INSTRUCTION SHEET
SPR-3 PULSE ISOLATION RELAY

Z3 →
Y3 → **OUTPUT #3**
K3 ←

Z2 →
Y2 → **OUTPUT #2**
K2 ←

Z1 →
Y1 → **OUTPUT #1**
K1 ←

Z → Y & Z "pulled up" to +13VDC
Y → **INPUT FROM METER**
K ← Common Return

ELECTRIC METER

GND ←
NEU ← **POWER SUPPLY INPUT**
120V-277V ←
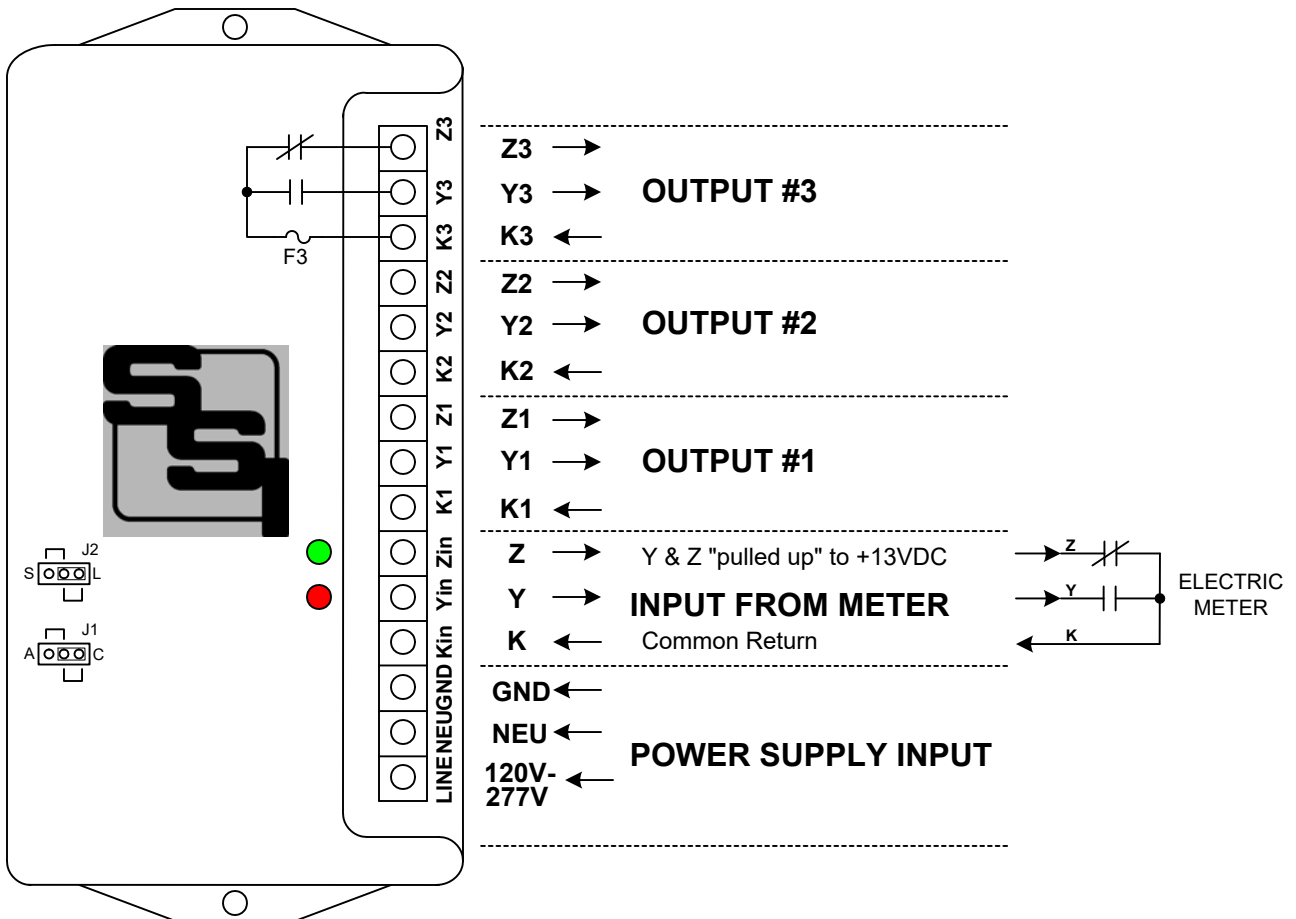
MOUNTING POSITION - The SPR-3 can be mounted in any position.

