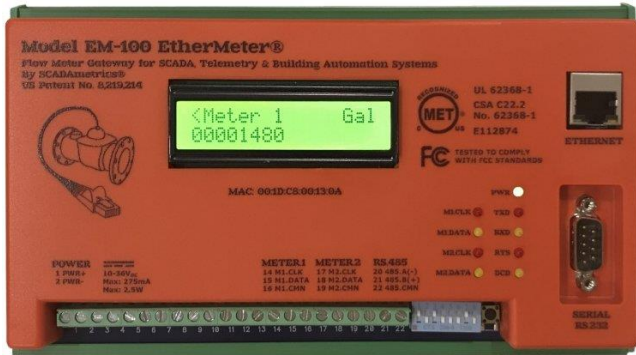


Flow-Meter Compatibility Matrix

21 November 2023



EtherMeter®

- MODEL EM-100
- FLOW METER GATEWAY FOR SCADA, TELEMETRY, & BUILDING AUTOMATION SYSTEMS
- COVERED BY US PATENT NO. 8,219,214



Signalizer™

- MODEL EMP
- ENCODER-TO-MILLIAMP & PULSE CONVERTER FOR WATER METERS
- COVERED BY US PATENT NO. 11,041,738



TheMeterDisplay™

- MODEL TMD
- REMOTE VISUAL DISPLAY FOR WATER METERS
- COVERED BY US PATENT NO. 11,041,738

AUTHORIZED SCADAMETRICS RESELLER

SCADAmetrics
St. Louis, Missouri USA
scadmetrics.com

EtherMeter[®], Signalizer[™], TheMeterDisplay[™]

Compatibility Matrix


1. PULSE-TYPE METERS AND THE ETHERMETER

TheMeterDisplay[™] and The Signalizer[™] are designed to interface exclusively to absolute-encoder-type meters. However, the EtherMeter[®] – although *primarily* designed for absolute-encoder-type meters – also provides meter-reading support for many pulse-based meters. As a consequence, pulse meter signal(s) may be connected to either (or both) of the EtherMeter’s meter input channels. Pulse processing technology allows the EtherMeter to collect meter totalization and flow rate data from non-encoder-based meters. Common examples include petroleum & chemical meters, commercial & industrial natural gas meters, volume correctors, and many others.

When the EtherMeter handles pulse-based meters, the totalization and flow-rate data is stored and transmitted from the same Modbus- and Rockwell-compatible memory registers that it uses for encoder-based meters. Therefore, regardless of which type of meter(s) is connected to the EtherMeter (encoder versus pulse), collection of totalization and flow data by the connected SCADA system is identical.

Because of the large number of pulse-type meters available, we cannot provide an exhaustive list of compatible pulse-type meter makes and models. Instead, we specify the acceptable pulse-type technologies, which include ONLY the following types:

- Mechanical Dry Contact
- Solid-State Dry Contact
- Open-Collector Input




PULSE OUTPUT SIGNAL FLOW METERS		<p>The EtherMeter is compatible with pulse output signal flow meters that feature a passive (mechanical-switch or solid-state switch) output.</p> <p>The EtherMeter is NOT compatible with pulse-output meters that feature an active (voltage) pulse.</p> <p>When using the EtherMeter with a pulse output signal flow meter, both the EtherMeter and the flow meter MUST BE powered by a battery-backed power supply.</p> <p>Within the Setup Menu, the User Must Set TYPEn to PULSE</p> <p>Wiring Codes:</p> <p>Meter Channel 1: PULSE(+)=EtherMeter.Terminal.15, PULSE(-)=EtherMeter.Terminal.16</p> <p>Meter Channel 2: PULSE(+)=EtherMeter.Terminal.18, PULSE(-)=EtherMeter.Terminal.19</p>
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2. ENCODER-TYPE METERS




The provided Encoder-Type Meter Compatibility Matrix is by no means exhaustive, especially in light of the fact that there are a multitude of three-wire-protocol registers available on the market today. Advertised full compatibility is limited to registers deemed so based upon testing within the laboratory and/or the field; and those are denoted by the EtherMeter[®] logo:





If there is a Sensus-protocol, Neptune-protocol, or Elster K-Frame-protocol encoder meter register that is not listed as compatible based upon testing, and you would like to see it listed as such, then please contact SCADAmetrics. Note that in such cases, we may request a register for testing and verification. You may also field-test a meter for compatibility using a SCADAmetrics Model TMD TheMeterDisplay[™].




