

PHASE MONITOR RELAYS

Provides microprocessor-based protection for 3 phase systems against phase loss, phase reversal, phase unbalance, and undervoltage. These devices are designed to be compatible with most Wye or Delta systems. In Wye systems, a connection to a neutral is not required. Phase Monitoring Relays protect against unbalanced voltages or single phasing regardless of any regenerative voltages. The relay is energized when the phase sequence and all voltages are correct. Any one of four fault conditions will de-energize the relay. Re-energization is automatic upon correction of the fault condition. An LED indicates normal and tripped conditions. The percent phase unbalance is adjustable from 2-10%, and the undervoltage drop-out can be set at 75-95% of operating voltage. The adjustable time delay dropout on undervoltage (0.1-20 seconds) eliminates nuisance tripping caused by momentary voltage fluctuations. **Output:** 10A SPDT (PMP) or DPDT (PMD) @ 240VAC/30VDC.

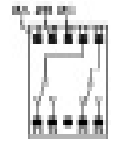
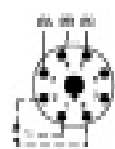
Dimensions: PMP-1.7" x 2.4" x 3.5". PMD-1.8" x 2.75" x 4.4".



PMP Plug-in



PMD Surface-Mount



Operating Voltage 50/60 Hz	Adjustable Undervoltage Drop-out Range	Product Number Plug-inCase (8 pin octal socket)	Socket	Product Number Surface-Mount Case*
208/240V	180-230V	PMP240	70169-D	PMD240
480V	360-460V	PMP480**	70175	PMD480

**Requires 600V-rated socket

* No socket required for PMD240 or PMD480

VOLTAGE MONITOR RELAYS



File E109461

Provides protection to equipment where an over or under voltage condition is potentially damaging. They monitor either AC single phase (50-400hz) or DC (independent of polarity) voltages. No supply (input) voltage is required. The pick-up voltage setting is user-adjustable from 85-115% of the nominal voltage rating. The drop-out voltage setting is fixed at 3% below the pick-up voltage setting. The relay energizes when the monitored voltage is above the pick-up setting. The relay de-energizes when the monitored voltage is below the drop-out setting. The time delay on drop-out is fixed at 50ms. **Output:** 10A DPDT @ 240VAC/30VDC. **Dimensions:** 1.7" x 2.4" x 2.9".

Nominal Voltage	Pick-up Voltage Range	Drop-Out Voltage Range	Product Number	Socket
24V AC	21-27V AC	20-26V AC	VMP024A	8 PIN OCTAL 70169-D
120V AC	102-138V AC	99-134V AC	VMP120A	
240V AC	204-276V AC	198-267V AC	VMP240A	
12V DC	10-14V DC	9-13V DC	VMPO12D	
24V DC	21-27V DC	20-26V DC	VMP024D	



ALTERNATING RELAYS

Used in special applications where the optimization of load usage is required by equalizing the run time of two loads. They are also used where additional capacity is required 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 status of the output relay. As listed, these units come with a 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:** 10A SPDT or DPDT Cross-Wired @ 240VAC/30VDC. **Dimensions:** 1.7" x 2.4" x 2.9".



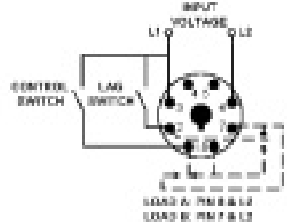
File E109461

File LR45565

Control Voltage	Product Number		Socket
	SPDT Contacts	DPDT Cross-Wired Contacts	
24V AC	ARP024A6R	ARP024A3R	8 PIN
120V AC	ARP120A6R	ARP120A3R	OCTAL
240V AC	ARP240A6R	ARP241A3R	70169-D



SPDT



DPDT Cross-Wired