

The LLC8 Series is a low cost, single-probe conductive liquid level control designed for low liquid level cutoff protection. It offers a factory fixed time delay of 1 - 60s and is available for input voltages of 24, 120, or 230VAC. LED indicator illuminates whenever the LLC8's isolated, 10A, SPDT output relay is energized. Sense resistance is fixed from 5K - 250KΩ. Available with manual/automatic reset or a special manual reset with a power outage feature that auto resets the unit when power is restored and the water level is acceptable. 24 and 120VAC units are UL recognized as limit switches under UL353 (230VAC units are UL 508) and CSA certified under Standard 14.

For more information see:
 Appendix B, page 167, Figure 28 for dimensional drawing.
 Appendix C, page 170, Figure 25 for connection diagram.

Operation

Automatic Reset (Reset switch not connected): When liquid rises to low level cutoff probe, output relay and LED indicator energize. When liquid falls below the low level cutoff probe, the output relay and LED indicator de-energize after a fixed time delay.

Manual Reset (Reset switch connected): When the liquid level falls below low level probe, the output relay and LED de-energize after a fixed time delay. When the liquid level rises to low level probe, the output relay and LED indicator remain de-energized until the NC manual reset switch is opened; then they energize immediately.

Power Outage Manual Reset (Reset switch connected): A power outage causes the output relay and LED indicator to de-energize. Upon restoration of power, if the liquid is touching the low level probe, the output relay and LED indicator will re-energize. If the liquid level is below the low level probe, the output relay and LED indicator remain de-energized until the NC reset switch is opened.

Features:

- Designed for low level cutoff protection
- Energized on wet probe
- Fixed time delay 1 - 60s
- Fixed sense resistance of 5K - 250KΩ
- 24, 120, or 230VAC input voltages available
- Isolated, 10A, SPDT output contacts

Approvals:   

Auxiliary Products:

- **Quick connect to screw adaptor:**
P/N: P1015-18
- **Electrode:** P/N: PHST-38QTN
- **Threaded probe (24"): P/N: LLP-24**
- **Female quick connect:**
P/N: P1015-13 (AWG 10/12)
P/N: P1015-64 (AWG 14/16)
P/N: P1015-14 (AWG 18/22)

Available Models:

LLC825F5M	LLC843F26P
LLC843F10M	LLC845F25P
LLC843F10P	LLC8610F12M
LLC843F26M	

If desired part number is not listed, please call us to see if it is technically possible to build.

Order Table:

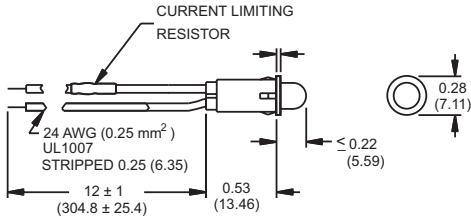
LLC8	X	X	X	X
	Input	Time Delay (fixed)	Sense Resistance	Reset
	-2 - 24VAC	Specify fixed delay	F - Fixed (Specify	M - Manual/Automatic
	-4 - 120VAC	in seconds (1-60) in 1s	fixed resistance in	Reset
	-6 - 230VAC	increments	kilohms (5-250)	P - Power outage
			in 1K increments.)	manual reset

Specifications

Control		Protection	
Type	Resistance sensing for conductive liquids with time delay	Surge	IEEE C62.41-1991 Level A
Sense Voltage	12VAC nominal at probe terminals	Isolation Voltage	≥ 2500V RMS input to output terminals
Sense Resistance	Fixed 5K - 250KΩ	Mechanical	
Sense Resistance Tolerance	±10%	Mounting	0.5 in. (12.7 mm) x .187 (4.76 mm) dia. nylon standoffs (3)
Time Delay		Termination	Electrical 0.25 in. (6.35 mm) male quick connect terminals
Tolerance	±20%	Reset Switch & Probe(s)	0.187 x 0.03 in. (4.75 x 0.76 mm) male quick connect terminals
Repeat Accuracy	±10%	Environmental	
Time Delay vs Temp. & Voltage	±10%	Operating / Storage Temperature	-40° to 60°C / -40° to 80°C
Power Outage Reset Delay	≤1s	Coating	Printed circuit board is conformal coated to resist moisture & corrosion
Input		Humidity	95% relative, non-condensing
Voltage	24, 120, or 230VAC	Weight	≅ 5 oz (141.7 g)
Tolerance	24VAC -15% -20%		
	120 or 230VAC -20% -10%		
AC Line Frequency	50/60 Hz		
Output			
Type	Electromechanical relay		
Form	Isolated SPDT		
Rating	10A resistive @ 120/240VAC; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC		