ENCODER-TYPE METER COMPATIBILITY MATRIX



Make	Model	Notes
<p style="text-align: center;">ABB Elster-AMCO</p>	<p style="text-align: center;">AquaMaster III</p> <p style="text-align: center;">Mag-Meter</p> <p style="text-align: center;">K-Frame Protocol Option</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Results provided courtesy City of Montreal, Quebec, Canada.</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.) Provides accurate bi-directional measurements of flow-rate and totalization.</p> <p>Note: The data-logging version of this meter does NOT provide the "ScanCoder" output signal that the EtherMeter requires.</p> <p>Mains-powered or battery-powered.</p> <p>Register requires user or factory pre-programming per Quick Reference Guide IM/AM/QRG_13:</p> <p>Set Parameter 326 (Adapter Code) to '0' (ScanCoder). Set Parameter 327 (Totalizer Source and Range) to '2' (Net x1).</p> <p>Must use the following EtherMeter setup command(s): SET ROLLn <most-significant 2 totalizer digits on meter display unit> SET TYPEn AUTO or ELSTER</p> <p>Wiring Interface: +V(GREEN)=TX, DATA(RED)=RX, 0V(BLACK)=CMN Connect To: 3-Terminal PCB WADX2026</p>
<p style="text-align: center;">Badger</p>	<p style="text-align: center;">ADE®</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Badger Meter.</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Register requires factory pre-programming. The maximum (6 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note 1: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS. Note 2: On certain Badger Meters that are built to be connected to an Itron ERT, the following alternate color coding may apply: BLACK=TX, RED=RX, DRAIN=CMN</p>
<p style="text-align: center;">Badger</p>	<p style="text-align: center;">HRE-LCD High Resolution Encoder, LCD Version</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of ABS Water Cooperative (IL).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register. When ordering, please make sure to request the encoder version and *not* the pulse (Badger HR) version.</p> <p>Provides high-resolution totalization (9 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (20-year battery life).</p> <p>Register requires factory pre-programming. The maximum (9 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note 1: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS. Note 2: On certain Badger Meters that are built to be connected to an Itron ERT, the following alternate color coding may apply: BLACK=TX, RED=RX, DRAIN=CMN</p>



<p style="text-align: center;">Badger</p>	<p style="text-align: center;">HRE-MECH High Resolution Encoder, Mechanical Version</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of ABS Water Cooperative (IL).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register. When ordering, please make sure to request the encoder version and *not* the pulse (Badger HR) version.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note 1: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS. Note 2: On certain Badger Meters that are built to be connected to an Itron ERT, the following alternate color coding may apply: BLACK=TX, RED=RX, DRAIN=CMN</p>
<p style="text-align: center;">Badger</p>	<p style="text-align: center;">E-Series® Meter</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Results provided courtesy City of Montreal, Quebec, Canada.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (9 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (20-year battery life).</p> <p>Register requires factory pre-programming. Specify 'High-Resolution E-Series ADE Mode'. The maximum (9 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note 1: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS. Note 2: On certain Badger Meters that are built to be connected to an Itron ERT, the following alternate color coding may apply: BLACK=TX, RED=RX, DRAIN=CMN</p>
<p style="text-align: center;">Badger</p>	<p style="text-align: center;">M2000 Mag-Meter</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Results provided courtesy Lange Tech (Chesterfield, Missouri)</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>The Encoder feature of this meter requires Badger M2000 firmware version 1.10 or later. Reference Badger Meter P/N 67354-003 to obtain a firmware upgrade kit. Enabling the meter as an encoder requires three settings, all within the advanced menu, to be configured:</p> <ul style="list-style-type: none"> • Totalizer Resolution – Selects the resolution of the display totalizer. • Protocol Type =V2 – Selects the type of information to be transmitted to the encoder. • Dial Type – Enables encoder and selects the number of significant totalizer digits to transmit. Recommended 8 or 9 dials. <p>Register requires field- or factory-programming. The maximum (8 digits) is recommended: Ouput #4 should be set to ADE. Communication method should be set to ADE.</p> <p>Mains-powered or battery-powered. SCADAmetrics recommends mains-powered, so that regular battery replacement is not required.</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p>Wiring: M2000.TERM.8 = TX, M2000.TERM.1 = RX, M2000.TERM.2 = CMN</p> <p>Note 1: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS. Note 2: On certain Badger Meters that are built to be connected to an Itron ERT, the following alternate color coding may apply: BLACK=TX, RED=RX, DRAIN=CMN</p>




<p>Badger</p>	<p>M5000 Mag-Meter</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Results provided courtesy City of Montreal, Quebec, Canada.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register requires field- or factory-programming. The maximum (8 digits) is recommended: Ouput #4 should be set to ADE. Communication method should be set to ADE.</p> <p>Mains-powered or battery-powered. SCADAmetrics recommends mains-powered, so that regular battery replacement is not required.</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p>Wiring: INPUT+ = TX, ADE_DATA = RX, INPUT- JUMPERED TO ADE_GROUND = CMN</p> <p>Note 1: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS. Note 2: On certain Badger Meters that are built to be connected to an Itron ERT, the following alternate color coding may apply: BLACK=TX, RED=RX, DRAIN=CMN</p>																					
<p>Badger</p>	<p>Dynasonics TFX-500w Clamp-On Ultrasonic Meter</p> 	<p>Compatible (based upon published specifications).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Mains-powered, Strap-On Ultrasonic Meter.</p> <p>Provides high-resolution totalization (7,8,9, or 10 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register requires field- or factory-programming via Flow Meter's User Interface. Nine (9) digits is highly recommended. 10 digits should not be selected. Endpoint Protocol should be set to V2. Resolution should be selected as follows:</p> <table border="0"> <tr> <td>1" and Below:</td> <td>x0.1 gal</td> <td>x0.01 ft³</td> <td>x0.001 m³</td> </tr> <tr> <td>1.5" – 4":</td> <td>x1 gal</td> <td>x0.1 ft³</td> <td>x0.01 m³</td> </tr> <tr> <td>6" and Above:</td> <td>x10 gal</td> <td>x1 ft³</td> <td>x0.01 m³</td> </tr> </table> <p>Wiring via Meter Terminal Block 500 (TB500):</p> <table border="0"> <tr> <td>4 = TX</td> <td>Red-Sensus</td> <td>Neptune-Black</td> </tr> <tr> <td>5 = RX</td> <td>Green-Sensus</td> <td>Neptune-Red</td> </tr> <tr> <td>3 = CMN</td> <td>Black-Sensus</td> <td>Neptune-Green</td> </tr> </table> <p>Note 1: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>	1" and Below:	x0.1 gal	x0.01 ft ³	x0.001 m ³	1.5" – 4":	x1 gal	x0.1 ft ³	x0.01 m ³	6" and Above:	x10 gal	x1 ft ³	x0.01 m ³	4 = TX	Red-Sensus	Neptune-Black	5 = RX	Green-Sensus	Neptune-Red	3 = CMN	Black-Sensus	Neptune-Green
1" and Below:	x0.1 gal	x0.01 ft ³	x0.001 m ³																				
1.5" – 4":	x1 gal	x0.1 ft ³	x0.01 m ³																				
6" and Above:	x10 gal	x1 ft ³	x0.01 m ³																				
4 = TX	Red-Sensus	Neptune-Black																					
5 = RX	Green-Sensus	Neptune-Red																					
3 = CMN	Black-Sensus	Neptune-Green																					
<p>Elster-AMCO (ABB/Kent)</p>	<p>InVISION™ Sensus- Protocol Option</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Bond-Madison Water District.</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Register requires factory pre-programming. The maximum (6 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>																					




