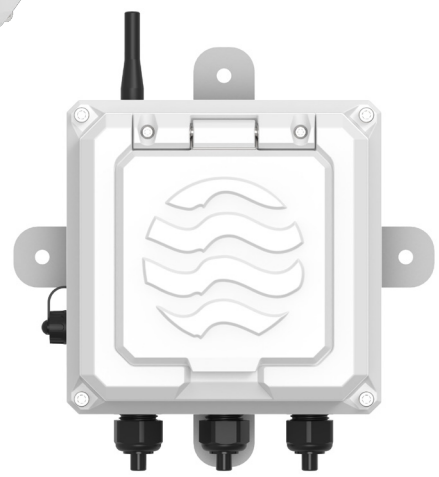
ProComm GO Electromagnetic Flow Meter Transmitter

Installation, Operation and Maintenance Manual







Standard Model
For use in non-hazardous locations

HL Model
For use in hazardous locations:
- Class I, Division 2, Groups A B C D, T4
- Class I, Zone 2 IIC T4

(Not available with model with SmartTrax On Board)

30126-47 Rev. 1.2
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McCROMETER

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SAFETY

Safety Symbols

Throughout this manual are safety warning and caution information boxes. Each warning and caution box will be identified by a large symbol indicating the type of information contained in the box. The symbols are explained below:



This symbol indicates important safety information. Failure to follow the instructions can result in serious injury or death.



This symbol indicates important information. Failure to follow the instructions can result in permanent damage to the meter or installation site.

Safety Warnings

When installing, operating, and maintaining McCrometer equipment where hazards may be present, you must protect yourself by wearing Personal Protective Equipment (PPE) and be trained to enter confined spaces. Examples of confined spaces are manholes, pumping stations, pipelines, pits, septic tanks, sewage digesters, vaults, degreasers, storage tanks, boilers, and furnaces.



WARNING!
Incorrect installation or removal of mag meters can result in serious injury or death. Read the instructions in this manual on the proper procedures carefully.



WARNING!
Never enter a confined space without testing the air at the top, middle, and bottom of the space. The air may be toxic, oxygen deficient, or explosive. Do not trust your senses to determine if the air is safe. You cannot see or smell many toxic gases.



WARNING!
Never enter a confined space without the proper safety equipment. You may need a respirator, gas detector, tripod, lifeline, and other safety equipment.



WARNING!
Never enter a confined space without standby/rescue personnel within earshot. Standby/rescue personnel must know what action to take in case of an emergency.



WARNING!
Pressurized pipes should only be hot tapped, cut, or drilled by qualified personnel. If possible, depressurize and drain the pipe before attempting any installation.



WARNING!
Carefully read all safety warning tags attached to the meter.



At the end of its lifetime, this product shall be disposed of in full compliance with the environmental regulations of the state in which it is located.

1.0 TRANSMITTER OVERVIEW

Read this entire manual prior to installation and/or changing any settings. Retain this manual in your records, DO NOT DISCARD.

The transmitter is the reporting device that displays transmits and stores, flow data received from the signal converter. The signal converter takes flow data from the sensor and turns it into usable data to allow the measurements, functional programming and data recording to be communicated through the transmitter display visually and as output signals.

The microprocessor-based transmitter has a multi-point curve-fitting algorithm to improve accuracy and a rugged enclosure that meets IP67. The microprocessor continually monitors the transmitter's functionality. The transmitter will display and output rate of flow and total volume.

The transmitter also comes many more features that is fully user-configurable using the configuration tool via the USB port and a laptop computer.

2.0 INSTALLING THE TRANSMITTER AND CABLES

I Installation to be in accordance with any applicable restrictions of the NEC for the US or CE Code, Part I for Canada, including issues such as routing, support and length of the wiring method.

2.1 Verify Serial Numbers

The transmitter and sensor are supplied as a matched system. Verify the meter serial numbers on both the transmitter and sensor match. This will ensure a properly calibrated system.

The serial number tag is located on the side or top of the transmitter (Figure 1). The tag has the transmitter model number, the transmitter serial number, the meter model number and the meter serial number. Examples are shown below (Figure 2 and Figure 3).

Meter mount transmitter



Remote mount transmitter



Figure 1. Serial number tag locations for meter mount and remote mount transmitters

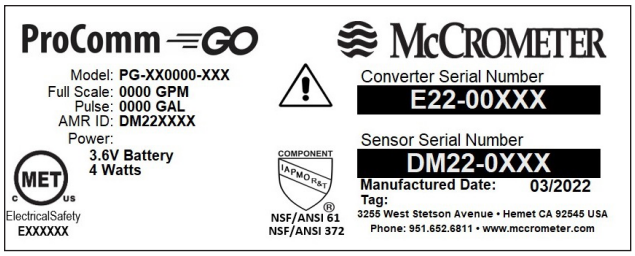


Figure 2. Serial number tag for standard model

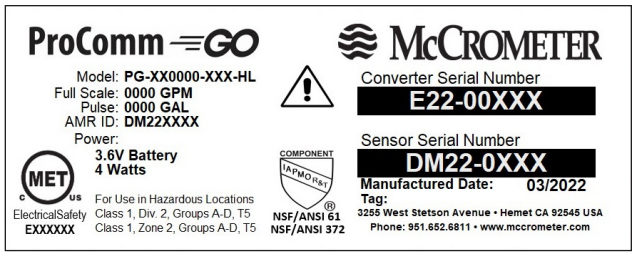


Figure 3. Serial number tag for hazardous location model

2.2 Example Remote Mount Configuration

After installing the sensor, mount the transmitter and connect the cable to the meter's junction box and the transmitter's external connection. Figure 4 below shows an example of a remote mount installation with an optional Smart Output connection.

You will need to carefully plan the location where to install the remote transmitter. The location cannot be further from the flow meter than the length of the 25' cable. This must be planned in advance because the cable length cannot be altered as the cable is calibrated with the meter. Doing so will alter the calibration accuracy and void the warranty.

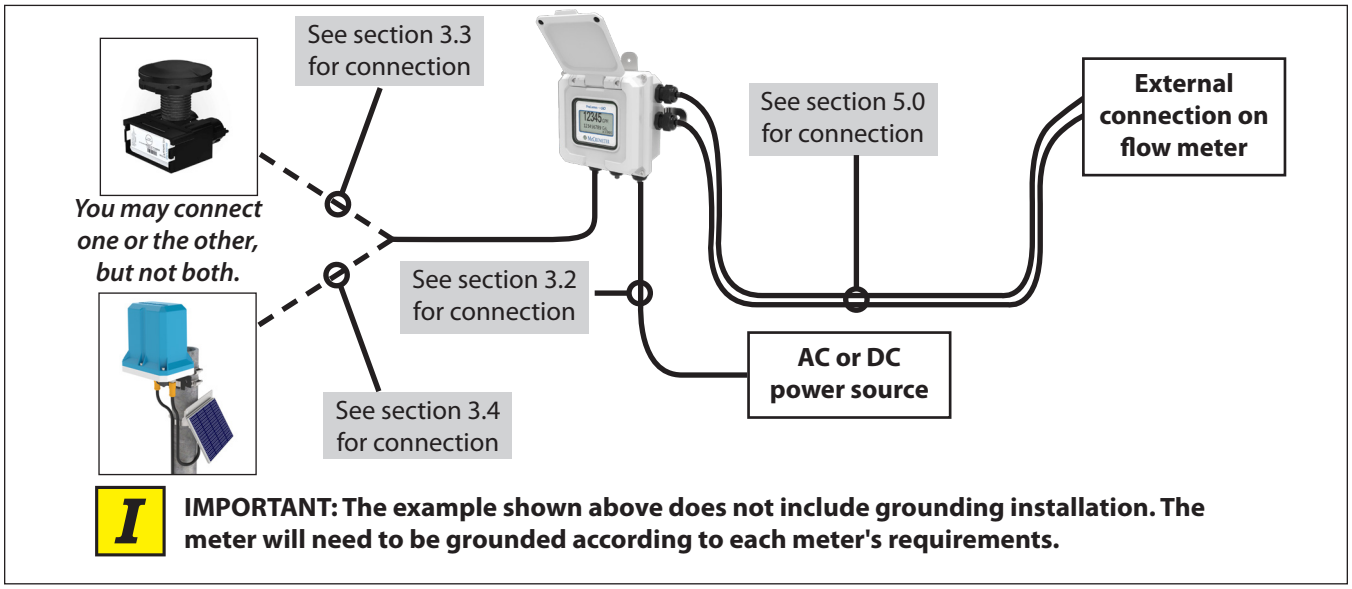


Figure 4. Example remote mount configuration

2.3 Remote Mount Cable Connection to Sensor

The remotely mounted ProComm GO transmitter connects to a white, single port junction box located on the sensor. See Figure 5 as an example showing the junction box on the Vera Mag 3000 meter.

Through this single two pair (4 conductor) cable, signal data is sent to the ProComm GO transmitter through a shielded pair, while the coil power is provided from the transmitter in the other pair.

The cable between the sensor and the transmitter is limited to 25' maximum. Additionally, any altering of the cable length, shortening or lengthening, after the paired unit has been calibrated, will void the calibration as the unit must be calibrated with the cable as a set.

The port on the converter is available as either a cable gland fitting or a quick connect fitting.



Figure 5. Junction box mounted on a mag meter sensor

2.4 Mounting the Transmitter

Note: This applies to the remote mount transmitter only.

If possible, mount the transmitter in an electronics shed or environmental enclosure. The sun shield should be oriented in a direction to reduce sun damage and ensure readability. This electronic unit is rated IP67 for temporary flooding.

There is a stainless steel mounting plate attached to the back of the ProComm GO transmitter, which is used to mount the transmitter to a solid, flat surface using four bolts (Figure 6). Mounting plate feet are located at the top, bottom, left, and right sides.

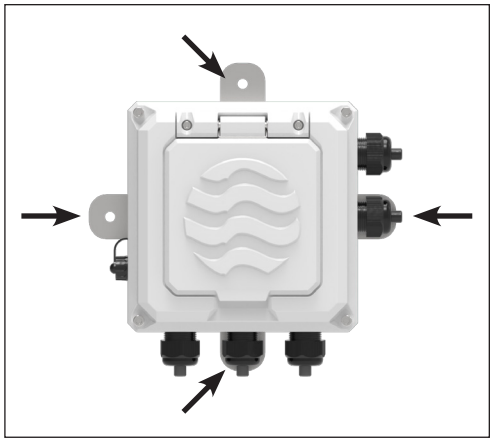


Figure 6. Mounting transmitter to solid surface

2.5 Installing Cables through Cable Glands and Conduit

All electrical cables enter the transmitter through compression fittings or optional customer-supplied conduit located on the side or bottom of the transmitter (Figure 7 and Figure 8). Ensure that all compression glands are properly tightened and all unused fittings are plugged so the case remains sealed.