POWER INPUT - The SPR-3 is powered by an AC voltage of between 120 and 277 volts. Connect the AC line's "hot" wire to the **LINE** terminal. Connect the AC line's "neutral" wire to the **NEU** terminal. Connect **GND** to Ground. If a true neutral does not exist at the meter, connect both NEU and GND to Ground. The Ground terminal must be connected for proper noise immunity.

METER CONNECTIONS - The SPR-3 can be set for either a 2-Wire(Form A) or 3-Wire(Form C) input. For 3 Wire (Form C) input mode, connect the SPR-3's "Kin", "Yin" and "Zin" input terminals to the meter's "K", "Y" and "Z" terminals. In the 2 Wire (Form A) mode, connect the "Kin" and "Yin" terminals to the meter's "K" and "Y" terminals. The SPR-3's "Kin" terminal is the common return. The +13VDC wetting voltage is "pulled-up" internally on the SPR-3's Yin and Zin terminals. Each alternating closure of the meter's Y and Z output will pull down each input line to the common return. Put Jumper J1 in the correct position for the input mode desired: Left=2-Wire (A), Right=3-Wire (C).The RED LED indicates that the KY input is closed and corresponding K-Y output is closed. The GREEN LED indicates that the KZ input is closed and the corresponding K-Z output is closed.

PULSE OUTPUTS - Three Form C (3-wire) isolated outputs are provided on the SPR-3. Transient voltage protection for the contacts of each relay is provided by MOVs on board. The output loads should be limited to 100 mA at 250 VAC/350VDC. Maximum Output power dissipation is limited to 800mW max. Outputs are protected by fuses F1, F2 and F3. One-tenth(1/10) Amp fuses are supplied standard. The SPR-3's outputs may be configured for either Long or Short output pulses. Selector Jumper J2 selects the long or short output mode for all outputs. In the Long mode, output pulses are the same width as input pulses. In the Short mode, output pulses are fixed at 100mS in length. Put Jumper J2 in the desired output mode. See Page 2 for description of these modes.

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WORKING WITH THE SPR-3 RELAY

