

4-20mA Resistance to Current Module PN-420MA0399 REV 3

● Description

The 4-20mA resistance to current module was designed for the eTape liquid level sensors. The eTape sensor plugs directly into the four-pin header on the module. The module is designed to convert the variable resistance output of the eTape liquid level sensor, to a linear output current between ~4 volts to ~20 mA DC. Applying the output current of the module to a microcontroller, PLC or other current monitoring device can more accurately measure and monitor the liquid level output of the eTape sensor. The module is calibrated using a five-point calibration process at 0%, 25%, 50%, 75% and 100% of full scale.



● Theory of Operation

The module converts the variable resistive output of the eTape sensor to a voltage using a programmable signal conditioning chip designed to amplify the change in resistance. The programmable chip conditions the eTape input signals by amplification and digitization through an analog front end channel. With the programmed firmware in the on-chip ARM Cortex M0 processor, the chip performs pre-programmed compensation algorithms. The module has a push button to calibrate the module across the complete range of 5-inch to 70-inch eTape sensors.

● Specifications

Thickness: 0.17" (4.3mm)

Length: 0.85" (21.6 mm)

Width: 0.75" (19.1 mm)

Current Output Range: ~4 – ~20 mA +/-5%

Connector: 4 Pin Female & 2 Pin Male Header

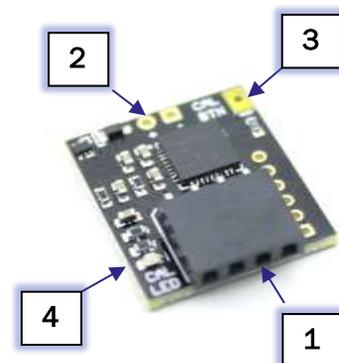
Temperature Range: -40°F - 257°F (-40°C - 125°C)

Power Requirements: 6 – 24VDC

● Connection and Installation

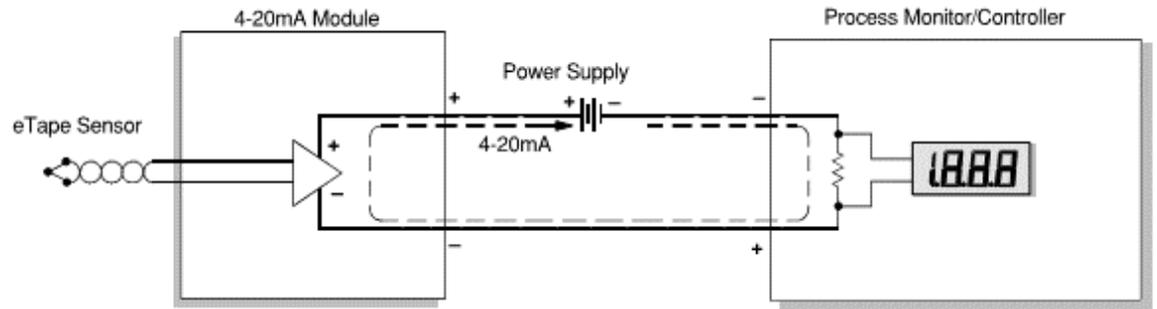
Connect to the module by attaching the eTape sensor to the four pin socket [1] located at the bottom of the module. Then connect Power (VIN) and ground (GND) to the two-pin header [2] located at the top of the module (6 – 24 VDC). Connect your current monitoring device or load in series with the power connection to monitor the output (4-20mA).

- 1- eTape Sensor Socket
- 2- Power and Output header
- 3- Calibration Button
- 4- Calibration LED



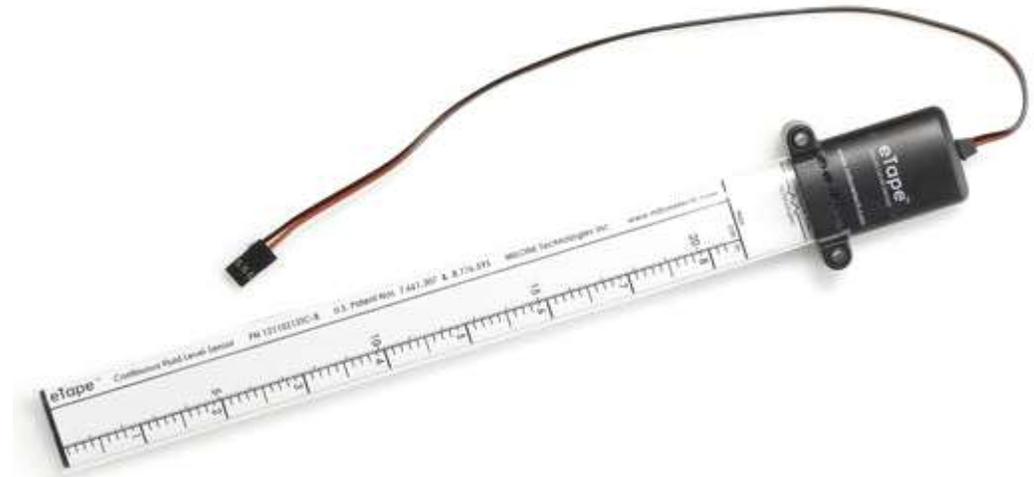
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- **Typical Current Loop Connection Diagram**



- **Complete eTape Assemblies**

If you purchase a complete assembly with the polycarbonate tube and housing cap, the 4-20mA module will come pre-calibrated and potted inside the black housing cap. There is no access for re-calibration of the module. There are three wires with the complete assemblies: red (V+), Black (V-) and White (not used) as shown below:



- **Technical Support**

If you require technical support for the 4-20mA module or eTape liquid level sensor, please contact our technical support department by email at: techsupport@milonetech.com.

Innovative Fluid Sensing