The power cable and wiring harnesses are each assigned specific cable glands where they will pass through into the transmitter. See section 2.7 for cable gland assignment for wiring harnesses and section 3.2 for wiring diagrams.

All cable compression glands must be properly tightened to prevent moisture intrusion and maintain the IP67 rating. To insure IP67 rating, use only round cable 0.24" to 0.47" in diameter.



Figure 7. Compression fittings

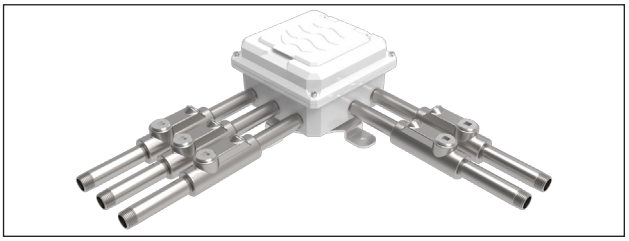


Figure 8. Remote mount transmitter with conduit pass-throughs

WARNING
Attaching conduit directly to the enclosure may introduce dangerous gasses and moisture into the enclosure creating a dangerous condition, and will remove the enclosure's IP67 rating. **Damage caused by attaching conduit to the enclosure or altering the enclosure in any way is not covered by the warranty.**

WARNING
EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE LAMPS, FUSES OR PLUG-IN MODULES (AS APPLICABLE) UNLESS POWER HAS BEEN DISCONNECTED OR THE AREA IS FREE OF IGNITABLE CONCENTRATIONS.

WARNING
EXPLOSION HAZARD. DO NOT DISCONNECT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS FREE OF IGNITABLE CONCENTRATIONS.

IMPORTANT: Do not cut or alter the cable length on power or signal cables!
Connections to the sensor must be made with cable supplied by McCrometer specifically for that purpose. Do not substitute the supplied cable with other types of cable, even for short runs. For repairs or added lengths of cable, the entire cable between the sensor and the transmitter must be replaced. (Consult factory for replacement cable.)

2.6 Pulling Sensor Cable Through Electrical Conduit

It is very important to protect the end of the sensor cable when pulling it through a conduit. Water can accumulate in low portions of conduit. Always use a cable cover, or similar method, to seal the end of the cable against water when pulling the cable through conduit (see Figure 9). This will ensure proper operation of the meter.

1. Tie a rope or cable-snake securely around the middle of the cable cover.
2. Carefully pull the rope or snake until the sensor cable end clears the conduit.
3. Bring the cable end to the transmitter location. If necessary, secure the cable so that it does not fall back through the conduit.
4. Remove the cable cover by pulling the rip wire. The cable cover will tear off (discard the cover).

NOTE Cable cover is not provided.

CAUTION: Do not cut the cable cover off. Doing so may damage the sensor cable and adversely effect the calibration of the meter.

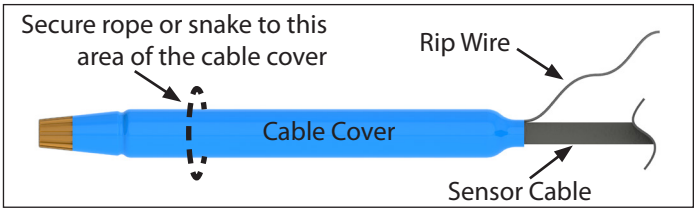


Figure 9. Cable cover

2.7 Cable Gland Assignment for Wiring Harnesses

Port assignment

1 - Outputs

2 - Outputs

3 - Power

4 - Sensor

5 - Not used

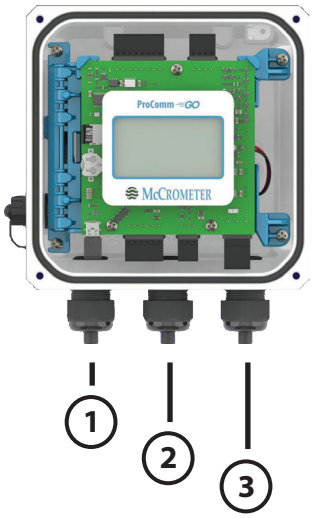


Figure 10. Meter mount view

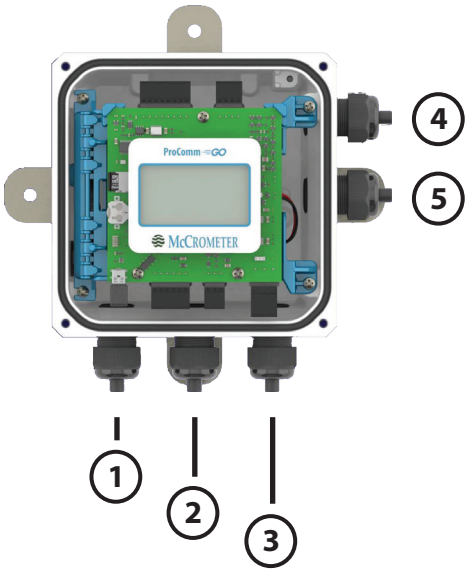


Figure 11. Remote mount view

3.0 INTERNAL WIRE CONNECTION

This section describes cable and wire harness connection inside the transmitter. Section 5.0 describes wire connection for all peripherals outside of the transmitter, including pulse output and external power options.

3.1 Terminal Block Diagram and Grounding Lug

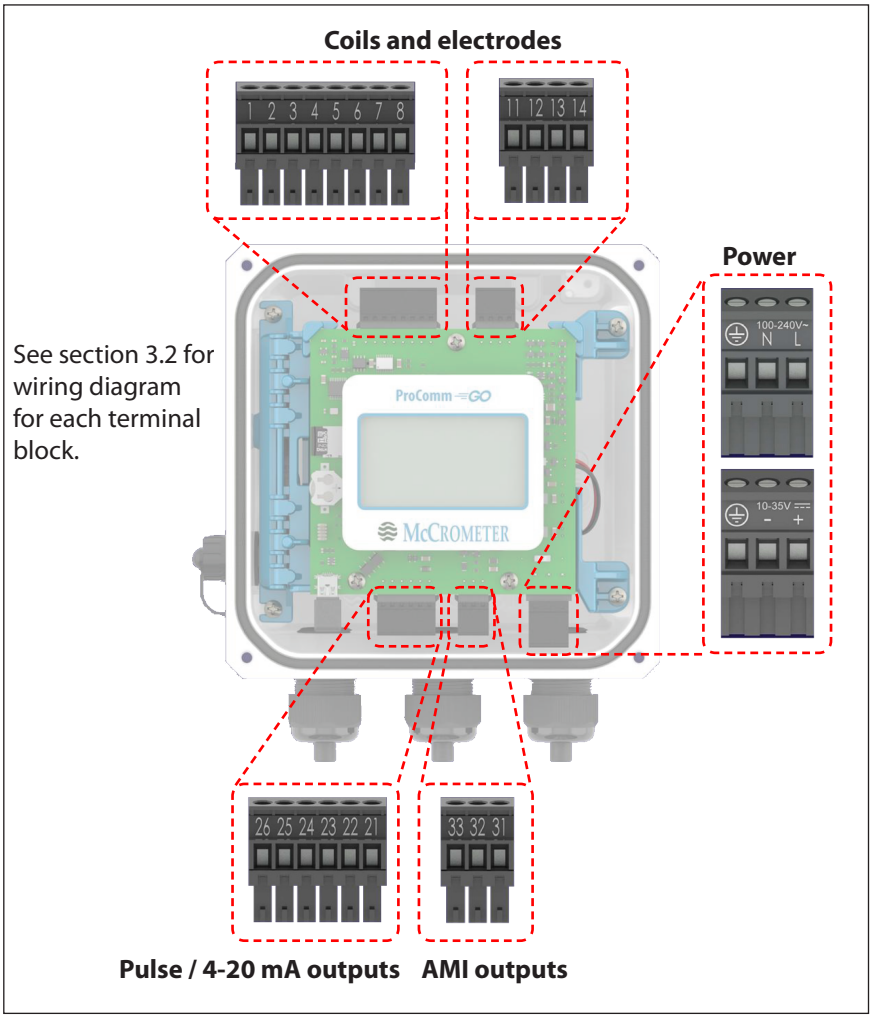


Figure 12. Terminal blocks

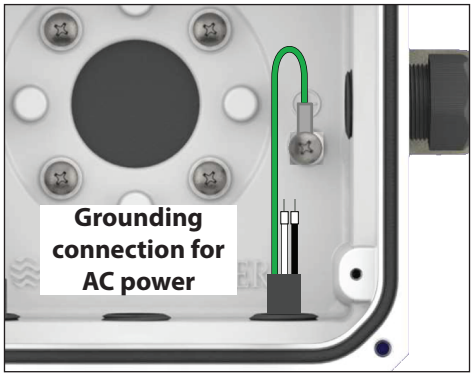
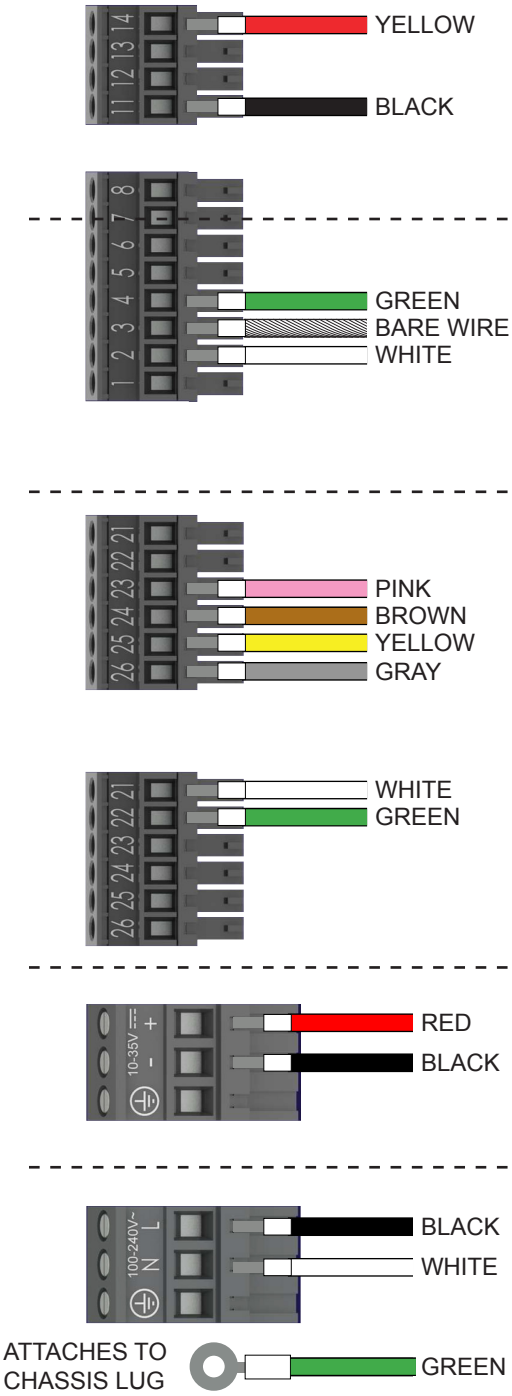


Figure 13. Grounding lug

3.2 Wiring Diagrams

TERMINAL BLOCK ASSIGNMENTS



Coils Harness

Terminal	Port	Wire Color
11	4	Black
14	4	Red

Electrodes Harness

Terminal	Port	Wire Color
2	5	White
3	5	Bare wire
4	5	Green

Pulse Output Harness

Terminal	Port	Wire Color
23	1	Pink
24	1	Brown
25	1	Yellow
26	1	Gray

4-20 mA Output Harness

Terminal	Port	Wire Color
21	1	White
22	1	Green

DC Power Harness

Terminal	Port	Wire Color
Positive	3	Red
Negative	3	Black

AC Power Harness

Terminal	Port	Wire Color
Load	3	Black
Neutral	3	White
Chassis lug	3	Green

To complete AC power connection, connect green grounding lug to chassis as shown on previous page.