<p>Elster-AMCO (ABB/Kent)</p>	<p>InVISION™</p> <p>K-Frame Protocol Option</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Elster-AMCO Water.</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Wiring Color Codes: GREEN=TX, RED=RX, BLACK=CMN Note: On the EtherMeter, the user must set TYPEn to AUTO or ELSTER.</p>
<p>Elster-AMCO (ABB/Kent)</p>	<p>ScanCoder</p> <p>K-Frame Protocol Option</p> 	<p>Compatible (based upon laboratory and/or field testing).</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Wiring Color Codes: BLACK=TX, RED=RX, GREEN(OR BARE SHIELD)=CMN Note: On the EtherMeter, the user must set TYPEn to AUTO or ELSTER.</p>
<p>Elster AMCO</p>	<p>evoQ4</p> <p>Mag-Meter</p> <p>Sensus- Protocol Option</p> 	<p>Compatible (based upon laboratory and/or field testing).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (10-year battery life).</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>When purchasing the 8-Digit Sensus-Protocol module for the evoQ4, there are two options: VFRAME 8-Digit (Gal x10) and SHIFTED VFRAME 8-Digit (Gal x1).</p> <p>For Meter Sizes 4" and Below, SHIFTED VFRAME 8-Digit (Gal x1) is recommended.</p> <p>For Meter Sizes 6" and Above, VFRAME 8-Digit (Gal x10) is recommended.</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or ELSTER.</p>
<p>Elster AMCO</p>	<p>evoQ4</p> <p>Mag-Meter</p> <p>K-Frame Protocol Option</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Elster-AMCO Water.</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Provides accurate measurement of bi-directional flow-rate and totalization.</p> <p>Battery-powered (10-year battery life).</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p>Wiring Color Codes: WHITE=TX, RED=RX, BLACK=CMN Note: On the EtherMeter, the user must set TYPEn to AUTO or ELSTER.</p>



<p>Itron (Actaris)</p>	<p>Cyble™ Coder</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Itron (Actaris).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-Powered (12-year battery life).</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Kamstrup</p>	<p>Flow IQ 2100 Ultrasonic Meter</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Kamstrup USA.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (9 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows. Also provides advanced alarm flags, which can be accessed by the EtherMeter. Please request special Kamstrup Firmware when ordering the EtherMeter.</p> <p>Note: On the EtherMeter, SAMPn should always be set to an even multiple of 32 seconds. Example: On the EtherMeter, set SAMPn to 64, TOn to 64 (same as SAMPn), FCALCn to DTOTAL</p> <p>Battery-powered (16-year battery life). Note: For maximum Kamstrup meter battery life preservation, the user should set the EtherMeter's SAMPn setting to >=320 Seconds.</p> <p>Register requires factory pre-programming. The maximum (9 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Master Meter</p>	<p>Acculinx™</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register and Results courtesy of Davis-Monthan AFB (Tucson, AZ).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register should <u>NOT</u> include the Factory RESISTOR option. Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>




<p style="text-align: center;">Master Meter</p>	<p style="text-align: center;">Octave® Ultrasonic Meter</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register and Results courtesy of Davis-Monthan AFB (Tucson, AZ).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Battery-powered (10-year battery life).</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Meter Register requires factory pre-programming.</p> <p>When ordering the Octave®, specify:</p> <ul style="list-style-type: none"> • ENCODER_UPDATE_PERIOD as 60 seconds. • "NET UNSIGNED" Totalization Mode. • Maximum Number of Encoder Digits (8 digits). • Do <u>NOT</u> include the Factory RESISTOR option. • Resolution = GALx1 (meter 4" or smaller) or GALx10 (meter 6" or larger). ...or... • Resolution = FT³x0.1 (meter 4" or smaller) or FT³x1 (meter 6" or larger). <p>Note: On the EtherMeter, Recommended SAMPn Setting: 60, 120, 180, 240, 300, 600, or 900 Seconds. (Must Be A Multiple of 60 Seconds). Example. On the EtherMeter, set SAMPn to 60, TON to 60 (same as SAMPn), FCALCn to DTOTAL</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p style="text-align: center;">Master Meter</p>	<p style="text-align: center;">Elinx™ Interpreter</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Registers provided courtesy of Master Meter Inc.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (20-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Register requires factory pre-programming.</p> <p>When ordering the Elinx™, specify:</p> <ul style="list-style-type: none"> • Maximum Number of Encoder Digits (8 digits). • Resolution = GALx1 (meter 4" or smaller) or GALx10 (meter 6" or larger). ...or... • Resolution = FT³x0.1 (meter 4" or smaller) or FT³x1 (meter 6" or larger). <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>



