SCADA METER INTERFACE UNIT (SMIU)

The master meter shall be equipped with a **SCADA Meter Interface Unit (SMIU)** that will perform protocol conversion between the encoder-type flow meter register to a 4-20 milliamp-input and pulse-input compatible SCADA System.

Flow Meter Reading Port.

The SMIU shall contain one (1) flow meter port that is capable of reading one (1) encoder-type flow meter, in conformance with AWWA Standard C707-05. The flow meter communication protocol(s) shall be user-settable, via integral dip switches, from amongst the following protocols:

a. Sensus Variable Length, 4 to 9 Digit.
b. Sensus Fixed Length, 4 to 6 Digit.
c. Neptune E-Coder Plus, 8 to 9 Digit.
d. Neptune ProRead Basic, 3-6 Digit.
e. Elster-AMCO-Honeywell K-Frame, 6 Digit.

The SMIU shall support, via user-settable dip switches, the following meter registration units:

a. Gallons
b. Cubic Feet
c. Cubic Meters
d. Acre Feet

The SMIU shall support, via user-settable dip switches, the following multiplier factors:

a. x 1 , x 10 , x 100 , x 1000 , x 0.1 , x 0.01 , x 0.001 , x 0.0001 , x 0.00001

The SMIU shall automatically sample the flow meter at pre-set time intervals, set via dip switches, and compute flow rate based upon a delta-Volume/delta-Time finite difference calculation.

The SMIU encoder primary sample period, in seconds, shall be user-selectable, via dip switches, from the following available settings:

a. 5, 10, 15, 30, 60, 300, 600, 900

The SMIU encoder alternative sample period, in seconds, shall be user-selectable, via dip switches and internal jumper, from the following available settings:

a. 1, 2, 3, 32, 64, 128, 640, 960

Flow Meter Pass-Through Port.

The SMIU shall contain an integral pass-through port that will provide concurrent encoder connectivity or concurrent touch-read connectivity from an AMI/AMR system to the flow meter while the SMIU is operating. In case of removal of power from the SMIU, the pass-through port shall continue to operate normally. The pass-through port shall not modify or buffer the encoder signal.

Analog Flow Signal Output.

The SMIU shall provide one (1) analog flow signal output with the following performance characteristics:

a. 4-20 milliamp
b. 3 KV Optical Isolation
c. 16-Bit Resolution
d. Permissable Series Resistance: 500 ohms or greater
e. Active Signal Type, Does Not Require Auxiliary Loop Power Supply
f. Field Rangeable 20 milliamp span, via dip switches
g. Gallons-Per-Minute Spans Available:
   20, 30, 50, 80, 125, 200, 300, 500, 750, 1200, 2000, 3000, 4600, 7300, 11400, 18000
h. Liters-Per-Minute Spans Available:
   75, 120, 200, 300, 475, 750, 1200, 2000, 3000, 4500, 7000, 11000, 17500, 27500, 43000, 68000

Pulse Totalizer Signal Output.

The SMIU shall provide one (1) pulse totalizer signal output with the following performance characteristics, or greater:

a. Solid-State Dry Contact
b. Open-Contact Voltage Rated for 60V or Greater
c. Closed-Contact Current Rated for 500 milliamps or Greater
d. Normal Pulse Speed Mode: 1 Pulse per Encoder Resolution
e. Slow Pulse Speed Mode: 1 Pulse per Encoder Resolution x10

Meter Fault Signal Output.

The SMIU shall provide one (1) dry contact signal output that signals a meter fault alarm signal to the connected SCADA system. The meter fault signal shall be activated when one of the following events occurs: Cut encoder cable, meter failure, loss-of-power to SMIU. The alarm contact shall possess the following performance characteristics, or greater:

a. Solid-State Dry Contact
b. Open-Contact Voltage Rated for 60V or Greater
c. Closed-Contact Current Rated for 500 milliamps or Greater

Electrical and Mechanical Characteristics.

Supply Voltage:	9-36Vdc
Supply Power:	1.25 Watts or less
Power Supply Isolation:	1500 Vrms or greater
Meter Communication Interface:	AWWA C707-05
EMI Suppression:	EN55032 Class B, Chebyshev DC Power Filter, 3-Wire Common-Mode Rejection Choke for Encoder Signal
Mounting:	The SMIU shall mount on standard 35mm industrial din-rail.
Wire Connections:	Removeable Terminal Blocks
Weight:	6.5 ounces or less
Temperature:	-40C to 85C (-40°F to 185°F)
Relative Humidity:	5% to 95%, Non-Condensing
Enclosure Rating:	Built to IP40 Specifications

The SMIU shall be manufactured in the USA.

The SMIU shall be a Signalizer, Model # EMP, as manufactured by SCADAmetrics, or equal.