3.3 Optional Smart Output Hook Up

The transmitter comes pre-wired with an interconnection that should readily connect to most AMI transceivers. Where interconnective devices are not mechanically compatible or where non-standard wiring is encountered, the installer can opt to remove the connector from the end of the transmitter's interface cable and make direct connection via the wiring table shown at right. (Figure 14)

- Signals and associated wire colors in the McCrometer SmartOutput™ interface cable are identified together in the top row of the table at right.
- Corresponding wire colors for transceivers from each compatible AMI vendor are identified in the columns under the top row.

McCrometer AMR Interface Pinout

	31 Ground	32 Power/Clock	33 Data
Badger	Black	Red	Green
Elster	Black	Red	Green
Itron	Green	Black	Red
Neptune	Green	Black	Red
Sensus	Black	Red	Green
SmartTrax	Black	White	Blue

Figure 14. AMI interface pinout

3.4 Connecting the SmartTrax Remote Transmitting Unit

The SmartTrax remote transmitting unit will need to be installed remotely from the transmitter, regardless of whether the transmitter is mounted directly on the sensor or installed remotely from the sensor. Use the output transmitter port to run the cable through (section 2.7).

The example configuration in section 2.2 shows the SmartTrax with an optional solar panel. If you use a solar panel or an external AC or DC power source, you will need to use the female connection shown in Figure 15 and Figure 16.

For specific wiring diagrams to connect the SmartTrax transmitter to the ProComm GO Transmitter, see Figure 17 and Figure 18.

For more detail on the SmartTrax transmitter, including specifications, installation requirements, location, and remote data access, see the SmartTrax Installation, Operation, and Maintenance manual, 30125-82.

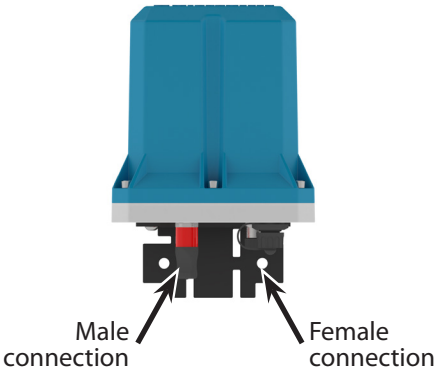


Figure 15. Connections, front view

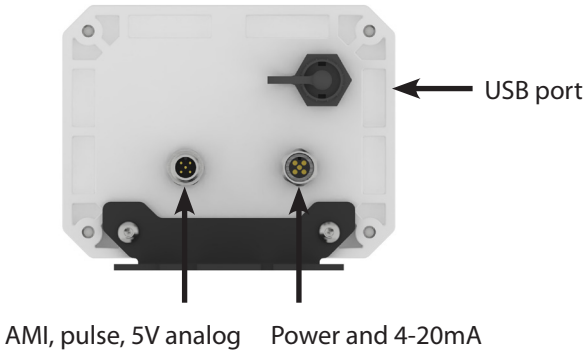


Figure 16. Connections, bottom view

3.5 Pin-out of Male and Female Connectors

FEMALE CABLE

Pulse / AMI / 5V Analog Connector



PULSE 1 & 2	
PULSE 1	BLUE
PULSE 2	WHITE
GROUND	BLACK

AMI	
DATA	BLUE
CLOCK	WHITE
GROUND	BLACK

5V ANALOG	
5V OUTPUT	BROWN
ANALOG IN	GRAY
GROUND	BLACK

MALE CABLE

4-20mA & Power Connector



4-20mA	
4-20mA -	WHITE
4-20mA +	BROWN

DC POWER / SOLAR	
9-30 VDC+	BLUE
GROUND / V-	BLACK

3.6 Installing the Optional Solar Panel

The optional solar panel can be installed as shown in Figure 4. There are two panel sizes with nominal power rated as 2.4W and 5.1W respectively. Do not use the optional solar panel used to provide power to the ProComm transmitter.

Install the solar panel adjacent to the SmartTrax unit so that the two can be connected with the 6' cable. Connect the cable from the solar panel to the female connection (Figure 19).

If the cable is not connected to the solar panel, refer to the wiring diagram shown in Figure 17 and Figure 18.



Figure 19. SmartTrax with attached solar panel

3.7 FlowCom with SmartTrax On Board

The FlowCom can be configured with a remote SmartTrax unit (see pages page 17 to page 19), but it is also available with built-in SmartTrax, called SmartTrans On Board. It is available for both meter mount or remote mount. An example is shown in Figure 3.

There are no user configurable controls for the for either version of the SmartTrax. See 4.0 for retrieving flow data from the SmartTrax.



Figure 36. Remote mount FlowCom with SmartTrax On Board

4.0 ACCESSING THE SMARTTRAX DATA

This information applies to both FlowCom with the external SmartTrax unit and to FlowCom with SmartTrax on board.

For both FlowCom models, there are no external user controls on the SmartTrax. The user interface is through either a laptop or a phone. Before users can view the flow data, they must create an account and log into the data server used for SmartTrax flow data. When that is done, users can add their devices and configure their measurement and output data.

STEP 1: Create Account

1. Use the following link: https://data.mccrometer.com
2. Click on "Sign up now".



3. Enter your email address, then click on "Send Verification Code".



4. Sign-in to your email to verify your account.

   While you're creating your account, you'll get an email from Microsoft on behalf of McCrometer. Open the email and find the verification code.



5. To finish creating your account, enter the verification code and click on "Verify Code".



6. Enter "New Password", Re-enter password, "Confirm New Password", enter preferred "Display Name" as it will show on the website and Click "Create".



STEP 2: Log-in to your account

1. Use the following link:

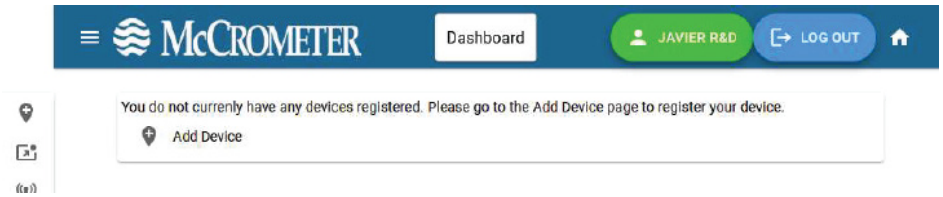
https://data.mccrometer.com

2. Enter your email address & Password and click on "Sign in".

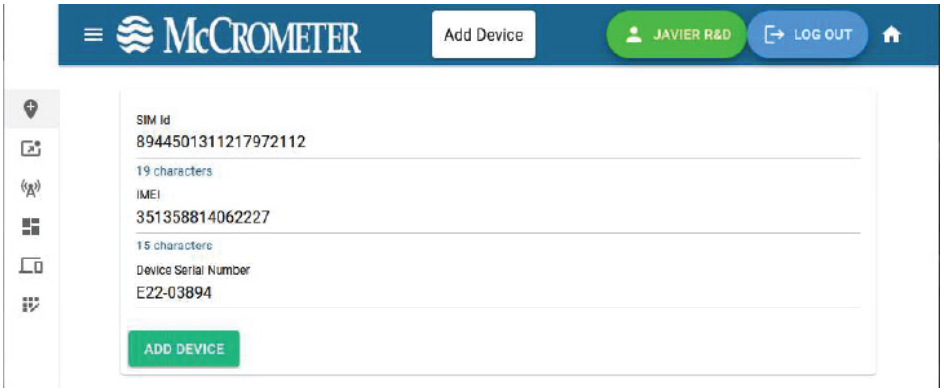


STEP 3: Add SMARTTRAX Unit

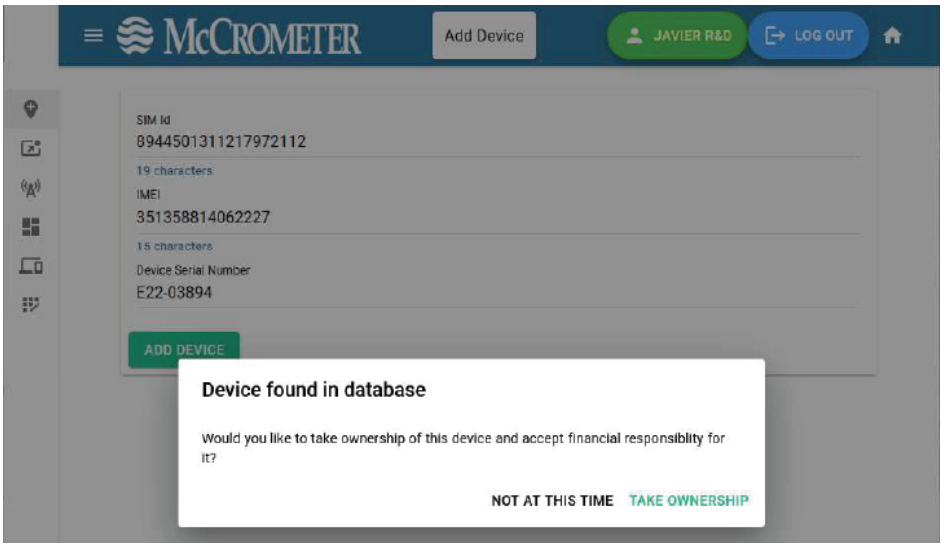
1. Click on "Add Device".



