT conduit connection in the end of the enclosure. Terminations are made using the color-coded wires with field-supplied connectors. All interconnect wiring should be 18 AWG or larger.



The **Model WD-2-T** tape includes a supervisory resistor mounted on the far end for the tape integrity self-check. A self-check disable jumper is provided inside for use with older or cut-down tapes that do not have the supervisory resistor.

STATUS INDICATOR

- **Green blink** Normal
- **Red blink** Water detected
- **Red/green alternating** Tape sensor problem

JUMPER POSITIONS

- **NO TBL CHK** Install jumper to disable tape trouble check
- **OPT** Remove jumper to convert trouble contacts to second set of alarm contacts
- **ALM** (position D) De-energize relay on alarm (position E) Energize relay on alarm
- **TBL** (position D) De-energize relay on trouble (position E) Energize relay on trouble

ORDERING INFORMATION

MODEL	DESCRIPTION
WD-2	Water detector without sensor tape
WD-2-T-10	Water detector with 10' (3.1m) sensor tape
WD-2-T-100	Water detector with 100' (7.6m) sensor tape
WD-2-T-25	Water detector with 25' (15.2m) sensor tape
WD-2-T-50	Water detector with 50' (30.5m) sensor tape

	RELATED PRODUCTS	PAGE
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**37**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**837**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**836**
WD-CLIP-5	Pack of five mounting clips (space 18"/45.7 cm for under-pipe installation)	

DESCRIPTION

The **Model LD1-24** and the **AQS** models are small electronic control relays for detecting a rising water level. Inside a waterproof enclosure, each model features a medium-power relay, which is operated by water reaching the trip level, and can be used to control alarms or other equipment. The relay is normally energized when the power supply is switched on and no water is present. When water rises up the side of the box to reach the switching level, the relay drops out. This sequence is failsafe, allowing each model to be used as a water spillage alarm switch or to turn off a valve or an air conditioning unit before the water overflows its containment.

FEATURES

- ***All components safely encapsulated against moisture ingress***
- ***Switching capability 5A at 240 VAC***

SPECIFICATIONS

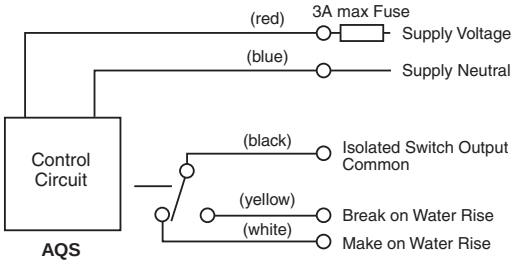
Supply Voltage	
AQS00660	95-254V 50/60 Hz, 1W
AQS00661	24 VAC/VDC 50/60 Hz
LD1-24	24 VAC, 50/60 Hz
Relay Output Rating	240 VAC 50/60 Hz, 5A; 24 VDC, 2.5A
Switch Off Level	
AQS00660/1	0.32" (0.8 cm) nominal
LD1-24	0.43" (1.1 cm) nominal
Switch On Level	
AQS00660/1	0.40" (1 cm) nominal
LD1-24	0.31" (0.8 cm) nominal
Operating Temperature	32° to 158°F (0° to 70°C)
Cable Length	
AQS00660/1	5' (1.5m)
LD1-24	18" (0.46m)
Dimensions	
AQS00660	1.2"H x 2.0"W x 1.25"L (3.0 x 5.0 x 3.1 cm)
AQS00661	1.2"H x 2.0"W x 1.25"L (3.0 x 5.0 x 3.1 cm)
LD1-24	0.9"H x 2.0"W x 1.25"L (2.2 x 5.0 x 3.1 cm)

INSTALLATION

A piece of double-sided tape is fitted to the base of each model and can be used to fix it to the surface being protected. Clean the mounting surface thoroughly to ensure good adhesion. Pull off the protective paper covering and press the models down into position. The AQS models also have slots for mounting with #4 self-tapping screws.

AQS **LDI-24**

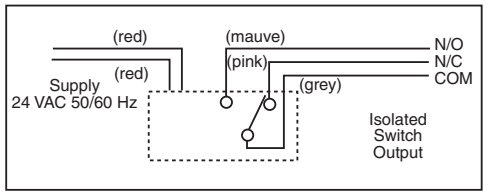
WIRING



AQS

Note: Relay is energized to make black and yellow when powered-up and dry.

AQS00660: 95-254V 50/60 Hz
AQS00661: 24V 50/60 Hz or DC



Note: Relay contacts shown in alarm (or power-off) condition.

LD1-24

WARNING: Although the LD1-24 is totally encapsulated and resistant to water ingress when used as intended (to detect rising water levels), it should not be installed where the encapsulated surface is permanently under water.

ORDERING INFORMATION

MODEL	DESCRIPTION
AQS00660	95-254 VAC water sensor/switch
AQS00661	24 VAC/VDC water sensor/switch
LD1-24	24 VAC water sensor/switch

SPOT LEAK DETECTOR

SD-R01

DESCRIPTION

The **Model SD-RO1** spot leak detector is an economical solution for detecting fluids in small, confined areas, such as drip pans. The unit is designed with polymer coated sensing probes to detect conductive fluids at a single point. The height of the probes can easily be adjusted to the desired position by simply bending them. Units can be screwed or glued to the floor or baseboard for quick installation.

SD-R01

FEATURES

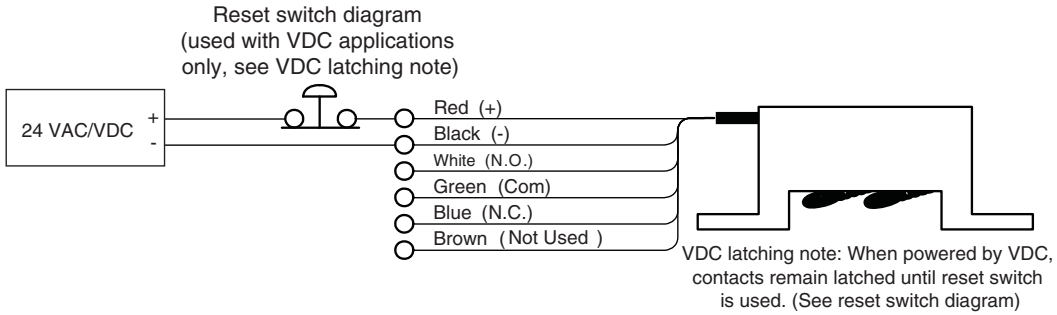
- ***Adjustable sensing probe height***
- ***Small footprint***
- ***No exposed metal sensing posts***
- ***All components encapsulated against moisture***
- ***Switching capability 0.5A at 120 VAC***
- ***Simple installation***

