



## PULSE ISOLATION RELAYS - SOLID STATE

# SPR-24 REPEATING PULSE RELAY

## DESCRIPTION

The SPR-24 dual repeating pulse isolation relay is designed to provide four isolated dry-contact, solid state Form C (K, Y, & Z) outputs from two Form A or C inputs. Each output is mappable (assignable) to either of the two inputs, allowing a flexible configuration. The primary application for the SPR-24 is where two independent isolation relay channels are desired with multiple outputs on each channel, in one package.

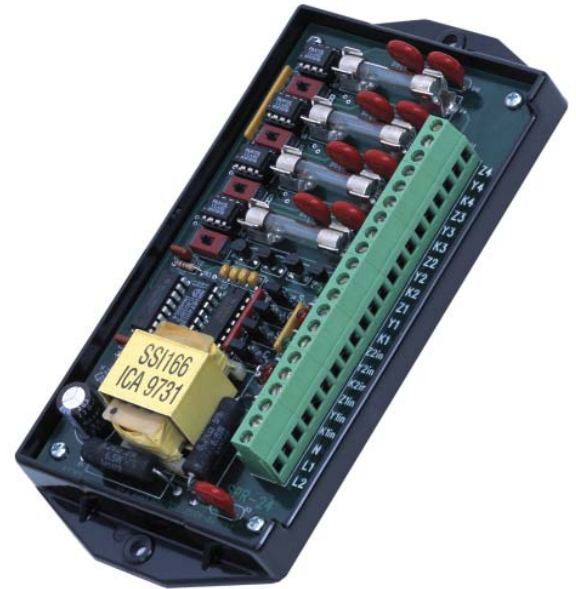
The SPR-24 operates over the standard SSI wide voltage range. The SPR-24 has a built-in low voltage transformer-isolated power supply generating a +13VDC sense voltage. The sense voltage is sent to each electric meter's Y and Z pulse initiator output terminals from the SPR-24's "Y1in"/"Z1in" and "Y2in"/"Z2in" input terminals, returning to the "K1in" and "K2in" terminals, the common return for both meters. Each output relay is switch-selectable to follow (echo) one of the two inputs, thus allowing each input to control one, two, three or even four relays. Flexible configurations for the two input channels are possible: 0/4, 1/3, 2/2, 3/1, and 4/0 such that one SPR-24 may be used in lieu of two or more relays to accomplish the same task.

The SPR-24 may be used with electric meters having electro-mechanical or semiconductor output contacts, either high or low voltage. Typical applications include interfaces between utility metering devices and customer-owned energy control systems, demand recorder applications, and supervisory control systems (SCADA) interfaces. The SPR-24 relay is designed for high speed pulses and can switch up to 72,000 pulses/hour in 3-Wire mode and 36,000 pulses/hour in 2-Wire mode. The outputs are non-latching. Each input may be configured for either a "long" or "short" output pulse. In the "long" output mode, the output pulse width exactly follows (or "mirrors") the input pulse width. In the "short" output mode, the output pulse is fixed at 100 milliseconds (mS). The "short" mode is normally used for end-of-interval pulses or where a fixed pulse width is needed.

Bright red and green LED indicators, one on each input, display each channel's relay status at all times thus allowing a rapid check of the system's performance without requiring any additional test equipment. The SPR-24's input and output terminal strip is a "Euro" type connector. When the stripped wire has been correctly installed in the terminals "slot" no conductive parts are exposed on the surface of the terminal strip, thus allowing the user maximum protection from accidental electrical shock. Each "K" lead of the SPR-24's four outputs 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-24 has built-in MOV transient protection for the solid-state relay 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 protection.

The mounting base plate is also made of polycarbonate and offers excellent electrical insulation between the circuits and the mounting surface.



### FUNCTIONAL SUMMARY

	IN	OUT
#	2	4
TYPE	2 Wire or 3 Wire	3 Wire
FORM	A or C	C

# SPR-24



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## SPECIFICATIONS

### ELECTRICAL

Power Input:	90 to 300 VAC 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 for pulse signal from meter. "Yin" terminal used for 2-Wire mode. Both used for 3-Wire.
Pulse Output:	Three sets of dry Form C contacts (K, Y, & Z) for energy pulses. The contacts are rated at 125VAC/VDC at 100milliamps. The maximum rating of the contacts is <u>800mW</u> . Each output is factory fused at 1/10 amp. (3AG)
Contact On-State Resistance:	25 ohms maximum, 18 typical
Operate and Release Time:	Turn On Time - .5 mS typical; 3 mS MAX Turn Off Time - .1 mS typical; 1 mS MAX
Input/Output Isolation Voltage:	2500Vrms

### MECHANICAL

Mounting:	Any position
Size:	3.50" wide, 7.20" high, 1.50" deep
Weight:	17 ounces

### TEMPERATURE

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

### OPTIONS

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