2. Enter "SIM Id", "IMEI" and "Device Serial Number" provided with device. If information is lost, please contact customer service.
3. Click on "ADD DEVICE"

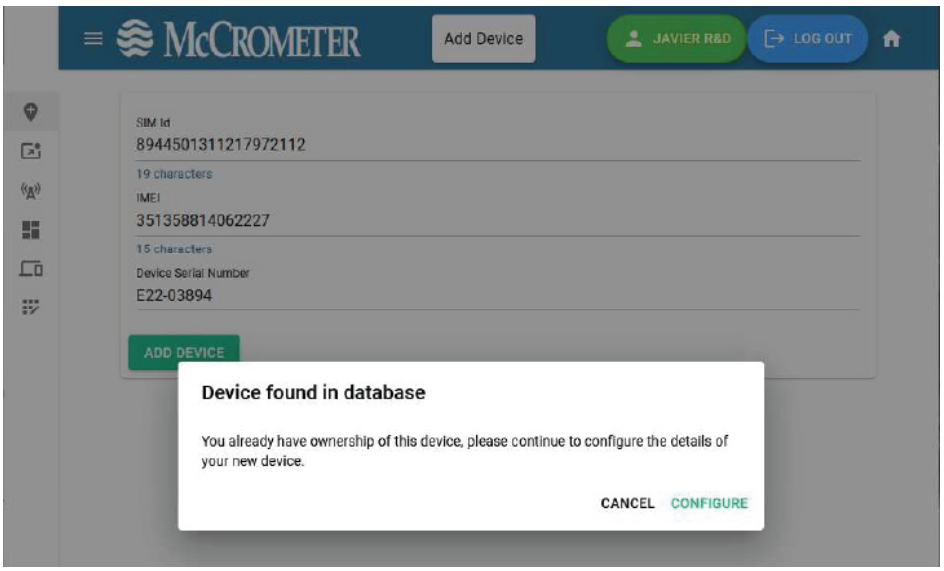


4. Click on "TAKE OWNERSHIP" if you will be responsible for reoccurring data fees. Each device has a 30-day grace period following activation. Ownership can be transferred via the website anytime.

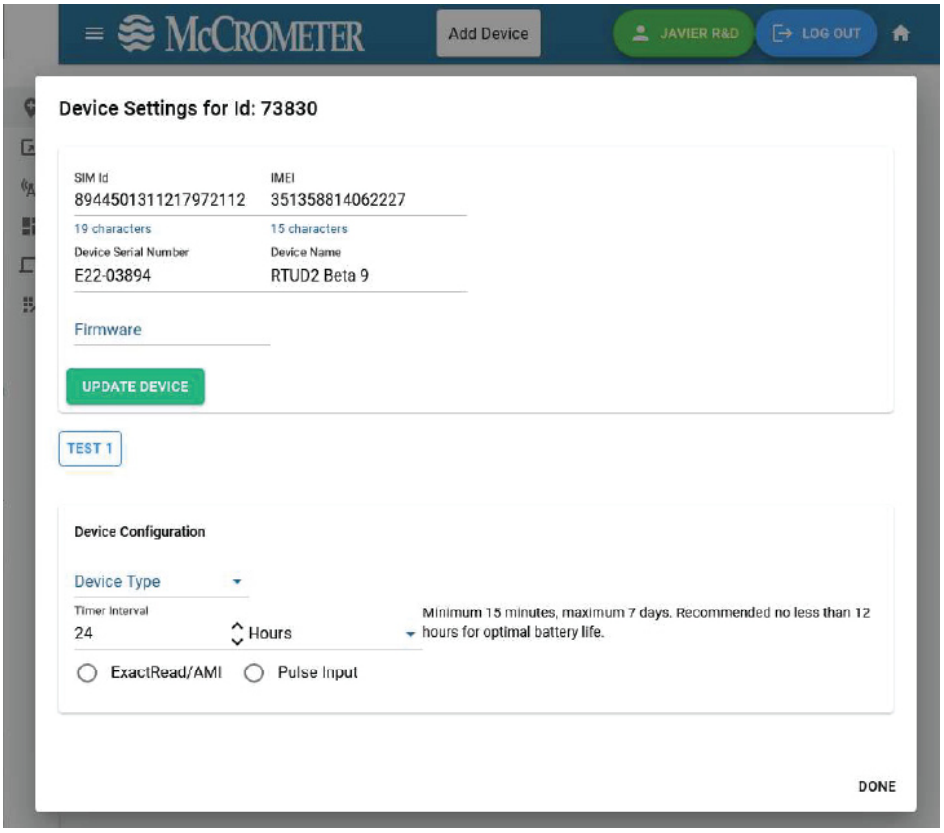


5. Click on "CONFIGURE" to set-up and activate device.

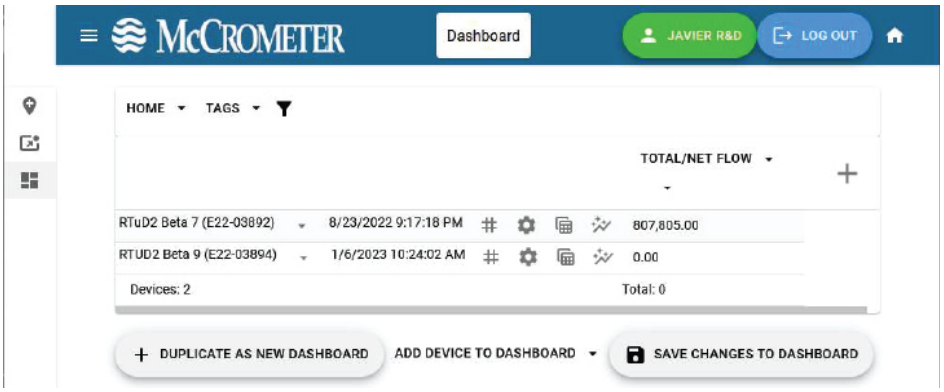
Note: Device configuration can be re-entered or changed anytime on the settings menu of your device.



6. Make changes to Configuration as needed and click on "DONE" to return to Dashboard.



7. Unit has been added to your Account successfully.



5.0 EXTERNAL WIRE CONNECTION

5.1 Cable Gland Connections

10-35VDC Power/4-20mA Output And Pulse Output

The flow meter has one dedicated port and two optional ports on the back side of the electronics enclosure. The dedicated port (center) is used to download data logger information or for meter service and troubleshooting. The two optional ports are for:

1. Optional 10-35 VDC power and 4-20mA output
2. Optional pulse outputs (flow volume and alarms)
3. AMI output
4. 100-240 VAC power



Figure 20. Standard cable gland

The flow meter is configured at the factory for the optional outputs and requested by the customer at the time of order. The external cables attach through a permanent cable gland (standard, Figure 20) or through a screw locking-type waterproof connector (quick connect option, Figure 21 - see next section).

5.2 Quick Connect Cabled Ends (Optional)

IMPORTANT
Connections to the sensor must be made with cable supplied by McCrometer specifically for that purpose. Do not substitute the supplied cable with other types of cable, even for short runs. For repairs or added lengths of cable, the entire cable between the sensor and the transmitter must be replaced. (Contact factory for replacement cable.)

When quick connect cables are used both the meter and transmitter must have connector ports. See Figure 21, Figure 22, and Figure 23 for examples.

Quick Connect cable end fittings are optional. If selected at the time of order, follow the instructions below:

1. Remove the protective caps from both the receiving ports and the cable ends.
2. Insert the cable end into the port until fully seated, then turn the knurled collar on the cable to the right until the cable is tight.
3. With both cables properly attached to the meter, connect the meter-end protective cap to the cable-end protective cap. This insures that the protective caps remain free from dirt.

To remove cables:

1. Turn the knurled collar on the cable to the left until it is completely detached.
2. Replace the protective cap firmly on the connector port.

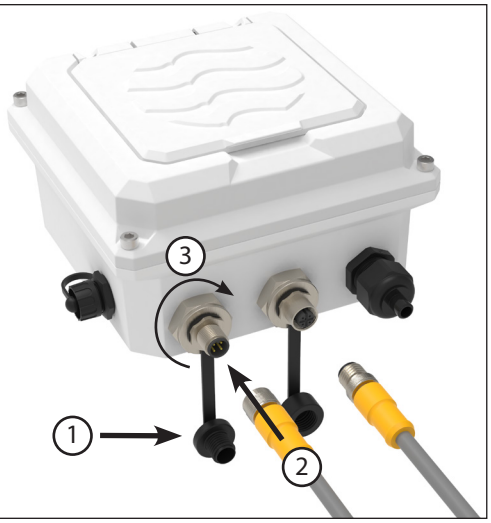
IMPORTANT
To connect sensor and converter via quick connect plugs and sockets, only use the supplied cable assemblies from McCrometer.

Do not position the meter in a manner that would make it difficult to disconnect from power supply.

IMPORTANT
When not in use, always keep the attached cap firmly screwed into the connector to insure a water-tight seal. Also, keep the contacts in the cable connector clean and dry during assembly.

WARNING
EXPLOSION HAZARD. DO NOT CONNECT/DISCONNECT CONNECTORS OR WIRING OR REMOVE ENCLOSURE LID WHILE WITHIN AN ELECTRICALLY CLASSIFIED HAZARDOUS AREA.

1. Remove protective cap.
2. Insert connector into the port.
3. Turn the knurled collar on the cable until tight.
4. When cable is connected, connect the meter-end protective cap to the cable-end protective cap (not shown).



Note: Exact location of connectors may depend on converter configuration.

Figure 21. Transmitter optional quick connect cable ends

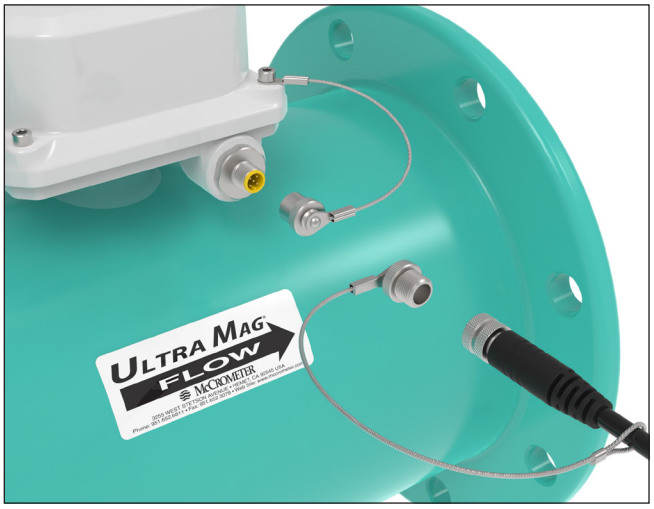


Figure 22. Ultra Mag 3000 and Dura Mag 3000 junction box with optional quick connect cable ends

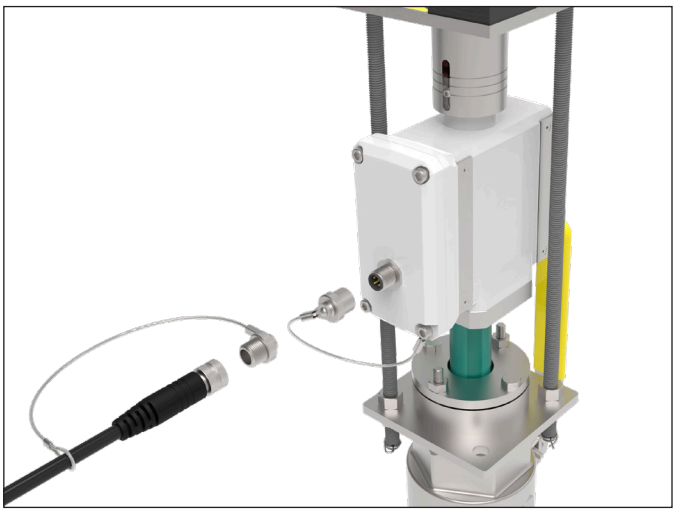


Figure 23. FPI Mag 3000 with quick connect cable

5.3 Power Options

Depending on output options and specific application position, you may choose to add additional power options to the battery powered transmitter. The 5W solar panel option (described in section 5.7) can extend battery life to 10-15 years. Additionally, you have the option of connecting external power of 10-32VDC or 100-240VAC.

