Application Note 17
Version 002
20 July 2013

EtherMeter Firmware for Schneider Electric Energy Systems.

This document describes the unique EtherMeter features inherent in the 'SEES'-version firmware, which is targeted for use by Schneider Electric Energy Systems.

Communication Protocols:

1. The SEES-version firmware offers the following industrial protocols:

   - MODBUS/TCP (Ethernet)
   - MODBUS/UDP (Ethernet)
   - MODBUS/RTU (RS-232)
   - MODBUS/RTU (RS-485)
   - MODBUS/ASCII (RS-232)
   - MODBUS/ASCII (RS-485)

2. The SEES-version firmware does not offer the following industrial protocols:

   - EtherNet/IP (Ethernet)
   - DF1 Full Duplex (RS-232)
   - DF1 Full Duplex (RS-485)
   - DF1 RadioModem (RS-232)
   - DF1 RadioModem (RS-485)

3. The integrated TELNET server functionality is turned OFF by default.

Logging MAXFLOW And MINFLOW:

1. The SEES-version firmware contains four (4) extra MODBUS holding registers which hold maximum and minimum observed flow rates for the connected meter(s). (See Chapter 14 of the User Manual for the Complete Modbus Register Map.)

   - 40009-10   Meter 1 – MAXIMUM Observed Flow Rate (x1000)   32-Bit Signed Integer
   - 40011-12   Meter 2 – MAXIMUM Observed Flow Rate (x1000)   32-Bit Signed Integer
   - 40013-14   Meter 1 – MINIMUM Observed Flow Rate (x1000)   32-Bit Signed Integer
   - 40015-16   Meter 2 – MINIMUM Observed Flow Rate (x1000)   32-Bit Signed Integer

Customized Factory Defaults:

2. The SEES-version firmware is preset to calculate the flow rate using the 'Fixed-Delta-Total' method (FCALC1=DTOTAL, FCALC2=DTOTAL, See User Manual for detailed explanation). The Meter Sampling Periods (SAMP1 and SAMP2) are preset to 10 seconds. The DTOTAL timeouts (TO1 and TO2) are preset to 900 seconds. All of these presets may be field-modified using the HyperTerminal Setup Procedures.

Resetting the MAXFLOW and MINFLOW Registers

The maximum and minimum observed flow rate registers are MODBUS-resettable. (See Chapter 14, Page 49 of the User Manual.)

1. When a '1' is written to MODBUS COIL 00011, the MAXIMUM and MINIMUM flow rates for METER 1 are reset to METER 1 CURRENT FLOW RATE. Verification is available from either the MODBUS-response to the COIL-write transmission, or by verifying the contents of the MAX flow register (40009-10) and the MIN flow register (40013-14) of METER 1.

2. When a '1' is written to MODBUS COIL 00012, the MAXIMUM and MINIMUM flow rates for METER 2 are reset to METER 2 CURRENT FLOW RATE. Verification is available from either the MODBUS-response to the COIL-write transmission, or by verifying the contents of the MAX flow register (40011-12) and the MIN flow register (40015-16) of METER 2.