



# FLOMEK Pulse Access, External Power and Scaled Pulse Module Owner's Manual

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**FLOMEC Pulse Access, External Power and Scaled Pulse Module**



## BEFORE YOU BEGIN

### Usage Requirements

- This Pulse Access, External Power & Scaled Pulse module is not FM Approved. Therefore, use of this module with an approved metering system voids FM Approval.
- This module is designed for use with all meters that are equipped with the Q9 display option. The PA-EP-SC module can be field calibrated through the configuration menu options on the Q9 display.

### Power Source Requirements

- This module will function properly with an input voltage between 5.0 VDC and 26 VDC.

## UNPACKING / INSPECTION

### Inspect

- After unpacking the unit, inspect carefully for any damage that may have occurred during transit. Check for loose, missing or damaged parts. Shipping damage claims must be filed with carrier.
- See General Safety Instruction, and all Cautions, Warnings, and Dangers as shown.

## SPECIFICATIONS

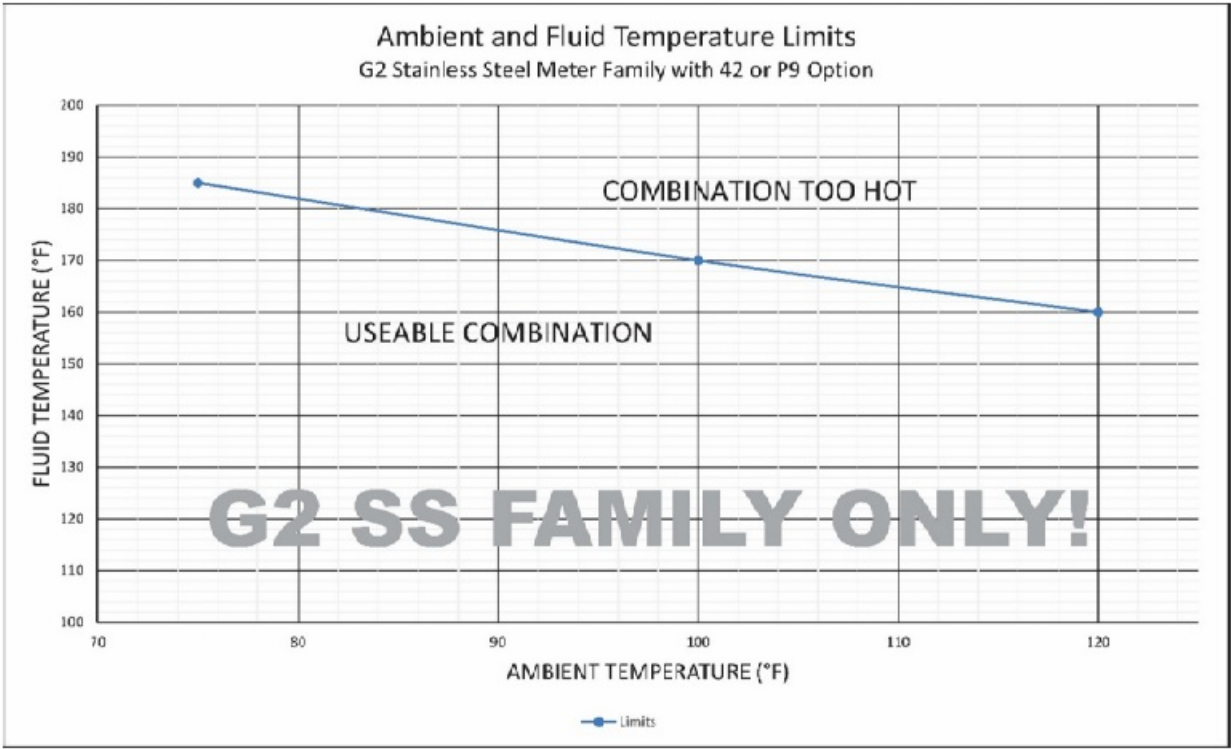
MECHANICAL

<b>Housing Material</b>	<b>Nylon 6-6</b>
<b>Strain Relief</b>	<b>Hubble PG7. Grip range 0.11-0.26</b>
<b>Housing Port Thread</b>	<b>Female 1/2-20 UNF-2B (Compatible with PG7)</b>
<b>Cable</b>	<b>Belden 9363 (22 AWG-3 conductor with drain wire and shield)</b>
