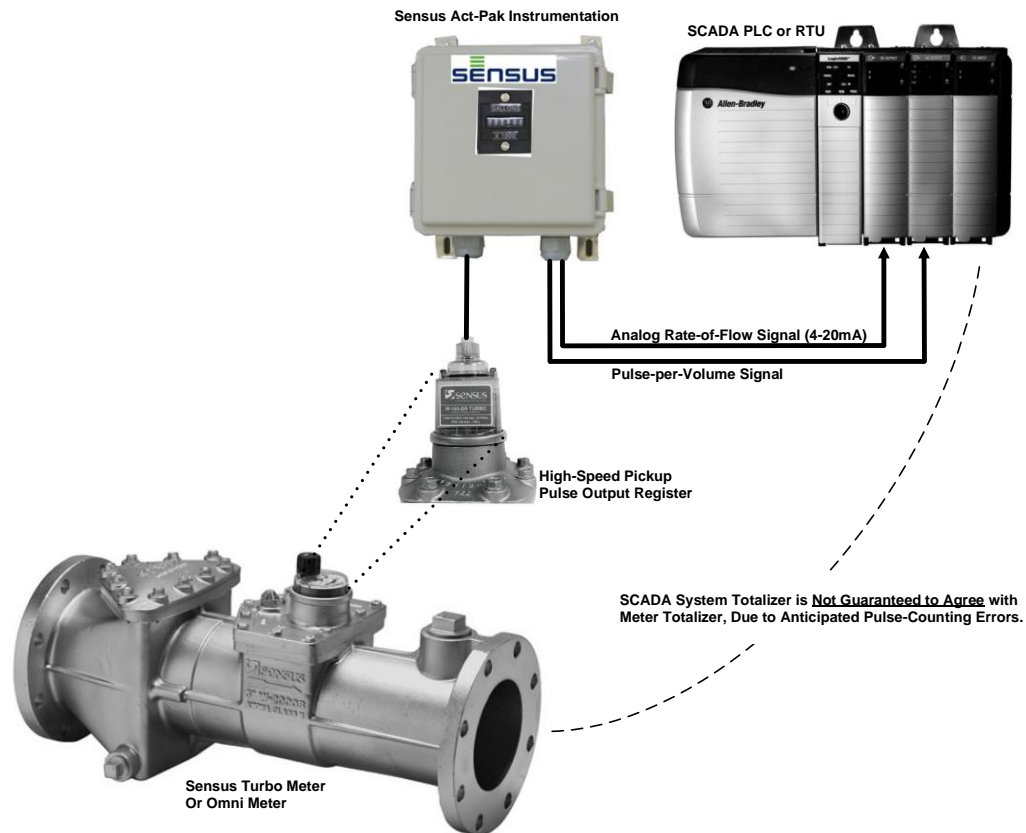


## Conversion from Sensus Act-Pak Analog Instrumentation – to EtherMeter® Digital Instrumentation.

The purpose of this Application Note is to describe the process and components required to replace Sensus Act-Pak Analog Instrumentation with an EtherMeter Digital Instrumentation Package.

A typical, legacy Sensus Omni Meter and SCADA-integration package is illustrated in **Figure 1**. Note that the interface to the SCADA system is via a 4-20mA analog rate-of-flow signal, a pulse-per-volume contact closure signal, or both. It is noteworthy that the SCADA integration signals do not convey the meter's totalizer reading, and therefore place a burden upon the SCADA PLC or RTU to count pulses. Speaking from experience, the SCADA system totalizer will generally drift apart from the flow meter's totalizer reading, rendering it unusable for most EPA reporting purposes.

