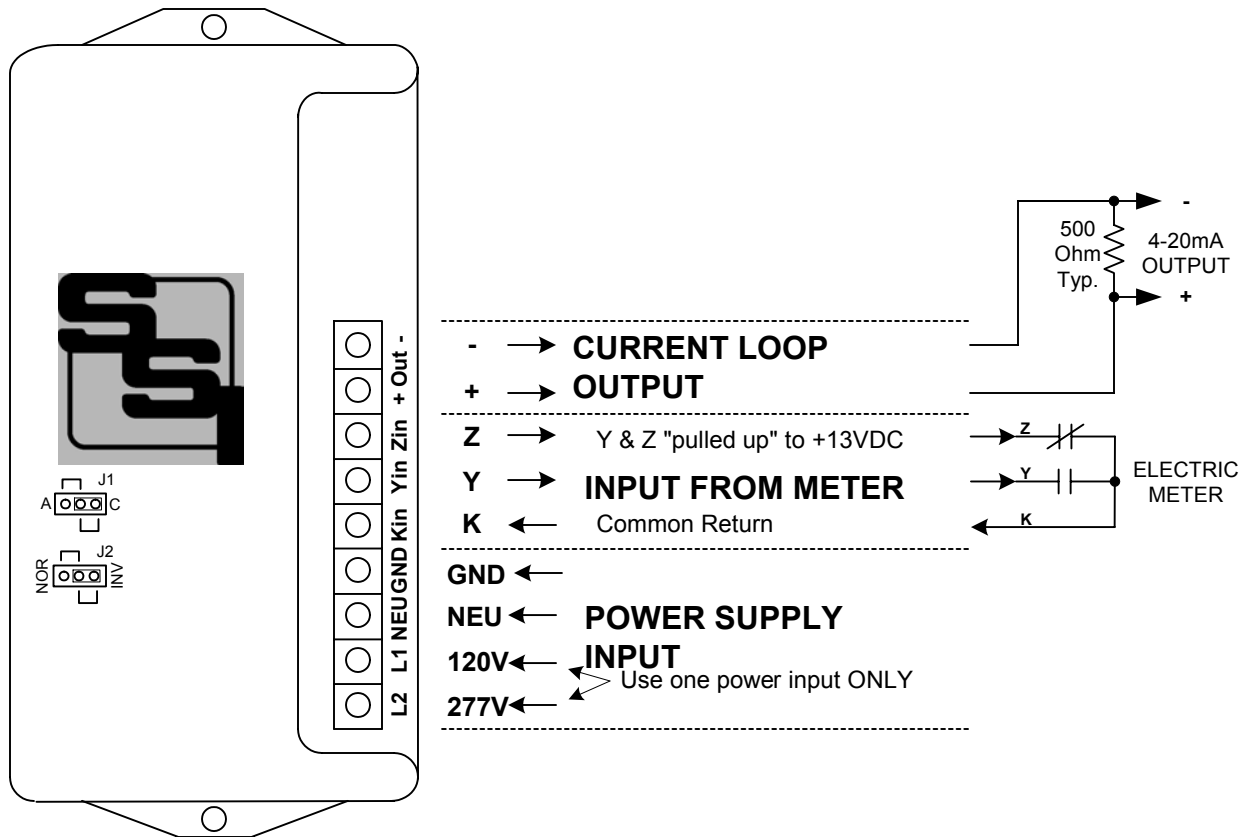


# INSTALLATION INSTRUCTION SHEET

## CLC-1 Pulse-to-Current Loop Converter



**MOUNTING POSITION** - The CLC-1 can be mounted in any position. Two mounting holes are provided.

**POWER INPUT** - The CLC-1 is powered by an AC voltage of between 90 and 300 volts. For 208 to 277VAC, connect the AC line's "hot" wire to the **L2** terminal. For 120VAC, connect the AC line's "hot" wire to the **L1** terminal. Connect the **NEU** terminal to the AC line's "neutral" wire. Connect **GND** to electrical system Ground.

**METER CONNECTIONS** - The CLC-1 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 CLC-1'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 CLC-1's "Kin" terminal is the common return. The +13VDC wetting voltage is "pulled-up" internally on the CLC-1's Yin and Zin terminals. Each alternating closure of the meter's Y and Z outputs will pull down each input line to the common return. Put Jumper J1 in the correct position for the input mode desired: Left=(A) 2-Wire, Right=(C) 3-Wire. The Form C mode is recommended.