5.4 DC Power Cable (Optional)

The cable contains wiring for both the optional 10-32VDC power to the meter, and the 4-20mA output from the meter. (Figure 24)

Note: Input power is for the transmitter only if that option was selected at time of purchase. The 4-20mA loop requires its own power supplied to the loop, not be used with red/black wires.

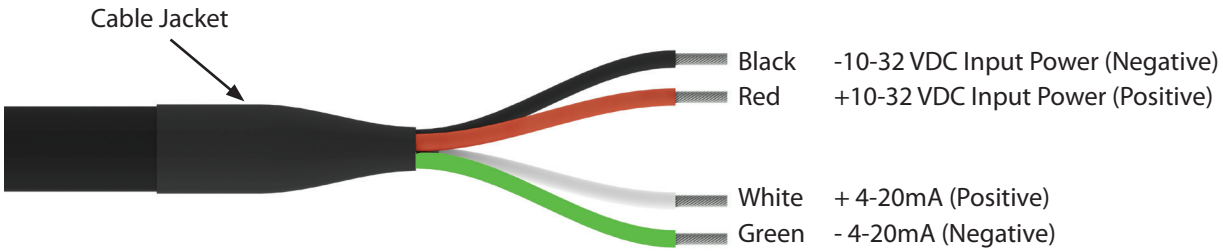


Figure 24. DC power cable

5.5 4-20mA Current Loop

Output type: 4-20mA current loop

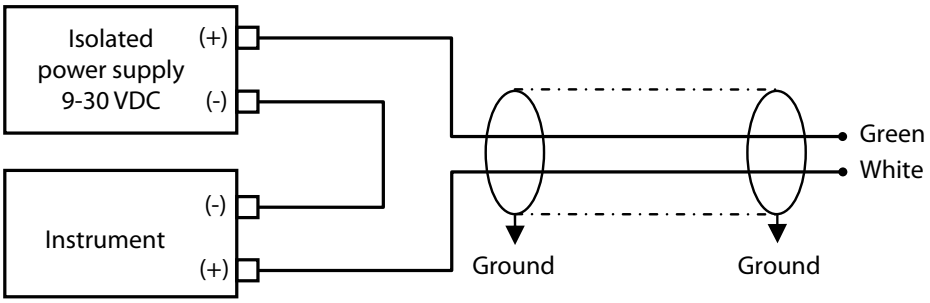


Figure 25. 4-20mA current loop

5.6 Pulse Output Cable (Optional)

The cable contains wiring for both pulse output 1 and pulse output 2. (Figure 26 and Figure 27)

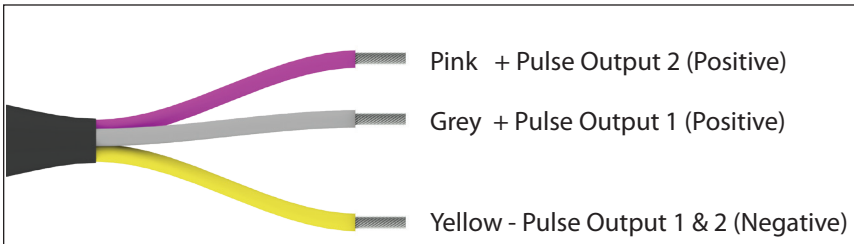


Figure 26. Quick connect pulse output cable wiring color scheme (optional)

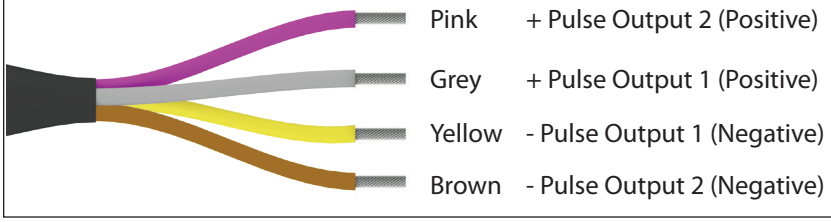


Figure 27. Hard wired pulse output cable wiring color scheme (optional)

5.7 Solar Panel Option (for use with standard model only)

The solar panel provides power to the transmitter by converting sunlight into electrical energy to recharge the solar panels' rechargeable battery. Its nominal power output is 5W.

When the solar panel is installed and the cable has been run to the transmitter, connection inside the transmitter is the same as installing batteries. See Figure 28 below.

The solar panel comes complete with all accessories, except for the fixing rod.

I These instructions apply only to McCrometer-supplied solar panels with a rechargeable battery. Connecting directly to a solar panel could damage the transmitter.

1. Remove lid from converter base.
2. Rotate battery tray open.
3. Route solar panel output cable through the bottom left strain relief.
4. Secure strain relief on the shrink wrap (Detail A) to avoid leaks.
5. Plug solar panel output cable into battery terminal 1 (BAT1).
6. Plug triple D battery pack into battery terminal 2 (BAT2).
7. Close battery tray.

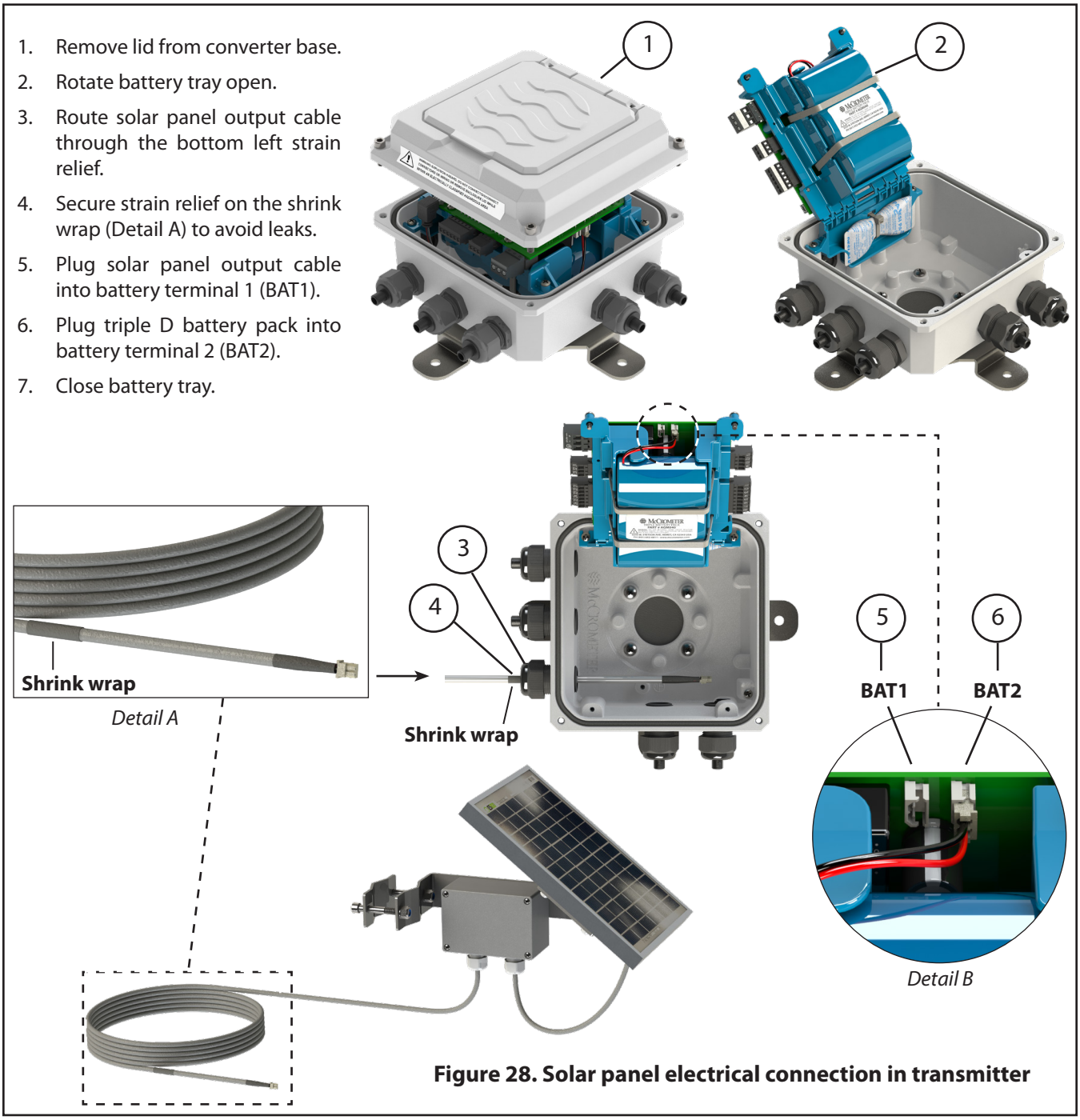


Figure 28. Solar panel electrical connection in transmitter

6.0 BATTERY INSTALLATION AND REPLACEMENT

This procedure applies to all flow meters with the ProComm GO 3000 converter. It describes how to install batteries in a new meter and how to replace batteries using the replacement battery kit PGK01.

WARNING
EXPLOSION HAZARD. DO NOT DISCONNECT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS FREE OF IGNITABLE CONCENTRATIONS.

Before you begin:

Check materials and tools to ensure you have everything you need.

Materials Provided (shown in order of use)

One triple D battery pack



One double A battery pack



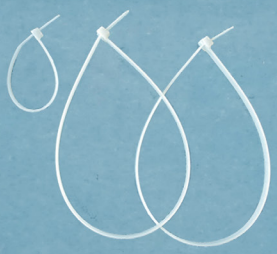
Replacement cover gasket



Molykote lubricant



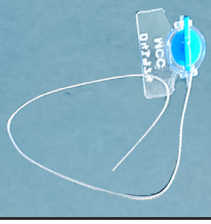
Zip ties:
- 2 large
- 1 small



Dry pack



Tamper proof wire seal



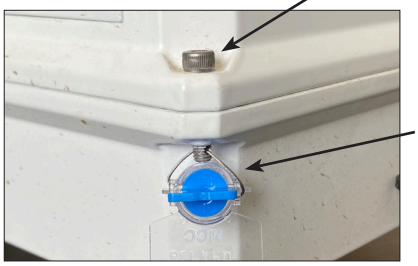
Tool Required

Wire cutters
Phillips screwdriver
5/32" Allen driver



I. Removing the cover

1. Cut off the tamper-proof seal and remove the wire from the security screw.
   NOTE: This step is not required for battery installation in new meters.



