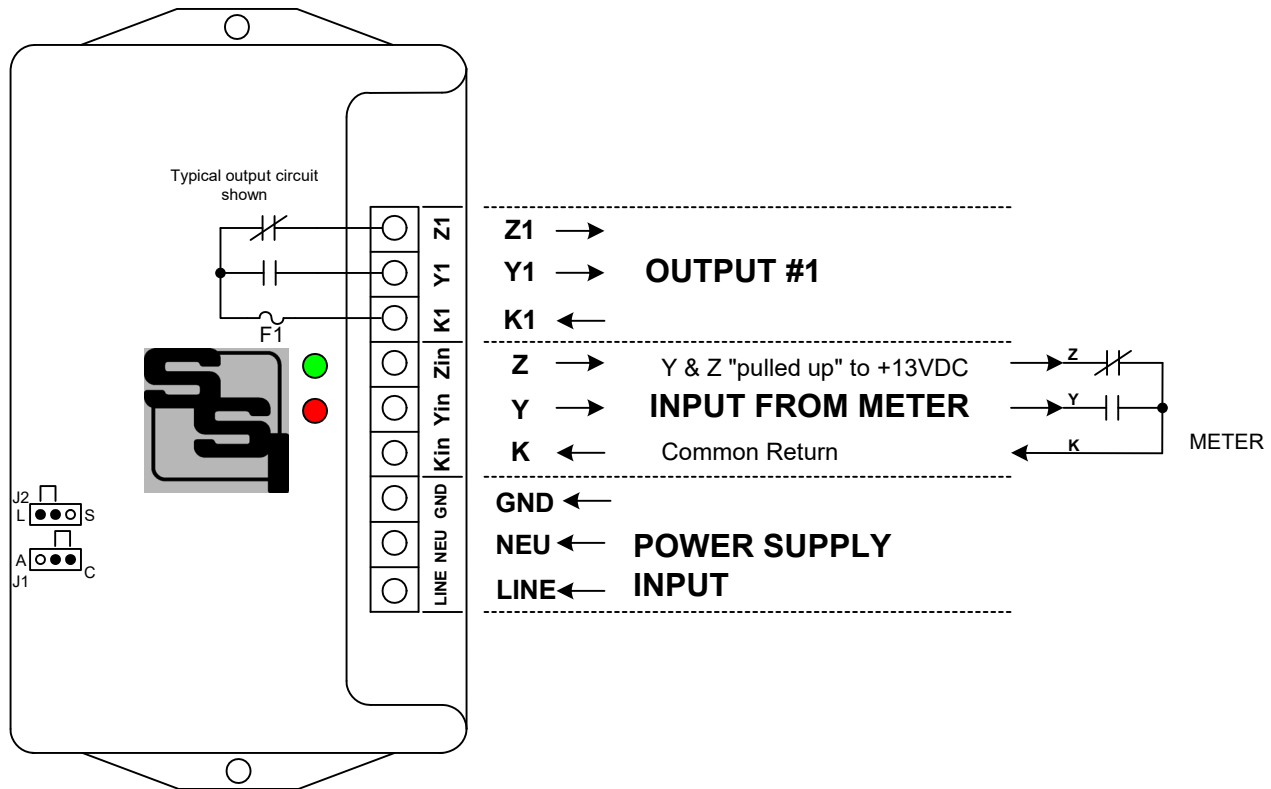


# INSTRUCTION SHEET

## SPR-1 PULSE ISOLATION RELAY

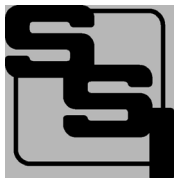


**MOUNTING POSITION** - The SPR-1 may be mounted in any position.

**POWER INPUT** - For a voltage between 120 and 277VAC input, connect the line "hot" lead to the **LINE** terminal and the neutral lead to the **NEU** terminal. Connect the **GND** terminal to Ground. If a true Neutral does not exist at the meter, connect both NEU and GND to Ground.

**METER CONNECTIONS** - The SPR-1 can be used with either a 2-Wire(Form A) or 3- Wire(Form C) input. In the 3W (Form C) input mode, the SPR-1's "K", "Y" and "Z" input terminals should be connected to the meter's "K", "Y" and "Z" terminals. In the 2W (Form A) mode, connect the "K" and "Y" terminals to the meter's "K" and "Y" terminals. The SPR-1's "Y" and "Z" terminals provide the +13VDC "pulled up" wetting voltage to the meter's Y and Z terminals. The "K" terminal is the common return. Put Jumper J1 in the correct position for the desired input as shown above: Left=2-Wire(A), Right=3-Wire(C).