**OUTPUT** - The CLC-1 outputs a current of either 4 or 20mA depending on the state of the pulse input. A positive going or negative-going transistion of the output current can be selected for either input state. For example, when the normal (**NOR**) configuration is selected, an output of 4mA will occur when the Yin and Kin pins are connected. Conversely, when the Zin and Kin input pins are connected, 20mA will occur at the output terminals. In the inverted (**INV**) mode output currents are opposite, 20mA upon K-Y closure and 4mA on K-Z closure of the inputs. Input impedance of the load should not exceed 600 ohms. Transient voltage protection for the output is provided by MOVs and zener diodes on board. Selector Jumper J2 selects the normal or inverted function of the output. Maximum output voltage is 10VDC.



## SOLID STATE INSTRUMENTS

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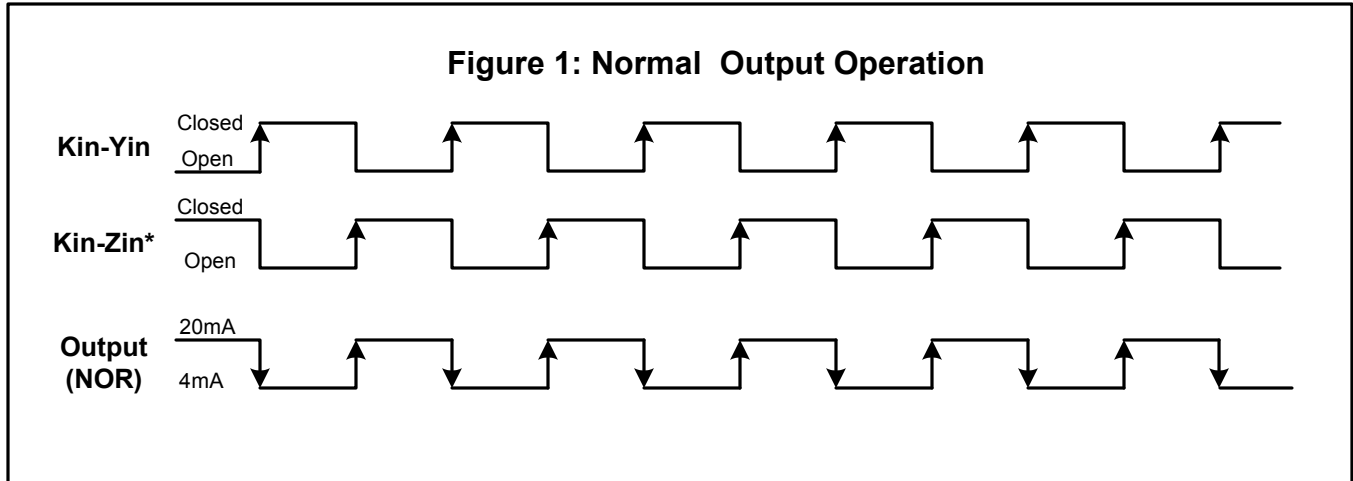
6230 Aviation Circle, Loveland, Colorado 80538

Phone: (970)461-9600 Fax: (970)461-9605

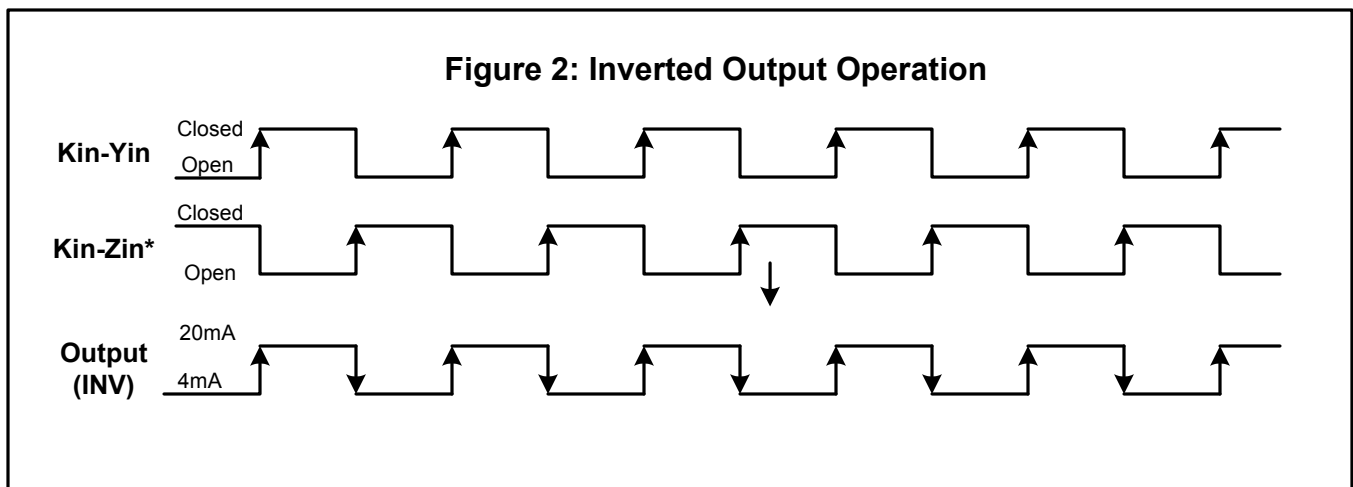
E-mail: support@solidstateinstruments.com

