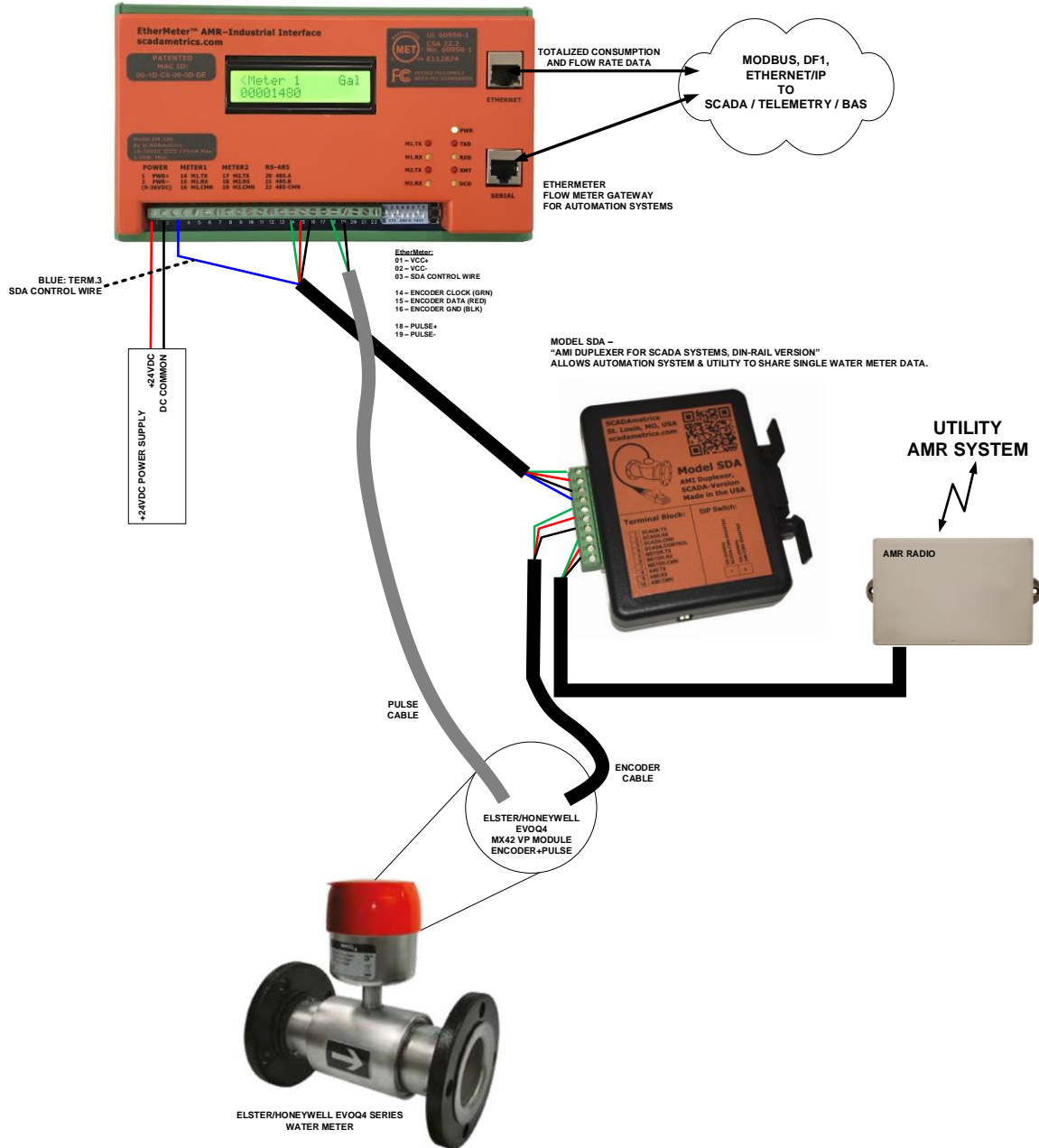


Application Note 029
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Connecting the Elster/Honeywell EvoQ4 Register Signals (Encoder and/or Pulse) To the EtherMeter®.