<b>Cable Length</b>	<b>10 ft. (3m), provided</b>
<b>Operating Temperature</b>	<b>0° to +140°F (-18° to +60°C)</b>
<b>Higher Process Fluid Temperatures Obtainable with G2 Stainless Steel Meters</b>	<p><b>When installed on G2 Stainless Steel Flowmeters, see Ambient and Fluid Temperature Limits graph on next page for higher process fluid temperature Limits.</b></p> <p><b>If wider process fluid temperature ranges are desired, reference information on FLOMEC® Remote Kits.</b></p>
<b>Storage Temperature</b>	<b>-40° to +180°F (-40° to +82°C)</b>
<b>POWER</b>	
<b>Voltage Minimum</b>	<b>5.0 VDC</b>
<b>Voltage Maximum</b>	<b>26 VDC</b>
<b>Isolated</b>	<b>No</b>
<b>PULSE OUTPUT</b>	
<b>Type</b>	<b>Open Collector (NPN)</b>
<b>* External Pull-up Voltage</b>	<b>5.0 to 26 VDC</b>

<b>** Internal Pull-up Voltage</b>	<b>5.0 to 26 VDC</b>
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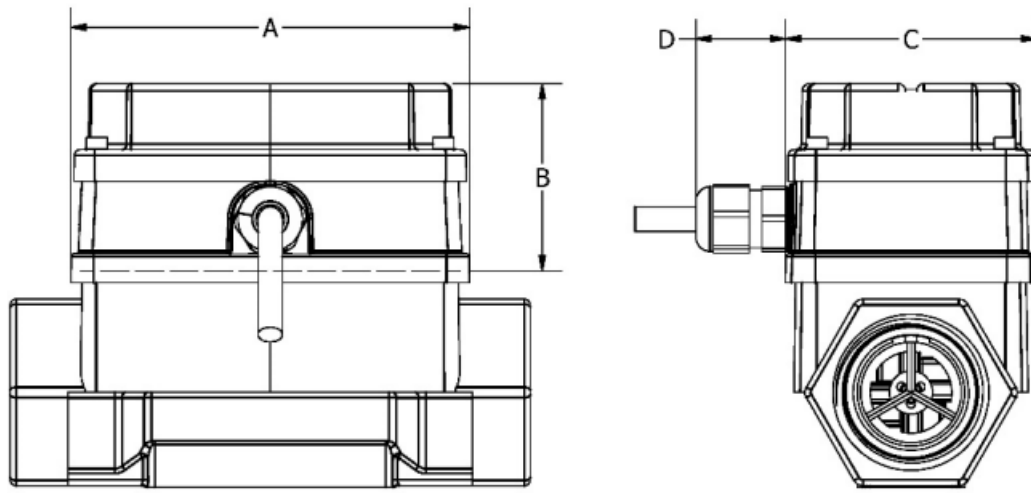
- **Note:** Customer supplied external voltage with separate power supply and a minimum external pull up resistance of 820 ohms.
- **Note:** When configured for internal pull up resistor, no external pull up resistor is required. Internal pull up is fixed at 100K ohm.

**AMBIENT AND FLUID TEMPERATURE LIMITS**



**NOTE:** The upper limit of the “Useable Combination” area can be increased by 10°F (6°C) when lithium batteries are installed in the Q9 Display.

