

***Owners Installation, Operation, and Safety Manual***

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***FILL-RITE***®

**Digital Liquid Meter**

Series 900DP – High Flow

**Models with Intrinsically Safe Barrier:**

**900CDP, 900CDP1.5, 900CDPBSPT, 900CDP1.5BPST**

**Models without Intrinsically Safe Barrier**

**900CDPX, 900CDPX1.5, 900CDPXSPT, 900CDPX1.5BSPT**

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## Thank You!

Thank you for your purchase of the Fill-Rite® Series 900 Digital Meter! Your new meter comes with over 80 years of fluid transfer experience behind it, providing you the value that comes with superior performance, user friendly design, long service life, and solid, simple engineering. Experience that gives you peace of mind, and passion for building real things that make a real difference.



## About This Manual

From initial concept and design through its final production, your Fill-Rite meter is built to give you years of trouble free use. To insure it provides that service, **it is critical that you read this entire manual prior to attempting to install or operate your new meter.** Become familiar with the terms and diagrams, and pay close attention to the highlighted areas with the following labels:



**WARNING!** Emphasizes an area in which personal injury or even death could result from failure to follow instructions properly. Mechanical damage may also occur.



**IMPORTANT!** These boxes contain information that illustrates a point that may save time or may be key to proper operation, or clarifies a step.



**CAUTION!** Failure to observe a “Caution” can cause damage to the equipment.

At Fill-Rite, your satisfaction with our products is paramount to us. If you have questions or need assistance with your product, please contact us at 1-800-634-2695 (M-F 8 AM–5 PM ET).

## Safety Information



**WARNING!** To insure safe and proper operation of your equipment, it is critical to read and adhere to all of the following safety warnings and precautions. Improper installation or use of this product can cause serious bodily injury or death!

- NEVER smoke near the meter, or use the meter near open flames when metering a flammable liquid! Fire can result!
- A Fill-Rite Filter should be used on the meter outlet to insure no foreign material is transferred to the fuel tank.
- Threaded pipe joints and connections should be sealed with the appropriate sealant or sealant tape to minimize the possibility of leaks.
- Storage tanks should be securely anchored to prevent shifting or tipping when full or empty.
- To minimize static electricity build up, use only static wire conductive hose when metering flammable fluids, and keep the fill nozzle in contact with the container being filled during the filling process.
- DO NOT exceed 50 psi/ 3.5 BARS line pressure.
- DO NOT install additional foot valve or check valve without a pressure relief valve; otherwise the meter may rupture.



**WARNING!** This product should not be used to transfer any type of aviation fuel.



**WARNING!** This product is not suited for use with fluids intended for human or animal consumption or fluids containing water. Nickel plated meters are approved for use with non-potable water, antifreeze, certain agricultural chemicals, and other specialized water applications.

## Installation

Meters are furnished for horizontal piping; left to right flow. The display can be rotated to any of four positions for horizontal or vertical piping and for either direction of flow.

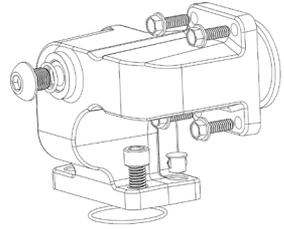
1. Determine direction for fluid to flow.
2. Install meter observing directional arrow on casting on back of meter (circled). Liquid MUST flow in the direction of the arrow for proper operation.
3. Once the meter is plumbed into place, remove four screws (circled) on corners of meter face (Torx T25 bit required).
4. Rotate meter face assembly to desired orientation.
5. Replace four screws.
6. Complete installation by making sure the joints are properly sealed and meter is positioned for easy viewing and use.



**CAUTION!** Threaded pipe joints and connections should be sealed with the appropriate sealant or sealant tape to minimize the possibility of leaks.