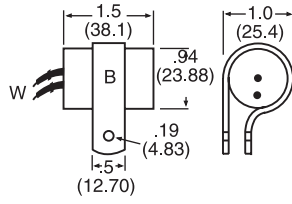
Appendix B - Dimensional Drawings

FIGURE 24



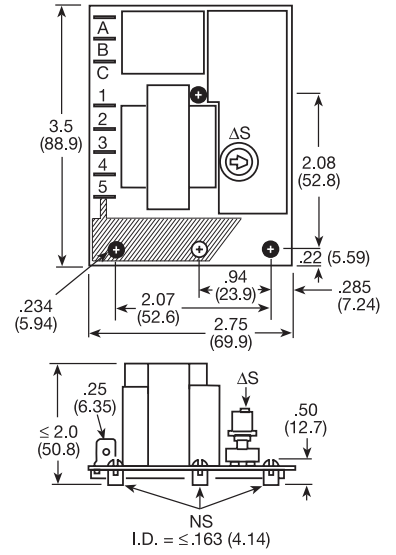
LPM

FIGURE 25



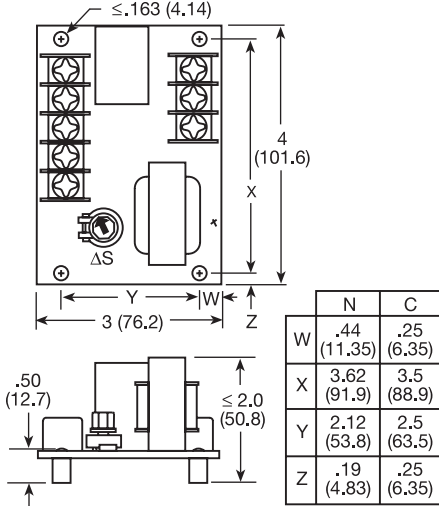
MSM

FIGURE 26



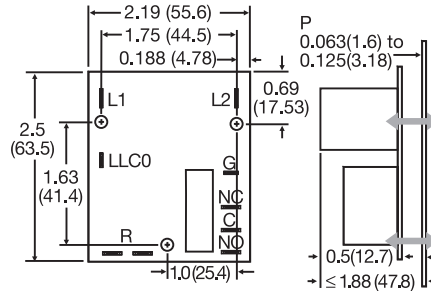
LLC1

FIGURE 27



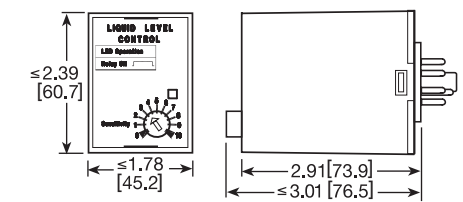
LLC2

FIGURE 28



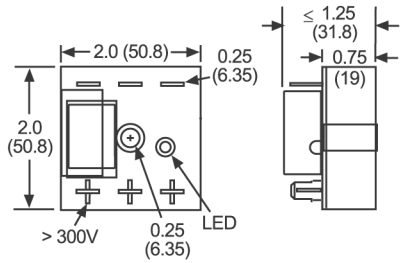
LLC8

FIGURE 29



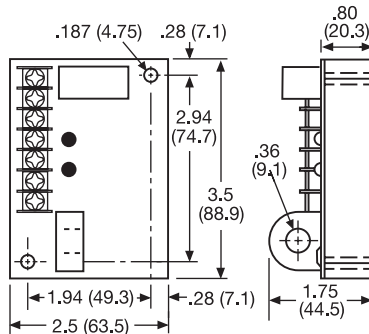
LLC5

FIGURE 30



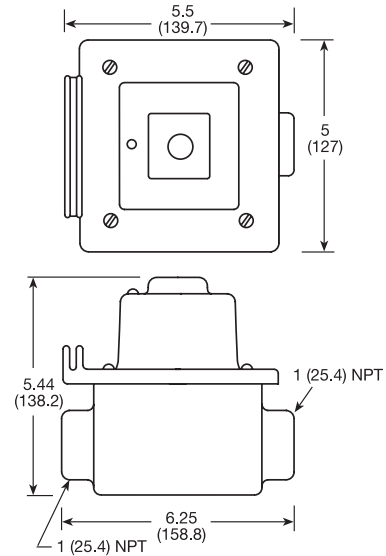
TVM; TVW

FIGURE 32



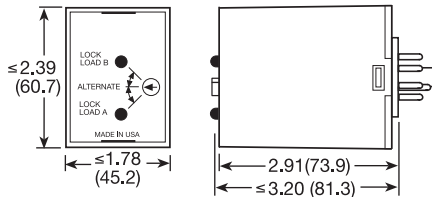
FB; SCR

FIGURE 33



PCR

FIGURE 31

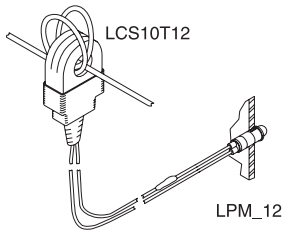


ARP

inches (millimeters)

Appendix C - Connection Diagrams

FIGURE 22 - LCS10T12



Wire Length: 500 ft. (152.4m) max. (Customer Supplied)
CAUTION: The LCS10T12 must be connected to the LPM12 or LPMG12 before current flows to prevent damage or shock hazard. Monitored wires must be properly insulated.

