# DUAL PROBE | PUMP UP & PUMP DOWN LCP Series



- Controls Level of Conductive Liquids in Pump Up (Fill) or Pump Down (Drain) Applications
- Dual Probe
- Probe is Pulsed with a DC Voltage to Prevent Electroplating
- Two Adjustable Sensitivity Ranges
- LED Status Indication
- Uses industry-standard 8 pin octal socket
- Pilot Duty Rating





with appropriate socket



Better. By Design.

800.238.7474 www.macromatic.com sales@macromatic.com LCP Series Liquid Level Control Relays detect and control levels of conductive liquids (tap water, seawater, sewage, chemical solutions, coffee, ice cream, etc.) in dual probe pump up or pump down applications. The conductive properties of the liquid complete a circuit between a probe and common when the liquid comes in contact with both. These relays compare the value of the measured resistance between probes with the setpoint of the adjustable potentiometer provided on the product. The output of the relay is used to control pumps, solenoids or valves to lower, raise or maintain the level of the liquid in the tank. Probes are pulsed with a DC voltage to prevent potential electroplating issues.

Two versions of Dual Probe products are available:

- **Pump Up (Fill)**: The relay energizes when the liquid level falls below the low probe and remains energized until the liquid level comes in contact with the high probe.
- **Pump Down (Drain)**: The relay energizes when the liquid level comes in contact with the high probe and remains energized until the liquid level falls below the lower probe.

Dual Probe				
FUNCTION	INPUT VOLTAGE	SENSITIVITY RANGE	PRODUCT NUMBER	WIRING/ SOCKET
PUMP UP (FILL)	24V AC	4.7K to 100KΩ 1K to 250KΩ	LCP8C100 LCP8C250	8 Pin Octal <b>70169-D</b>
	120V AC	4.7K to 100KΩ 1K to 250KΩ	LCP2C100 LCP2C250	
	240V AC	4.7K to 100KΩ 1K to 250KΩ	LCP1C100 LCP1C250	
PUMP DOWN (DRAIN)	24V AC	4.7K to 100KΩ 1K to 250KΩ	LCP8D100 LCP8D250	~~ v~~
	120V AC	4.7K to 100KΩ 1K to 250KΩ	LCP2D100 LCP2D250	DIAGRAM 197 Cross to Products
	240V AC	4.7K to 100KΩ 1K to 250KΩ	LCP1D100 LCP1D250	NCC
PUMP UP (FILL)	24V AC	4.7K to 100KΩ 1K to 250KΩ	LCP8E100 LCP8E250	8 Pin Octal 70169-D
	120V AC	4.7K to 100KΩ 1K to 250KΩ	LCP2E100 LCP2E250	
	240V AC	4.7K to 100KΩ 1K to 250KΩ	LCP1E100 LCP1E250	21 Development of the second s
PUMP DOWN (DRAIN)	24V AC	4.7K to 100KΩ 1K to 250KΩ	LCP8G100 LCP8G250	~° v °~
	120V AC	4.7K to 100KΩ 1K to 250KΩ	LCP2G100 LCP2G250	DIAGRAM 206 Cross to Products
	240V AC	4.7K to 100KΩ 1K to 250KΩ	LCP1G100 LCP1G250	from Symcom & Crouzet
PUMP UP (FILL)	24V AC	4.7K to 100KΩ 1K to 250KΩ	LCP8H100 LCP8H250	8 Pin Octal <b>70169-D</b>
	120V AC	4.7K to 100KΩ 1K to 250KΩ	LCP2H100 LCP2H250	
	240V AC	4.7K to 100KΩ 1K to 250KΩ	LCP1H100 LCP1H250	HIGH PROBE
PUMP DOWN (DRAIN)	24V AC	4.7K to 100KΩ 1K to 250KΩ	LCP8J100 LCP8J250	~~~~
	120V AC	4.7K to 100KΩ 1K to 250KΩ	LCP2J100 LCP2J250	DIAGRAM 199
	240V AC	4.7K to 100KΩ 1K to 250KΩ	LCP1J100 LCP1J250	Cross to Products from GEMS (Warrick)

Sockets & Accessories available

# DUAL PROBE | PUMP UP & PUMP DOWN LCP Series

### **OPERATION**

**Pump Up (Fill)**: When the liquid level falls below the low level probe, the output relay energizes and the LED is Red ON. The pump is ON to fill the tank. The relay remains energized until the liquid level rises and touches the high level probe. The output relay de-energizes, turning off the pump, and remains de-energized and the LED is Green ON until the liquid level again falls below the low level probe.

**Pump Down (Drain)**: When the liquid level rises and touches the high level probe, the output relay energizes and the LED is Red ON. The pump is ON to drain the tank. The relay remains energized until the liquid level falls below the low level probe. The output relay de-energizes, turning off the pump, and remains de-energized and the LED is Green ON until the liquid level rises and touches the high level probe.

## **APPLICATION DATA**

#### Voltage Tolerance:

AC Operation: +10/-15% of nominal at 50/60 Hz.

Load (Burden): 2 VA

#### Probe Voltage:

5V DC Pulsed

#### **Resistance Sensitivity Range:**

4.7K - 100K $\Omega$  or 1K - 250K $\Omega$ 

#### **Response Time:**

Pick-up: One second Drop-out: One second

#### LED Indicator:

Green ON with Input Voltage applied; Red Flashing during timing; Red ON when relay energized



If the container is non-conductive or insulated, an additional probe must be installed as the COM connection where it will always be submerged.

**NOTE**: the Connection Diagram shown above is for Functions C & D (Wiring Diagram 197). If other Dual Probe Functions are used (E, G, H or J), please check appropriate Wiring Diagram on the product label.

Temperature: Operating: Storage:

-28° to 65°C (-18° to 149°F)
-40° to 85°C (-40° to 185°F)

#### **Output Contacts:**

10A @ 240V AC / 7A @ 28V DC, 1/4HP @ 120V AC (N.O.)

#### Life:

Mechanical: 10,000,000 operations Full Load: 100,000 operations

#### Mounting:

Requires Industry-Standard 8 Pin Octal Socket (Macromatic 70169-D or equivalent)

Approvals:



File #E109466 with appropriate socket

US

socket File #E109466

### DIMENSIONS



All Dimensions in Inches (Millimeters)