

ALTERNATING RELAYS

DPDT CROSS-WIRED DUPLEXOR

ARP SERIES PLUG-IN



- ◆ For duplex loads
- ◆ 10A DPDT Cross-Wired Output Configuration when additional capacity is required
- ◆ Can be used with two or three Control 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 either load ON first
- ◆ 2 LED's indicate load to energize first



with appropriate socket



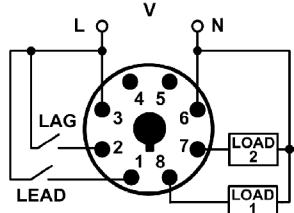
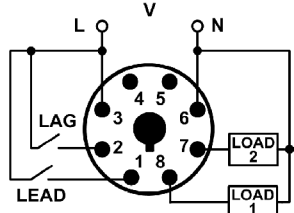
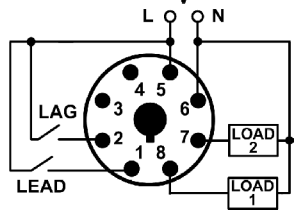
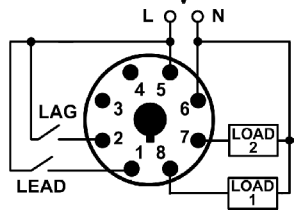
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Alternating Relays with DPDT cross-wired outputs are used in applications requiring both (a) the optimization of load usage by equalizing the run time of two loads and (b) additional capacity in case of excess load requirements. This alternating action is initiated by a control switch, such as a float switch, manual switch, timing relay, pressure switch, or other isolated contact. Each time the initiating switch is opened, the output relay contacts will change state, thus alternating the two loads. Two LED indicators show the load to energize first.

Alternating Relays with DPDT cross-wired output configurations can be used with two or three control switches. See "Typical Installations" on Page 35 for more information. For products with SPDT or DPDT output configurations, see Page 32.

An optional three position selector switch is offered. This allows a DPDT cross-wired unit to alternate the two loads as normal, or lock the relay to always operate the same load first each time. In this manner, a load that has fewer hours of operation than the other load could be used more often in an effort to eventually balance the run time of both loads.

OUTPUT CONTACTS	CONTROL VOLTAGE	PRODUCT NUMBER	WIRING/SOCKET
DPDT CROSS-WIRED w/o Selector Switch	12V AC 24V AC 120V AC 240V AC	ARP012A3 ARP024A3 ARP120A3 ARP240A3	8 Pin Octal 70169-D 
DPDT CROSS-WIRED w/ Selector Switch	12V AC 24V AC 120V AC 240V AC	ARP012A3R ARP024A3R ARP120A3R ARP240A3R	 DIAGRAM 19
DPDT CROSS-WIRED w/o Selector Switch	12V AC 24V AC 120V AC 240V AC	ARP012A5 ARP024A5 ARP120A5 ARP240A5	8 Pin Octal 70169-D 
DPDT CROSS-WIRED w/ Selector Switch	12V AC 24V AC 120V AC 240V AC	ARP012A5R ARP024A5R ARP120A5R ARP240A5R	 DIAGRAM 147

Application Data & Dimensions—Page 35
Sockets & Accessories—Pages 80 & 81

ALTERNATING RELAYS

DPDT CROSS-WIRED DUPLEXOR

APPLICATION DATA & DIMENSIONS

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: 100,000 operations

Temperature: -28° to 65°C (-18° to 149°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:

LOAD 1 (always energizes first)

ALTERNATE

LOAD 2 (always energizes first)

Approvals:



File #E109466



File #LR45565

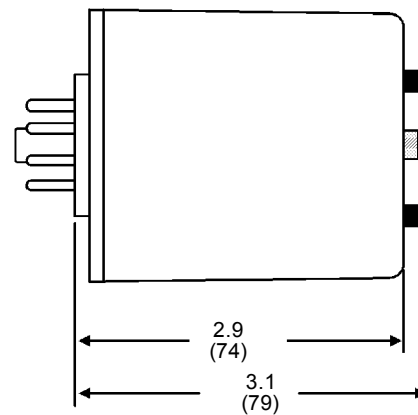
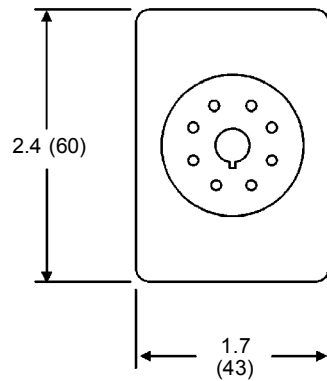


Low Voltage &
EMC Directives
EN60947-1, EN60947-5-1



IND. CONT. EQUIP.
5007
with
appropriate
socket
File #E109466

DIMENSIONS



All Dimensions in
Inches (Millimeters)

TYPICAL INSTALLATIONS

In the initial off state (diagram below left), both the LEAD Control Switch and the LAG Control Switch are open, the Alternating Relay is in the LOAD 1 position, and both loads are off. The red LED marked "LOAD 1" is ON. When the LEAD Control Switch closes, it energizes Load M1. As long as the LEAD Control Switch remains closed, Load M1 remains energized. If the LAG Control Switch closes, it energizes Load M2. When the LAG Control Switch opens, Load M2 is turned off. When the LEAD Control Switch opens, Load M1 is turned off and the Alternating Relay toggles to the LOAD 2 position. The red LED marked "LOAD 2" is ON. When the LEAD Control Switch closes, it turns on Load M2. If the LAG Control Switch closes, it will energize Load M1. When the LAG Control Switch opens, Load M1 is turned off. When the LEAD Control Switch opens, Load M2 is turned off, the Alternating Relay toggles back to the LOAD 1 position, and the process can be repeated again.

The diagram below right illustrates a type of operation known as "Sequence On - Simultaneously Off (S.O.S.O.)"-the two loads are energized sequentially, but remain on together until the OFF switch is opened.

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

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

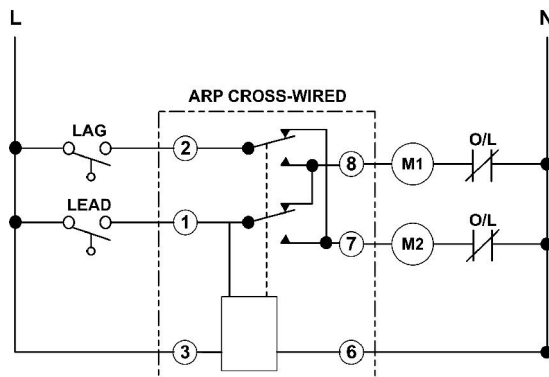


Figure A

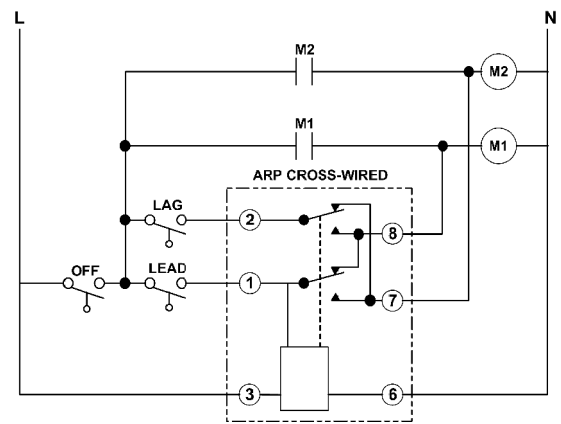


Figure B