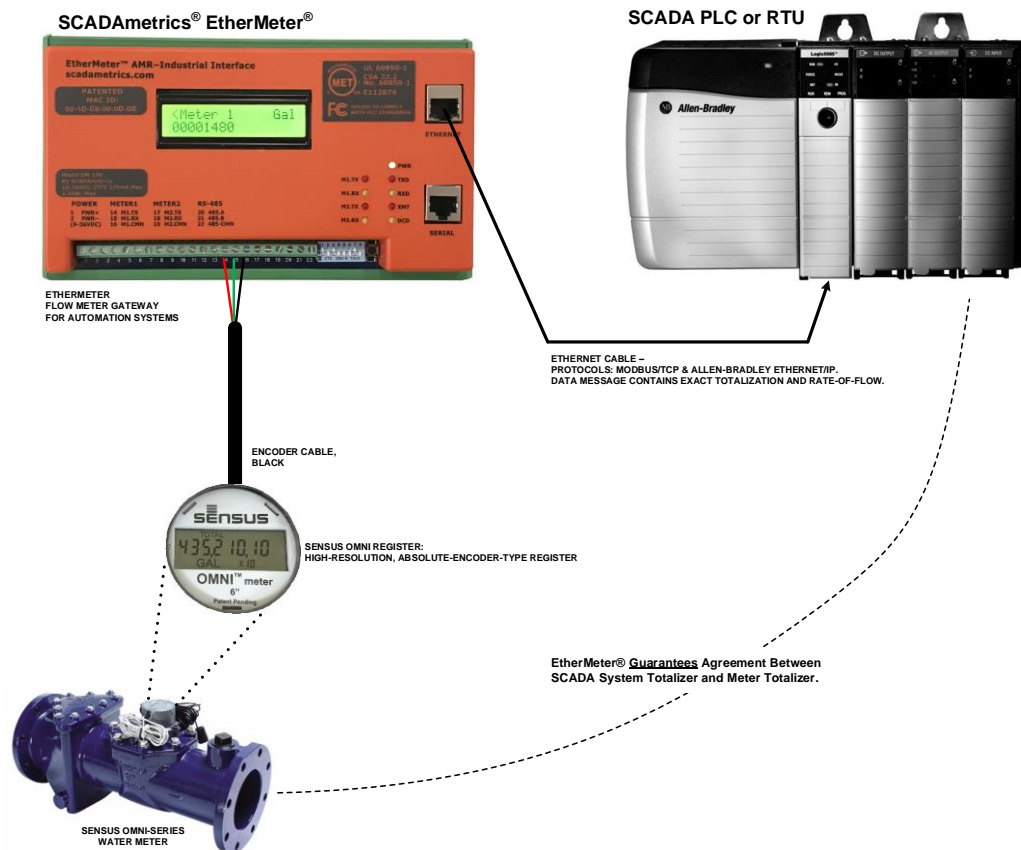
### LEGACY SENSUS TURBO METER WITH ACT-PAK ANALOG INSTRUMENTATION.



**Figure 1. Sensus Turbo Meter (or Omni Meter) and Associated Analog Instrumentation Package.**

An EtherMeter-driven Omni Meter and SCADA-integration package is illustrated in **Figure 2**. Note that the interface to the SCADA system is via a single Ethernet cable, through which both totalizer and rate-of-flow information is digitally conveyed. The communication protocol can be either industry-standard Modbus or industry-standard Rockwell EtherNet/IP. This system leverages absolute-encoder technology to ensure that the SCADA system's totalizer reading is an exact match to the meter's reading. The EtherMeter also supports Modbus/RTU and DF1 for SCADA systems that prefer a serial data link.

## SENSUS OMNI METER WITH ETHERMETER® DIGITAL INSTRUMENTATION.



**Figure 2. Sensus Omni Meter and Associated Digital Instrumentation Package.**

**Conclusion:** The Sensus Omni Meter & EtherMeter SCADA solution provides a superior end-product, with the following advantages over a legacy Act-Pak SCADA solution:

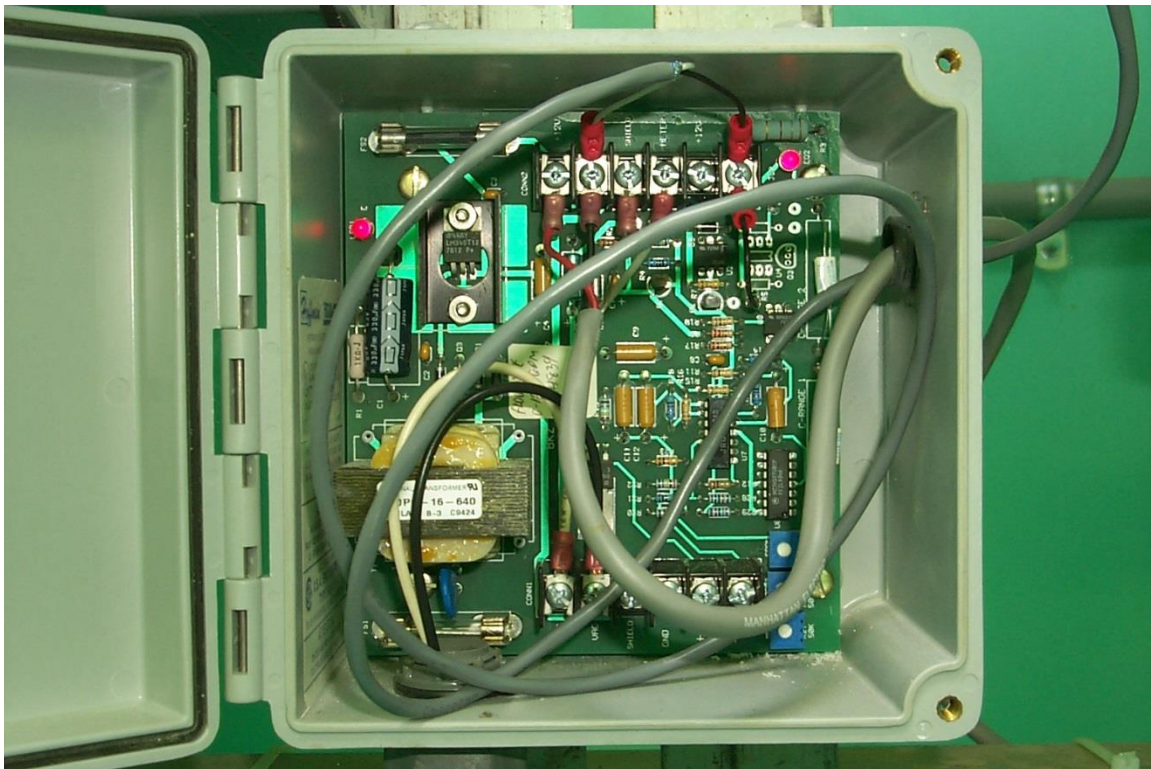
1. Guaranteed Meter Reading Match, Thereby Eliminating Truck Rolls to Retrieve Correct SCADA Meter Readings.
2. Less Expensive Components.
3. Supports a Parallel AMI/AMR Hookup, if Desired.