<p>McCrometer (& Water Specialties)</p>	<p>FlowCom Smart-Output Version</p> <p>*</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register courtesy of McCrometer Corp. (Hemet, CA).</p> <p>* In June 2021, we received reports that certain new FlowCom registers were including a decimal point in their totalization string, which renders the register incompatible with the EtherMeter – and likely incompatible with many other AMR endpoints. So therefore, we recommend that you proceed with caution, and at your own risk, with this register.</p> <p>For compatible versions, it is a <u>Fair</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). Generally speaking, an 8-digit high-resolution register will enable fast calculation of flow-rates. However, in this case, the FlowCom register only updates its available reading once every 10 minutes; and therefore flow-rate calculation can only be performed as a 10-minute average flow, severely hampering its ability to provide up-to-date flow readings via its encoder signal. If flow data is required, then the system integrator should purchase and utilize the FlowCom Smart Output (Encoder) + 4-20mA option.</p> <p>Battery-powered. In order to assist battery capacity, recommend that the FlowCom be purchased with the 4-20mA output option, which allows for externally-powering the meter.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>By default, the FlowCom register is pre-set to a McCrometer-selected default meter resolution. However, we recommend that the user request that McCrometer pre-program the 8-digit resolution to the following non-default settings:</p> <table border="1" data-bbox="639 898 943 978"> <tr> <td>2" – 4"</td> <td>Gallons x 1</td> </tr> <tr> <td>6" – 10"</td> <td>Gallons x 10</td> </tr> <tr> <td>12" +</td> <td>Gallons x 100</td> </tr> </table> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note 1: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS. Note 2: On the EtherMeter, the user should set FCALCn to DTOTAL, SAMPn to 600, and TOn to 600</p>	2" – 4"	Gallons x 1	6" – 10"	Gallons x 10	12" +	Gallons x 100
2" – 4"	Gallons x 1							
6" – 10"	Gallons x 10							
12" +	Gallons x 100							
<p>McCrometer (& Water Specialties)</p>	<p>ProComm Transmitter</p> <p>UltraMag™ Flanged MagMeter Models UM06 & UM08</p> <p>FPI Mag™ Insertion MagMeter</p> <p>SPI Mag™ Insertion MagMeter</p> <p>Smart-Output Version</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Meter courtesy of McCrometer Corp. (Hemet, CA).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution (8 or 9 digits) or medium-resolution (6-Digit) totalization. The high-resolution (8-9 digit) totalization is preferable, as it speeds the flow-rate calculation.</p> <p>Order with Converter Option: '7' (Smart Output). Order with Smart Output Protocol Option: IT9 (9-Digit) ...or... SEN (8-Digit)</p> <p><u>Note:</u> If the meter is to be connected <u>only</u> to an EtherMeter, then the 9-Digit option is recommended. If the meter is to be <u>co</u>-connected to a utility AMR system, then select the output compatible with the utility AMR system (9 Digit, 8 Digit, 6 Digit).</p> <p>Terminal Block Wire Codes: Term.28=TX, Term.29=RX, Term.27=CMN</p> <p>MIM085 Option Wiring Color Codes: BLACK=TX, RED=RX, WHITE=CMN MIM086 Option Wiring Color Codes: BLACK=TX, RED=RX, WHITE=CMN MIM087 Option Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN</p> <p>Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>						



<p>McCrometer (& Water Specialties)</p>	<p>M-Series & L-Series Transmitters</p> <p>UltraMag™ Flanged MagMeter Models UM06 & UM08</p> <p>FPI Mag™ Insertion MagMeter</p> <p>SPI Mag™ Insertion MagMeter</p> <p>Smart-Output Version</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Meter courtesy of McCrometer Corp. (Hemet, CA).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution (8 or 9 digits) or medium-resolution (6-Digit) totalization. The high-resolution (8-9 digit) totalization is preferable, as it speeds the flow-rate calculation.</p> <p>Order with "MIM085 Smart Output™ Option: 9-Digit Absolute Encoder Signal. ...or... Order with "MIM087 Smart Output™ Option: 8-Digit Absolute Encoder Signal.</p> <p><u>Note:</u> If the meter is to be connected <u>only</u> to an EtherMeter, then the MIM085 (9-Digit) option is recommended. If the meter is to be co-connected to a utility AMR system, then select the output compatible with the utility AMR system (MIM085=9 Digit, MIM087=8 Digit, MIM086=6 Digit).</p> <p>Terminal Block Wire Codes: Term.28=TX, Term.29=RX, Term.27=CMN</p> <p>MIM085 Option Wiring Color Codes: BLACK=TX, RED=RX, WHITE=CMN MIM086 Option Wiring Color Codes: BLACK=TX, RED=RX, WHITE=CMN MIM087 Option Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN</p> <p>Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Metron-Farnier</p>	<p>HawkEye™ OER</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Metron-Farnier. (Note: The 6-digit (newest) version of this register is recommended.)</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Register requires factory pre-programming. The maximum (6 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, WHITE=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Metron-Farnier</p>	<p>MIU (Register Attachment)</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Metron-Farnier.</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.) Reverse-flows can cause erroneous readings and are not detected with this register.</p> <p>Battery-powered.</p> <p>Register requires factory pre-programming. The maximum (7 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, WHITE=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>