2. Remove screws holding the lid to the housing using a 5/32" Allen driver. Lift the lid up and place the lid upside hanging by the green ground wire.



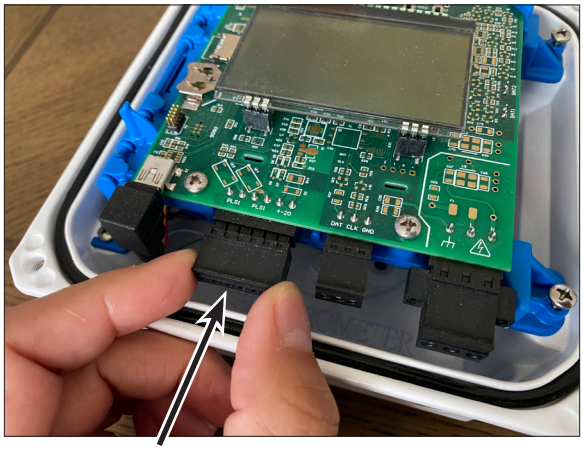


*If you are <u>replacing batteries</u> with fresh batteries, continue to step **3**.*

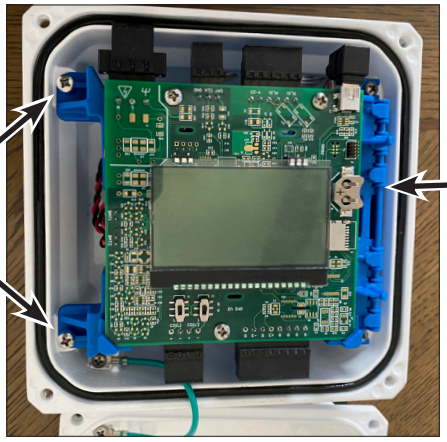
*If you are <u>installing batteries in a new meter</u> that does not have batteries already installed, go to step **9**.*

II. Removing the batteries

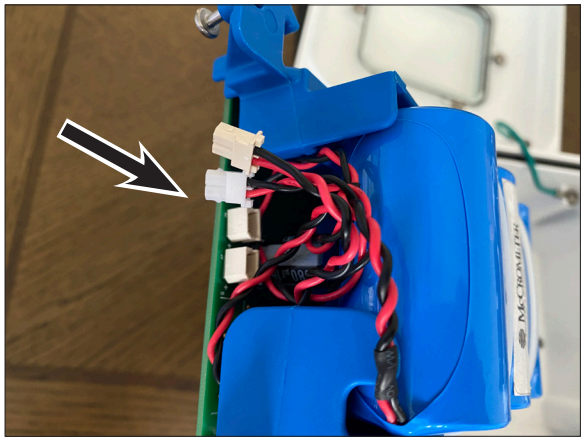
3. Unplug tall connectors to sensor, outputs, and power.



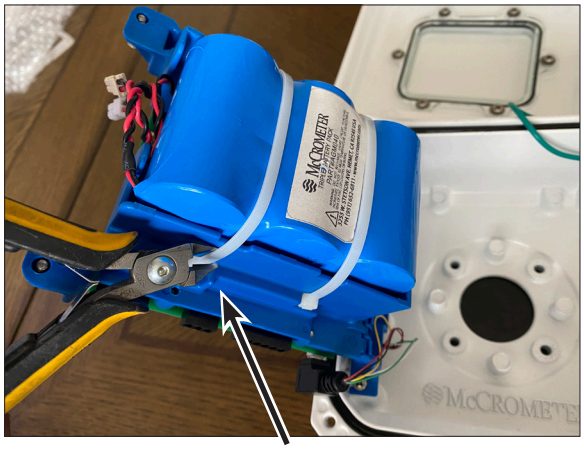
4. Loosen the captive screws opposite of the hinge and lift the battery cover.



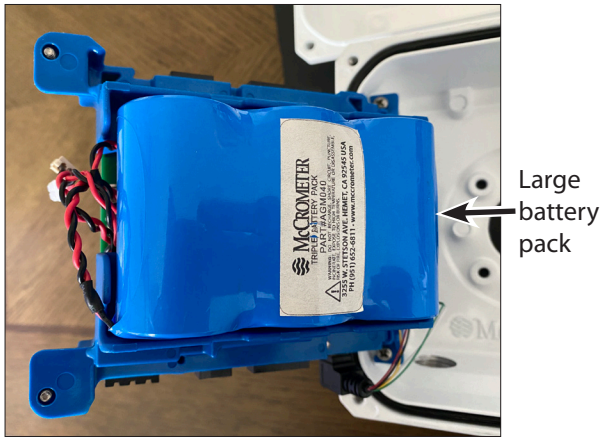
5. Unplug the batteries.



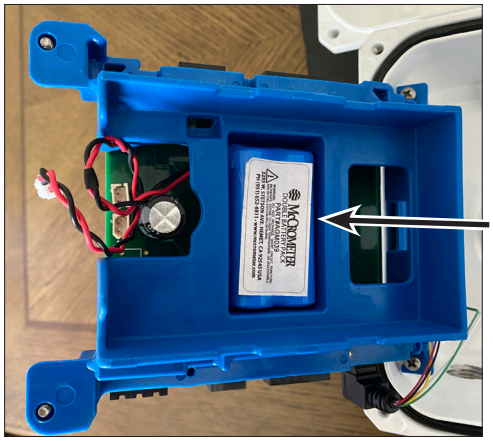
6. Cut the two zip ties securing the batteries.



7. Remove the large battery pack.



8. Remove the small battery pack located underneath. Pull the wires carefully from underneath the battery tray.



III. Installing the batteries and restoring the power

9. Cut the zip tie holding the dry pack to the hinge on the converter base.



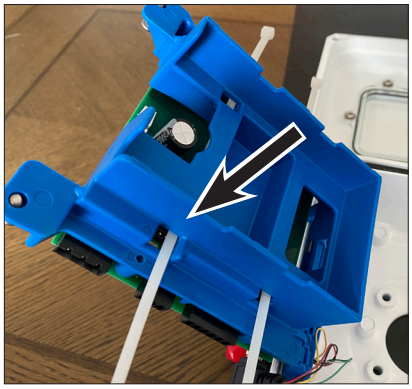
10. Pass the new zip tie through the slots in the internal hinge.



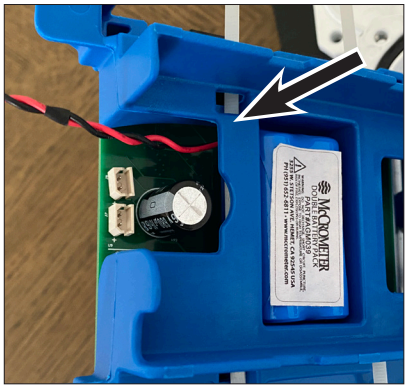
11. Wrap the new zip tie around the new dry pack and cut off the excess.



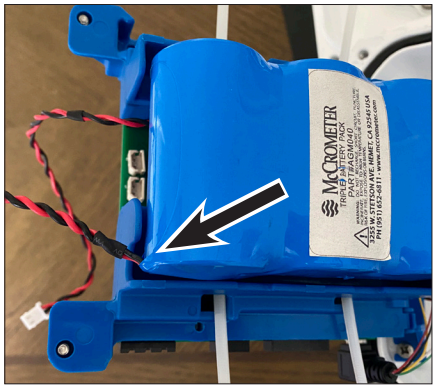
12. Pass the two large zip ties through the slots in the internal tray holder.



13. Place the small battery pack in the center pocket, making sure the wire leads go out through the opening.



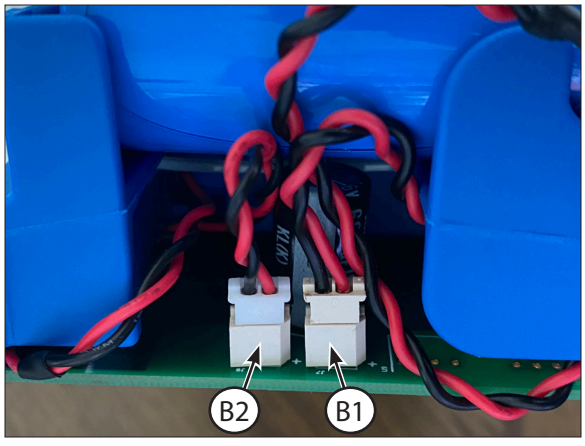
14. Place the large battery pack on the the internal tray with wire leads passing through the slot.



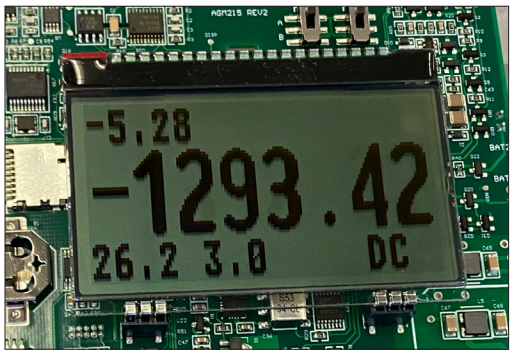
15. Secure the battery packs to the internal tray with the two large zip ties. Cut off the excess of each of the zip ties.

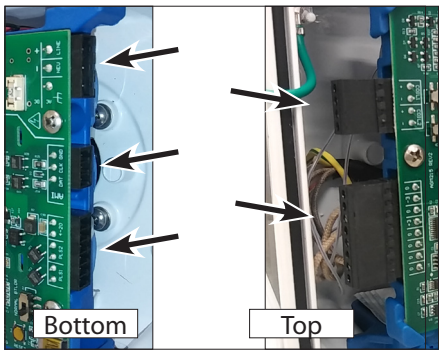


16. Plug the batteries into the circuit board.
    - The large battery pack goes to connector B1.
    - The small battery pack goes to connector B2.

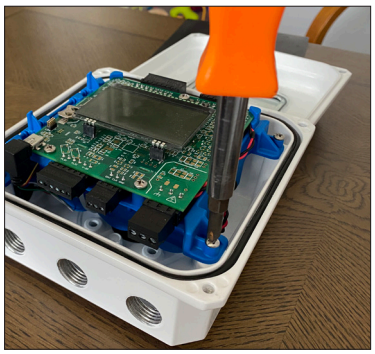


17. Set the hinged LCD/internal battery cover back in place to see the display. The unit will start to power up. Plug in all of the connectors to the board. Ensure that the unit is powered normally and there are no alarms.





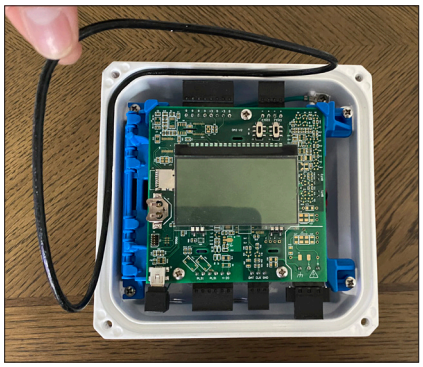
18. Replace the two screws that hold the LCD/battery cover in place.