DIMENSIONS			
Length (A)	Height (B)	Width (C)	Strain Relief (D)
3.45 in. (8.8 cm)	0.90 in. (2.3 cm)	2.18 in. (5.5 cm)	0.77 in. (1.96 cm)



**Module shown installed on G2 1" stainless steel flowmeter**

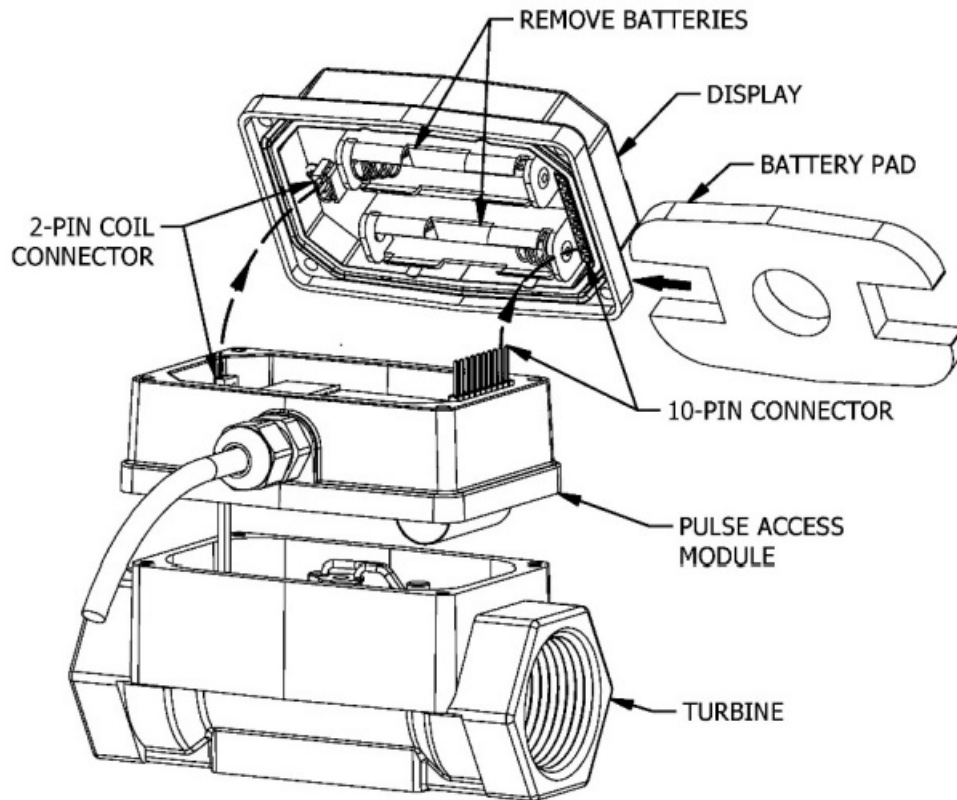
**Figure 1**

## **APPROVAL RATINGS**

## **INSTALLATION**

### **INSTALLING MODULE**

1. Remove the display electronics from the front of the turbine.  
**NOTE:** If you are installing more than one module at a time, take care to keep the proper electronics paired with the original turbine.
2. If your display currently has batteries installed, you will need to remove them to enable the scaled pulse output to function.
3. Disconnect 2-pin coil connector from display. Make sure coil remains firmly attached to meter body (DO NOT pull on wires or attempt to remove from meter body).
4. Connect the module to the 10-pin connector located on the backside of the computer electronics (see Figure 2).
5. Reconnect the coil connector to the 2-pin terminal block on the other end of the computer backside. Once the cables are installed on the display, the housing of the display can be placed on top of the module (see Figure 2).
6. Install the computer electronics to the front side of the turbine. Tighten the four screws snugly.



