



#### FUNCTIONAL SUMMARY

|      | IN                  | OUT    |
|------|---------------------|--------|
| #    | 4                   | 4      |
| TYPE | 2 Wire<br>or 3 Wire | 3 Wire |
| FORM | A or C              | C      |

# SPR-44B

## SSI STANDARD B-SERIES

# SPR-44B QUAD PULSE ISOLATION RELAY

## DESCRIPTION

The SPR-44B quad pulse isolation relay is designed to provide four isolated dry-contact, solid state Form C (K, Y, & Z) outputs from four Form A or C inputs. The primary application for the SPR-44 is where four independent isolation relay channels are desired in one package. A variety of pulse splitting relaying schemes can be accomplished by paralleling two or more inputs.



The SPR-44B operates over the standard SSI wide voltage range. The SPR-44B has a built-in low voltage transformer-isolated power supply generating a +13VDC wetting voltage

The sense voltage is sent to each meter's Y and Z terminals from the SPR-44B's "Yin" and "Zin" input terminals, returning to the "Kin" terminal, the common return for all meters. Since all meters supplying pulses to the SPR-44B have a common reference, a number of flexible input configurations can be wired. For example, two inputs can be wired in parallel giving a "splitting" configuration where one input and two outputs is desired.

The SPR-44B may be used with electric meters having electro-mechanical or semiconductor dry-contact output contacts, either high or low voltage. The SPR-44B's inputs are configured to also accept open-collector transistor or open-drain FET solid state pulse initiator switches. 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-44B 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. The SPR-44B outputs' pulse timing follows the inputs' timing such that output pulses have the exact same pulse width as the input.

The SPR-44B also has a pulse conversion capability built in. Each of the four channels of the SPR-44B can be independently set for Normal or Conversion mode. In the pulse conversion mode, a 3-wire (FormC) input can be converted to a 2-Wire (FormA) pulse while maintaining the same pulse value. Additionally, a 2-wire (FormA) input can be converted to a 3-Wire (FormC) pulse while maintaining the same pulse value.

Bright red and green LED indicators, one of each on every input, indicates 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-44B'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-44B'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-44B has built-in MOV transient protection for the solid state relay contacts which eliminates the need for external or off-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.



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### SPECIFICATIONS

#### ELECTRICAL

|                                 |                                                                                                                                                                                                                                            |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Input:                    | 120 to 277 VAC. Burden: 10 mA at 120 VAC<br>Four independent field-selectable, Form A or Form C inputs.                                                                                                                                    |
| Pulse Input:                    | Each input has "Yin" and "Zin" terminals wetted "pulled up" with +13VDC. "Kin" terminal is the common return. The Form A input uses the "Yin" terminal, the Form C input uses the "Yin", and "Zin" terminals for the input from the meter. |
| Pulse Output:                   | Four sets of dry Form C contacts (K, Y, & Z) for energy pulses. The relay contacts are solid state with "no bounce" circuitry. Outputs are rated at 125VAC/VDC 1/10th Amp(100 milliamps). Factory fused at 1/10 amp @ 250VAC. (3AG)        |
| Contact On-State Resistance:    | 25 ohms maximum, 18 ohms typical                                                                                                                                                                                                           |
| Insulation Resistance:          | 50 megohms typical                                                                                                                                                                                                                         |
| Operate and Release Time:       | 2 to 3 milliseconds typical                                                                                                                                                                                                                |
| Input/Output Isolation Voltage: | 3750Vrms                                                                                                                                                                                                                                   |

#### MECHANICAL

|           |                                    |
|-----------|------------------------------------|
| Mounting: | Any position                       |
| Size:     | 3.50" wide, 7.20" high, 1.50" deep |
| Weight:   | 12 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: | (-SP2 Option) 125 VDC input<br>(-SP12 Option) 12VDC input<br>(1SP13 Option) 15-48VDC input |
|-----------------|--------------------------------------------------------------------------------------------|