IV. Replacing the gasket

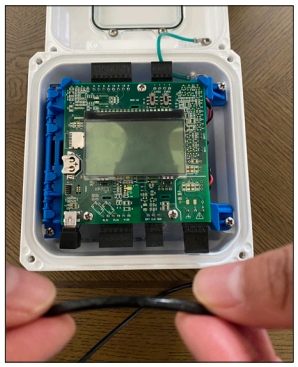
If you installed replacement batteries, we recommend that you replace the gasket.
If you installed new batteries, you must set the gasket in place before replacing the cover and closing up the unit.

19. If your unit has a gasket, remove it.



20. Apply a light coating of Molykote to the replacement gasket.





21. Place the gasket in the groove and press it in.

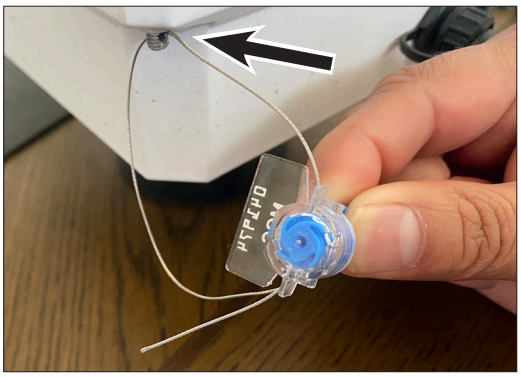


V. Replacing the cover

22. Place the converter lid onto the housing. Tighten the screws firmly. Be careful not to pinch any wires between the lid and the base.



23. Fasten the tamper proof seal as follows:
    a. Guide the wire through the hole in the screw.
    b. Thread the wire through the body of the tamper proof seal.



24. Rotate the blue part on the tamper proof seal to bring in the wire and secure the seal close to the screw.



7.0 OPERATION

7.1 General

The flow meter comes pre-configured from the factory based on the installation parameters provided to McCrometer at the time of order. Other than activating the display, there is nothing required of the user for the basic operation of the flow meter.

7.2 Activating the Display

The display is activated when the lid is opened. (Figure 29) The display will remain active for 30 seconds.

The transmitter display is light activated and requires a minimum amount of light to appear. Environments where light is low, such as in dimly lit buildings or outdoors after sundown may prevent the display from appearing when the lid is raised.

NOTE There is an optical sensor embedded in the display located under the McCrometer "swirl" logo at the lower left. If the display does not appear, a flashlight will provide sufficient light to bring it up.

CAUTION:
If the lid is broken off, contact the Factory for a lid replacement kit. In the meantime, set the lid on the meter in its proper position and use the boot to hold it in place.



Figure 29. Lift lid to activate display

The various parts of the interface screen is shown below. (Figure 30) Depending on how the transmitter is configured with the configuration tool (see section 8.0) the display will show either single direction or bidirectional total flow quantities. Bidirectional flows are represented as either positive (POS) or negative (NEG), as shown at right.

NOTE *The default setting for the ProComm GO transmitter is the positive totalizer. This is done so that any negative flow will be set to 0 and not recorded.*

Bidirectional flow has to be turned on with either negative or net showing for the transmitter to show a negative flow rate and calculate a negative total.

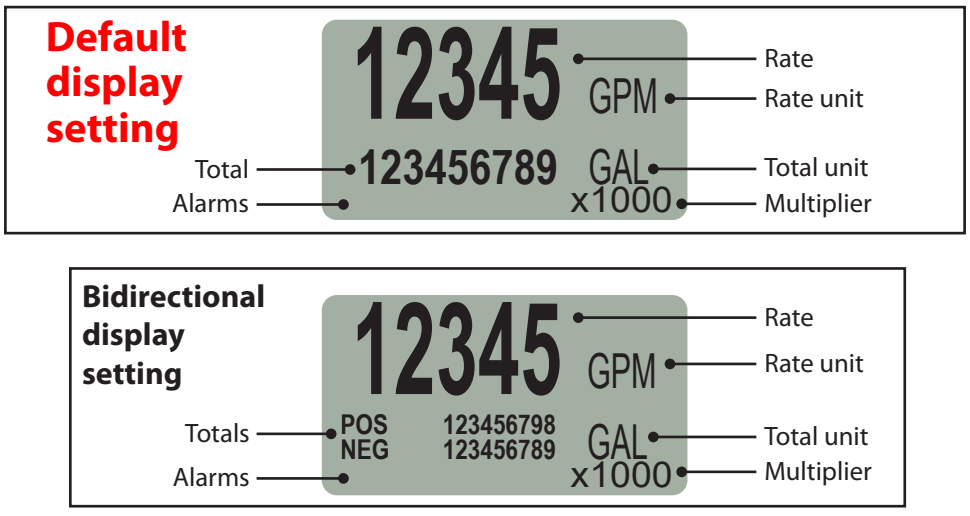


Figure 30. Interface screen, bidirectional and single direction flow

7.3 Transmitter Boot

The boot simply slips over the electronics enclosure. When installing the boot, insure the corners of the boot fit snugly over the lip of the enclosure. See Figure 31. To remove the boot, grip two corners and pull them away from the lip of the enclosure and then pull upwards. See Figure 32.

> **NOTE** It is HIGHLY recommended that transmitter is covered by the boot at all times when the meter is not being read. The boot adds protection to the transmitter.

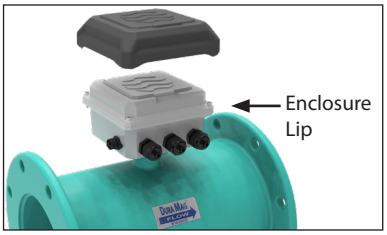


Figure 31. Boot installation

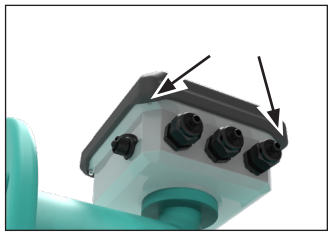


Figure 32. Boot removal

8.0 TRANSMITTER CONFIGURATION

The transmitter can be programmed to customize how the data is measured and stored. The configuration tool runs only on Windows 7, 8, or 10 and requires a computer with a USB port.

To access the transmitter's USB port, unscrew the cap at the left side of the transmitter. You will need a cable with a mini USB type B connector. (Figure 33)

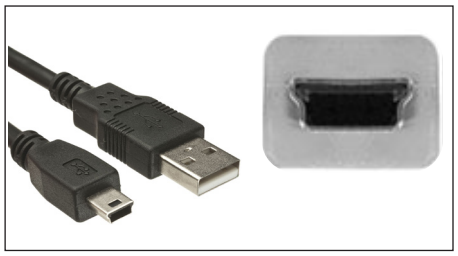


Figure 33. Mini USB type B connector

> **WARNING**
> EXPLOSION HAZARD. DO NOT CONNECT/DISCONNECT CONNECTORS OR WIRING OR REMOVE ENCLOSURE LID WHILE WITHIN AN ELECTRICALLY CLASSIFIED HAZARDOUS AREA.

You must have your flow meter's serial number before you begin. There are no installation files. The program and support files can be copied or unzipped into a folder and run from there.

This is only a summary of the configuration tool's functionality. The software has complete set-up and operation instructions included. The software can be downloaded from the McCrometer Web site.



Figure 34. Plug in mini-USB cable

Software Operation

1. Remove the cap that protects the USB port and plug in a mini USB type B cable. (Figure 34) Connect the other end to a laptop computer.
2. Start the software. Follow the instructions shown before setting up your customized configuration. (Figure 35)
3. When you have set up your configuration file, you can change the settings listed below. Using the configuration tool is mostly self-explanatory.
   - Flow rate unit of measure
   - Totalizer unit of measure
   - Multiplier
   - Totalizer presets
   - Forward/reverse pulse enable: 1 pulse per x per unit of measure
   - Pipe ID
   - Clock time and date
   - Pulse output
   - Automated meter reading

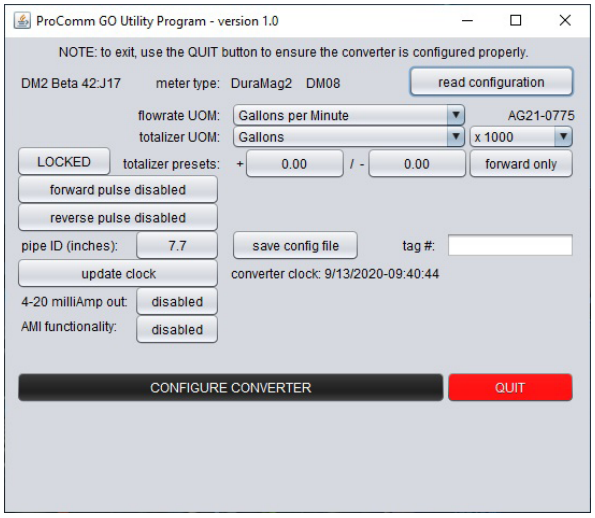


Figure 35. Configuration tool interface

When configuration is complete, remove the USB connector and replace the protective cap.

9.0 ERROR MESSAGES FOR TROUBLESHOOTING

DISPLAY MESSAGE	Troubleshooting
BAT LOW	Battery replacement Kit is needed to replace batteries. The batteries Should last approximately 6-9 months from the time the warning is shown.
420 ERR	The 4-20 circuit is not wired correctly. Check the wiring diagram and ensure 9-30VDC power is supplied to the circuit. The output is not source powered.
COIL XCT	There is an issue with the electro magnetic coils. Check that the internal wiring is correct in the transmitter for the coil wires.
OOR **OUT OF RANGE**	The meter signal exceeds the limit of the transmitter, likely due to noise. Check the meter grounding meets the IOM guidelines and identify any sources of noise.
HIGH HUM	Humidity inside transmitter housing has exceeded limits. Check for any loose connections on transmitter housing that could be creating a leak.
COIN LOW	Datalogger time backup battery is low. This is part of the battery replacement kit and should be replaced with the main battery packs.