**Module shown installed on G2 1" stainless steel flowmeter**

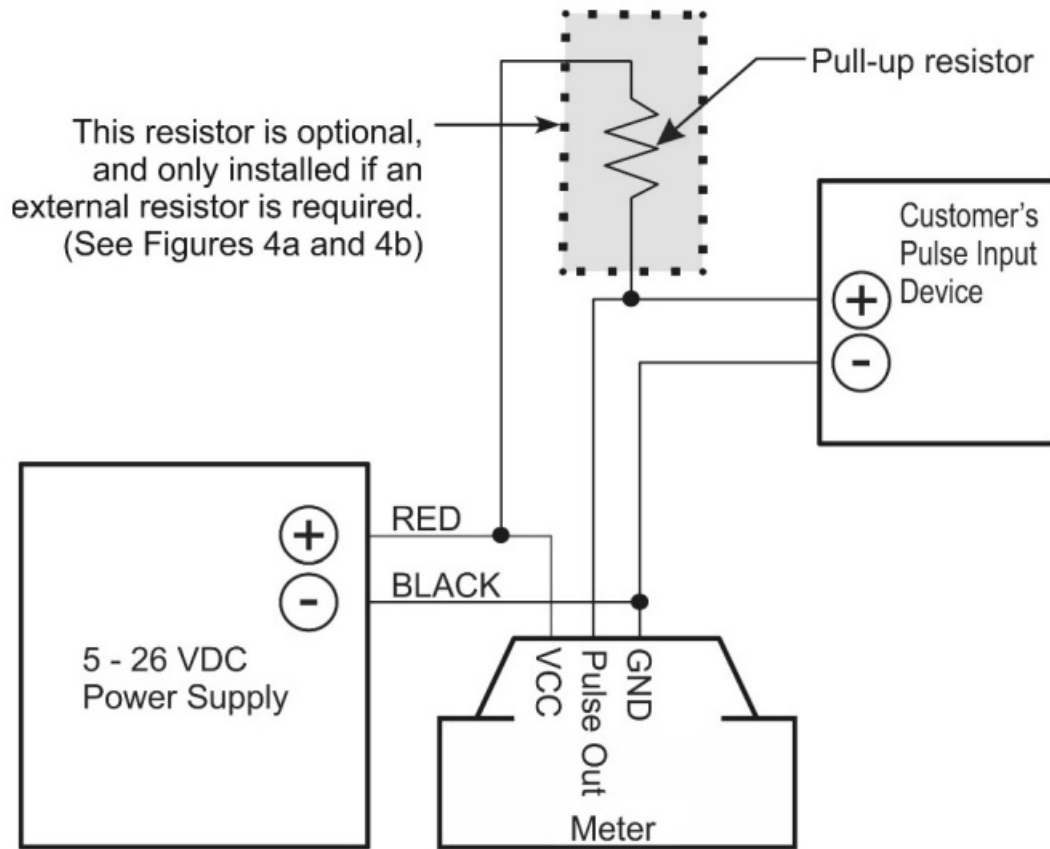
## WIRING

The Pulse Access module comes pre-wired for external connections to external power and provides an open collector output, which can be set for either raw or scaled pulse output. The wires are color-coded and are to be connected as shown in Figures 3 & 4.