<p>Metron-Farnier</p>	<p>Innov8™ Innov8-VN™</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Registers provided courtesy of Metron-Farnier (Boulder, CO). EtherMeter Firmwares Dated 28 Aug 2019, and Later.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register. When ordering the Innov8 or Innov8-VN, please make sure to request the encoder version and *not* the pulse version. When ordering the Innov8-VN, please make sure to order with the 3-wire encoder cable option.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (10-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Mueller (Hersey)</p>	<p>ME-8</p> 	<p>Compatible (based upon laboratory and/or field testing).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Mueller (Hersey)</p>	<p>Translator</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Hersey Meter.</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Register requires factory pre-programming. The maximum (6 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, WHITE=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>



<p style="text-align: center;">Mueller (Hersey)</p>	<p style="text-align: center;">HbMAG Mag-Meter</p> <p style="text-align: center;">Sensus Protocol Option</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Siemens Industry.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>This mag-meter provides accurate measurement of bi-directional flow-rate and totalization.</p> <p>By Default, this meter is Battery-powered. We recommend the meter configuration that features the line-powered option with a small internal battery backup option.</p> <p>Line-Powered Option: 12/24 V AC/VDC Mains (Line) Powered.</p> <p>Internal Battery Backup Option: HBBAT1D.</p> <p>Register requires user/factory pre-programming. The maximum (8 digits) is recommended. Adjust Parameter 305 to provide desired resolution. For 3" size meters and below, set to "Two Digits After Decimal Point" (GALx100 x 0.01 = GALx1 Resolution). For 4" size meters and above, set to "One Digit After Decimal Point" (GALx100 x 0.1 = GALx10 Resolution).</p> <p>Note: On the EtherMeter, Recommended SAMPn Setting: 15, 30, 45, 60, 75,... (Must Be A Multiple of 15 Seconds).</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p>Wiring Codes: TX=TERM.91, RX=TERM.92, CMN=TERM.93 Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p style="text-align: center;">Neptune (Schlumberger)</p>	<p style="text-align: center;">E-Coder™</p> 	<p>Compatible (based upon laboratory and/or field testing).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register does not require any special factory pre-programming (Neptune Factory Defaults = OK).</p> <p>Note 1: On the EtherMeter, the user should set TYPEn to AUTO or NEPTUNE. Note 2: On the EtherMeter, the user should set SAMPn >= 20 seconds.</p> <p>Note: The EtherMeter is <u>NOT</u> compatible with the R900i version of the E-Coder. The R900i has a built-in radio, but no hookup cables or terminals, and therefore it is not compatible with the EtherMeter or any other non-Neptune reading equipment.</p> <p>Wiring Color Codes: BLACK=TX, RED=RX, GREEN=CMN</p> <p>SPECIAL NOTE FOR NEPTUNE COMPOUND METERS OUTFITTED WITH TWO E-CODER REGISTERS: When using a compound meter, and 2 registers are connected in parallel, that means the registers are programmed into 'Network Mode'. The EtherMeter is not compatible with registers that are in 'Network Mode'. The register signal wires must be separated; and the registers must be re-programmed into 'Normal Mode' using a Neptune Handheld Programmer. Please call if more details are required.</p>



<p>Neptune (Schlumberger)</p>	<p>Mach 10™</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Meter provided courtesy of Ti-Sales (Sudbury, MA).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register does not require any special factory pre-programming (Neptune Factory Defaults = OK).</p> <p>Note 1: On the EtherMeter, the user should set TYPEn to AUTO or NEPTUNE. Note 2: On the EtherMeter, the user should set SAMPn >= 20 seconds.</p> <p>Note: The EtherMeter is <u>NOT</u> compatible with the R900i version of the Mach 10. The R900i has a built-in radio, but no hookup cables or terminals, and therefore it is not compatible with the EtherMeter or any other non-Neptune reading equipment.</p> <p>Wiring Color Codes: BLACK=TX, RED=RX, GREEN=CMN</p>
<p>Neptune (Schlumberger)</p> <p>also sold under manufacturer name: Seametrics</p>	<p>WaterFlux 3070</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Meter provided courtesy of Ti-Sales (Sudbury, MA).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Select Purchase Option: Neptune Protocol or Sensus Protocol 8 Digits.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation.</p> <p>Register does not require any special factory pre-programming (Factory Defaults = OK).</p> <p>Note 1: On the EtherMeter, the user should set TYPEn to AUTO or NEPTUNE. Note 2: On the EtherMeter, Recommended SAMPn Setting: 30, 60, 90, 120, ... (Must Be A Multiple of 30 Seconds).</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p>Wiring Color Codes: BLACK=TX, RED=RX, GREEN=CMN</p>
<p>Neptune (Schlumberger)</p>	<p>Tru/Mag™</p> 	<p>Compatible (based upon laboratory and/or field testing).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation.</p> <p>Register does not require any special factory pre-programming (Factory Defaults = OK).</p> <p>Note 1: On the EtherMeter, the user should set TYPEn to AUTO or NEPTUNE. Note 2: On the EtherMeter, the user should set SAMPn >= 20 seconds. Note 3: External-Power is recommended. Note 4: The Tru/Mag only measures flow in the forward direction (7/24/2012).</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p>Wiring Color Codes: BLACK=TX, RED=RX, GREEN=CMN</p>



