

Technote 09 – Weak analog 4-20mA devices

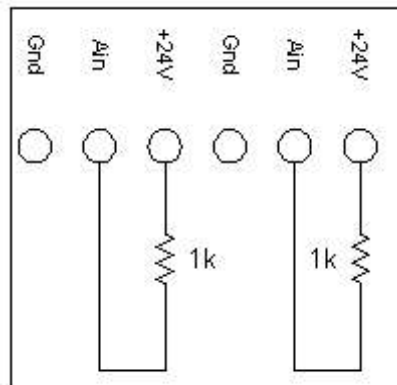
Certain current-loop devices – may not register with the “Learn” circuit correctly.

The problem stems from how the IO module and A8811 detect a 4-20mA device. It places the input in high impedance mode and watches the voltage on the IO input. On a 0-10v device, the voltage will show the reading (up to 10v). On a 4-20mA device, the sensor/transmitter will raise the voltage to try to force at least 4mA to flow through the input. This should cause the voltage to raise above 10V. In this mode, if the I/O input sees more than 10V, it assumes a 4-20mA device and configures accordingly.

You can watch this, put a hand held voltmeter on the A1 and GND terminals and press the learn button.

The work around is this, by attaching the A1 to +24V with a 1k ohm resistor it causes the input voltage to go to 24V immediately which then triggers a 4-20mA device detection. The resistor is there to prevent too much current from flowing and damaging the input.

If a 4-20mA device does not register correctly, temporarily install 1-2K Ohm resistors between the +24V and A in terminals, for each channel to be registered as current-loop, and press the “Learn” button.



The resistor should be removed after the learn process is complete, and the device is confirmed to be in 4-20mA mode.