Wire Color	Feature
Red	VCC
Black	GND
White	Pulse Out

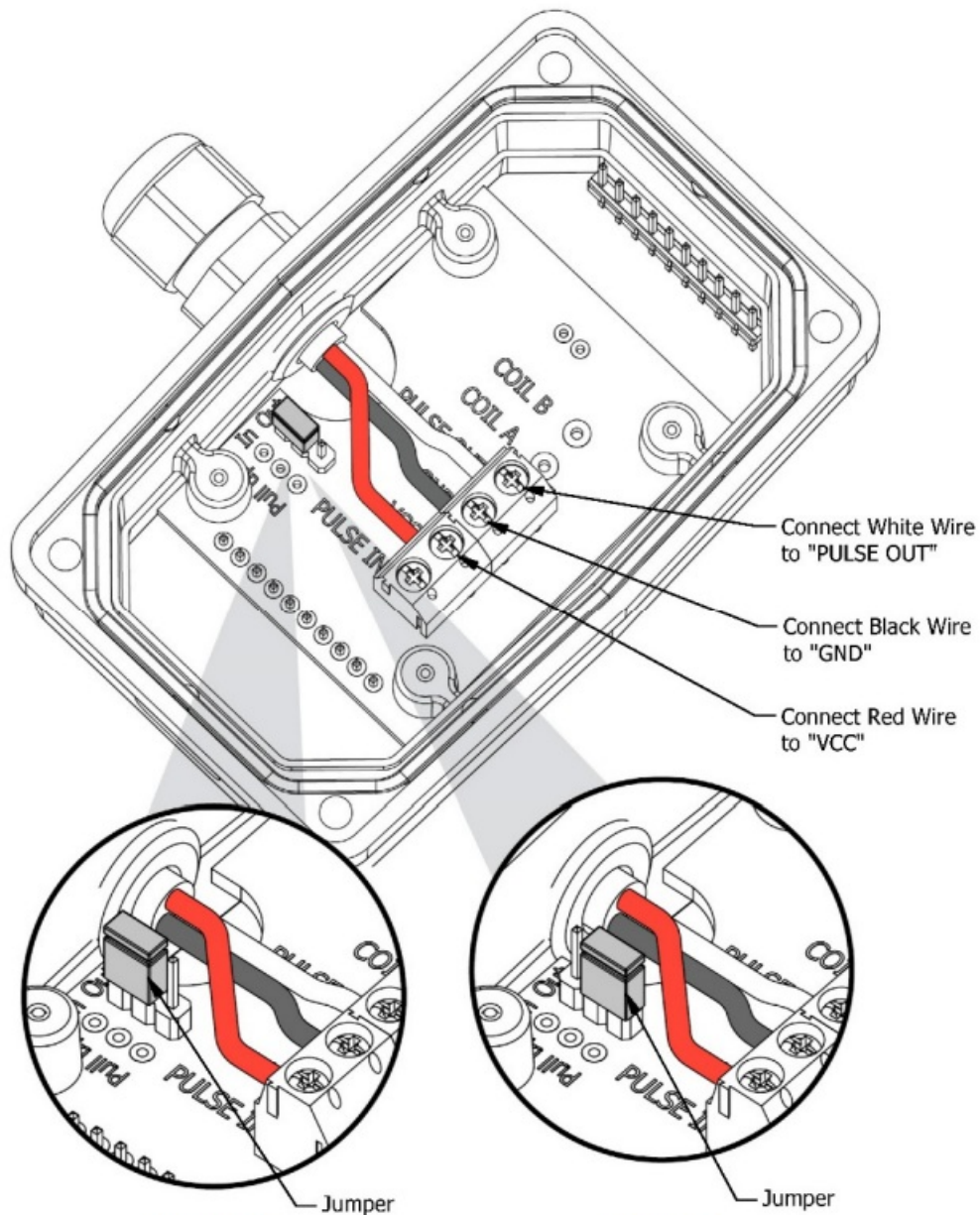
**NOTE:** The pulse output is set to raw pulse output as the default setting on the Q9 display. If your application requires a scaling of the pulse output, refer to the installation instructions to enable the scaled pulse feature and refer to the Q9 owner's manual for instructions on the configuration of the scaled pulse feature.

