

**RS232 – 4-20ma Tx**  
**PN: ece-I-13-001, REV 2**



**Figure 1**

**Technical Details:**

This product is for those instances where you need a non-PLC device, like a PC, NetLinx Master or Crestron Master with a serial port (UART or USB) or the like to communicate with a PLC over a 4-20ma current loop. The protocol is quite simple. First it uses 9600 baud, no parity, 8-bits, 1 stop bit and no flow control. The strings are simple ASCII representations of the desired current terminated with a carriage return. So, if you wanted the device to produce a 15.250ma you would send the string: "15.250"<0x0D>. The unit will respond to a good string and value with the following string: "I = 15.250"<0x0D>. If you sent a string that was not formatted properly, it would return: "BAD STRING!"<0x0D>. If you sent an incorrect value, it would return: "BAD VALUE!"<0x0D>. Finally, if there is a physical problem with the loop current (for instance: an open circuit), it will return the message: "ERROR!"<0x0D>. Besides sending the error string, there is also an error tally output on the Phoenix connector that is low when there is an error and high when everything is copasetic. There are two LEDs on the backside of the device. One indicates the unit is powered (green LED); the other indicates if there is a physical problem with the loop circuit (red LED).

The actual current output for any value will be +/-0.015ma (or 0.000015Amps) of the string sent. Generally, it will actually be under +/-0.005ma, but as the current gets closer to the largest amount (19.999ma), the error can approach +/-0.015ma maximum.

The serial communication port is a D-SUB 9-pin female socket. It is configured as a DCE that means you can use a straight through serial cable between it and a standard PC comm port. In any case, the transmit pin is 2, the receive pin is 3 and ground is pin 5.

The loop current port is a five-pin Phoenix connector. The 18 to 24vdc power is applied to pins 1 (+V) and 2 (Gnd). The error tally is on pin 3 (high - no problem; low - a fault). Pin 4 is the negative loop connection and pin 5 is the positive loop connection. See Figure 2.



Figure 2

See Figure 3 for a typical application:

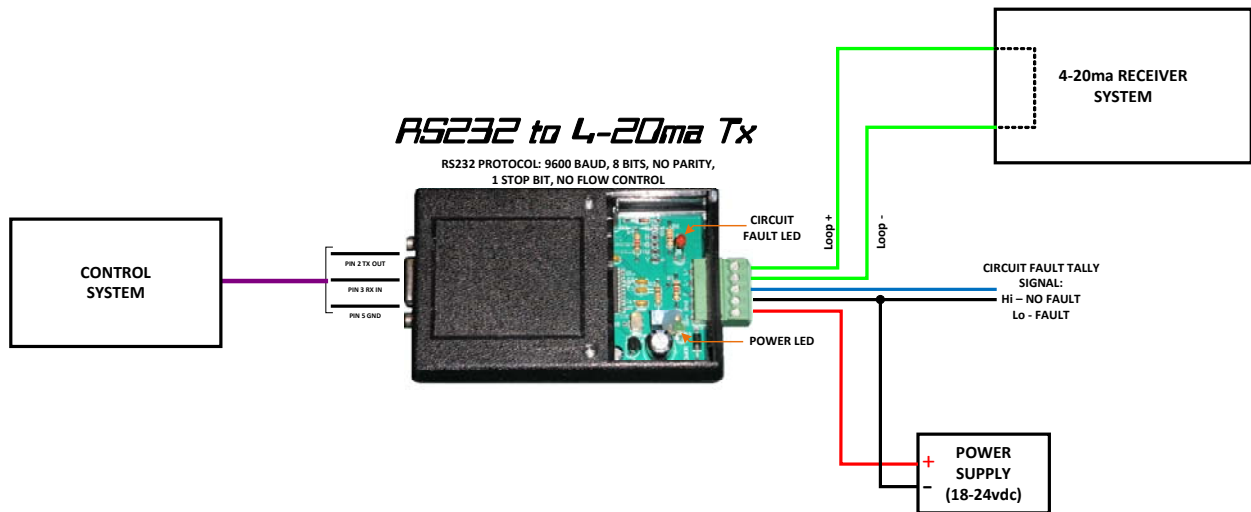


Figure 3

