

Application Note:

Flow Totalization Utilizing Analog Ethernet I/O

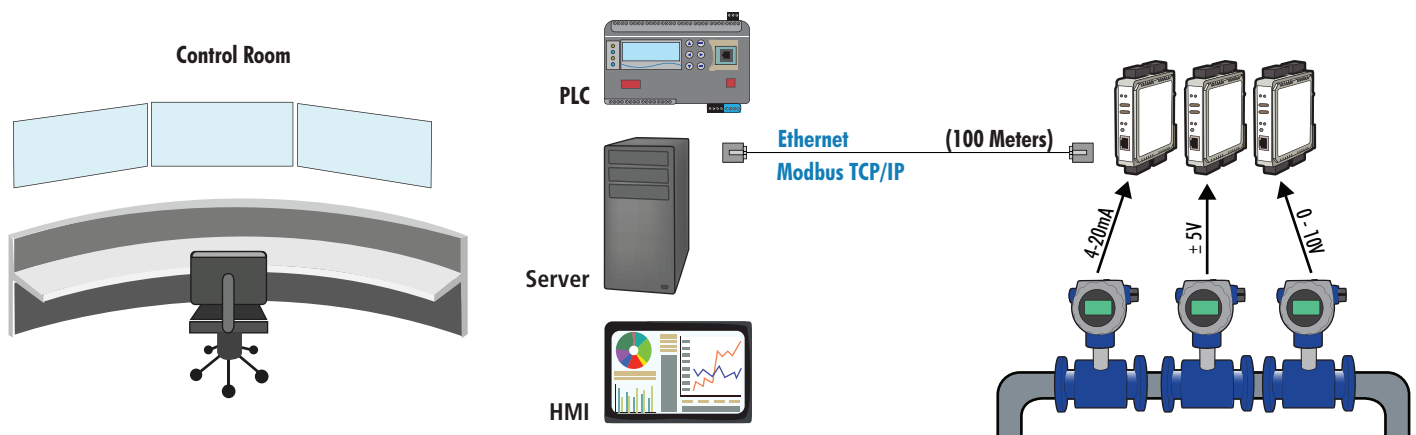
Defining the Problem:

A municipality wants to monitor water usage and does not have the capability to scale analog data. They want an all-in-one solution which will read, scale, and totalize the inputs from the flow meters.

System Requirements:

Flow meters producing a DC current ($\pm 20\text{mA}$, $0\text{-}20\text{mA}$, $4\text{-}20\text{mA}$) or voltage ($\pm 5\text{V}$, $\pm 10\text{V}$) signal. Acromag remote I/O scales and totalizes the analog input to Modbus TCP/IP (units are definable) on a per second, per minute, or per hour basis.

The 32-bit scaled data is automatically scaled and ready to be read by a PLC, HMI, or any other Modbus master.



Implementing the Solution:

1. Connect a PC to the 9xxEN, open an internet browser, assign the network parameters and configure the analog input for each channel along with scaling (zero, full scale, and units), time base (per second, per minute, or per hour), totalize options, and input averaging. Make sure to enable floating point support.
2. Simulate input signals and observe the scaled units and totalized value change in the 9xxEN's test page.
3. The Modbus software/hardware periodically reads the scaled units and totalized value of each input from the 30000 Modbus input registers (or the 43000 holding registers). Two registers of 16-bit unsigned integer values yield a 32-bit totalized value.

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Notes:

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Why Acromag:

The unique totalizer feature on the 900EN BusWorks® analog input distributed I/O modules make them the perfect fit for this application. Real-time application support and 60 years of experience makes Acromag the smart choice.