**NOTE:** If using the scaled pulse output feature, use the scaled K-factor in the user interface device.



**Figure 3**

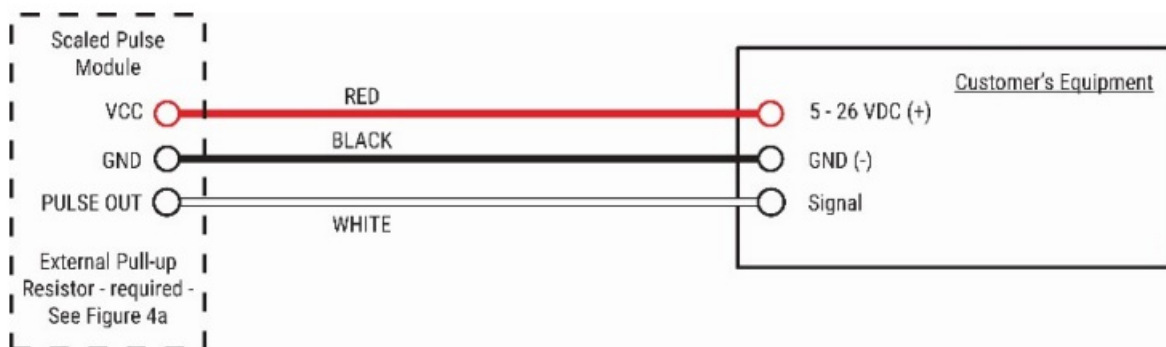
**NOTE:** The internal and external options for the pull up resistance and voltage is selectable by the header on the pulse access board (see Figures 4a & 4b). When the Jumper is on the top two pins, the external resistor required option is selected (Figure 4a). This external resistor can be installed as shown on Figure 3, but could also be built into the existing customer equipment. When the Jumper is located on the bottom two pins, the internal resistor option is selected (Figure 4b).



### Wiring Example 1

Customer's Equipment:

- Built in Power
- Built in Pull-Up Resistor (via Customer's Equipment)
- Use Scaled Pulse Output Module's External Pull-up Resistor Jumper Setting (Fig 4a).



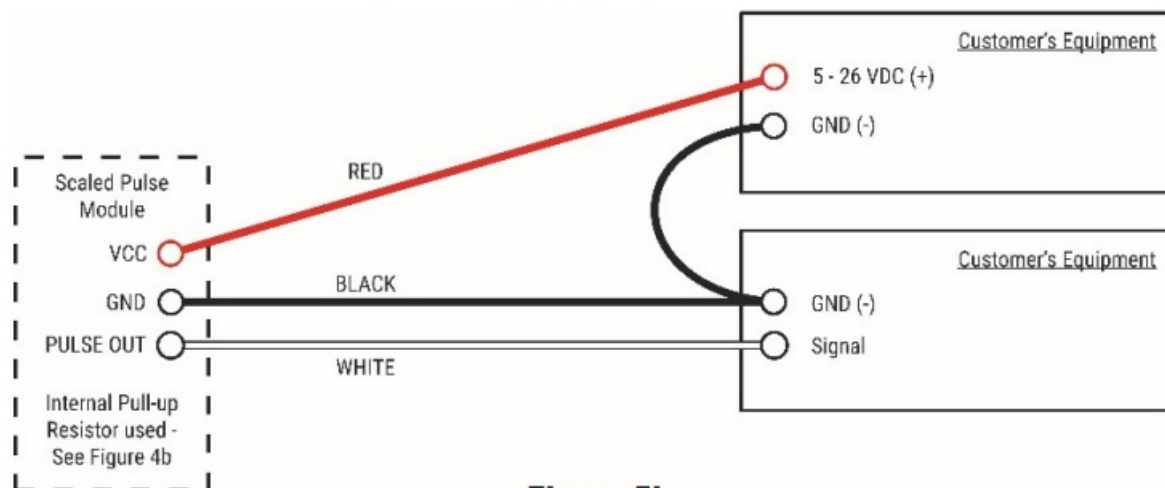
**Figure 5a**



## Wiring Example 2

Customer's Equipment:

- No Built in Power
- No Built in Pull-Up Resistor
- Use Scaled Pulse Output Module's Internal Pull-up Resistor Jumper Setting (Fig 4b).