# WORKING WITH THE CLC-1 RELAY

Operation: The CLC-1 Pulse to 4-20mA Current Loop Conversion Relay Module is designed to output either 4 or 20 milliamps upon a predetermined closure of the K to Y input circuit or the K to Z input circuit. In Figure 1 below, the CLC-1 is set for Normal operation (J2 in NOR position). Upon the transition from open to closed of the K-Y input, the output changes from 20mA to 4mA. When the pulse output of the meter changes state, that is, opening the K-Y input and closing the K-Z input, the CLC-1's output changes from 4mA to 20mA.



In Figure 2 below, the CLC-1 is set for Inverted (J2 in INV position) operation. Upon the transition of the K-Y input from open to closed, the output changes from 4mA to 20mA. When the pulse output of the meter changes state, that is, opening the K-Y input and closing the K-Z input, the CLC-1's output changes from 20mA to 4mA.

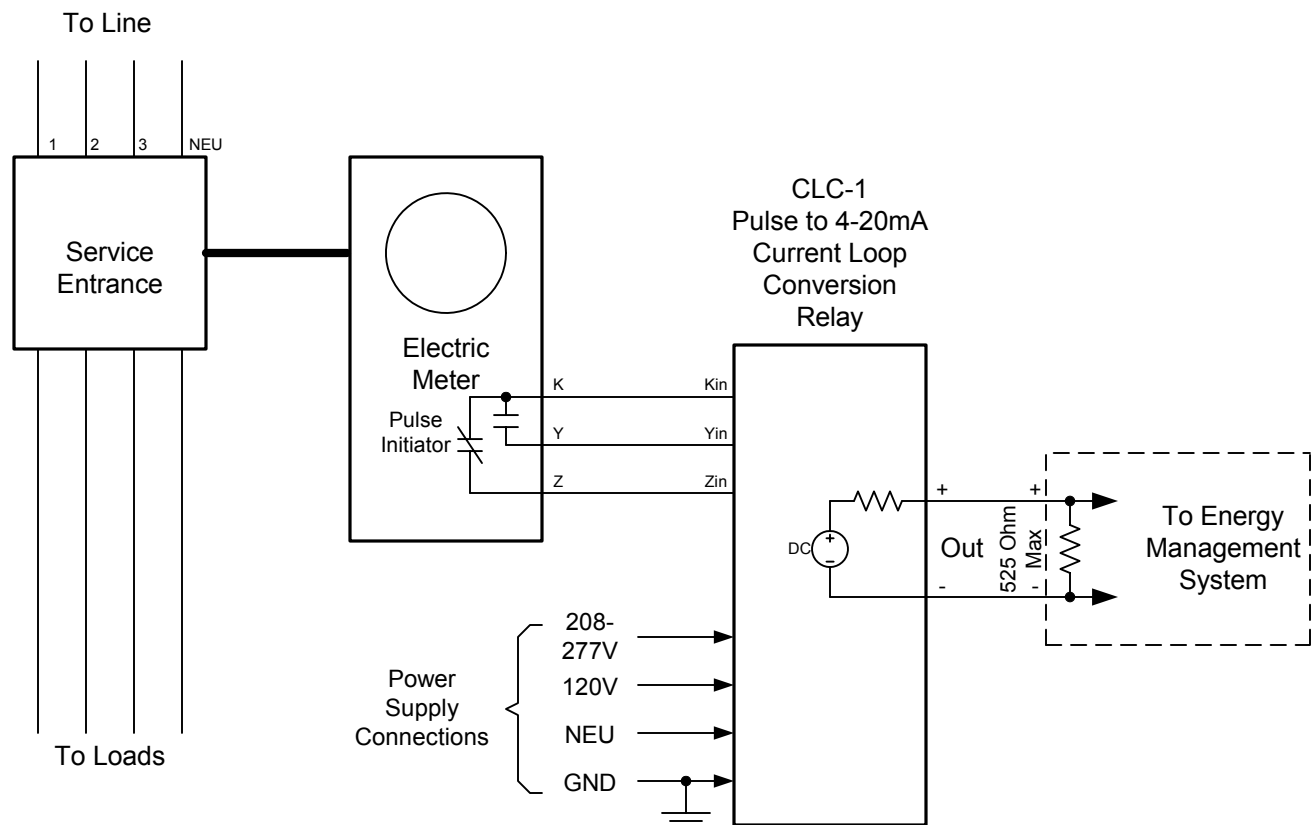


The 3-wire (Form C) input mode is recommended due to the superior noise immunity. Use the 2-wire (Form A) input mode only if the 3-wire interface is not available.

