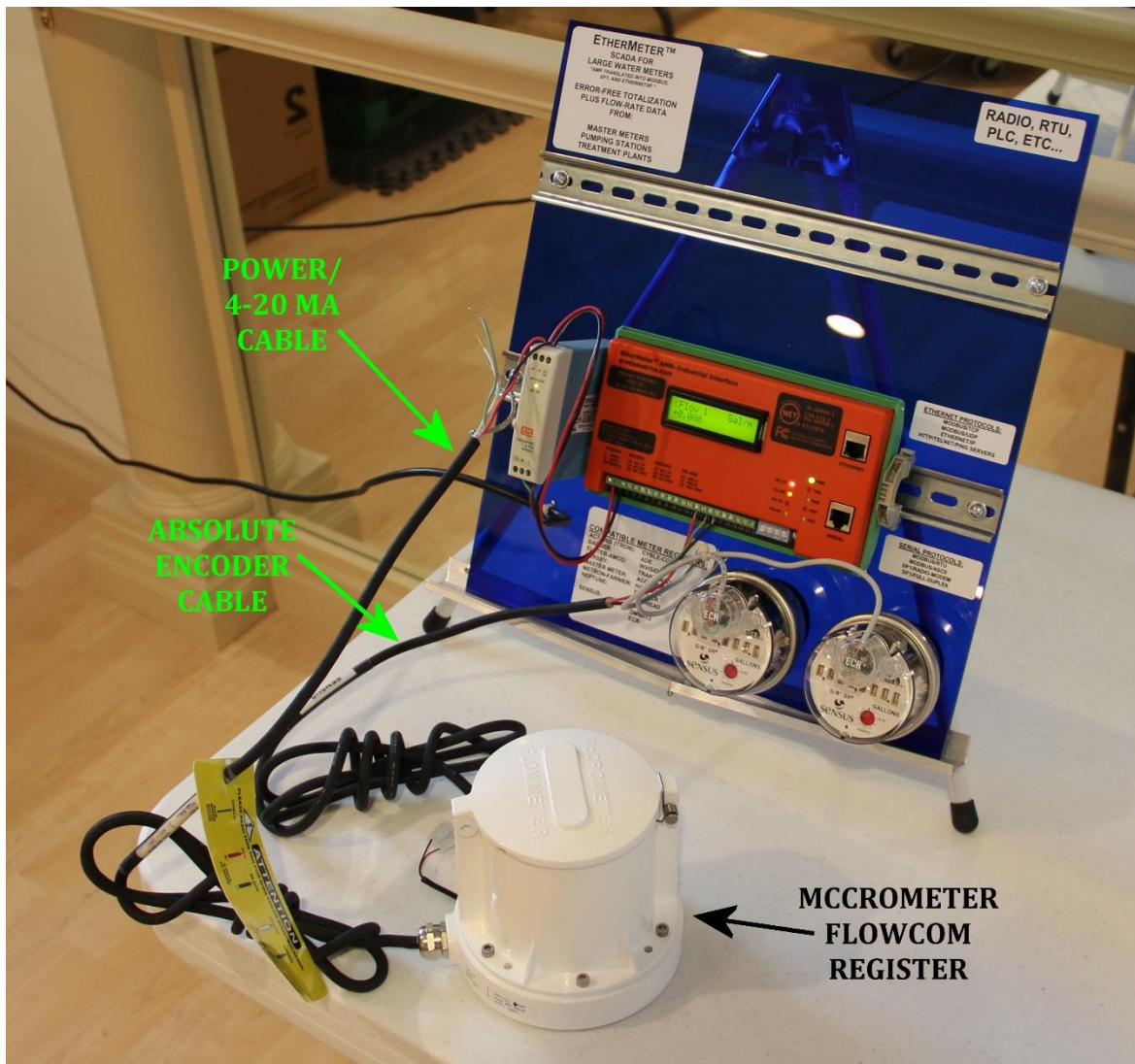


Application Note 019  
Version 002  
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## Connecting the EtherMeter® to the McCrometer FlowCom™ Register, Absolute Encoder Version

