SSI STANDARD

# SPR-1 PULSE ISOLATION RELAY

## DESCRIPTION

FUNCTIONAL SUMMARY

| | IN | OUT |
|---|---|---|
| # | 1 | 1 |
| TYPE | 2 Wire or 3 Wire | 3 Wire |
| FORM | A or C | C |

The SPR-1 pulse isolation relay is designed to provide one set of isolated (dry) solid state Form C (K, Y & Z) contacts from a single field-selectable Form A or C input over a wide voltage range. The outputs may be configured as either toggle or fixed mode. In toggle mode, the outputs are fixed at 100mS, regardless of the closure time of the input. The sense voltage provided by the SPR-1 to the sending device (typically a meter) is +13 VDC. The SPR-1 may be used with meters having high or low voltage semiconductor outputs, or mechanical output contacts (relays).

Applications include interfaces between utility metering devices and customer-owned energy control systems, demand recorders or supervisory control (SCADA) systems. The SPR-1 relay has a switch-selectable Form A or Form C input and input filtering circuitry to prevent noise from triggering the output. Pulses less than 18 mS are considered to be noise and will not be detected as a valid pulse. Once an input pulse greater in length than 18 mS is detected, the output will be changed to the state of the input.

Bright red and green LED indicators display the system's status at all times, thus allowing a rapid check of the system's performance without requiring any additional test equipment. The SPR-1's input and output terminal strip is a "Euro" type. When the stripped wire has been correctly installed in the terminal's slot, no conductive parts are exposed on the surface of the terminal strip, thus allowing the user maximum protection from accidental electrical shock. The "K" lead of the SPR-1's output is fused to prevent damage to the relays under almost any condition a user might cause such as excessive current, incorrect wiring, etc.

The SPR-1 has built-in MOV transient protection for the solid state relay contacts that eliminates the need for external protection. 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 protection. The mounting base plate is also made of polycarbonate and offers excellent electrical insulation between the circuit and the mounting surface. The SPR-1 is normally mounted inside another enclosure, suitable for the user's intended application.

SPR-1

**SOLID STATE INSTRUMENTS A Product Family Owned by RADIAN RESEARCH**
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SSI ELITE

# SPR-1 PULSE ISOLATION RELAY

SPR-1

## SPECIFICATIONS

### ELECTRICAL

| | |
|---|---|
| Power Input: | 120, 208-277. Burden: 10 mA at 120 VAC |
| Pulse Input: | One switch-selectable Form A or Form C input. “Kin” is common return. Input has “Yin” and “Zin” input terminals “pulled up” to +13VDC for pulse signal from meter. “Yin” terminal used for 2-Wire mode. Both used for 3-Wire. |
| Pulse Output: | One set of dry Form C contacts (K, Y, & Z) for energy pulses. The contacts are solid state rated at 125VAC/VDC at 100milliamps. The maximum power rating of the contacts is 800mW. Each output is factory fused at 1/10 amp. (3AG) |
| Contact On-State Resistance: | 25 ohms maximum, 18 typical |
| Insulation Resistance: | 50 megohms typical |
| Operate and Release Time: | 2 to 3 milliseconds typical |
| Input/Output Isolation Voltage: | 2500Vrms |

### MECHANICAL

| | |
|---|---|
| Mounting: | Any position |
| Size: | 3.27” wide, 5.70” high, 1.50” deep |
| Weight: | 6 ounces |

### TEMPERATURE

| | |
|---|---|
| Temperature Range: | -38° C to +70° C, -36.4° F to +158° F |
| Humidity: | 0 to 98% non-condensing |

### AVAILABLE OPTIONS

| | |
|---|---|
| Input Voltages: | 125 VDC input using the DCS-1 Power Supply. Contact factory for other input voltages. |

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