

OVERVIEW

This document describes the connection of a Badger Meter-supplied endpoint (transmitter), such as an ORION® RTR® or Itron® 100WP or 60WP, to an M2000 Mag Meter.

QUICK SETUP FOR TOTALIZER AND FLOW UNIT



M2000 Front Panel Buttons

1. Navigate to *Start Menu* > *Quick Setup* > *Flow Unit*.
2. Select the desired unit of measurement.
3. Navigate to *Start Menu* > *Quick Setup* > *Totalizer Unit*.
4. Select the desired unit of measurement.

PROGRAMMING THE M2000 FOR THE ENDPOINT

Programming for Output #1

1. Navigate to *Start Menu* > *Main Menu* > *Inputs/Outputs* > *Digital Output 1* > *Pulses/Unit*.

2. Select the desired values.

NOTE: If the Pulse/Unit value is too high, error 110 will display when you save. The Pulses/Unit and Full Scale Flow parameters are dependent values that cannot exceed 10 kHz. To correct the error, decrease either or both of the Pulse/Unit and the Full Scale Flow values.

3. Navigate to *Select Function* > *AMR (50 ms pulse)*.
4. Press **E** four times until the menu text is at *Exit This Menu* to exit the programming.

Programming for Output #2

1. Navigate to *Start Menu* > *Main Menu* > *Inputs/Outputs* > *Digital Output 2* > *Pulses/Unit*.
2. Select the desired values.
3. Navigate to *Start Menu* > *Main Menu* > *Inputs/Outputs* > *Digital Output 1* > *Pulses/Width*.
4. Set the value to 0050 ms.
5. Press **E** four times until the menu text is at *Exit This Menu* to exit the programming.



Badger Meter

ADDITIONAL NOTES

If the M2000 displays a reading, it will be necessary to either program the endpoint to match the same reading on the M2000, or reset the totalizer(s). The M2000 has a separate *Unit Multiplier* setting in the *Advanced* menu that establishes the resolution of the totalizer reading on the display. This multiplier displays a seven-digit reading and is set to OFF from the factory. The endpoint must be programmed to coincide with the value set in the *Pulses/Unit* and the *Unit Multiplier*. For example, if the *Unit Multiplier* is set to 100 and the *Pulse/Unit* is set to 0000000.010, the reading on the display would be 1234500 (the endpoint should be programmed to 12345).

To use the reading from the endpoint in the Reading Data Management Software, the correct Test Circle Code will also need to be added in the software. The Test Circle Code will depend on the *Pulses/Unit* that was programmed into the M2000.

WIRING AN ORION RTR ENDPOINT TO THE M2000

Use either Output #1 or #2 when connecting an endpoint to the M2000. Output #1 is the recommended option, as an AMR function exists that will make for easier programming.

To connect the endpoint to Output #1, connect the endpoint wires this way:

- Terminal 1: Red
- Terminal 2: Black and Green
- Remove jumper JP1 (output #1)

To connect the endpoint to Output #2, connect the endpoint wires this way:

- Terminal 3: Red
- Terminal 4: Black and Green
- Remove jumper JP2 (output #2)

WIRING AN ITRON 100WP OR 60WP ENDPOINT TO THE M2000

To connect the endpoint to Output #1, connect the endpoint wires this way:

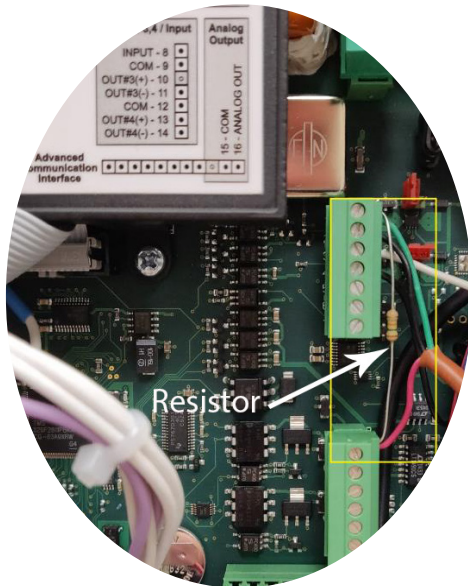
- Terminal 1: Red and White
- Terminal 2: Black
- Remove jumper JP1 (output #1)

To connect the endpoint to Output #2, connect the endpoint wires this way:

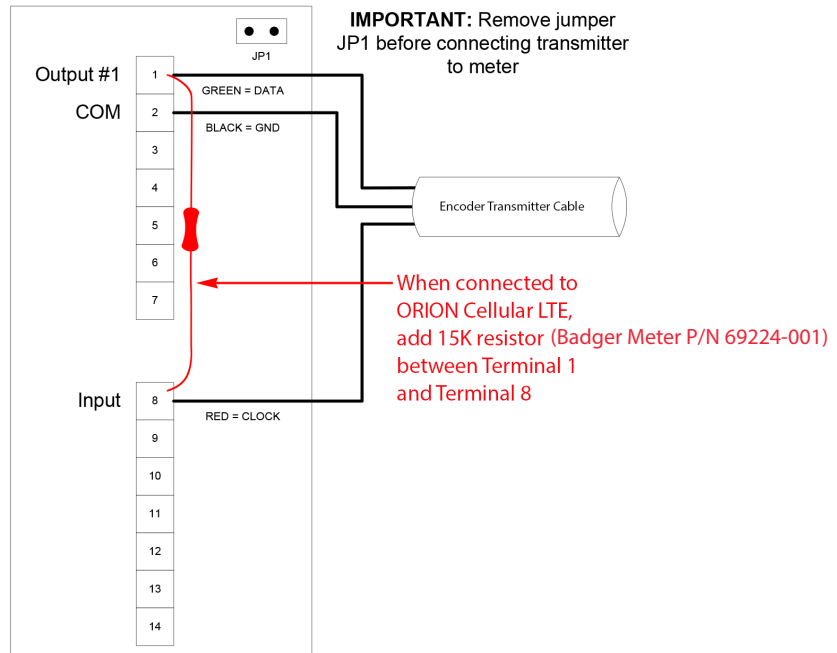
- Terminal 3: Red and white
- Terminal 4: Black
- Remove jumper JP2 (output #2)

CONNECTIONS DIAGRAM

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.



Encoder Connections



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.

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