In 2013, McCrometer Inc. (Hemet, CA, [www.McCrometer.com](http://www.McCrometer.com)) introduced a new version of its FlowCom™ water meter register that offers an absolute-encoder signal output. When used in conjunction with the EtherMeter, this new version of the FlowCom register allows SCADA/Telemetry/Building/Farm Automation Systems to collect revenue-grade-accurate meter totalization and flow rate data using standard industrial networking protocols such as Modbus, DF1, and EtherNet/IP.

This document describes FlowCom ordering information, along with the electrical wiring interface details between the EtherMeter and the FlowCom.



**FlowCom Register Connected to an EtherMeter  
Bench Test Register Courtesy of McCrometer Inc. (Hemet, CA)**

The FlowCom register is offered in two model families – the FC100 and the FC101. The FC100 is the register is used in conjunction with the McPropeller™ line of propeller meters, and the FC101 is used in conjunction with the Water Specialties™ line of propeller meters.



**McPropeller Flow Meter**



**Water Specialties Flow Meter**

The FlowCom register is offered by McCrometer as factory-installed register on new flow meters, or as a retrofit kit for meters that are already installed in the field.

### **External Power and the Internal Backup Battery**

The FlowCom register contains an integral 5-year battery. However, for EtherMeter applications, it is recommended that the FlowCom be configured for external power supply, as this will permit the user to interrogate the register at a high sampling rate without adversely affecting the battery life.

External power is supplied via the FlowCom's 4-20mA flow rate loop cable. Because the FlowCom register only updates its available encoder reading every 600 seconds, this signal is effectively useless for calculating rate-of-flow. Therefore, if rate-of-flow information is desired, then the 4-20mA loop must be read separately.

Due to the fact that the 4-20mA output of the FlowCom is not isolated, the 4-20mA loop cannot be interfaced directly to one of the EtherMeter's analog input channels without the addition of an isolation buffer module.

Although apparently not documented by McCrometer in the FlowCom User Manual, it has been reported by our customers that the FlowCom 4-20mA loop requires +24VDC power from a separate, dedicated isolated 24VDC power supply.

### **Ordering Information**

For retrofit applications, the following information should be provided to the McCrometer factory or your local McCrometer sales representative:

McPropeller Meter Serial Number / Model Number

FC100-02-K + Sensus Protocol Output

...or...

Water Specialties Meter Serial Number / Model Number

FC101-02-K + Sensus Protocol Output

## **Signal, Power, and Meter Wiring**

The FlowCom register kit contains three (3) integral cables: Meter Connection, Power Connection, and Absolute Encoder Connection.

**Magnetic Pickup.** The Meter Connection cable contains two inner conductors (Red,Black) which are connected to the propeller's magnetic pickup in accordance with factory instructions.

**Power Supply.** The Power Connection cable contains a Red inner conductor which should be connected to a separate, dedicated isolated DC Power Supply (+) and the Black inner conductor should be connected to the DC Power Supply Common (-). The DC Power Supply must be within the range of 12-30VDC. The Power Connection cable also contains a Silver Shield conductor, and this should be connected to Earth/Chassis ground. **It is important to note that the FlowCom 4-20mA loop and the EtherMeter cannot be powered from the same power supply!**

**Absolute Encoder.** The Absolute Encoder Cable contains three (3) inner conductors, which should be connected to the EtherMeter. For EtherMeter channel 1, the connections are: Terminal.14-Red, Terminal.15-Green, Terminal.16-Black. For EtherMeter channel 2, the connections are: Terminal.17-Red, Terminal.18-Green, Terminal.19-Black.

**Additional Grounding.** Additionally, the metal body of the FlowCom register should be bonded to Earth/Chassis ground using a ring terminal or grounding lug.

For more information, please contact SCADAmetrics or McCrometer technical support.