**Notes:** Before performing a conversion from an Act-Pak-based system to a Digital EtherMeter-based system, please contact your SCADA system integrator to inquire whether your SCADA system is capable of supporting the EtherMeter – which can be succinctly described as a Modbus/TCP/RTU slave device, and/or Allen-Bradley EtherNet/IP/DF1 slave device.

## Appendix 1: Sensus Turbo Meter with Act-Pak, Application Photos



Sensus Act-Pak



Sensus Act-Pak





Sensus Act-Pak



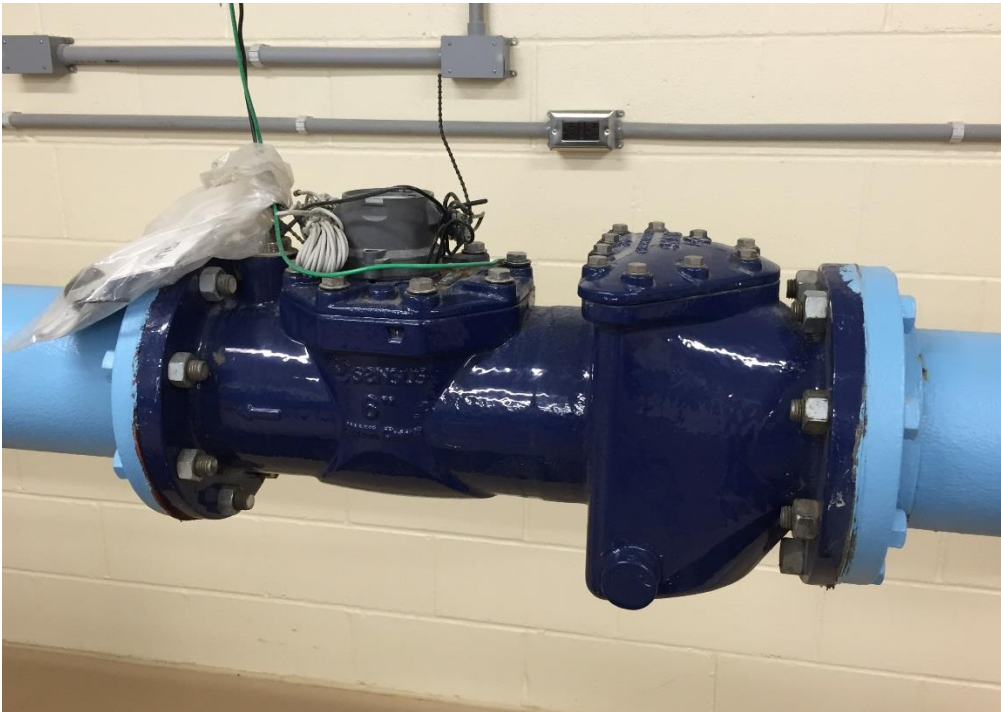
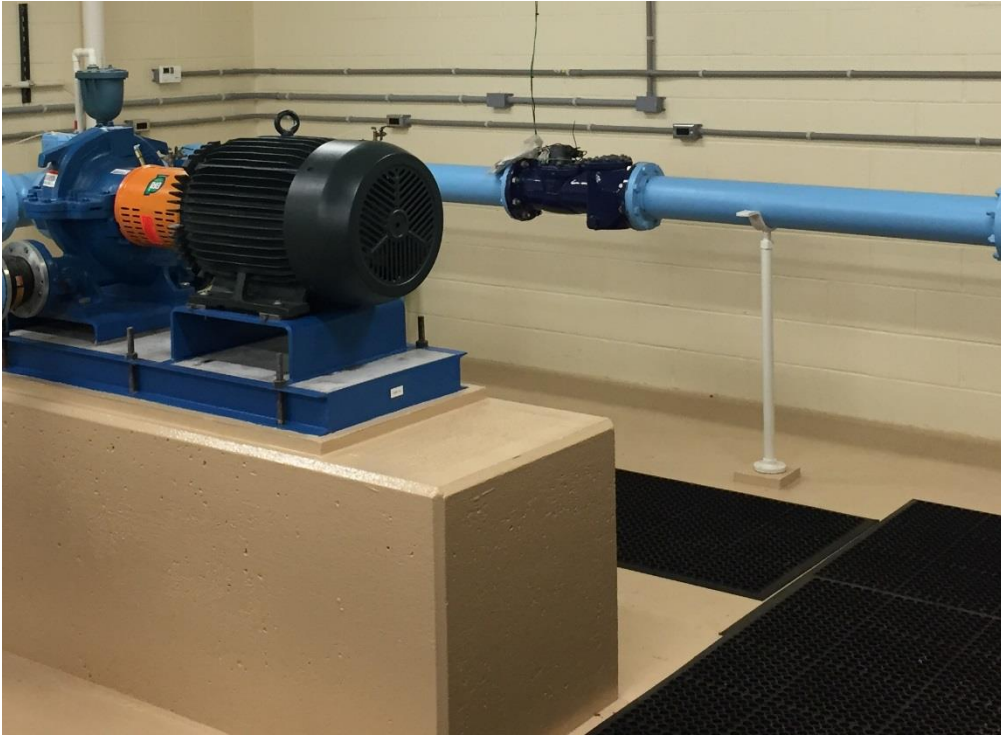
Sensus High-Speed Pickup (Pulse-Output) Register