SPECIFICATIONS

Supply Voltage	24 VAC/VDC, 0.1A	**Cable Length**	14' (4.27m)
Contact Rating	1A @ 24 VDC, 0.5A @ 120 VAC resistive	**Dimensions**	2.0"H x 1.55"W x 1.0"D (5.1 x 3.9 x 2.5 cm)
Contact Type	SPDT	**Approvals**	CE, RoHS
Operating Temperature	32° to 122°F (0° to 50°C)	**Weight**	0.4 lb (0.2 kg)
Storage Humidity	5% to 95% non-condensing	**Warranty**	1 year

WIRING

Connect the white (N/O) and green (Com) or blue (N/C) leads to the alarm device. Connect the black (-) and red (+) leads to the power source. Test the SD-RO1 by placing water under the sensing probes.



(*Note: The SD-R01 latches if powered by DC voltage and a reset switch must be installed on the positive or negative wire. The SD-R01 will automatically reset with AC voltage applied.)*

ORDERING INFORMATION

MODEL	DESCRIPTION
SD-R01	Spot leak detector, 24 VAC/VDC

CONDENSATE OVERFLOW SWITCHES
SS/SP SERIES

DESCRIPTION

The **SS/SP Series** condensate overflow switches detect rising water in A/C condensate drain pans and shut off the system to prevent overflow and water damage. Designed for installation on auxiliary drain pan outlets or inline on primary drains, models are available with a solid state electronic probe or magnetic reed switch. Switches include mounting adapters and hardware.

Model SG1 condensate overflow alarm is wired across the normally closed contacts of the condensate switch. As the water level rises, the switch opens allowing current to flow through the alarm which sounds a buzzer and flashes an LED indicating a possible overflow condition. The SG1 works with most 24-volt overflow switches and pumps and comes pre-wired with 4-foot 18 AWG lead wires and 2-sided tape.

FEATURES

- ***Waterproof***
- ***Primary or auxiliary installation***
- ***Easy to install and service***
- ***Low voltage***
- ***UL listed 508***
- ***Plenum rated models***

SS1

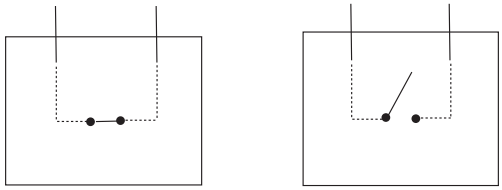
SP1P

SS2AP

SG1

SS3

WIRING



Normal Position
Closed Contacts

Contacts Open
On rising water

SPECIFICATIONS

Model	Switch Type	Supply Voltage	Switching Capability	Installation	Plenum rated	Mounting Adapter	Lead length	Weight
SS1	Magnetic	24 VAC	1.25A	Primary (inline) or auxillary	NA	3/4" adapter	6 ft (1.8m), 18 AWG	3.2 oz (91g)
SS2AP	Magnetic	24 VAC	1.25A	Auxillary	Plenum rated	3/4" adapter	4 ft (1.2m), 18 AWG	3.2 oz (91g)
SS3	Magnetic	24 VAC	1.25A	Drain Pan	NA	NA	6 ft (1.8m), 18 AWG	1.4 oz (40g)
SP1P	Solid state	24 VAC	2.3A	Primary (inline) or auxillary	Plenum rated	3/4" adapter	6 ft (1.8m), 18 AWG	3.2 oz (91g)

ORDERING INFORMATION

MODEL	DESCRIPTION
SS1	Inline magnetic reed condensate overflow switch
SS2AP	Auxiliary condensate overflow switch
SS3	Auxiliary condensate pan overflow switch
SP1P	Inline solid state condensate overflow switch

RELATED PRODUCTS		PAGE
SG1	Condensate overflow alarm	**517**

VERTICAL FLOAT SWITCH

VS-120R1R9L-01

DESCRIPTION

The **Model VS-120R1R9L-01** vertical float switch is designed for sump pump control. The unit features adjustable float stops, a rod guide, pipe clamp, and stainless steel bracket. The switch and cord assembly is suitable for exposure to sewage environments. The plug assembly fits into a standard three-prong, 120 VAC electrical outlet and has an integral three-prong switched socket for sump pump control. The pump connects into the back of the power plug and switching level actuation is controlled though the positioning of the float using the adjustable stops. The **VS-120RIR9L-01** contact makes on a level rise.

MADE IN USA

VS-120R1R9L-01

FEATURES

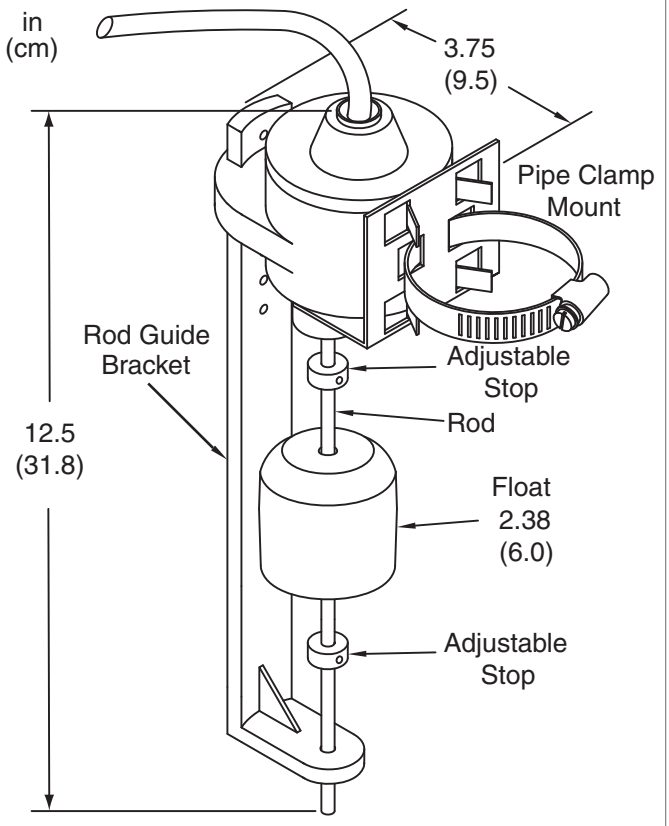
- ***SPDT mechanical switch***
- ***10A contacts rated for 1/2 hp***
- ***Float suitable for sewage and high temperature***
- ***Adjustable float stops***
- ***Mounts to sump discharge pipes up to 2.5" (6 cm)***