<p style="text-align: center;">Neptune (Schlumberger)</p>	<p style="text-align: center;">ProRead™ “3-Board”</p> 	<p>Compatible (based upon laboratory and/or field testing). Register must be an Auto-Sense and Revision H or above (eg: “AUTO H65N”).</p> <p><u>Fair</u> register for SCADA System interrogation of encoder register.</p> <p>Provides low/medium-resolution totalization (5.2 digits). The low/medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The “FIXED DTOTAL” flow calculation method is recommended.)</p> <p>Register requires factory pre-programming. The maximum (5.2 digits) is recommended.</p> <p>Note 1: On the EtherMeter, the user should set TYPEn to AUTO or NEPTUNE.</p> <p>Wiring Color Codes: BLACK=TX, RED=RX, GREEN=CMN</p> <p>SPECIAL NOTE FOR NEPTUNE COMPOUND METERS OUTFITTED WITH TWO PRO-READ REGISTERS: When using a compound meter, and 2 registers are connected in parallel, that means the registers are programmed into ‘Network Mode’. The EtherMeter is not compatible with registers that are in ‘Network Mode’. The register signal wires must be separated; and the registers must be re-programmed into ‘Normal Mode’ using a Neptune Handheld Programmer. Please call if more details are required.</p>
<p style="text-align: center;">Neptune (Schlumberger)</p>	<p style="text-align: center;">ProCoder™</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Ti-Sales (Sudbury, MA).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register does not require any special factory pre-programming (Neptune Factory Defaults = OK).</p> <p>Note: The EtherMeter is <u>NOT</u> compatible with the R900i version of the ProCoder. The R900i has a built-in radio, but no hookup cables or terminals, and therefore it is not compatible with the EtherMeter or any other non-Neptune reading equipment.</p> <p>Wiring Color Codes: BLACK=TX, RED=RX, GREEN=CMN</p> <p>Note: On the EtherMeter, the user should set TYPEn to AUTO or NEPTUNE.</p> <p>SPECIAL NOTE FOR NEPTUNE COMPOUND METERS OUTFITTED WITH TWO PROCODER REGISTERS: When using a compound meter, and 2 registers are connected in parallel, that means the registers are programmed into ‘Network Mode’. The EtherMeter is not compatible with registers that are in ‘Network Mode’. The register signal wires must be separated; and the registers must be re-programmed into ‘Normal Mode’ using a Neptune Handheld Programmer. Please call if more details are required.</p>



<p style="text-align: center;">Neptune (Schlumberger)</p>	<p style="text-align: center;">ProRead™ “2-Board”</p> 	<p>Compatible (based upon laboratory and/or field testing). Register must be an Auto-Sense and Revision H or above (eg: “AUTO H49N”). Test Register provided courtesy of Ti-Sales (Sudbury, MA).</p> <p><u>Fair</u> register for SCADA System interrogation of encoder register.</p> <p>Provides low -resolution totalization (4 digits). The low -resolution totalization delays flow-rate calculations and reverse-flow detection. (The “FIXED DTOTAL” flow calculation method is recommended.)</p> <p>Register requires factory pre-programming. The maximum (4 digits) is recommended.</p> <p>Note: On the EtherMeter, the user should set TYPEn to AUTO or NEPTUNE.</p> <p>Wiring Color Codes: BLACK=TX, RED=RX, GREEN=CMN</p> <p>SPECIAL NOTE FOR NEPTUNE COMPOUND METERS OUTFITTED WITH TWO PRO-READ REGISTERS: When using a compound meter, and 2 registers are connected in parallel, that means the registers are programmed into ‘Network Mode’. The EtherMeter is not compatible with registers that are in ‘Network Mode’. The register signal wires must be separated; and the registers must be re-programmed into ‘Normal Mode’ using a Neptune Handheld Programmer. Please call if more details are required.</p>
<p style="text-align: center;">RG3</p>	<p style="text-align: center;">Tomahawk™</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Registers provided courtesy of RG3 Meter Company.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (20-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>


<p>Seametrics</p>	<p>iMag 4700</p>	<p>Compatible (based upon published specifications).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (20-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Sensus (Rockwell/ Invensys)</p>	<p>ICE[®] (ECR-III)</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Registers provided courtesy of Core and Main.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p><u>Recommended Pre-Programming Parameters:</u> Reading Wheels: 8 thru 1 Programmable ID: <disabled> Programmable Text: <disabled/blank> Multiplier: <disabled> Unit: <disabled> Reading String: <Normal Reading String></p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Sensus (Rockwell/ Invensys)</p>	<p>OMNI T² Turbo, C² Compound, F² Fire Svc, R² Residential</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Registers provided courtesy of Core and Main.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (10-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p><u>Recommended Pre-Programming Parameters:</u> Reading Wheels: 8 thru 1 Programmable ID: <disabled> Programmable Text: <disabled/blank> Multiplier: <disabled> Unit: <disabled> Reading String: <"Normal-Mode" Reading String> (*Not* Smart Mode)</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>