This document describes the wiring procedures and EtherMeter settings required when connecting to an Elster/Honeywell EvoQ4 MagMeter to the EtherMeter. Both Encoder and Pulse signals will be addressed.

CONNECTING AN ETHERMETER TO AN ELSTER/HONEYWELL EVOQ4 METER USING BOTH ENCODER AND PULSE SIGNALS (MX42 VP MODULE). UTILITY METER-SHARING IMPLEMENTED USING THE SDA DUPLXER.



Frequently Asked Questions –

Question: Under which circumstances would it be desirable to connect both encoder and pulse to signals to the EtherMeter?

Answer 1: The Meter is to be co-connected to both the Utility and an Automation System. Often, the Utility desires to configure the encoder output for coarse resolution (e.g. 1000's of gallons); and this coarse resolution makes it difficult or impossible to discern the realtime rate-of-flow. However, realtime rate-of-flow can be discerned from the pulse signal, which can be independently programmed for fine resolution. By utilizing both the encoder and pulse signals, the user can receive revenue-grade-accurate totalization (from the encoder signal) and realtime rate-of-flow (from the pulse signal).

Answer 2: Often, the Utility desires to monitor realtime rate-of-flow, which normally requires that the EtherMeter interrogate the EVOQ4 register at short time intervals (perhaps once every 15 or 20 seconds). However, frequent interrogations may cause the internal battery of the EVOQ4 to deplete more rapidly. Therefore, rate-of-flow can be determined using the pulse signal, while the exact totalization is interrogated from the encoder signal at a more relaxed interval (perhaps once every 10 or 15 minutes).

Question: What is the pulse resolution for the Elster/Honeywell MX42 VP encoder/pulse module?

Answer: According to its datasheet, the resolution depends upon registration units:

Gallon: 1 Pulse per Gallon; **Cubic Feet:** 1 Pulse per 0.1 Cubic Foot; **Cubic Meters:** 1 Pulse per Liter

Question: The EtherMeter is not detecting the EVOQ4 meter... What could be wrong?

Answer: In certain instances, the EVOQ4 meter is wired using Sensus color-coding, where the RED and GREEN wires should be swapped throughout the wiring diagram.

EtherMeter Setup Commands:

Using a serial setup cable (P/N EM-439), and referencing the EtherMeter User Manual, the EtherMeter should be configured for pulse input on the appropriate meter input channel. For example, an EVOQ4 Meter with encoder signal programmed for 1000's of gallons connected to EtherMeter Channel 1, and pulse signal programmed for single gallon resolution connected to EtherMeter Channel 2:

SETUP COMMAND:	PURPOSE:
SET EXP1 3	METER 1 READING IN 1000'S OF GALLONS
SET SAMP1 600	READ METER 1 EVERY 600 SECONDS (10 MINUTES)
SET PWR2 0	SET METER CHANNEL #2 INPUT AS PULSE-TYPE
SET DB2 10	SET DEBOUNCE TO 10 MILLISECONDS
SET EXP2 0	METER 2 READING IN SINGLE GALLONS
SET FCALC2 DTOTAL	FLOW CALCULATION METHOD: FIXED DELTA-TOTAL
SET SAMP2 20	UPDATE FLOW-RATE CALCULATION EVERY 20 SECONDS
SET TO2 20	SET FLOW-RATE TO ZERO IF NO PULSES IN PAST 20 SECONDS
SET CNT2 <CURRENT READING>	SYNC ETHERMETER WITH REGISTER METER READING

In this configuration, Meter Total (encoder) is digitally available in MODBUS Register 40001-2 (Allen Bradley Register N7:0-1), and Meter Flow (pulse) is digitally available in MODBUS Register 40007-9 (Allen Bradley Register N7:6-7). The encoder-based flow (MODBUS Register 40005-6) and the pulse-based totalization (MODBUS Register 40003-4) may be ignored/discarded.