OPERATING MODES: The SPR-3 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.
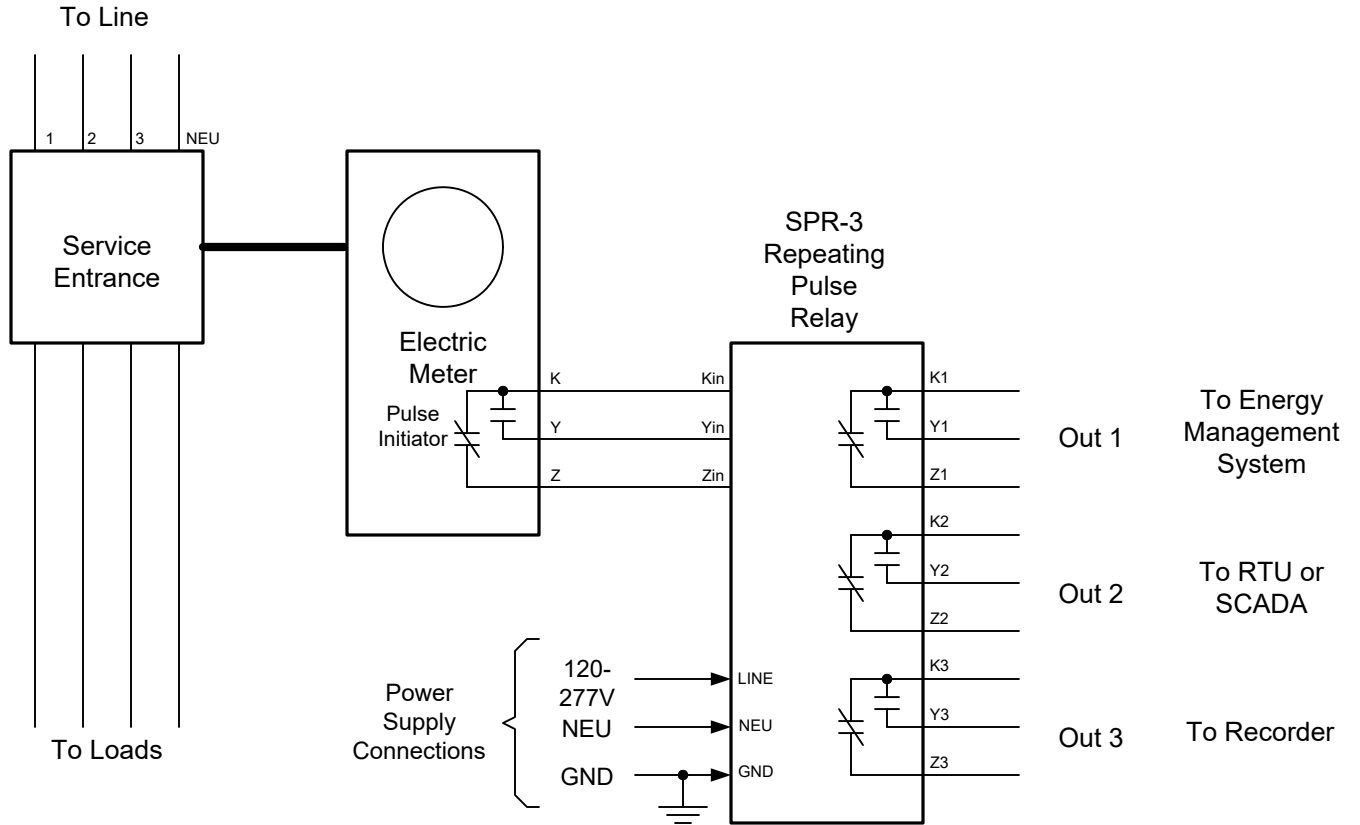
Figure 1: 2-Wire or 3-Wire <u>LONG</u> Output Operation
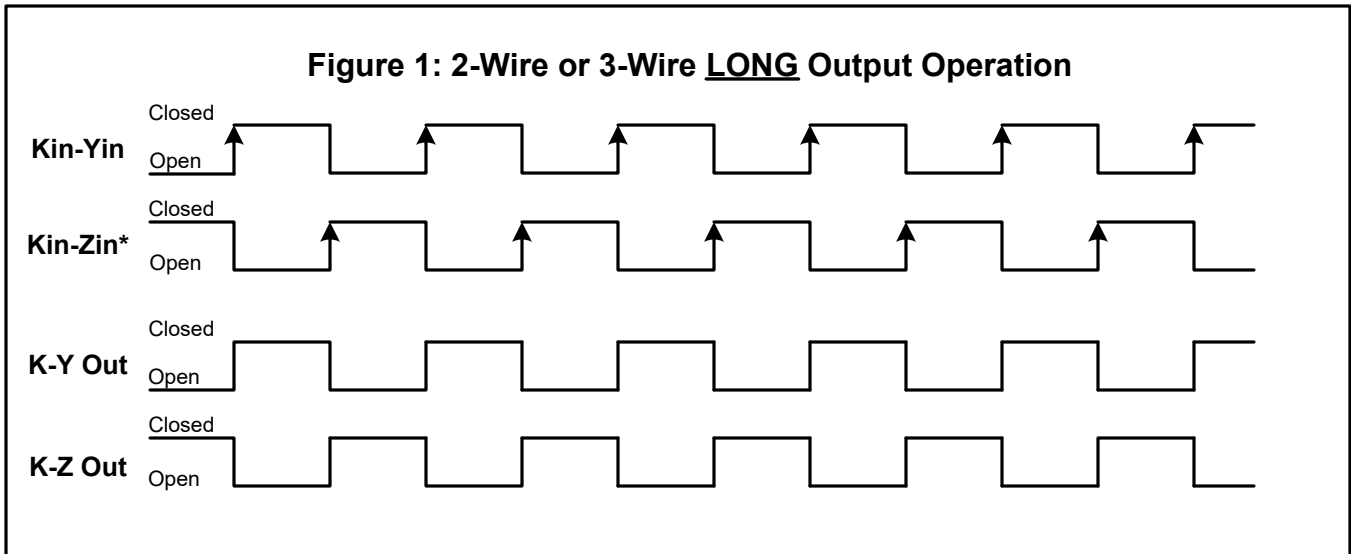
In the _Short_ output mode, shown in Figure 2 below, an output pulse (K-Y closure) with a fixed width (T1) of 100mS occurs each time the input is triggered. Correspondingly, the K-Z output opens for 100mS (T2) each time the input is triggered. In the "short" mode, the output pulse rate is limited to 9 pulses per second, or about 32,400 pulses per hour.