**OUTPUT** - One 3-wire (Form C) isolated output is provided. Transient voltage protection for the contacts of the relay is provided by MOV's on board. The output load should be limited to 100 mA at 250 VAC/VDC, 800mW max, and is protected by fuse F1. A one-tenth (1/10) Amp fuse is supplied standard. Jumper J2 sets the long(L) or short(S) output modes. The long mode sets the output to the same pulse width as the input. The short mode sets the output for a fixed 100mS wide pulse width. Put Jumper J2 in the correct position for the desired output mode as shown above: Left=Long, Right=Short. More information on long and short pulses on page 2.



## SOLID STATE INSTRUMENTS

by Radian Research, Inc

3852 Fortune Dr, Lafayette, IN 47905

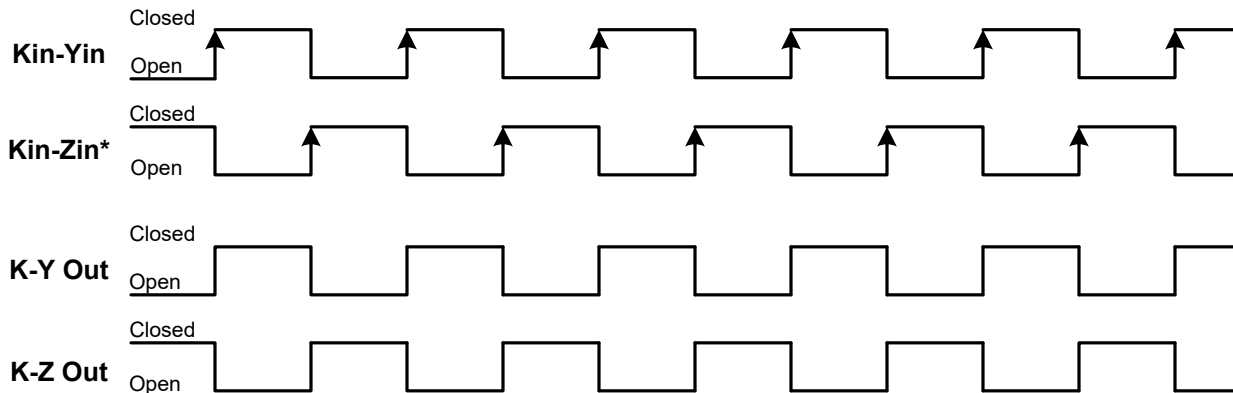
Phone: (765) 449-5576

Mail: [technicalsupport@radianresearch.com](mailto:technicalsupport@radianresearch.com)

# WORKING WITH THE SPR-1 RELAY

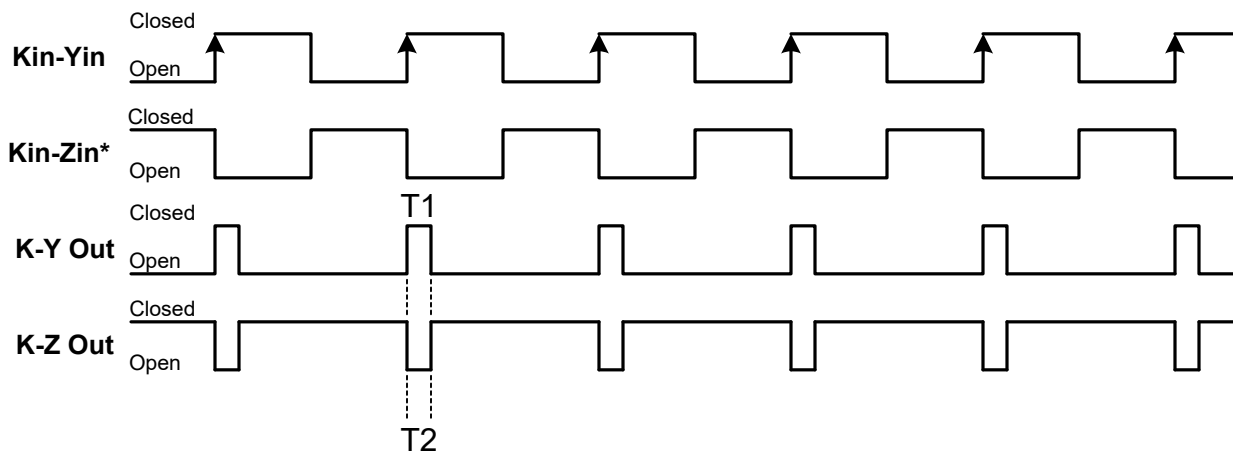
**OPERATING MODES:** The SPR-1 Repeating Pulse Relay allows the outputs to be configured for either the "Long" or "Short" pulse output mode. In the Long mode, the outputs simply follow the input. Output pulse widths are equal to input pulse widths. With the "long" output configuration selected, pulse speeds of up to 72,000 pulses per hour (20/sec) are possible. Figure 1 below shows the timing diagram for the "long" output mode.

