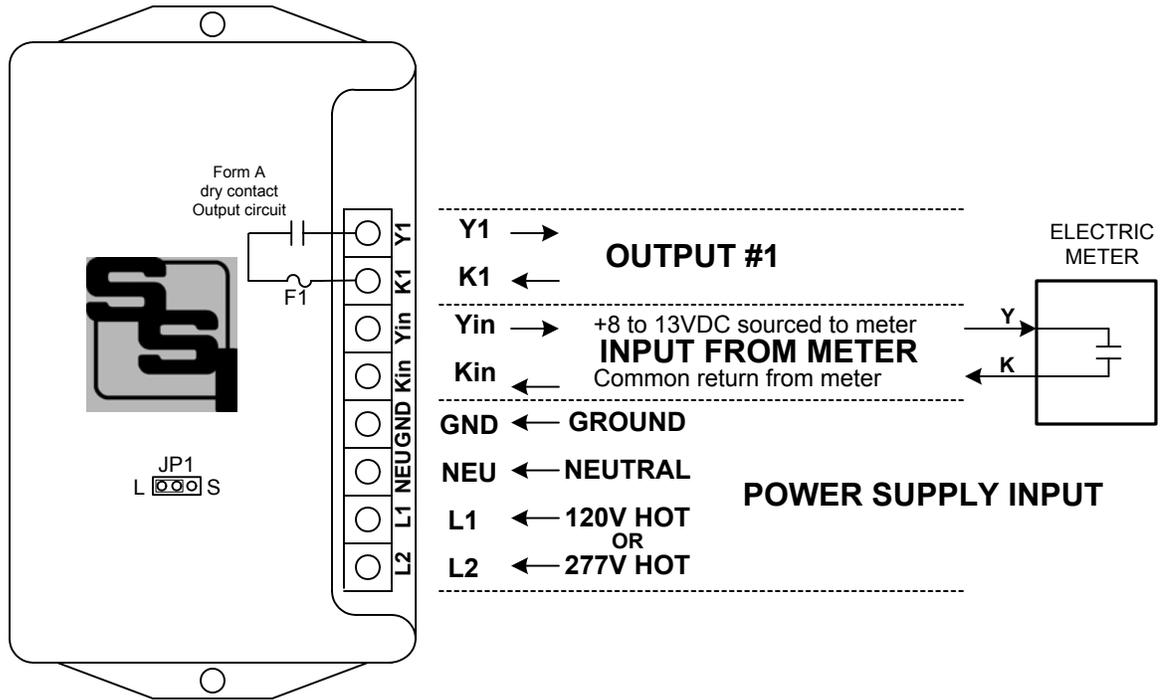


PIR-1PS

Elite Solid State

PULSE ISOLATION RELAY INSTRUCTION SHEET



MOUNTING POSITION - The PIR-1PS may be mounted in any position.

POWER INPUT - For a 120VAC power supply, connect the "hot" lead to the **L1** terminal. For a 208 to 277VAC power supply, connect the "hot lead to the **L2** terminal. Connect the Neutral power supply lead to the **NEU** terminal. Connect the electrical system ground to the **GND** terminal.

METER CONNECTIONS - The PIR-1PS's **Kin** and **Yin** input terminals are connected to the meter's K & Y terminals: Kin to K and Yin to Y. The PIR-1PS's **Yin** terminal provides a "pulled up" +13VDC wetting voltage to the meter's Y terminal. The **Kin** terminal is the common return.

FUSES - The fuse is a type 3AG and may be up to 1/2 Amp in size. A 1/2 Amp fuse is supplied standard with the unit unless otherwise specified.

OUTPUTS - Under the plastic cover in the center of the board just above the power transformer is a 3-pin header labeled **JP1**. This selects either the **Long (LEFT)** or the **Short (RIGHT)** output pulse mode. Use the long (L) mode to have the output pulse length match the input pulse length. Read the reverse side of this sheet for additional information on selecting the jumper setting. Arc suppression for the contact of the solid state relay is provided internally.

