



# PIR-1

## PULSE ISOLATION RELAY

The PIR-1 pulse isolation relay is designed to provide a single isolated “dry”, mercury-wetted form “A” (K & Y) or form “B” (K & Z) contact from a single form “A” input. Typical applications involve timing circuits that distribute “end-of-demand” interval pulses. Other applications include interfaces between utility metering devices and customer owned-energy control systems, demand recorder applications, and supervisory control systems (SCADA) interfaces. A bright yellow LED lamp indicate the system’s status at all times thus allowing a rapid check of the system’s performance without requiring any additional test equipment.



The PIR-1 has an integrated circuit that checks each incoming pulse for its duration. If the incoming pulse is less than 20 milliseconds in length the PIR-1 assumes the incoming pulse to be noise and it is disregarded. Thus any valid pulse rate of 25 pulses per second (50 on-50 off form factor) or less is accepted while static and induced noise is rejected. If used in a very noisy environment this “pulse acceptance window” may be lengthened or shortened as needed to reject noise by the change of a resistor and/or a capacitor value. The PIR-1’s form “A” output pulse contact closure may be set in the field for either a nominal 100 millisecond closure, regardless of the input pulse’s duration, or set to exactly follow the input pulse’s closure timing length. The 100 millisecond factory set duration may be changed by changing either a resistor and/or a capacitor for longer or shorter durations. The PIR-1’s input and output circuit’s terminal strip is color coded for error free field wiring. The “K” lead of the PIR-1’s output is fused to prevent damage to the relay under almost any conditions a user might cause such as excessive current, incorrect wiring, etc.

The PIR-1 has built-in transient protection for the mercury-wetted relay’s contacts which eliminates the need for external or off-the-board transient suppressors. All component parts which have power applied to them, with the exception of the input/output terminal strip are enclosed in a polycarbonate cover for maximum user protection. The mounting base plate is also made of polycarbonate and offers excellent electrical insulation between the circuit and the mounting surface.

### SOLID STATE INSTRUMENTS

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# PIR-1 SPECIFICATIONS

## ELECTRICAL

Power Input: 90 to 325 VAC. Burden: 10 MA. at 120 VAC

Output: One set of Form "A" or Form "B" contacts (K & Y or K & Z) selected by a user changeable board jumper for time or energy pulses. The contacts are a mercury-wetted "no bounce" relays rated at 500 VDC or 350 VAC 2 Amps. break, 5 amps carry. The maximum rating of the contacts is 100 VA. Factory fused at 1/2 amp. (3AG)

Contact Resistance: 50 milliohms maximum, 12 to 14 typical

Insulation Resistance: 50 megohms typical

Operate and Release Time: 1 to 2 milliseconds typical

## MECHANICAL

Mounting: Within 30 degrees of vertical

Size: 3.27 inches wide, 5.65 inches high, 1.50 inches deep

Weight: 11 ounces

## TEMPERATURE

Temperature Range: -38° C to +70° C, -36.4° F to +158° F

Humidity: 0 to 98% non-condensing

## OPTIONS

Input Voltages: 24 VAC



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