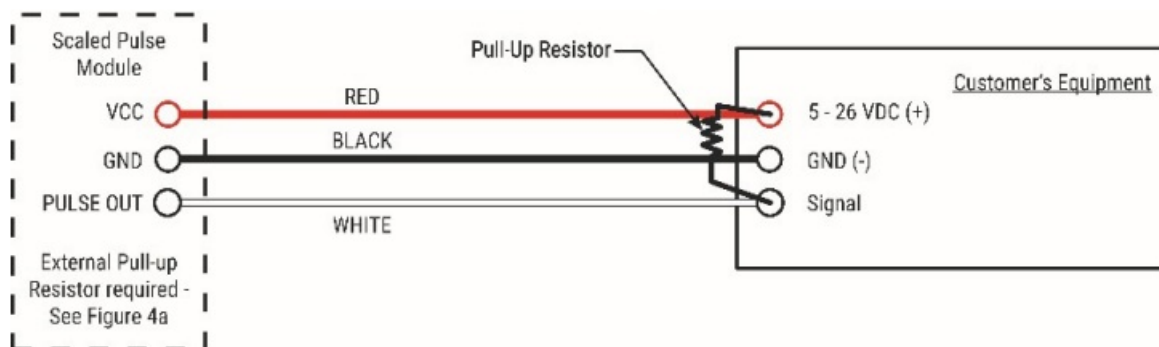


**Figure 5b**

## Wiring Example 3

Customer's Equipment:

- Built in Power
- No Built in Pull-Up Resistor
- External Pull-up Resistor added by user.
- Use Scaled Pulse Output Module's External Pull-up Resistor Jumper Setting (Fig 4a).



**Figure 5c**

## OPERATION / CALIBRATION

### ADJUSTING SCALED PULSE K-FACTOR

To set or adjust Scaled Pulse K-Factor settings, refer to the Q9 Owner's Manual (Non-Agency) Field Calibration Section for further instructions (see below).

You can download the Q9 Owner's Manual (Non-Agency) here:



or visit [flomecmeters.com](http://flomecmeters.com) to download owner's manuals and other technical documents.

## TROUBLESHOOTING

Symptom	Possible Cause(s)	Corrective Action
A. No output signal.	1. Incorrect or no input power. 2. Not wired correctly. 3. Broken connection. 4. Defective PC board connector. 5. Defective unit. 6. Batteries installed.	1. Supply correct power requirements.
		2. Check owner's manual for correct installation.
		3. Check resistance to determine location of break.
		4. Contact distributor or factory for replacement
		5. Contact distributor or factory for replacement.
		6. Remove batteries and cycle loop power.

B. Scaled Pulse output not working or not shown in Q9 configuration options menu.	1. Batteries being installed will disable the Scaled Pulse output feature.	1. Remove batteries, cycle loop power and reconfigure the Scaled Pulse output feature on Q9 display.
C. Pulse output values are not giving accurate total volumes.	1. Customer's "pulse Input device" (pulses per unit of volume) does not match module pulse output (pulses per unit of volume).	1. Reconfigure module pulse output (or customer's "pulse input device") to match in pulses per unit of volume (module output pulses per unit of volume = input pulses per unit of volume).
	2. Q9 display calibration is NOT optimized for best results.	2. Verify Q9 display value is giving correct volume totals.
D. Q9 display value not giving correct volume totals.	1. Q9 display showing velocity, flowrate, or accumulative total instead of batch total. 2. Q9 display calibration is not optimized for best results.	1. Press "bottom button" of Q9 display until correct volume is displayed (see Operation Section in Q9 owner's manual). 2. If "1" above is not the Issue, see Operation/Calibration Section of this manual.

## PULSE OUTPUT FLOWCHART

## PARTS LIST

Part No.	Description
901002-52	Seal

## PARTS & SERVICE

For warranty consideration, parts, or other service information, please contact your local distributor. If you need further assistance, contact the GPI Product Support Department in Wichita, Kansas, during normal business hours.