**IMPORTANT!** If you have purchased this meter as part of a “Kit”, the meter flange base is drilled with 4 holes. This allows the meter to be used with 300 and 700 series pumps. Line the meter bracket up for installation and insert the bolts in the two holes that align with the corresponding holes on the pump outlet. Once the meter bracket is bolted securely in place install the two plugs in the holes that were not used to prevent moisture from entering them.



## Meter Calibration

Meter calibration is required upon installation, after disassembly, after significant wear, or when dispensing a different viscosity fluid. Calibration must be done between 6 and 40 GPM (23 and 151 LPM). Meter calibration can be easily changed by following the calibration procedure. A container of KNOWN volume will be needed for the calibration procedure. For the 900 series digital meter, a five gallon container or larger (or a 20 liter container or larger) should be used.

## Procedure for Meter Calibration

Unit of measure and calibration is configured using a 3-step process.

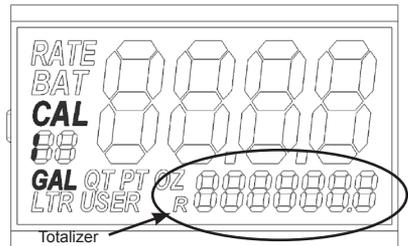
1. Select the desired unit of measure
2. Fill a container with a known volume using the desired fluid.
3. Enter the amount of fluid dispensed.

Prior to calibration, the unit must be placed in calibration mode. Press and hold the TOTAL and CAL buttons for 5 seconds to enter Calibration Mode.



**IMPORTANT!** When calibrating, the totalizers will not increase in value.

1. The unit will default to the last unit of measure used.
2. Press and release the TOTAL button to toggle through the available units of measure.
3. Press and hold the CAL button for 2 seconds to move to the next step.
4. If the meter is left untouched for 2 minutes or the RESET button is pressed, the unit will automatically exit Calibration Mode and ignore any changes in volume.



**IMPORTANT!** Dispensing into a container with a known volume allows the unit to automatically calculate the internal scaling value to compensate for fluid viscosities and the system flow rate.

5. **CAL 2** will be displayed.
6. Begin dispensing fluid into the container.
7. **FILL** will begin to blink after fluid flow is detected.
8. Dispense the desired amount fluid; stop flow as soon as desired level is reached.
9. Press and hold the CAL button for 2 seconds to move to the next step.

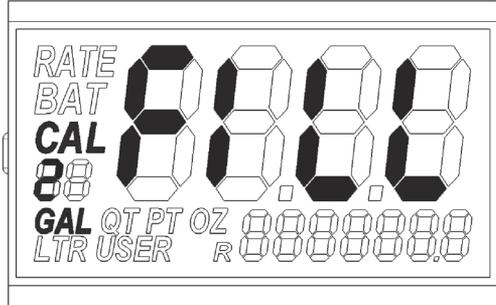


**IMPORTANT!** If left untouched for 2 minutes, or the RESET button is pressed, the meter will exit Calibration Mode and any dispensed fluid will be ignored.

- Pressing and holding the CAL button for 2 seconds before dispensing into a container will cause the meter to skip a fill operation and only change the unit of measure.

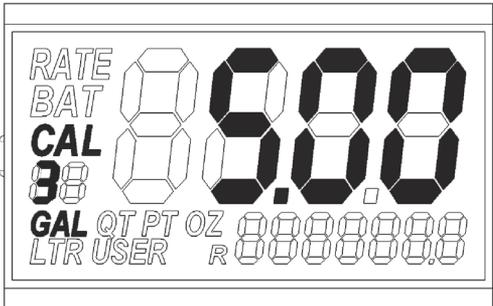


**IMPORTANT!** For maximum accuracy, try to get as close as possible to the dispensed volume without changing flow rate.



- The unit will default to a measured value based on the last calibration performed.
- The left-most digit will begin blinking.
- Use the TOTAL button to scroll from 0 to 9 until the desired number has been selected.
- Press and release the CAL button to move to the next digit.

- Repeat Steps 3-4 until the amount of dispensed fluid has been entered.
- If you make a mistake entering a digit, press and release the TOTAL button repeatedly until the digit is active again.
- Press and hold the CAL button for 2 seconds to complete the calibration process regardless of the current digit selected.