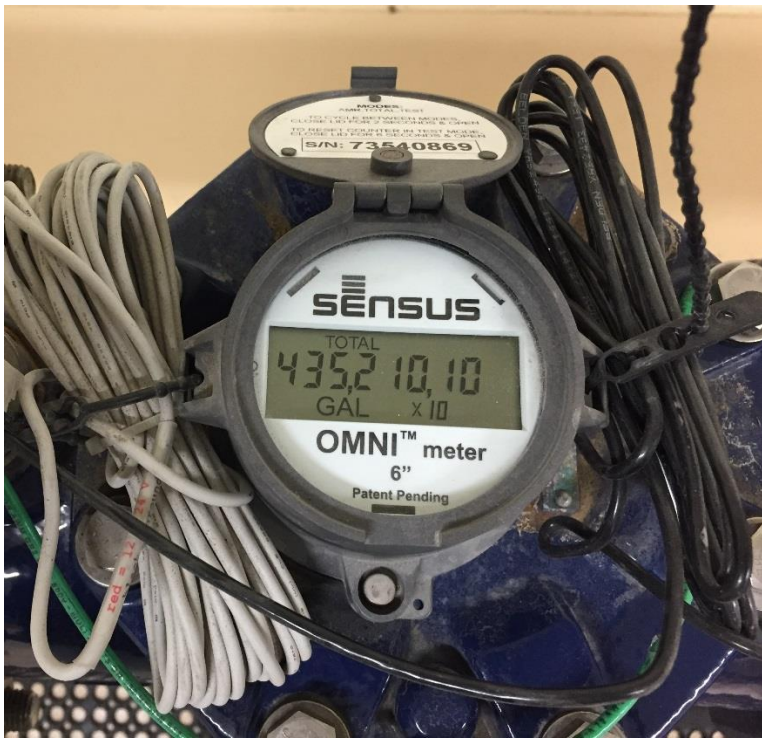
**Sensus High-Speed Pickup (Pulse-Output) Register**



## **Appendix 2: Sensus Omni Meter with EtherMeter, Application Photos**



**Sensus 6-Inch Omni-T2 Turbine Meter, with Integral Absolute-Encoder Register.**



**SCADAmetrics EtherMeter, Flow Meter Gateway Between Sensus 6 Inch Omni-T2 Meter and SCADA System. SCADA Connection Medium: Modbus/RTU (RS-485). Note the Perfect Agreement Between the SCADA Totalizer and the Omni Meter's Totalizer!**



**EtherMeter Derives Rate-of-Flow (GPM) from the Sensus Omni Register's Absolute-Encoder Signal.**