ALTERNATING RELAYS

For 3 Switch Applications (Lead-Lag-Stop) Sequence On-Simultaneous OFF

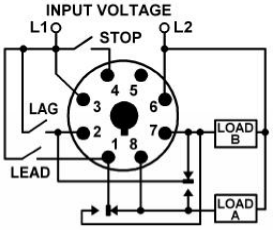
- Works with 3 Control Switches - LEAD, LAG and STOP
- Utilizes Sequence On - Simultaneously Off (S.O.S.O.) Operation
- Replaces Separate Components in Duplex Panel, Saving Space and Reducing Labor
- Protects against Failures of Both STOP & LEAD Switches
- Control Voltages of 12, 24, 120 & 240V AC
- Compact Plug-in Design Utilizing Industry-Standard 8 Pin Octal Socket
- Optional low profile selector switch to lock in one sequence
- 2 LED's indicate relay status
- c UL us LISTED with appropriate socket

Macromatic Alternating Relays for Three Switch Applications offer a number of unique advantages over standard duplex units:

- Combines standard DPDT cross-wired Alternating Relay, contactor auxiliary contacts and control relay into one compact & economical product, thus reducing the cost of the panel by saving space, reducing the number of components and minimizing assembly labor.
- Works with three switches instead of just one or two – LEAD, LAG and STOP.
- Sequence On - Simultaneous Off (S.O.S.O.) Operation – the two loads are energized sequentially, but remain on together until the STOP switch is opened.
- Protects against failure of the STOP and LEAD switches – if both switches fail, the two pump motors will be energized simultaneously when the LAG switch is closed.

See "Typical Installations" on Page 57 for more information.

Alternating Relays from Macromatic are available with an optional three position selector switch. This allows the unit to alternate the two loads as normal, or lock the relay to one load or the other. By locking the Alternating Relay to one load, the other load can be removed for service without rewiring the first load for continuous operation. The selector switch has a low profile to prevent any accidental changes in status.

OUTPUT CONTACTS	CONTROL VOLTAGE	PRODUCT NUMBER	WIRING/SOCKETn
DPDT CROSS-WIRED For 3 Switch Operation w/o Selector Switch	12V AC 24V AC 120V AC 240V AC	ARP012A8 ARP024A8 ARP120A8 ARP240A8	8 Pin Octal **70169-D**  **DIAGRAM 58**
DPDT CROSS-WIRED For 3 Switch Operation w/ Selector Switch	12V AC 24V AC 120V AC 240V AC	ARP012A8R ARP024A8R ARP120A8R ARP240A8R	

n See Page 58 for **Sockets & Accessories.**

MACROMATIC

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Application Data

Voltage Tolerances: +10%/-15% of control voltage at 50/60Hz.

Load (Burden): Less than 3VA

Output Contacts:
10A @ 240V AC/30V DC,
1/2HP @ 120/240V AC (N.O.), 1/3HP @ 120/240VAC (N.C.)

Life:
Mechanical: 10,000,000 operations
Full Load: 150,000 operations

Temperature: -28° to 65°C (-20° to 150°F)

Transient Protection: 10,000 volts for 20 microseconds

Indicator LED's: 2 LED's marked LOAD A and LOAD B

Optional Selector Switch Settings:
ALTERNATE
LOCK LOAD A
LOCK LOAD B

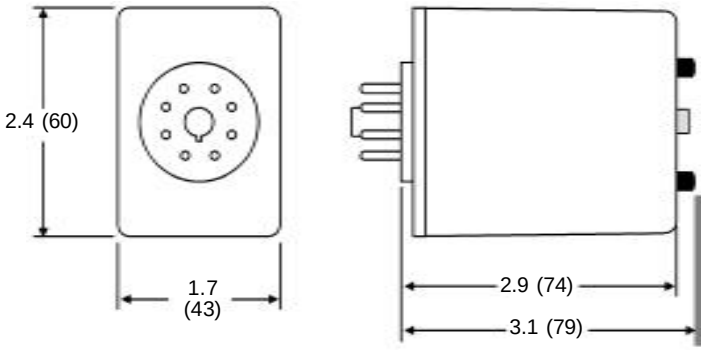
Approvals:

File #E109466

File #E109466

with appropriate socket

Dimensions



All Dimensions in Inches (Millimeters)

Typical Installations

DPDT Cross-Wired for Three Switch Applications

In the OFF state, all three switches are open, the Alternating Relay is in the LOAD A position, and both loads are off. No action happens with the Alternating Relay or either load when the STOP Switch closes. When the LEAD Switch closes, Load #1 (M1) turns on. When the LAG Switch closes, Load #2 (M2) turns on. Both loads remain on as long as all three switches are closed.

When the LAG Switch opens, Load #2 (M2) remains on because the STOP Switch is still closed. When the LEAD Switch opens, Load #1 (M1) remains on because the STOP Switch is still closed. When the STOP Switch opens, both Load #1 (M1) and Load #2 (M2) are turned off simultaneously. The Alternating Relay toggles to the LOAD B position. The entire cycle is then repeated, but with Load #2 (M2) energized first followed by Load #1 (M1).

This type of operation is known as “Sequence On - Simultaneously Off (S.O.S.O.)”-the two loads are energized sequentially, but remain on together until the STOP switch is opened.

If both the STOP Switch and LEAD Switch fail to close and turn on the first load, both loads will be turned on simultaneously when the LAG Switch is closed.