SPECIFICATIONS

Supply Voltage	115 VAC
Contact Rating	10A 120/240 VAC, 1/2 hp 120/240 VAC, 50/60 Hz
Operating Temperature	150°F (66°C) maximum
Enclosure	ABS plastic
Wetted Materials	Black Polypropylene
Mounting Orientation	Vertical
Cable Length	10 ft (3.1m)
Dimensions	12.5"H (31.8 cm), 2.4" (6 cm) diameter float
Approvals	CSA
Wiring Terminaltions	Piggy-back three-prong standard plug
Weight	1.3 lb (0.6 kg)
Warranty	1 year

DIMENSIONS

12.5"H (31.8 cm) with 2.4" (6 cm) diameter float



ORDERING INFORMATION

MODEL	DESCRIPTION
VS-120R1R9L-01	Vertical float switch

CABLE-STYLE WATER DETECTOR
LD300

DESCRIPTION

The **Model LD300** reports the presence of water within a predetermined zone. The **Model LD300** is a single zone system with a visual alarm indicator and a separate output relay for leaks and fault detection.

The **Model LD300** continuously monitors up to 300' (91m) of water leak detection cable and is ideal for small areas. If conductive fluid contacts the sensing cable anywhere along its length, the module will activate a leak relay, and flash the LED, clearly indicating fluid has been detected. If the sensing cable is cut or comes loose, the module will activate a cable fault by flashing the LED and activating a fault relay.

The **Model LD300** also features two jumper selectable leak detection thresholds for adjusting the sensitivity of the leak/fault detection circuit.

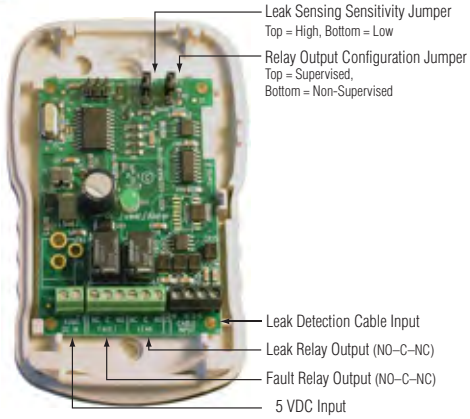
FEATURES

- ***Dual dry contacts alarm fluid or fault detection***
- ***Two adjustable alarm thresholds***
- ***LED indication for normal/alarm conditions***
- ***Monitors up to 300' (91 m) of sensing cable***
- ***Lightweight enclosure with easy installation***
- ***Use non-sensing cable between sections of sensing cable***

MADE IN USA

RoHS

LD300



SPECIFICATIONS

Supply Voltage	5 VDC (± 10%) @ 100 mA	**Mounting**	Wall mount
Relay Type	Two Form C alarm relays (leak and fault)	**Cable Length**	10 ft (3.1m), 25 ft (7.7m), 50 ft (15.4m), 100 ft (30.8m)
Relay Outputs	1A @ 24 VDC, 0.5A resisitive @ 120 VAC	**Cable Type**	Water detection cable
LED Indication	Solid – normal; 1 second flash - leak detected; 2 quick flashes followed by a pause - cable fault alarm	**Dimensions**	4.4"H X 2.7"W X 1.1"D (11.2 X 6.9 X 2.8 cm)
Response Time	<20 secconds	**Approvals**	CE, ETL Listed, RoHS compliant
Altitude Limits	15,000 ft (4,572m) maximum	**Weight**	3 oz (0.084) w/o cable
Operating Humidity	5 to 95% non-condensing	**Warranty**	1 Year
Operating Temperature	32° to 122°F (°0 to 50°C)		

ORDERING INFORMATION

MODEL	DESCRIPTION
LD300	Water detector includes 15' leader cable and end-of-line connector (order sensing cable separately)
LD300-100KIT	Water detector kit includes LD300 detector, 100' of cable and end of line connector
LD300-10KIT	Water detector kit includes LD300 detector, 10' of cable and end of line connector
LD300-25KIT	Water detector kit includes LD300 detector, 25' of cable and end of line connector
LD300-50KIT	Water detector kit includes LD300 detector, 50' of cable and end of line connector

RELATED PRODUCTS		PAGE
DCP-524	Power supply, 24 VAC IN to 24 VDC and 5 VDC OUT	**839**
JC-200	Package of 200 cable-securing J clips	
JC-25	Package of 25 cable-securing J clips	
NSC-10	10' non-sensing cable	
NSC-100	100' non-sensing cable	
NSC-25	25' non-sensing cable	
NSC-50	50' non-sensing cable	
SC-C-10	10 ft (3.1m) Chemical Sensing cable	**525**
SC-C-100	100 ft (30.8m) Chemical sensing cable	**525**
SC-C-25	25 ft (7.7m) Chemical sensing cable	**525**
SC-C-50	50 ft (15.4m) Chemical sensing cable	**525**
WCCS-50	Weighted cable connector; simulates 50' of sensing cable	
X-CON	X connector single SC input, 3 SC outputs	

WEB-ACCESSIBLE LEAK DETECTOR

LD1500

DESCRIPTION

The **Model LD1500** web-accessible leak detector offers a reliable leak detection solution that mitigates potential water damage, costly business outages, and downtime. The unit detects the presence of any conductive fluid and identifies the distance to the leak. The distance to the leak can be communicated via various protocols to alarm monitoring and notification systems. The physical location of the leak can be determined by cross-referencing the distance with a cable reference map of your site.

Sensing cable is available in standard lengths with pre-installed mating end connectors. Linked end-to-end these connections allow for easy installation of additional length. The **Model LD1500** can monitor up to 1500' (457m) of sensing cable.