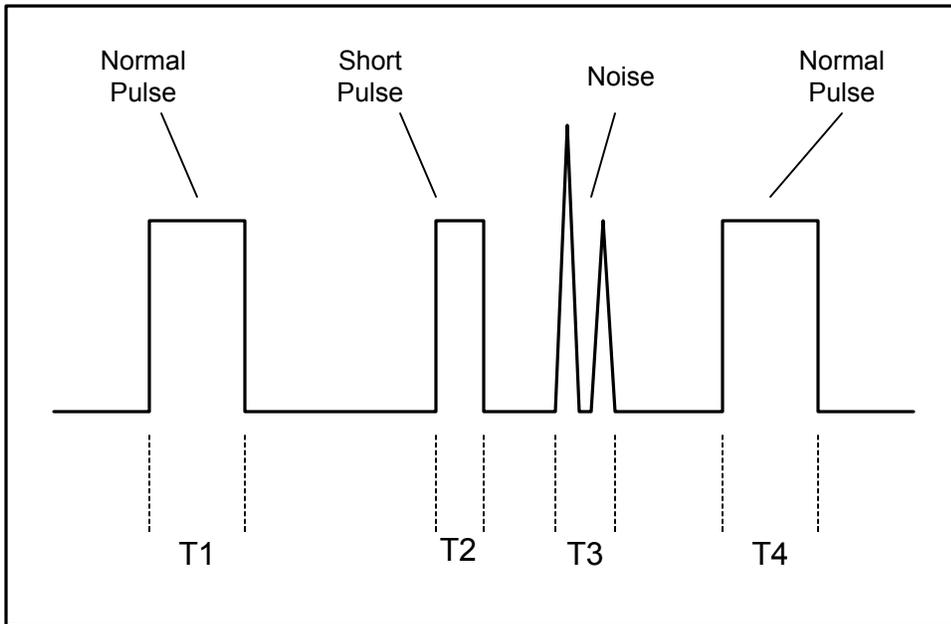


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WORKING WITH THE PIR-1PS RELAY

BLOCKING NOISE: The PIR-1PS has a built-in circuit to reject noise while allowing the detection of valid pulses from a sending source. The circuit accomplishes this by