FIGURE 23 - LLC1 Series

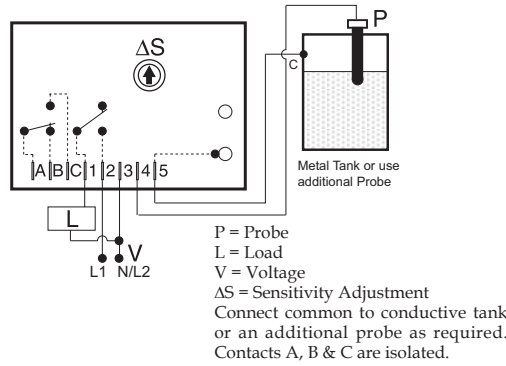


FIGURE 24 - LLC4 Series

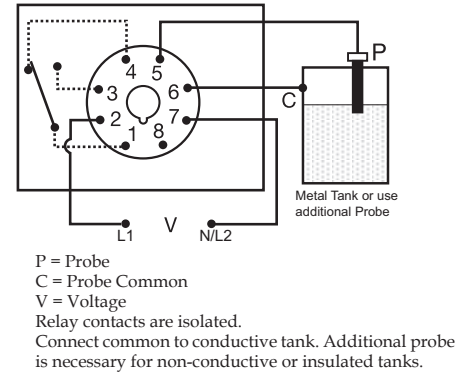


FIGURE 25 - LLC8 Series

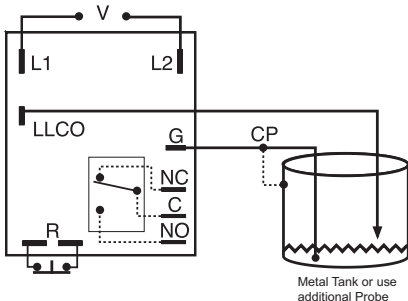


FIGURE 26 - LLC6 Series

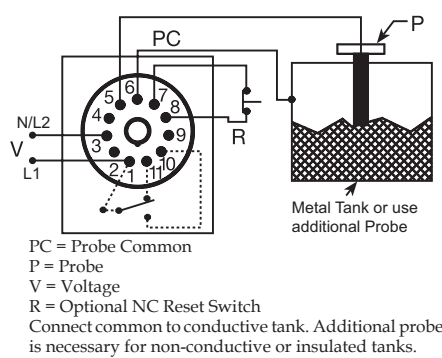


FIGURE 27 - LLC2 Series

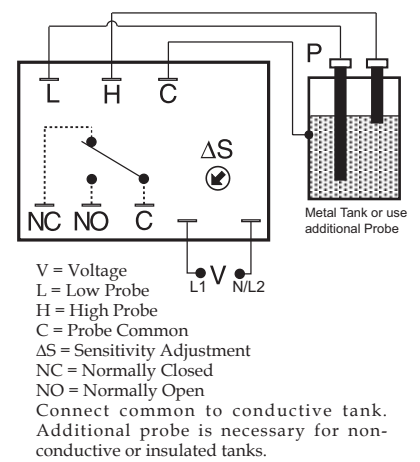


FIGURE 28 - LLC5 Series

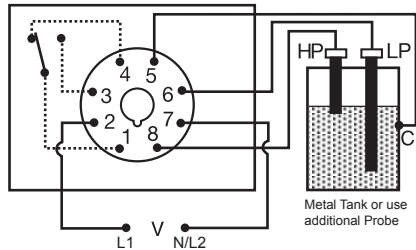
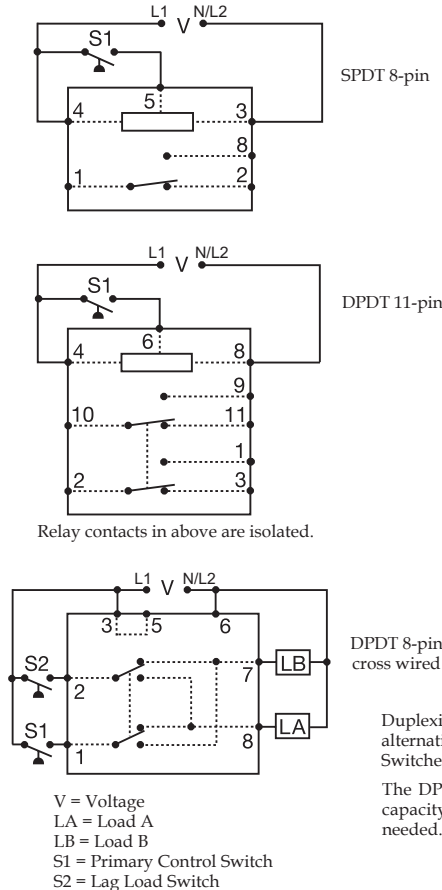


FIGURE 29 - ARP Series



Duplexing (Cross Wired): Duplexing models operate the same as alternating relays and when both the Control (S1) and Lag Load (S2) Switches are closed, Load A and Load B energize simultaneously.

The DPDT 8-pin, cross wired option, allows extra system load capacity through simultaneous operation of both motors when needed. Relay contacts are not isolated.