Electromagnetic Flow Meters

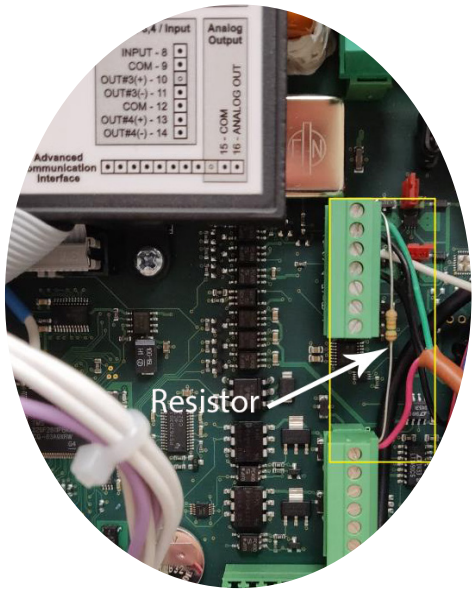
Resistor Kit

CONNECTING AN ORION ENCODER ENDPOINT TO THE M2000 METER

This feature requires 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.

- Totalizer Resolution – Selects the resolution of the display totalizer.
- Protocol Type – 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.

Changing the protocol type will automatically configure the necessary digital inputs/outputs. Manually changing the digital inputs/outputs within the *Input/Outputs* menu is not allowed. Below is a wiring diagram for connecting an encoder to the meter.



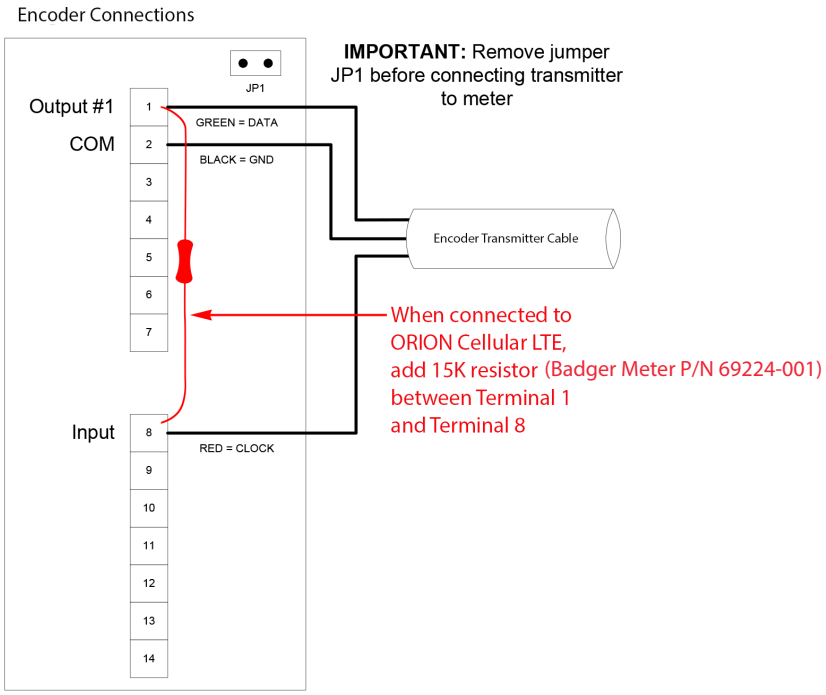


Figure 1: Encoder interface

NOTE: When connected to an ORION Cellular LTE endpoint, add a 15K resistor (Badger Meter P/N 69224-001) to the M2000 meter terminal block between terminal 1 (green wire) and terminal 8 (red wire) as shown to correct any potential meter reading issues. The resistor is indicated by an arrow in the photo and in the drawing.

CONNECTING AN ORION ENCODER ENDPOINT TO THE M5000 METER

NOTE: Once connected, the endpoint automatically updates within one hour. You can force an update using the Endpoint Utility software. See the "*ORION Endpoint Utility*" user manual for programming information available at *www.badgermeter.com*.

Wiring

Connect the encoder endpoint to the meter:

Encoder Wire	M5000 Terminal
Red (Power/Clock)	Input +
Green (Data)	Out 4 +
Black (Ground)	Out 4 –

Connect a jumper wire from Out 4 negative (–) to INPUT negative (–).

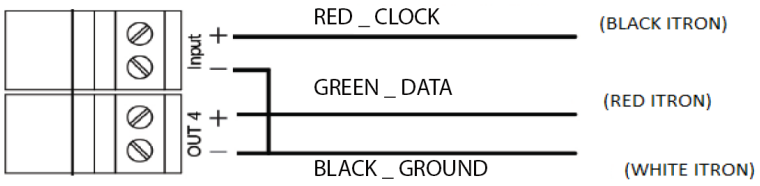


Figure 2: M5000 endpoint connection

Adding Resistor with ORION Cellular LTE

When connected to an ORION Cellular LTE endpoint, additional resistance is required. Add a 15K resistor to the M5000 terminal block between Input + (red wire) and Out 4 + (green wire) as shown. The resistor is represented in red in *Figure 3*.

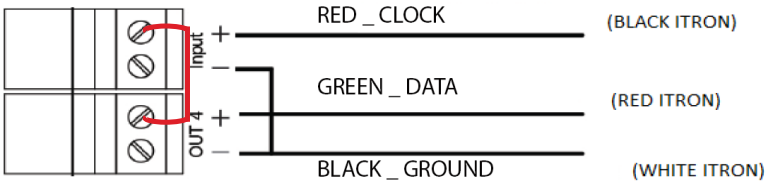


Figure 3: ORION Cellular LTE endpoint connection with resistor

Order resistor kit P/N 69224-001 from Badger Meter.

Programming

Changing the following settings automatically configures *Input* and *Output 4* for ADE.

To program the M5000 meter for the endpoint to Output #1 (forward flow):

1. Navigate to *COMMUNIC* > *INTERFAC* > *ADE* >*CONTROL*.
2. Use the arrows to change the values, then press **EXIT/SAVE**.
3. Repeat steps 1 and 2 for *Control, Protocol, Dials and Resolution* (the Resolution range is 0.0001…10,000).
4. Press **EXIT/SAVE**.

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