Figure 2: 2-Wire or 3-Wire <u>SHORT</u> Output Operation
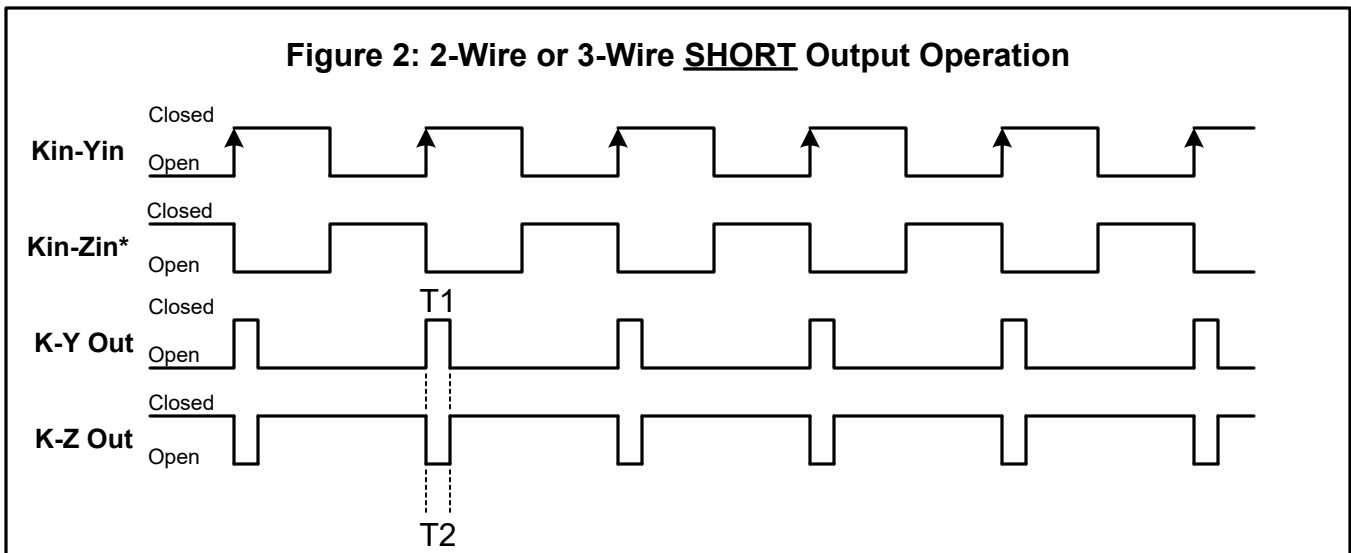
If the input pulse rate is greater than 9 pulses per second, it is recommended that the LONG pulse output mode be used. Contact the factory for technical support at (888)272-9336.

SPR-3 Wiring Diagram

To Line

1   2   3   NEU

Service Entrance

Electric Meter

Pulse Initiator

SPR-3 Repeating Pulse Relay

K   Kin
Y   Yin
Z   Zin

K1
Y1   Out 1   To Energy Management System
Z1

K2
Y2   Out 2   To RTU or SCADA
Z2

K3
Y3   Out 3   To Recorder
Z3

To Loads

Power Supply Connections

120-277V → LINE
NEU → NEU
GND → GND

SPR-3WiringDiagram_2022.vsd

SPR-3 Repeating Pulse Relay Wiring Diagram		REVISIONS		
		NO.	DATE	DESCRIPTION
DATE ORIGINAL 10/10/2022	SCALE N/A			
LATEST REVISION	JOB NO.	CHECKED	DRAWN WHB	

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