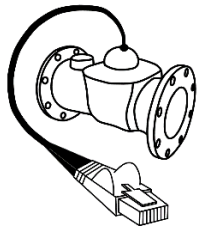
<p>Sensus (Rockwell/ Invensys)</p>	<p>OMNI+ (PLUS) T² Turbo, C² Compound, F² Fire Svc, R² Residential</p> 	<p>Compatible (based upon laboratory and/or field testing).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (10-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Register requires factory pre-programming. 8 digits of totalization are available, and the following resolutions are recommended:</p> <table border="0" data-bbox="638 464 1243 512"> <tr> <td>1.5" – 4" Diameter</td> <td>Gallons x1</td> <td>FT³ x0.1</td> <td>M³ x0.01</td> </tr> <tr> <td>6"+ Diameter</td> <td>Gallons x10</td> <td>FT³ x1</td> <td>M³ x0.1</td> </tr> </table> <p><u>Recommended Pre-Programming Parameters:</u> Programmable ID: <disabled> Programmable Text: <disabled/blank> Multiplier: <disabled> Unit: <disabled> Reading String: <"Normal-Mode" Reading String> (*Not* Smart Mode)</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>	1.5" – 4" Diameter	Gallons x1	FT ³ x0.1	M ³ x0.01	6"+ Diameter	Gallons x10	FT ³ x1	M ³ x0.1
1.5" – 4" Diameter	Gallons x1	FT ³ x0.1	M ³ x0.01							
6"+ Diameter	Gallons x10	FT ³ x1	M ³ x0.1							
<p>Sensus (Rockwell/ Invensys)</p>	<p>ECR</p> 	<p>Compatible (based upon laboratory and/or field testing).</p> <p>Test Registers provided courtesy of Core and Main.</p> <p>Note 1: Register Utilizes The "Fixed-Length" Variation of The Sensus Protocol.</p> <p>Note 2: Obsolete Register, No Longer Available from Sensus. SCADAmetrics recommends replacement with ICE® Register.</p> <p>Note 3: Sensus/Rockwell produced a register called "ECR/TRC" which has been tested and found to be NOT compatible with the EtherMeter.</p> <p><u>Fair</u> register for SCADA System interrogation of encoder register.</p> <p>Provides low resolution totalization (4 digits). The low -resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Register does not require factory pre-programming.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>								

<p style="text-align: center;">Sensus (Rockwell/ Invensys)</p>	<p style="text-align: center;">Hydroverse</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Results reported, courtesy of Allied Control Services (NJ).</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Battery-powered (10-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Register requires factory pre-programming. 8 digits of totalization are available, and the following resolutions are recommended:</p> <table border="0" data-bbox="638 485 1243 537"> <tr> <td>1.5" – 4" Diameter</td> <td>Gallons x1</td> <td>FT³ x0.1</td> <td>M³ x0.01</td> </tr> <tr> <td>6"+ Diameter</td> <td>Gallons x10</td> <td>FT³ x1</td> <td>M³ x0.1</td> </tr> </table> <p><u>Recommended Pre-Programming Parameters:</u> Programmable ID: <disabled> Programmable Text: <disabled/blank> Multiplier: <disabled> Unit: <disabled> Reading String: <"Normal-Mode" Reading String> (*Not* Smart Mode)</p> <p><u>Encoder Wiring Color Codes:</u> BLUE=TX, PURPLE=RX, GREEN/YELLOW=CMN</p> <p>Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p> <p><u>Additional Wiring Color Codes:</u></p> <p>ORANGE = Forward Pulse RED = Reverse Pulse BROWN = Alarm Output YELLOW = Pulse & Alarm Common</p> <p>For APK and APK.PLUS applications, only two wires should be connected to the APK/APK.PLUS: ORANGE and YELLOW. There is no 24V_{DC} excitation required.</p>	1.5" – 4" Diameter	Gallons x1	FT ³ x0.1	M ³ x0.01	6"+ Diameter	Gallons x10	FT ³ x1	M ³ x0.1
1.5" – 4" Diameter	Gallons x1	FT ³ x0.1	M ³ x0.01							
6"+ Diameter	Gallons x10	FT ³ x1	M ³ x0.1							
<p style="text-align: center;">Sensus (Rockwell/ Invensys)</p>	<p style="text-align: center;">iPerl™ Mag-Meter</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Registers provided courtesy of Core and Main.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Battery-powered (10-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended. Requires iPerl 3-Wire, Plain-End Connector.</p> <p><u>Recommended Pre-Programming Parameters:</u> Reading Wheels: 8 thru 1 Programmable ID: <disabled> Programmable Text: <disabled/blank> Multiplier: <disabled> Unit: <disabled> Reading String: <Normal Reading String></p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>								

