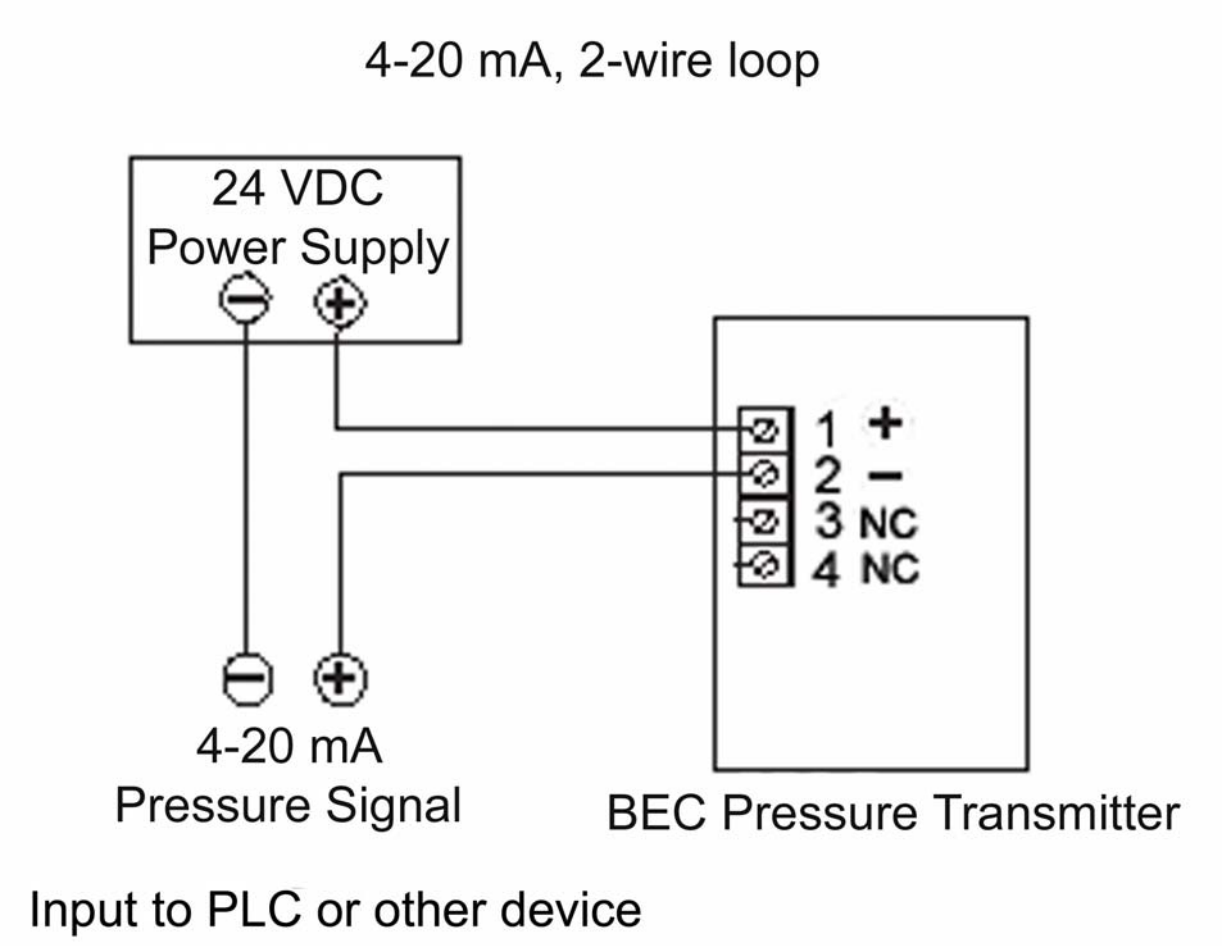

RULE OF THUMB FOR WIRING A 4-20MA LOOP

This is based on Kichoff's voltage law. It states that the sum of the voltages in a loop must equal 0. A simple way to use this in a 4-20 ma loop circuit is to use the convention that going through a device that is energy absorbing is a negative voltage from + to -. Going through a device from - to + is a positive voltage.

So, if you follow the wire from the power supply to the transmitter and go through the transmitter, the transmitter polarity is first +, then - which is energy absorbing. Then going to the signal input to the PLC or other device is first +, then - which is energy absorbing. When the loop is followed to the power supply, the loop goes to a - terminal first, then a + terminal which is energy supplying. The power supply is energy supplying and the other devices are energy absorbing. If the transmitter polarity was wired - to +, for example, that would be wired as power supplying which it is not, in this loop, so it will not work.

If the transmitter was wired as a 4 wire transmitter, the transmitter would be energy supplying since the power supply would be wired directly to the transmitter and it would be supplying the energy on the loop. The + of the transmitter would go to the + on the PLC or other device and the - would go to the - on the PLC or other device.