10.0 SPECIFICATIONS

Physical Specifications

Electronic Housing	Diecast aluminum, powder coated enclosure w/ tamper resistant seal, 6½" x 6½" x 43/8" tall
Transmitter Dimensions	See "Dimensions" section for meter mount and remote mount transmitter dimensions.
Power	**Battery:** Standard: three 3.6V lithium-thionyl chloride (Li-SOCI2) D size batteries with two AA backup batteries **AC Power:** 100-240VAC/45-66Hz (4W) **DC Power:** Linear power supply 10-35VDC (4 W)
Electrical Connections	• Optional shielded cable for 10-32VDC/4-20 mA output • Optional shielded cable for pulse out

Performance and Operational Specifications

Battery Life	Five-year expected battery life, five-year battery warranty
Location	Indoor or outdoor use
Altitude	Operating: 2000 meters Storage: 12,000 meters
Operating Temperature	-4° to 140° F (-20° to 60° C)
Storage Temperature	-4° to 140° F (-20° to 60° C)
Relative Humidity	0% to 100%
IP Rating	IP67 Die cast aluminum transmitter
Outputs	**Digital output:** Digital pulse (open collector) output for volumetric - Two isolated digital pulse (open collector) outputs for volumetric - AMI output **Analog output:** 4-20mA: Galvanically Isolated, 16 Bit resolution. All power configurations (including battery). Note: 9-30 VDC loop power required (not supplied via transmitter)

Display and Measurement

Display	• 2-Line LCD display (no backlight) • Non-volatile memory • Anti-reverse totalizer (standard) • Total (to 9 digits of precision)	• Flow rate and velocity (to 5 digits of precision) • Two alarms: low battery and empty pipe (optional) • Opening lid activates display
Digits	5 Rate, 9 Total	

Units

GPM	Gallons per minute	IGM	Imperial gal per minute	CFM	Cubic feet per minute
MGD	Mega gal per day	MI9	Miners inch (9G)	B5M	Barrels per minute (55G)
CFS	Cubic feet per second	MI1	Miners inch (11.22G)	B5H	Barrels per hour (55G)
MLD	Megaliters per day	APD	Acre feet per day	B5D	Barrels per day (55G)
LPS	Liters per second	KLH	Kiloliters per hour	B4M	Barrels per minute (42G)
CMH	Cubic meters per hour	LPH	Liters per hour	B4H	Barrels per hour (42G)
LPM	Liters per minute	CMM	Cubic meters per minute	B4D	Barrels per day (42G)
GPH	Gallons per hour	CFM	Cubic feet per minute		

Display and Measurement (cont.)

Totalizer Units

GAL	Gallons	B42	Barrel (42G)	MH1	Miners Inch Hour (11.22G)
CUF	Cubic Feet	B46	Barrel (46G)	MD1	Miners Inch Day (11.22G)
AFT	Acre Feet	B55	Barrel (55G)	MH9	Miners Inch Hour (9G)
CUM	Cubic Meters	IMG	Imperial Gallon	MD9	Miners Inch Day (9G)
LIT	Liters	AIN	Acre Inch	KGL	Kilo Gallons
MML	Megaliter	TON	Ton (Short)	MGL	Mega Gallons
MTT	Metric Ton (KL)	MM1	Miners Inch Minute (11.22G)	IN3	Cubic Inch
B31	Barrel (31G)	MM9	Miners Inch Minute (9G)		

Data Logger

Standard with all models, minimum of five years of data stored

Other Specifications

Options and Accessories

- Data Logger - included as standard with five years of data storage at default (12hr) interval. (Cable sold separately)
- AC, DC, and battery powered with battery backup powered available

Safety

- IEC 61010-1, Pollution Degree II
- Overvoltage protection Category III

Certifications

Standard Model

- ISO 9001:2015 certified quality management system
- CE
- Certified by MET to UL 61010-1

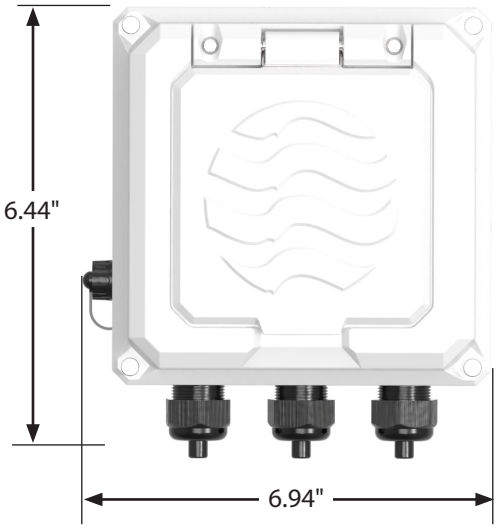
HL Model

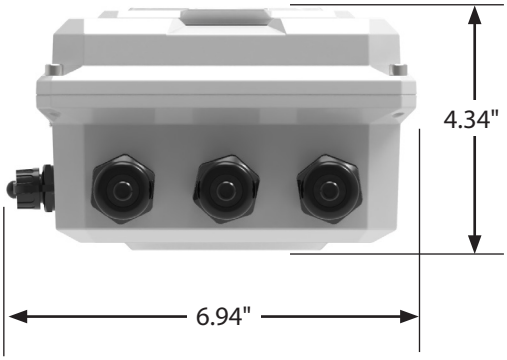
- ISO 9001:2015 certified quality management system
- CE
- Certified by MET to UL 61010-1 and MET C22.2 No. 61010-1-04
  - Class I, Division 2, Groups A B C D, T4
  - Class I, Zone 2, IIC T4

Note: ProComm GO with SmartTrax On Board is not available for hazardous locations.

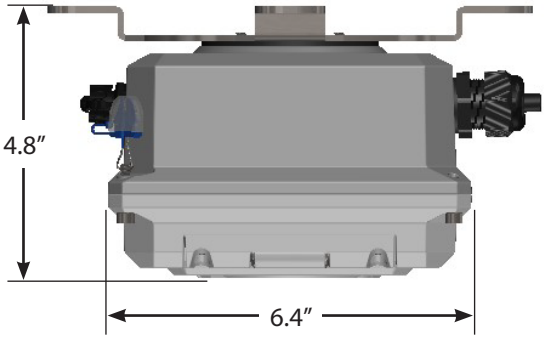
11.0 DIMENSIONS

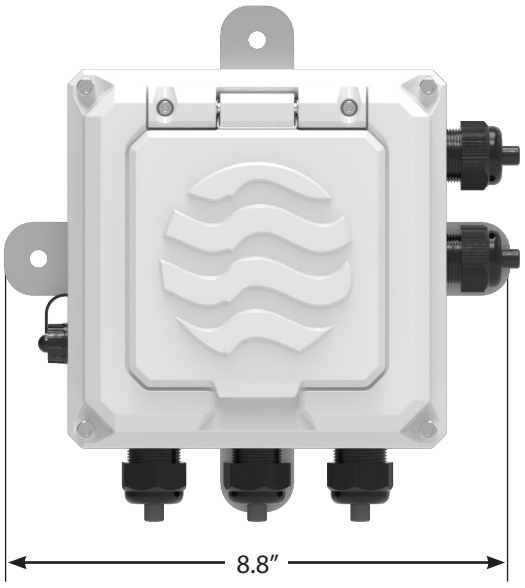
Meter mount converter

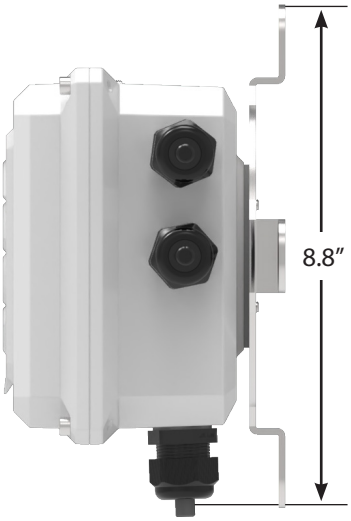




Remote mount converter







12.0 RETURNING A UNIT FOR REPAIR

If the unit needs to be returned to the factory for repair, please do the following:

- Prior to calling for a return authorization number, determine the model number, serial number (located inside the front panel of transmitter), and reason for return.
- Call the McCrometer Customer Service Department at 1-800-220-2279 and ask for a Return Authorization (RA) number.
- Please make sure the meter is clean and free from foreign debris prior to shipping.
- Ship the meter in the original packaging, if possible. Do not ship manuals, power cords, or other parts with your unit unless required for repair.
- Write the RA number on the outside of the shipping box. All return shipments should be insured.
- Address all shipments to:

  McCrometer, Inc.
  RMA #
  3255 W. Stetson Avenue
  Hemet, CA 92545

WARRANTY STATEMENT

McCrometer warrants that this product will be free from defects in material and workmanship for a period 12 months from the date the equipment was first installed, but in no event longer than 18 months from the date the equipment was first shipped by McCrometer. Repairs shall be warranted for 12 months or, if the repair is performed under this warranty, for the remainder of the original warranty period, whichever is less.

Buyer shall report any claimed defect in writing to McCrometer immediately upon discovery and in any event, within the warranty period. McCrometer shall, at its sole option, repair the equipment or furnish replacement equipment or parts thereof, at the original delivery point.

McCrometer shall not be liable for costs of removal, reinstallation, or gaining access. If Buyer or others repair, replace, or adjust equipment or parts without McCrometer prior written approval, McCrometer is relieved of any further obligation to Buyer under this Article with respect to such equipment.

No equipment furnished by McCrometer shall be deemed to be defective by reason of normal wear and tear, failure to resist erosive or corrosive action of any fluid or gas (unless otherwise specified in Quotations/ Purchase Order Specifications), Buyer's direct or indirect failure (or the failure of its agents or contractors) to properly store, install, operate, or maintain the equipment in accordance with good industry practices or specific recommendations of McCrometer, or Buyer's failure to provide complete and accurate information to McCrometer concerning the operational application of the equipment.

THE FOREGOING LIMITED WARRANTIES WITH RESPECT TO EQUIPMENT AND PRODUCTS ARE EXCLUSIVE AND IN LIEU OF ANY AND ALL OTHER WARRANTIES OF QUALITY OR PERFORMANCE, EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, ANY AND ALL WARRANTIES OF MERCHANTABILITY OR FITNESS OF SAID EQUIPMENT AND PRODUCTS FOR ANY PARTICULAR PURPOSE.

MCCROMETER DISCLAIMS ANY WARRANTY, WHETHER EXPRESS OR IMPLIED, REGARDING THE SUITABILITY OF PRODUCTS AND EQUIPMENT SUPPLIED PURSUANT TO ANY PURCHASE ORDER FOR INSTALLATION IN ANY PARTICULAR SYSTEM OF SYSTEMS. MCCROMETER MAKES NO WARRANTY OF ANY KIND WITH RESPECT TO ANY SERVICES PERFORMED BY MCCROMETER OR ITS AGENTS PURSUANT TO ANY QUOTATION.

Purchaser's sole remedy and manufacturer's sole obligation for alleged product failure, whether under warranty claim or otherwise, shall be the aforestated obligation of manufacturer to repair or replace products returned within twenty-four months after date of original shipment. The manufacturer shall not be liable for, and the purchaser assumes and agrees to indemnify and save harmless the manufacturer in respect to, any loss or damage that may arise through the use by the purchaser of any of the manufacturer's products.

McCrometer does not authorize any person or entity (including, without limitation, McCrometer agents and employees) to make any representations (verbal or written) contrary to the terms of this limited warranty or its exclusions. Such terms of this limited warranty and its exclusions can only be effectively modified in writing and only by the President of McCrometer.