

# CO-420 4 to 20 ma Converter

## IMPORTANT PRECAUTIONS

The 4 to 20 ma device which is connected to the converter must not provide power to the loop. If you are unsure if the device provides power, connect a volt meter to check for the presence of power.

A short circuit of the loop or excessive current through the 4 to 20 ma loop could cause damage.

Reversed polarity of the 36 volt power input or of the 4 to 20 ma input may cause damage.

The 36 volt DC power source must be completely isolated and must not be used to power any device other than the 4 to 20 ma converter. The PS-24-400 wall adapter may be used.

If a 36 volt power source is not available, you may connect two 12 VDC 500 ma wall adapters in series (a 12 VDC 500 ma wall adapter will produce about 18 volts under a light load). The PS-12VDC-500 wall adapter may be used for this purpose.

When the 4 to 20 ma loop is open, or if current through the loop is less than 4 ma, the converter output will go negative. This can cause problems or inaccurate readings with the analog input. Be sure that your 4 to 20 ma transducer is connected to the loop before connecting or applying power to the ADC-4 or ADC-16 Analog to Digital Converter.

A 390 ohm limiting resistor is installed in series with the 4 to 20 ma loop to protect the input. This resistor may be removed if your loop has excessive resistance. The 390 ohm resistor is on the CO-420 circuit board.

If input noise is a problem (resulting in fluctuating digital readings from the ADC-4 or ADC-16), additional noise filtering may be required by adding a 3K resistor in series with the + 0 to 5 volt output line and/or increasing the value of the input filter capacitor. Additional filtering of your 36 volt power source may also be needed to reduce noise (install a 2200 mf capacitor across 36 volt power lines).