A toll free number is provided for your convenience. **1-888-996-3837**

To obtain prompt, efficient service, always be prepared with the following information:

- The model number of your meter.

- The serial number or manufacturing date code of your meter.
- Part descriptions and numbers.

For warranty work, always be prepared with your original sales slip or other evidence of purchase date.

**IMPORTANT:** Please contact GPI before returning any parts. It may be possible to diagnose the trouble and identify needed parts in a telephone call.

### **WEEE DIRECTIVE**

The Waste Electrical and Electronic Equipment (WEEE) directive (2002/96/EC) was approved by the European Parliament and the Council of the European Union in 2003. This symbol indicates that this product contains electrical and electronic equipment that may include batteries, printed circuit boards, liquid crystal displays or other components that may be subject to local disposal regulations at your location. Please understand those regulations and dispose of this product in a responsible manner.

### **FLOMEC® TWO-YEAR LIMITED WARRANTY**

Great Plains Industries, Inc. 5252 E. 36th Street North, Wichita, KS USA 67220-3205, hereby provides a limited warranty against defects in material and workmanship on all products manufactured by Great Plains Industries, Inc. This product includes a 2-year warranty. Manufacturer's sole obligation under the foregoing warranties will be limited to either, at Manufacturer's option, replacing or repairing defective Goods (subject to limitations hereinafter provided) or refunding the purchase price for such Goods theretofore paid by the Buyer, and Buyer's exclusive remedy for breach of any such warranties will be enforcement of such obligations of Manufacturer. The warranty shall extend to the purchaser of this product and to any person to whom such product is transferred during the warranty period.

The warranty period shall begin on the date of manufacture or on the date of purchase with an original sales receipt. This warranty shall not apply if:

- **A.** the product has been altered or modified outside the warrantor's duly appointed representative;
- **B.** the product has been subjected to neglect, misuse, abuse or damage or has been installed or operated other than in accordance with the manufacturer's operating instructions.

To make a claim against this warranty, or for technical assistance or repair, contact your FLOMEC distributor or contact FLOMEC at one of the locations below.

#### **In North or South America contact**

Great Plains Industries, Inc. 5252 East 36th St. North Wichita, KS 67220-3205  
USA  
888-996-3837  
[www.flomecmeters.com](http://www.flomecmeters.com)  
(North America)

#### **Outside North or South America contact**

GPI Australia (Trimec Industries Pty. Ltd.) 12/7-11 Parraweena Road Caringbah NSW 2229  
Australia  
+61 02 9540 4433  
[www.flomec.com.au](http://www.flomec.com.au)

The company will step you through a product troubleshooting process to determine appropriate corrective actions. GREAT PLAINS INDUSTRIES, INC., EXCLUDES LIABILITY UNDER THIS WARRANTY FOR DIRECT, INDIRECT, INCIDENTAL AND CONSEQUENTIAL DAMAGES INCURRED IN THE USE OR LOSS OF USE OF THE PRODUCT WARRANTED HEREUNDER.

The company herewith expressly disclaims any warranty of merchantability or fitness for any particular purpose

other than for which it was designed.


This warranty gives you specific rights and you may also have other rights which vary from U.S. state to U.S. state.

**NOTE:** In compliance with MAGNUSON MOSS CONSUMER WARRANTY ACT “ Part 702 (governs the resale availability of the warranty terms).

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- 888-996-3837
- [flomecmeters.com](http://flomecmeters.com)

## Documents / Resources

	<a href="#">FLOMEC Pulse Access, External Power and Scaled Pulse Module</a> [pdf] Owner's Manual Pulse Access External Power and Scaled Pulse Module, Pulse Access, External Power and Scaled Pulse Module
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## References

- [Home - FLOMEC](#)
- [FLOMEC® - Flow Meter & Instrumentation Manufacturer](#)
- [Home - FLOMEC](#)