<p>Sensus (Rockwell/ Invensys)</p>	<p>AccuStream™</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Registers provided courtesy of Core and Main.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Register requires factory pre-programming. The maximum (8 digits) is recommended.</p> <p><u>Recommended Pre-Programming Parameters:</u> Reading Wheels: 8 thru 1 Programmable ID: <disabled> Programmable Text: <disabled/blank> Multiplier: <disabled> Unit: <disabled> Reading String: <Normal Reading String></p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p>Sensus (Rockwell/ Invensys)</p>	<p>AccuMag™ Mag-Meter</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Results provided courtesy of City of Montreal, Quebec, Canada.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>Note: On the EtherMeter, SAMPn should always be set to an even multiple of 30 seconds. Example: On the EtherMeter, set SAMPn to 60, TOn to 60 (same as SAMPn), FCALCn to DTIME or DTOTAL.</p> <p>Battery-powered (8 to 15-year battery life). Note: For maximum meter battery life preservation, the user should set the EtherMeter's SAMPn setting to >=300 Seconds.</p> <p>Note: It has been our observation that the 30 second update period of the Accumag is only approximate. Therefore, setting FCALCn to DTIME is likely to provide better results than DTOTAL.</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p><u>Recommended Pre-Programming Parameters:</u> Reading Wheels: 8 thru 1 Programmable ID: <disabled> Programmable Text: <disabled/blank> Multiplier: <disabled> Unit: <disabled> Reading String: <Normal Reading String></p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>

<p style="text-align: center;">Siemens (Sitrans)</p>	<p style="text-align: center;">F M MAG 8000 Mag-Meter</p> <p style="text-align: center;">Sensus Protocol Option</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Siemens Industry.</p> <p><u>Excellent</u> register for SCADA System interrogation of encoder register.</p> <p>Provides high-resolution totalization (8 digits). The high-resolution totalization speeds the flow-rate calculation and detection of reverse flows.</p> <p>This mag-meter provides accurate measurement of bi-directional flow-rate and totalization.</p> <p>By Default, this meter is Battery-powered. We recommend the meter configuration that features the line-powered option with a small internal battery backup option.</p> <p>Line-Powered Option: 12/24 V AC/VDC Mains (Line) Powered.</p> <p>Internal Battery Backup Option: HBBAT1D.</p> <p>Register requires user/factory pre-programming using the Siemens Flow Tool Software. The maximum (8 digits) is recommended.</p> <p>Adjust Parameter 305 to provide desired resolution: For All Size Meters, Set to "Zero Digits After Decimal Point", which will provide GALx1 Resolution.</p> <p>To Monitor NET Totalization, Set Parameter 310 (Flow Direction Totalizer 1) to "NET".</p> <p>For Gallon Registration, Set Parameter 8 (Totalizer Unit) to GAL; and Set Parameter 9 (Flowrate Unit) to GPM.</p> <p>MagMeter: Meter grounding lug(s) MUST be tied to the control panel electrical grounding terminal/lug.</p> <p>Wiring Codes: TX=TERM.91, RX=TERM.92, CMN=TERM.93</p> <p>Note 1: On the EtherMeter, Recommended SAMPn Setting: 15, 30, 45, 60, 75,... (Must Be A Multiple of 15 Seconds).</p> <p>Note 2: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
<p style="text-align: center;">Zenner USA</p>	<p style="text-align: center;">ETR</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Zenner USA.</p> <p><u>Good</u> register for SCADA System interrogation of encoder register.</p> <p>Provides medium-resolution totalization (6 digits). The medium-resolution totalization delays flow-rate calculations and reverse-flow detection. (The "FIXED DTOTAL" flow calculation method is recommended.)</p> <p>Battery-powered (15-year battery life). Note: On the EtherMeter, the user should set SAMPn >= 30 seconds to assist battery life.</p> <p>Register requires factory pre-programming. The maximum (6 or 7 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN</p> <p>Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>

<p>Zenner USA</p>	<p>STEALTH</p> 	<p>Compatible (based upon laboratory and/or field testing). Test Register provided courtesy of Kevin Moore Electric Company (Utah).</p> <p>Provides high-resolution totalization (9 digits).</p> <p>This ultrasonic-meter provides accurate measurement of bi-directional flow-rate and totalization.</p> <p>IMPORTANT NOTE! – IF THE USER DESIRES TO CONNECT THE ZENNER STEALTH FLOW METER WITH THE MODEL EM.100 ETHERMETER OR MODEL EMP SIGNALIZER, THEN THE STEALTH <u>MUST</u> BE OUTFITTED WITH THE (NEW) MAINS-POWERED NDC COMMUNICATION MODULE – <u>NOT</u> THE BATTERY-POWERED NDC MODULE.</p> <p>BOTH THE ETHERMETER AND SIGNALIZER INTERROGATE THE FLOW METER, VIA THE NDC MODULE, AT FREQUENT INTERVALS, SO AS TO QUICKLY DETERMINE THE RATE-OF-FLOW (GPM/LPM). THESE FREQUENT INTERROGATIONS WILL GENERALLY CAUSE THE BATTERY OF THE STANDARD NDC MODULE TO DEplete AFTER APPROXIMATELY 864,000 INTERROGATIONS. THEREFORE, THE MAINS-POWERED MODULE IS REQUIRED.</p> <p>Register requires factory pre-programming. The maximum (9 digits) is recommended.</p> <p>Wiring Color Codes: RED=TX, GREEN=RX, BLACK=CMN Note: On the EtherMeter, the user should set TYPEn to AUTO or SENSUS.</p>
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