CLC-1 Pulse to 4-20mA Current Loop Converter Transfer Function		REVISIONS		
		NO.	DATE	DESCRIPTION
DATE ORIGINAL	SCALE			
05/01/08	N/A			
LATEST REVISION	JOB NO.	CHECKED	DRAWN	
			WHB	

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# CLC-1 Wiring Diagram

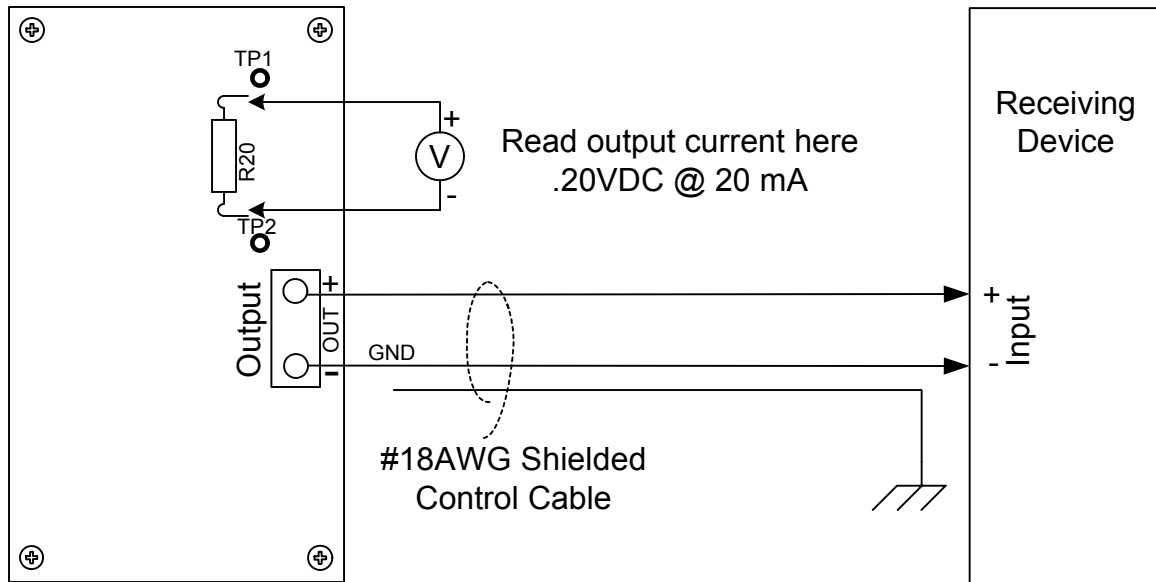


CLC-1WiringDiagram.vsd

CLC-1 Pulse to 4-20mA Conversion Relay Wiring Diagram		REVISIONS	
		NO.	DATE
DATE ORIGINAL <b>05/01/08</b>		SCALE <b>N/A</b>	
LATEST REVISION		DRAWN <b>WHB</b>	

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## CLC-1 4-20mA Current Loop Converter Module



### **Testing the CLC-1**

Using a Digital Volt Meter (DVM) connect the leads across Resistor R20 above the current loop output connector. With the meter disconnected from the CLC-1, jumper the Kin to Yin terminals together. The voltage across R20 is proportional to the output current. At 20mA of output current, the output voltage across R20 will be .20VDC. At 4mA of output current, the output voltage across R20 will be .04VDC. You must have a good quality DVM to accurately read DC voltages at this low level. Jumper the Kin to Zin terminals together. Read the voltage across R20. Voltage should be representative of the output current, depending on the position of J2. Connect electric meter's pulse output to the input of the CLC-1.

### **Interfacing the CLC-1 to the Receiving Device**

The receiving device must have an input suitable for accepting a 4-20mA current at a maximum voltage of +10VDC. Use a #18AWG to #22AWG two conductor shielded control cable between the CLC-1 and the receiving device. Connect the control cable's shield to the electrical system ground on ONE end, but not both.

### **Technical Support**

Contact Brayden Automation Corp. Tech Support at 888-BRAYDEN (888-272-9336) if you need assistance on the application of the CLC-1 4-20mA Pulse to Current Loop Converter Module.