MADE IN USA

LD1500

FEATURES

- ***Adjustable leak, delay and cable contamination alarm thresholds***
- ***Modbus and BACnet communications***
- ***Quick return to normal status after cable is wiped dry***
- ***Modbus (RS-485) integration with LD2000 and LD5100***
- ***HTML interface***
- ***Self calibrating***

SPECIFICATIONS

Supply Voltage	24 VAC/VDC @ 600 mA max
Relay Type	SPDT
Relay Outputs	1A @ 24 VDC, 0.5A resisitive @ 120 VAC
Accuracy	±2 ft (0.6m) plus ±0.5% of the cable length
Repeatability	±2 ft (0.6m) plus ±0.25% of the cable length
Communication Ports	
Ethernet	10/100BASE-T, 500 VAC RMS isolation
RS-232 port	9600 baud, no parity, 9 data bits, 1 stop bit
RS-485	1200, 2400, 9600 or 19200 baud (selectable), no parity, 8 data bits, 1 stop bit
Protocol	
Terminal emulation (RS-232)	VT100 compatible
Modbus (RS-485)	Slave, RTU mode. supports function codes 03, 04, 06, and 16
BACnet MS/TP	EIA-485

LED Indication	1 bi-color power/status (green=power on, red=alarm)
Response Time	Adjustable from 5-995 seconds
Alarm	Bi-color status LED
Logging Samples	Logging capabilities: Logs last 10 events
Security Login	Web browser access: 1 Web password read only, 1 password read/write
Operating Humidity	5 to 95% non-condensing
Operating Temperature	32° to 122°F (°0 to 50°C)
Mounting	Wall mount
Cable Length	1500 ft (457.2m) maximum
Cable Type	Water detection cable
Dimensions	3.6"H x 7.0"W x 1.25"D (9.2 x 17.8.0 x 3.2 cm)
Approvals	CE, ETL Listed, RoHS compliant
Weight	1.5 lb (0.68 kg)
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
LD1500	Water detector includes 15' leader cable and end-of-line connector (order sensing cable separately)

RELATED PRODUCTS

JC-200	Package of 200 cable-securing J clips
JC-25	Package of 25 cable-securing J clips
NSC-10	10' non-sensing cable
NSC-100	100' non-sensing cable
NSC-25	25' non-sensing cable
NSC-50	50' non-sensing cable
SC-10	10' sensing cable

RELATED PRODUCTS

SC-100	100' sensing cable
SC-25	25' sensing Cable
SC-50	50' sensing cable
WCCS-50	Weighted cable connector; simulates 50' of sensing cable
X-CON	X connector single SC input, 3 SC outputs

WEB-ACCESSIBLE LEAK DETECTOR
LD2100

DESCRIPTION

The **Model LD2100** web-accessible leak detector monitors up to 5000 ft (1524m) of sensing cable. The LED display provides basic information about alarm conditions, while a Web browser offers a convenient way to configure the unit, access and acknowledge alarms, and view alarm logs. Output communications include a Form C relay, SNMP, Modbus and/or BACnet. SMTP allows for direct email alarm notification which can be routed to cell phones, PDAs, or other wireless devices.

LD2100

FEATURES

- ***Adjustable leak, delay and contamination alarm thresholds***
- ***32 configurable virtual zones***
- ***Single person cable mapping***
- ***HTML interface***
- ***SNMP, Modbus, BACnet and relay output***
- ***Monitors up to 5000 ft (1524 m)***
- ***Alarm notification via email***
- ***Quick return to normal status after cable is wiped dry***
- ***Self calibrating***

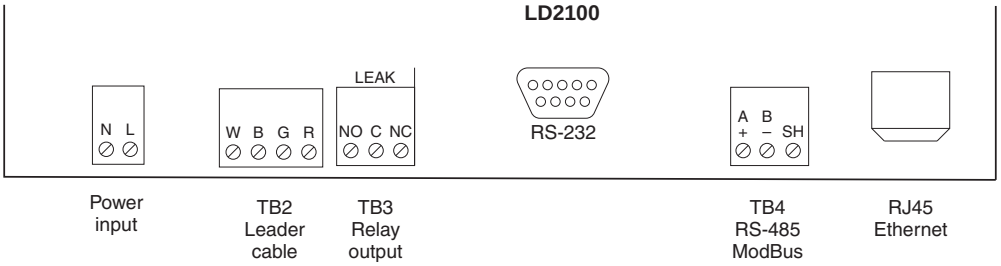
SPECIFICATIONS

Supply Voltage	24 VAC/VDC @ 600 mA max
Relay Outputs	1A @ 24 VDC, 0.5A resisitive @ 120 VAC
Accuracy	±2 ft (0.6m) plus ±0.5% of the cable length
Repeatability	±2 ft (0.6m) plus ±0.25% of the cable length
Response Time	Adjustable from 5 to 995 seconds
Communication Ports	
Ethernet	10/100BASE-T, 500 VAC RMS isolation
RS-232 port	9600 baud, no parity, 9 data bits, 1 stop bit
RS-485	1200, 2400, 9600 or 19200 baud (selectable), no parity, 8 data bits, 1 stop bit
Protocol	
Terminal emulation (RS-232)	VT100 compatible
Modbus (RS-485)	Slave, RTU mode. supports function codes 03, 04, 06, and 16
BACnet MS/TP	EIA-485
Display	Green, alphanumeric, dot matrix LED
LED Indication	1 bi-color power/status (green=power on, red=alarm)
Alarm	
Visual	Green, alphanumeric, dot matrix LED display, Bi-color status LED
Email (Ethernet)	4 Email recipients
SNMP	4 community strings
Altitude Limits	15,000 ft (4,572m) maximum
Logging Samples	Logging capabilities: Logs last 500 events
Security Login	1 Web password Read Only, 1 Web password Read/Write
Operating Humidity	5 to 95% non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Mounting	Wall mount
Cable Length	5000 ft (1524m) maximum
Cable Type	Water detection cable
Dimensions	4.25"H x 8.0"W x 1.25"D (10.8 x 20.3 x 3.2 cm)
Approvals	CE, ETL Listed, conforms to UL 61010-1 and En61010-1, certified to CSA C22.2 No. 61010-1, RoHS compliant
Weight	1.5 lb (0.68 kg)
Warranty	1 year