- If at the last digit and the CAL button is pressed for less than 2 seconds, the process will roll back to the left-most digit, but retain the current value. This allows the user to edit an incorrect value.
- An error check for gross calibration errors (+/- 15%) will be performed unless USER units are selected. If an error is detected, the meter will display Err0 until a button is pressed and the calibration process is aborted.
- If the meter is left untouched for 2 minutes or the RESET button is pressed, the unit will automatically exit Calibration Mode and ignore any changes.

## Operating Instructions

For accurate measurement and to prevent meter damage, dispenser and piping must always be filled with liquid and be free of air. Calibrated the meter per instructions in this manual prior to its use.

The Fill-Rite 900 Series Digital Meter face incorporates three buttons that control all the operation and calibration functions.

To turn the display on, or wake the meter from "Sleep" mode, simply press any button on the face. Dispensing fluid will also turn the meter display on.

The display can be illuminated by pressing the "CAL" button. The display will remain illuminated for 10 seconds.





**IMPORTANT!** When the meter is in the “Deep Sleep” mode, dispensing fluid will **NOT** turn the meter on. The meter will not display or accumulate any fluid that is dispensed while in “Deep Sleep” mode.

- Pressing any button will turn the meter on when in deep sleep mode (fluid flow will not turn the unit on or cause it to exit deep sleep mode).
- The last count and selected totalizer is retained and displayed when the meter is turned on.
- Pressing and releasing the TOTAL button will switch between the resettable and non-resettable totalizers. (The “R” icon will be displayed when the resettable total is displayed).
- Pressing and holding the RESET button for 2 seconds will reset the counter.
- Pressing and holding the RESET button and TOTAL buttons for 2 seconds will reset the totalizer. The resettable totalizer must be active in order to reset it.
- Pressing and holding the RESET button and CAL buttons for 2 seconds will display the software version for 2 seconds and then perform a segment check for 3 seconds, and then restore the display.
- Pressing and holding the CAL button for 5 seconds will place the meter into a deep sleep mode.



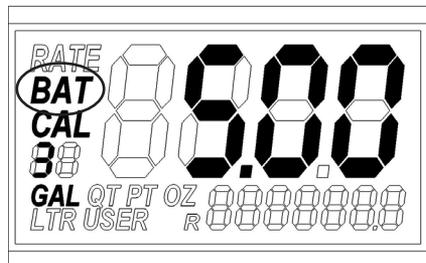
**IMPORTANT!** “Deep Sleep” mode is designed to maintain a status of operational readiness while offering battery conservation. The meter should be placed in this mode under the following circumstances:

- Flushing the unit so the dispensed volume is not counted.
- Traveling over rough surfaces (off-road); fluid in the metering chamber will be counted if fluid is being jostled.
- Extending battery life; the meter can be placed in deep sleep mode repeatedly with no adverse effect on battery life.

- After 30 seconds of inactivity, the display will blank to conserve battery power.
- If the meter is connected to the external power source, the display will not blank unless forced into deep sleep mode.
- If external power is removed, the meter will automatically switch to battery only operation and vice-versa.
- The counter and resettable totalizer 2 can be reset even if fluid flow is detected. The meter will continue counting during the 2 second RESET button press, reset to 0, and resume counting.

## Low Battery Warning

The digital display includes a “Low Battery” warning indicator. When the batteries reaches a level low enough to require replacement, the display will show “BAT” as a reminder to change them. Replace batteries when indicated per procedure on page 8.



## Storage

If your meter is to be stored for a period of time, clean it thoroughly. This will help protect the meter from damage.

## Troubleshooting



**WARNING!** To prevent possible ignition of a flammable or explosive atmosphere **DO NOT** use a voltmeter, or similarly powered tool or device during live maintenance.

