



SPECIALTY DEVICES

PCL-1 PULSE-TO-CURRENT LOOP CONVERTER

DESCRIPTION

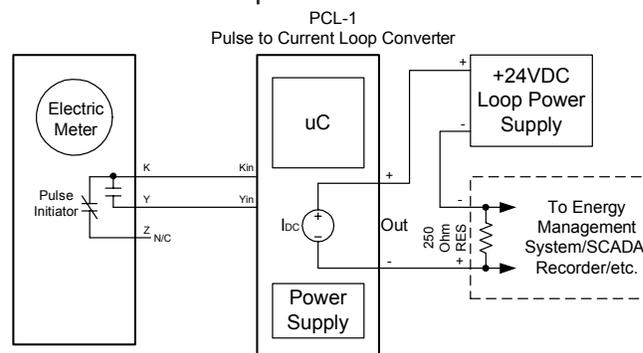
The PCL-1 Pulse-to-Current Loop Converter is a device designed to convert a 2-Wire KY pulse to an analog 4-20mA signal, readable by another device with a 4-20mA input. The 4-20mA current output of the PCL-1 can be configured to represent the current Instantaneous or Average demand in kilowatts. The KY pulse output from a meter or isolation relay is fed directly into the PCL-1's KY input. The PCL-1's input provides a +13VDC wetting voltage for the meter's dry contacts. Upon receiving each pulse from the meter, the PCL-1's microcontroller calculates the instantaneous kW based on the pulse rate and value, and updates the output to a current level between 4mA and 20mA. For example, suppose you have the full scale output of the PCL-1 configured for 500kW. If a current demand of 250kW is calculated, the output would be adjusted to 12mA, the 50% midpoint between 4 and 20mA.



If the Average kW output mode is selected, the output for a selected demand interval --either 1, 2, 5, 10, 15, 30, or 60 minutes -- is calculated continuously and the 4-20mA output represents the current interval's rolling average kW demand. A USB port is included to allow quick programming and implementation.

The PCL-1 uses an 8-bit Digital-to-Analog converter so resolution is 1/256th of full scale. A bright red LED lamp indicates the input's status at all times. An additional Yellow LED indicates when the output is written to. Additional provisions are made to easily read the output's current level with a precision digital multimeter.

Typical applications include interfaces between utility metering devices and customer-owned energy management control systems, SCADA systems, recorders or programmable logic controllers. A +24VDC loop power supply is all that is necessary to implement the 4-20mA current loop. The PCL-1 has built-in transient and reverse polarity protection on the 4-20mA current loop output that eliminates the need for external protection.



PCL-1

#

TYPE

FORM

FUNCTIONAL SUMMARY

	IN	OUT
#	1	1
TYPE	2 Wire	2 Wire
FORM	A	4-20mA



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SPECIFICATIONS

ELECTRICAL

Power Input:	120VAC; 208-277VAC. Burden: 10 MA. at 120 VAC
Input:	One KY Form A (2-wire)input with +13VDC wetting voltage compatible with dry contact or open-collector transistor output.
Output:	One 4 – 20 mA current loop output. +5VDC maximum voltage output.
Output Impedance:	600 ohms maximum, 250 ohms typical
Loop to Control Isolation Voltage:	5000Vrms
Output Update Time:	Variable based on pulse width, up to 50 milliseconds max.
Maximum Input Pulse Rate:	20 pulses per second
Pulse value:	1wh/p to 65535 wh/p, in 1wh increments.
Full scale selection:	100kW, 200kW, 500kW, 1MW, 2MW, 5MW, 10MW, 20MW
Demand Averaging interval selection:	1, 2, 5, 10, 15, 30, 60 minutes.

MECHANICAL

Mounting:	Within 30 degrees of vertical
Size:	3.50 inches wide, 7.20 inches high, 1.50 inches 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:	15-48VDC, 125VDC, 12 & 24VAC
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PCL-1