**Figure 1: 2-Wire or 3-Wire LONG Output Operation**



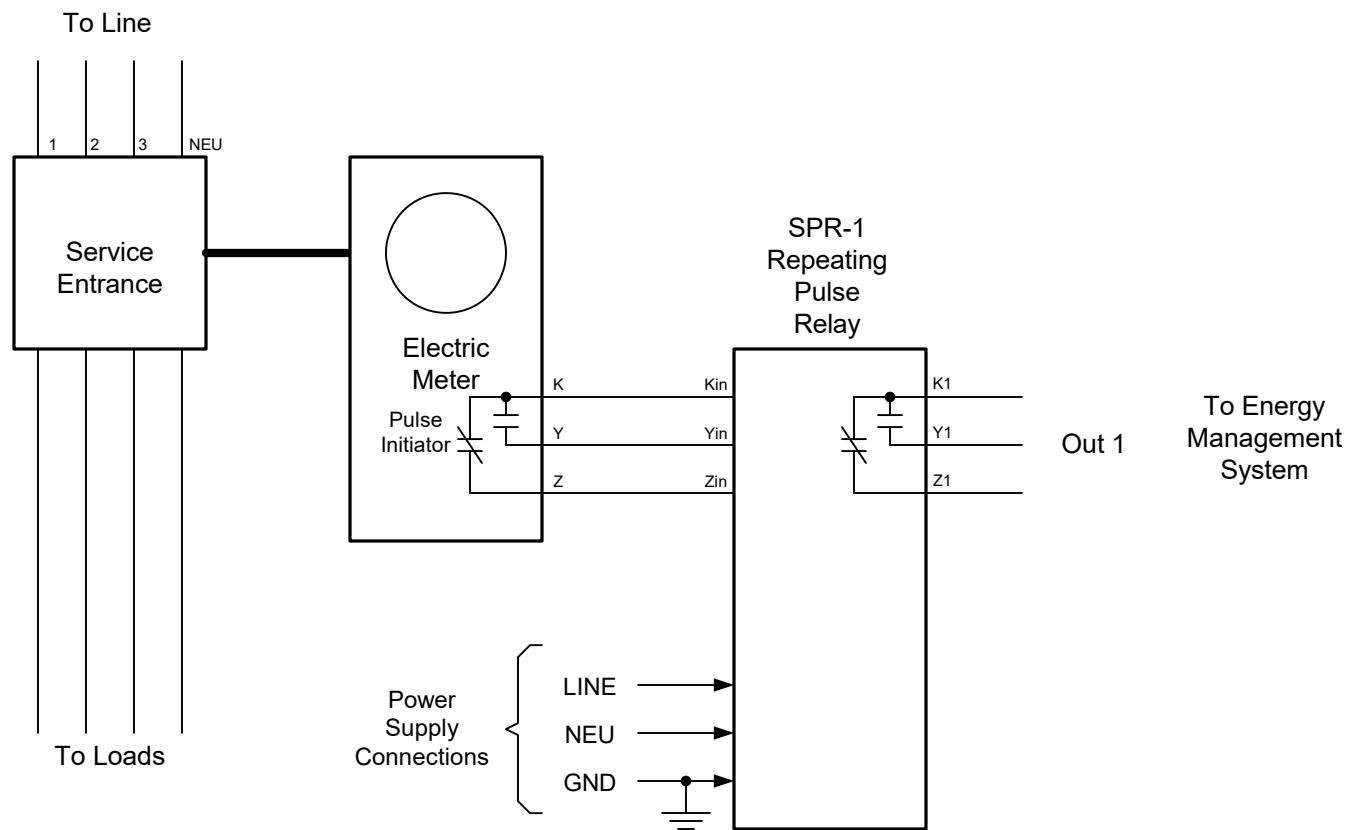
In the Short output mode, shown in Figure 2 below, an output pulse (K-Y closure) with a fixed width (T1) of 100mS occurs each time the input is triggered. Correspondingly, the K-Z output opens for 100mS (T2) each time the input is triggered. In the "short" mode, the output pulse rate is limited to 9 pulses per second, or about 32,400 pulses per hour.

**Figure 2: 2-Wire or 3-Wire SHORT Output Operation**



If the input pulse rate is greater than 9 pulses per second, it is recommended that the LONG pulse output mode be used. Contact the factory for technical support at (888)272-9336.

# SPR-1 Wiring Diagram



SPR-1WiringDiagram\_RevE.vsd

SPR-1 Repeating Pulse Relay Wiring Diagram		REVISIONS		<b>Solid State Instruments by Radian Research Inc</b> 3852 Fortune Dr Lafayette, IN 47905 (765) 449-5576 technicalsupport@radianresearch.com www.solidstateinstruments.com	
		NO.	DATE		DESCRIPTION
DATE ORIGINAL	SCALE				
01/01/2025	N/A				
LATEST REVISION	JOB NO.	CHECKED	DRAWN		
			WHB		