WEB-ACCESSIBLE LEAK DETECTOR

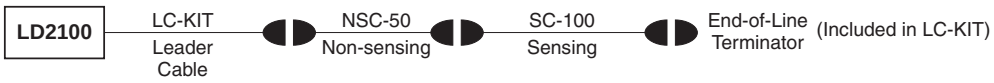
LD2100

WIRING

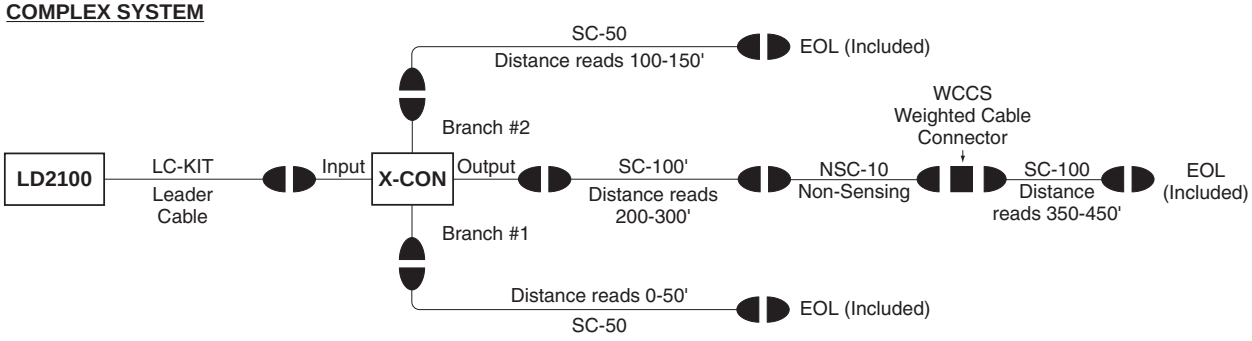


SENSOR WIRING

SIMPLE SYSTEM



COMPLEX SYSTEM



ORDERING INFORMATION

MODEL	DESCRIPTION
LD2100	Water detector includes 15' leader cable and end-of-line connector (order sensing cable separately)

RELATED PRODUCTS

JC-200	Package of 200 cable-securing J clips
JC-25	Package of 25 cable-securing J clips
NSC-10	10' non-sensing cable
NSC-100	100' non-sensing cable
NSC-25	25' non-sensing cable
NSC-50	50' non-sensing cable
SC-10	10' sensing cable
SC-100	100' sensing cable
SC-25	25' sensing cable
SC-50	50' sensing cable
X-CON	X connector single SC input, 3 SC outputs

CABLE-STYLE WATER DETECTOR
LD5100

DESCRIPTION

The **Model LD5100** reports the presence of water in an area and can quickly pinpoint the location of a leak. Within seconds, an alarm sounds and the distance to the leak is shown on the **Model LD5100** display. The physical location of the leak can be determined by cross-referencing the distance displayed with a cable reference map of your site.

Sensing cable is available in standard lengths with preinstalled mating end connectors. Linked end-to-end, these connections allow for easy installation of additional length. The **Model LD5100** can monitor up to 5000' (1500m) of sensing cable.

LD 5100

FEATURES

- ***Adjustable leak, delay and contamination alarm thresholds***
- ***12 configurable virtual zones***
- ***Single person cable mapping to simplify installation and setup***
- ***Simple user interface with 160x160 Graphic LCD backlit display***
- ***Dual Modbus (RS-485)***
- ***4-20mA analog output for simple integration***
- ***RS-232 port allows configuration with PC***
- ***Dual dry contact outputs for both leak and cable break***
- ***Event log stores 512 date and time stamped alarms***
- ***288 day trend data log shows leakage current on cable every 24 hours***

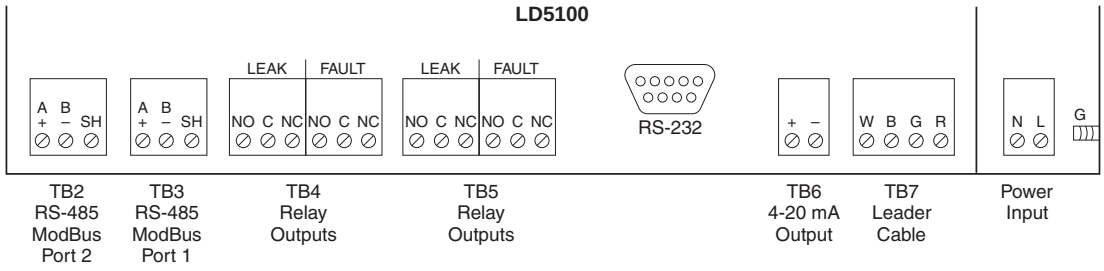
SPECIFICATIONS

Supply Voltage	120/240 VAC 50/60 Hz
Analog Output	4-20 mA loop powered, 18-36 VDC, RL=500Ω maximum
Relay Type	2-SPDT (leak detection) 2-SPDT (cable break detection)
Relay Outputs	1A @ 24 VDC, 0.5A resisitive @ 120 VAC
Accuracy	±2 ft (0.6m) plus ±0.5% of the cable length
Repeatability	±2 ft (0.6m) ±0.25% of the cable length
Communication Ports	
Ethernet	10/100BASE-T, 500 VAC RMS isolation
RS-232 port	9600 baud, no parity, 9 data bits, 1 stop bit
RS-485	1200, 2400, 9600 or 19200 baud (selectable), no parity, 8 data bits, 1 stop bit
Protocol	
Terminal emulation (RS-232)	VT100 compatible
Modbus (RS-485)	Slave; RTU mode; supports function codes 03, 04, 06 and 16
Display	Graphic, 160 x 160 pixel resolution backlit LCD with contrast adjustment
LED Indication	1 bi-color power/status (green=power on, red=alarm)
Response Time	Adjustable from 20-3600 seconds
Alarm	Audible: 85 dBa @ 2' (0.6m); resound 0-999 minutes
Altitude Limits	15,000 ft (4,572m) maximum
Logging Samples	
Event log	Last 512 events
Trend log	Cable current everyday, for last 288 days
Security Login	
Terminal emulation access	No login required
Display access	1 administrator (password for configuration, not to view status)
Operating Humidity	5% to 95% non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Mounting	Wall mount
Cable Length	5000 ft (1522m) maximum
Cable Type	Water detection cable
Dimensions	12.6"H x 10.0"W x 3.3"D (32.0 x 25.4 x 82.5 cm)
Approvals	CE, ETL Listed, RoHS compliant
Weight	10 lb (4.53 kg) without cable
Warranty	1 year