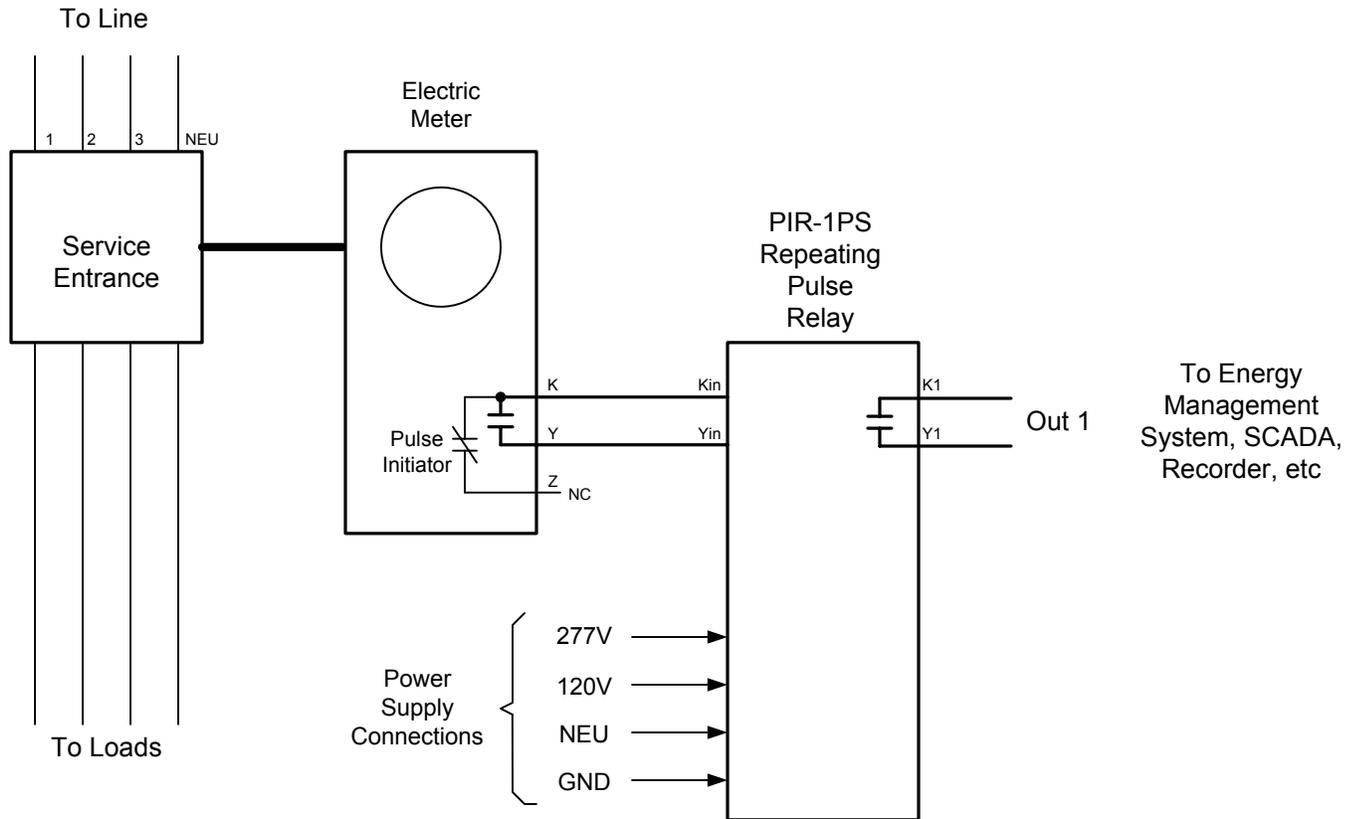


measuring the time an input voltage is present. If the input voltage is present for less than 20 to 25 milliseconds, it is assumed to be noise. An input of longer duration is classified as a valid input and an output will occur. In the illustration to the left, the normal pulses with time durations of T1 and T4 will cause an output. The short pulse of time duration

T2 and the noise with duration T3 will be rejected because the length of time (pulse width) is too short, even though the voltage is of sufficient magnitude. The time T4 could be many or thousands of times as long as T1 and it would still be a valid time pulse since it has met the minimum time requirement of 20 to 25 milliseconds. The time duration of 20 to 25 milliseconds has been chosen as the factory-set value since one cycle of the 60 hertz AC line frequency represents 16.67 milliseconds. Most induced noise and arcing discharges do not last longer than this, while most contact closures are a great deal longer. The time duration of the noise rejection circuit may be modified by changing either a resistor and/or a capacitor. In a very dirty (noise-wise) environment, it might be desirable to set the delay up to as much as 250 milliseconds. If you need a longer input validation period, contact the factory for correct values and procedures.

OUTPUT PULSE DURATION: The PIR-1PS can output two types of pulses - long or short - depending upon the position of the small 3-pin header **JP1** located in the middle of the board just above the transformer and to the left of the **Yin** terminal. In the "**S**" (right) position, the PIR-1PS outputs a "short" pulse of approximately 100 milliseconds in duration occurring 20 to 25 milliseconds after the input of the leading edge of a valid input pulse. The length of the output pulse may be modified by changing the value of a resistor and/or a capacitor to allow much longer or shorter output periods. If the switch is in the "**S**" position and the incoming pulse is of sufficient time duration to be a valid pulse, but is less than 100 milliseconds, the output time period will still be 100 milliseconds. Thus, the PIR-1PS can be used as a pulse stretcher. In the "**L**" (left) position, the PIR-1PS outputs a "long" pulse which is the same duration as the valid input pulse plus 100 milliseconds, occurring 20-25 milliseconds after the input of the leading edge of a valid input pulse. Maximum pulse rate is approximately 4 pulses per second. If no jumper is not installed, the PIR-1PS will default to the short output mode.

PIR-1PS Wiring Diagram



PIR-1PS Repeating Pulse Relay Wiring Diagram		REVISIONS	
		NO.	DATE
DATE ORIGINAL 11/24/08		SCALE N/A	
LATEST REVISION		DRAWN WHB	

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