CABLE-STYLE WATER DETECTOR

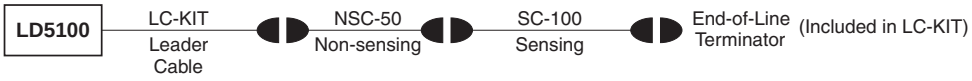
LD5100

WIRING

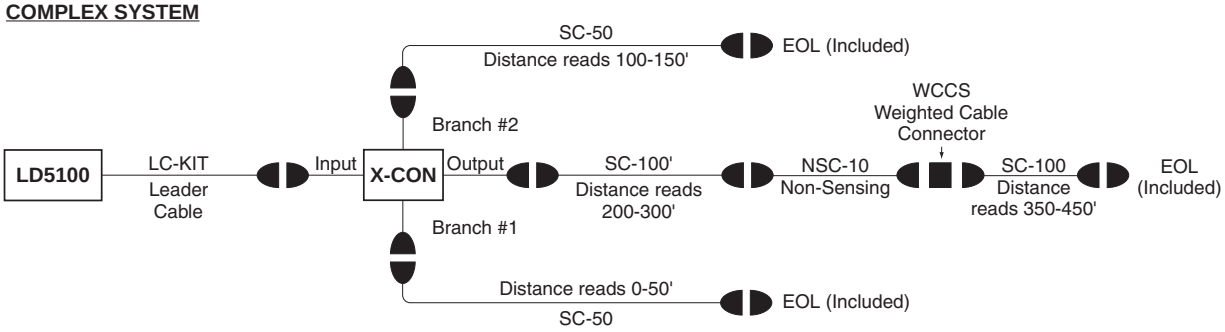


SENSOR WIRING

SIMPLE SYSTEM



COMPLEX SYSTEM



ORDERING INFORMATION

MODEL	DESCRIPTION
LD5100	Water detector includes 15' leader cable and end-of-line connector (order sensing cable separately)

RELATED PRODUCTS

JC-200	Package of 200 cable-securing J clips
JC-25	Package of 25 cable-securing J clips
NSC-10	10' non-sensing cable
NSC-100	100' non-sensing cable
NSC-25	25' non-sensing cable
NSC-50	50' non-sensing cable
SC-10	10' sensing cable
SC-100	100' sensing cable
SC-25	25' sensing cable
SC-50	50' sensing cable
WCCS-50	Weighted cable connector; simulates 50' of sensing cable
X-CON	X connector single SC input, 3 SC outputs

HYDROCARBON AND CHEMICAL SENSING CABLE

SC-H SERIES, SC-C SERIES

DESCRIPTION

RLE Technologies' SeaHawk Sensing Cable reliably senses the presence of liquids in a wide variety of industrial, business, and residential settings. Sensing cables are durable, highly flexible, and resistant to bends and kinks. Hydrocarbon Sensing Cable (**SC-H Series**) detects the presence of hydrocarbons while remaining impervious to the presence of water. The Chemical Sensing Cable (**SC-C Series**) detects the presence of aqueous acids, bases, and other conductive fluids, including water. RLE's sensing cables are engineered to minimize false alarms, and are available in standard, custom, and bulk lengths.

Use sensing cables in conjunction with RLE's SeaHawk zone or distance-read leak detection controllers to determine the location of a leak - the cable senses the leak while the controller determines and annunciates the leak's location. RLE controllers are supervised systems - not only do they locate leaks, but they also monitor the cable for contamination, breaks, and disconnects.

RLE's sensing cables and controllers offer reliable leak detection solutions that mitigate potential damage, costly business outages, and downtime.

FEATURES

- ***Resistant to bends and kinks***
- ***Highly flexible***
- ***Compatible with SeaHawk zone and distance-read leak detection controllers***
- ***Available in standard and custom lengths***

NEW!

SC-H

SC-C

APPLICATION

SC-H Series detects the presence of:

- ***Petroleum***
- ***Unleaded gasoline***
- ***Diesel #1 and #2***
- ***Home heating oil***
- ***Kerosene***
- ***Jet fuel***
- ***Xylene***

SC-C Series detects the presence of:

- ***Acids***
- ***Bases***
- ***Other conductive fluids***

INSTALLATION

When using **SC-H and SC-C** sensing and non-sensing cables with a SeaHawk controller, reduce the controller's capacity distance by 30%. For example, the LD300 monitors up to 300 feet of water detection cable (SC). When used with hydrocarbon or chemical sensing cable, the maximum length of cable the LD300 can monitor is reduced to 210 feet.

Note: Prolonged exposure to concentrated ketones may cause temporary reduction of sensitivity.

SPECIFICATIONS

Cable Type	
SC-H	Hydrocarbon detection
SC-C	Chemical detection
Bend Radius	
SC-H	0.75 in. (19.05mm) minimum
Operating Temperature	
SC-H	-4°F to 140°F (-20°C to 90°C)
SC-C	-40° to 185°F (-40° to 85°C)

Dimensions	
SC-H	Cable diameter: 0.28" (7.0mm) Connector diameter: 0.45" (11.4mm)
SC-C	Cable diameter: 0.24 in. (6.0mm) Connector diameter: 0.45 in. (11.4mm)
Approvals	
SC-C	UL, RoHS compliant, Plenum rated
Weight	
SC-H	0.05 lb (0.023kg), 1 ft. (0.305m) length
SC-C	0.035 lb (0.016kg), 1 ft. (0.305m) length

ORDERING INFORMATION

MODEL	DESCRIPTION
SC-H-10	10 ft (3.1m) Hydrocarbon sensing cable
SC-H-25	25 ft (7.7m) Hydrocarbon sensing cable
SC-H-50	50 ft (15.4m) Hydrocarbon sensing cable
SC-H-100	100 ft (30.8m) Hydrocarbon sensing cable
SC-C-10	10 ft (3.1m) Chemical Sensing cable
SC-C-25	25 ft (7.7m) Chemical sensing cable

MODEL	DESCRIPTION
SC-C-50	50 ft (15.4m) Chemical sensing cable
SC-C-100	100 ft (30.8m) Chemical sensing cable
NSC-CH-10	10 ft (3.1m) Hydrocarbon/chemical non-sensing cable
NSC-CH-25	25 ft (7.7m) Hydrocarbon/chemical non-sensing cable
NSC-CH-50	50 ft (15.4m) Hydrocarbon/chemical non-sensing cable
NSC-CH-100	100 ft (30.8m) Hydrocarbon/chemical non-sensing cable

RELATED PRODUCTS

JC-C-25	Package of 25 cable-securing J clips for SC-C Sensing cable
JC-C-200	Package of 200 cable-securing J clips for SC-C Sensing cable
JC-H-25	Package of 25 cable-securing J clips for SC-H Sensing cable
JC-H-200	Package of 200 cable-securing J clips for SC-H Sensing cable
WCCS-50-M	Weighted cable connector; simulates 50ft/15.24m (for use with SC-C and SC-H)
X-CON-M	X-Connector; single input, three "branch" outputs, simulates 150ft/45.72m (for use with SC-C or SC-H)

NEW!

ELECTRONIC WATER LEVEL CONTROL SYSTEM

WLC SERIES

DESCRIPTION

The **WLC Series** is perfect in any application where water level management is important such as cooling tower basins and water holding tanks for cooling towers. The **WLC Series** electronic water level control systems are designed with user-friendly LED indicators to specify which functions are being performed and if there are any interruptions in performance. Its modular construction allows for easy access to all components and it fully integrates with a building or site automation. Each **WLC Series** controller, depending on the model, has a set of 2 relays for each action, one for high power applications such as turning on or off a pump and one for low power applications such as notification to a building automation system.

FEATURES

- ***Easy installation***
- ***Simple, reliable, and automatic***
- ***Compensates for wave action***
- ***No moving parts or mechanical floats***
- ***Liquid tight enclosure***
- ***Accurately manages levels to within 1/8" of operating range***
- ***Easy to read LED display***

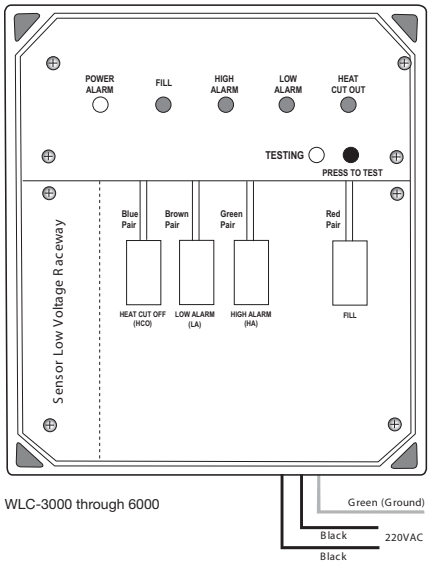
NEW!

Waterline Controls™
Electronic Water Level Control Systems

MADE IN USA

WLC Series

WIRING



Quantity of relays and lights are a function of the model.

*Bottom plate removed in illustration

WLC-3000 through 6000

SPECIFICATIONS

Supply Voltage	110/220 VAC 60 Hz, 250 mA @ 110 VAC
Contact Rating	30A @ 250 VAC 0.5 @ 50 VAC/VDC
Contact Type	SPST
Accuracy	±0.125" (3.175 mm) of operating range
LED Indication	Power on, Status indication
Enclosure	NEMA 4X
Mounting Orientation	Vertical
Approvals	ETL listed
Warranty	Limited lifetime warranty

ORDERING INFORMATION

MODEL	DESCRIPTION
WLC-3000	Water level controller, fill only
WLC-4000	Water level controller, fill with high alarm and built-in diagnostics
WLC-4500	Water level controller, fill with low alarm and built-in diagnostics
WLC-5000	Water level controller, fill with high and low alarm and built-in diagnostics
WLC-6000	Water level controller, fill with high, low, and ultra-low (heat cut off) alarms and diagnostics

RELAY IN A BOX FOR PUMP LEVEL SWITCH CONTROL

RIB, RIBT PILOT SERIES

DESCRIPTION

The **Relay In A Box (RIB) Pilot Series** controls most BAS, HVAC, low-horsepower motor and lighting applications. The relays come mounted and pre-wired in a housing, saving the installer the time, trouble, and expense of buying separate components (relay, socket, mounting rail, and enclosure) and assembling them on the job or at the shop.

The **RIB Pilot Series** has a protruding 1/2" or 3/4" NPT nipple from which all wires exit (except T series). To install, remove a conduit knockout in the equipment, insert the wires and nipple through the hole, tighten the locknut, and connect the wires.

RIB Pilot Series - 10A Relays
The RIB Pilot Series has relay contacts rated for 10A and is used to control light electrical loads, drive power relays/ contactors, or sense the voltage being fed to electrical loads. The **RIB Pilot Series** requires a low coil-drive current and is provided with circuitry to allow powering the relay coil from a wide range of AC or DC voltages.

RIBT Series - High/Low Voltage Separation
The **RIBT Series** is designed to provide physically separate entrances for connections to the relay input coil and output contacts. Relay contact wires exit the housing through a 1/2" or 3/4" NPT nipple. The cover of the **RIBT Series** is removable, and the coil drive wires can enter the housing through one of two convenient openings with star bushings or 1/2" conduit. The coil drive wires are secured to screw terminals within a separate wiring compartment in the **RIBT Series**. Most of the **RIB's** in the **Pilot Series** are also available in the **RIBT Series**.

Functional Devices, Inc. RIB®

RIBU1C

RIBU1S

c UL us

FEATURES

- ***Convenient and economical to use***
- ***Relay status indicator via LED***
- ***Coil uses low current and accepts a wide range of AC and DC voltages***
- ***Closed/Open/Auto switch option available***
- ***Nipple- or screw-mountable***
- ***Compact, gray plastic enclosure***
- ***Color-coded wires for eliminating errors***
- ***UL listed for UL916 Energy Management and UL864 Fire***
- ***Made in the USA***

SPECIFICATIONS - GENERAL

Wire Length	16" (40.6 cm)
Life Rating	10 million cycles minimum mechanical
Relay Status	LED, ON - relay activated
Operating Temperature	-30° to 140°F (-34° to 60°F), -30° to 140°F (-34° to 60°C)
Operating Humidity	5 to 95% non-condensing
Housing Type	Plenum rated, NEMA 1, NEMA 4
Conduit Hub	1/2" NPT, 3/4" NPT
Dimensions	1.7" H x 2.8" W x 1.5" D (4.32 x 7.11 x 3.81 cm), 2.3" H x 3.2"W x 1.8" D (5.84 x 8.13 x 4.57 cm), 4.0" H x 4.0" W x 1.8" D (10.16 x 10.16 x 4.57 cm)
Approvals	UL listed, UL 916 Energy Management UL 864 Fire, cUL listed, CSFM
Weight	1.0 lb (0.45 kg)
Warranty	1 year

	PULL-IN		DROP-OUT	
COIL DRIVE	**DC**	**AC**	**DC**	**AC**
10-30 VAC/VDC	10	9	2.8	2.1
24 VAC/VDC	20	18	3.8	3
120 VAC	–	102	–	9
208-277 VAC	–	176	–	13

Coil pull-in/drop-out (nominal values)

RELAY IN A BOX FOR PUMP LEVEL SWITCH CONTROL

RIB, RIBT PILOT SERIES

SPECIFICATIONS - PILOT SERIES

MODEL	TYPE	COIL DRIVE	SIZE/ HUB	OVR SW	RELAY CONTACT RATINGS	RELAY CONTACT WIRING	RELAY COIL DRIVE DATA
RIBU1C* RIBU1C-N4†	1-SPDT	10-30 VAC/VDC 120 VAC 50/60 Hz	A-1/2	–	10A resistive 120/240/277 VAC 10A resistive 28 VDC 480 VA pilot duty 240/277 VAC 480 VA ballast 277 VAC 600W tungsten 120 VAC N.O. 240W tungsten 120 VAC N.C. 1/3 hp for N.O. 120/240 VAC 1/6 hp for N.C. 120/240 VAC 1/4 hp for N.O. 277 VAC 1/8 hp for N.C. 277 VAC	**Relay #1** NC (blue) COM (yellow) NO (orange) **Relay #2** (if present) NC (gray) COM (purple) NO (brown)	**Wiring** **Relay #1** Common - White/Yellow wire 10-30 VAC/VDC - White/Blue wire 120 VAC - White/Black wire 208-277 VAC - White/Brown wire **Relay #2** (if present) Common - White/Purple wire 10-30 VAC/VDC - Gray/White wire 120 VAC - White/Red wire 208-277 VAC - White/Orange wire **Input Current** 30 mA @ 10 VAC 32 mA @ 12 VAC 42 mA @ 24 VAC 50 mA @ 30 VAC 25 mA @ 120 VAC 35 mA @ 208-277 VAC 12 mA @ 10 VDC 14 mA @ 12 VDC 16 mA @ 24 VDC 18 mA @ 30 VDC
RIBU2C*	2-SPDT		G-3/4	–			
RIBH1C* RIBH1C-N4†	1-SPDT	10-30 VAC 208-277 VAC 50/60 Hz	A-1/2	–			
RIBH2C*	2-SPDT		G-3/4	–			
RIBU1SC*	1-SPDT	10-30 VAC/VDC 120 VAC 50/60 Hz	G-1/2	Yes-2	10A resistive 277 VAC 480 VA pilot duty 277 VAC 480 VA ballast 277 VAC 600W tungsten 120 VAC N.O. 240W tungsten 120 VAC N.C. 1/3 hp for N.O. 120-240 VAC 1/6 hp for N.C. 120-240 VAC 1/4 hp for N.O. 277 VAC 1/8 hp for N.C. 277 VAC Status Contact on **RIBU1SM** and **RIBH1SM**: 5A max @ 277 VAC	Auto / Manual (yellow) Common N.C. - Closed (blue) N.C. Open N.O. - Closed (orange) N.O. **Relay #1** (orange) Closed (orange) Open Auto **Relay #2 of RIBU2S2** Closed (brown) Open (brown) Auto **Relay #2 of RIBU2SC** NC (gray) COM (purple) NO (brown) **STATUS** = 2nd Pole of switch of **RIBU1SM**, **RIBH1SM** Closed (brown) Open (purple) Auto (gray)	
RIBH1SC*	1-SPDT	10-30 VAC 208-277 VAC 50/60 Hz	G-1/2	Yes-2			
RIBU1S*	1-SPST-NO**	10-30 VAC/VDC 120 VAC 50/60 Hz	G-1/2	Yes			
RIBU2SC	1-SPST-NO** 1-SPDT		G-3/4	Yes			
RIBU2S2	2-SPST-NO**		B-3/4	Yes-2			
RIBU1SM	1-SPST-NO**		G-1/2	Yes + Status			
RIBH1S*	1-SPST-NO**	10-30 VAC/VDC 208-277 VAC 50/60 Hz	G-1/2	Yes			
RIBH1SM	1-SPST-NO**		G-1/2	Yes + Status			
RIB2401D* RIB2401D-N4†	1-DPDT	24 VAC/VDC 120 VAC 50/60- Hz	A-1/2	–	10A resistive 30 VDC 10A resistive 277 VAC 1/2 hp for N.O. 120/240 VAC 1/3 hp for N.C. 120/240 VAC	NC (blue) COM (yellow) NO (orange)	**Wiring** Common - White/Yellow wire 24 VAC/VDC - White/Blue wire 120 VAC - White/Black wire 208-277 VAC - White/Brown wire **Input Current** 24 mA @ 18 VAC 20 mA @ 20 VDC 32 mA @ 24 VAC 24 mA @ 30 VDC 40 mA @ 30 VAC 36 mA @ 30 VDC 31 mA @ 120 VAC (RIB2401D) 36 mA @ 208-277 VAC (RIB2402D)
RIB2402D RIB2402D-N4†	1-DPDT	24 VAC/VDC 208-277 VAC 50/60 Hz	A-1/2	–	10A resistive 30 VDC 10A resistive 277 VAC 180 VA pilot duty 120 VAC 1/8 hp for N.C. 120 VAC	NC (gray) COM (purple) NO (brown)	
RIBL3C	3-SPST-NO	10-30 VAC/VDC 50/60 Hz	B-1/2	–	10A resistive 120-277 VAC 10A resistive 28 VDC 480 VA pilot duty 240-277 VAC 480 VA ballast 277 VAC 600W tungsten 120 VAC N.O. 240W tungsten 120 VAC N.C. 1/3 hp for N.O. 120-240 VAC 1/6 hp for N.C. 120-240 VAC 1/4 hp for N.O. 277 VAC 1/8 hp for N.C. 277 VAC	**Relay #1** (black) (black) **Relay #2** (blue) (blue) **Relay #3** (yellow) (yellow) **Relay #4 (if present)** NC (gray) COM (purple) NO (brown)	**Wiring** Common - White/Red wire Relay#1 - White/Black wire Relay#2 - White/Blue wire Relay#3 - White/Yellow wire Relay#4 - White/Brown wire (if present) **Input Current** 30 mA @ 10 VAC 12 mA @ 10 VDC 32 mA @ 12 VAC 14 mA @ 12 VDC 42 mA @ 24 VAC 16 mA @ 24 VDC 50 mA @ 30 VAC 18 mA @ 30 VDC
RIBL4C	3-SPST-NO 1-SPDT		B-1/2	–			
SIB02S	SPDT Manual Switch	–	A-1/2	Yes	Switch ratings 20A 277 VAC	(blue) (yellow) (orange)	No Relay Switch Only

ORDERING INFORMATION

Order by model number

* Models may be ordered in **RIBT Series** with high/low voltage separation.

** Can be ordered normally closed by adding **- NC** after model number.

† **N4** has NEMA 4 housing