The following troubleshooting guide is designed to help you with basic diagnostics and repairs if you should encounter abnormal service from your 900 series digital meter. We recommend you use only genuine Fill-Rite parts. These parts, and additional service information, are available through your authorized Fill-Rite dealer.

Further troubleshooting information can be found in your pump manual. If you need additional assistance, please contact us at 1-800-634-2695 (M-F 8 AM–5 PM ET).

Concern	Possible Cause	Recommended Repair
Counter inaccurate.	Meter mis-calibrated.	Check calibration and recalibrate as necessary (directions on page 4).
	Air in lines or metering chamber.	Check line seals and joints for leakage; seal leaks appropriately.
	Measuring gears or disc are sticking.	Clean or replace internal metering components as necessary.
Low flow capacity	Clogged meter chamber.	Clean meter chamber; clean or replace screens and filters in piping.
Meter body cracks.	Excess line pressure.	Install pressure relief valve to allow high pressure to bleed back to the tank. Replace meter.
Nutating Disc Broken.	Sudden high pressure fluid hitting disc.	Avoid surge flows by installing a shut-off valve on outlet of meter; install meter as close to the pump as possible, keep piping full of liquid. Replace broken chamber assembly.

## Fluid Compatibility

**The 900 series digital meter IS compatible with the following fluids:**

Diesel Fuel Bio-Diesel (up to B20) Gasoline Kerosene Mineral Spirits Heptane Hexane

**The 900 series digital meter IS NOT compatible with the following fluids:**

Bleach Hydrochloric Acid Ink Sulfuric Acid Salt Water



**CAUTION!** If in doubt about compatibility of a specific fluid, contact supplier of fluid to check for any adverse reactions to the following wetted materials:  
Aluminum Stainless Steel Fluorocarbon Polyester Nickel Acetal

## Assembly and Disassembly

The 900 series digital meter consist of a chamber housing, measuring chamber, drive shaft, digital counter assembly, and cover. The design of the meter is such that it can be completely disassembled without disturbing the piping (refer to diagram on page 9).

## Accessing the Batteries\*



**WARNING!** DO NOT replace the batteries in an explosive atmosphere! Potential spark during this procedure can create an explosion!



**WARNING!** Batteries may ONLY be replaced with the following:  
Duracell MN1500    Duracell MX1500    Energizer E91  
Incorrect battery selection presents a safety hazard.

For access to the batteries\* (2 AA cell batteries - Figure 1)

- 1) Remove the four screws at the top and bottom of front bezel (Torx #T25).
- 2) Lift bezel off. Batteries are located on the backside of the of the display; use a Phillips head screwdriver to remove the cover to access the batteries.
- 3) Reassembly by reversing this procedure.

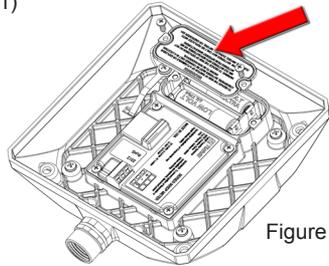


Figure 1

## Meter Chamber Assembly

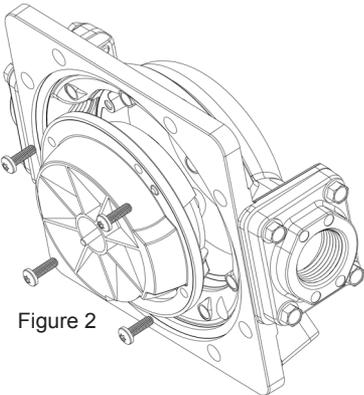


Figure 2

The Meter Chamber consists of upper and lower chambers, a nutating disc, and four screws (figure 2).

The meter chamber can be dislodged by removing 4 screws.

Reassemble by reversing this procedure.



**IMPORTANT!** If replacing any components of the meter chamber, complete assembly must be replaced due to its precision method of construction. This will assure a proper fit, and correct operation of the chamber.

## Repair

Meters needing repairs should be taken to an authorized repair facility. Meters MUST be triple rinsed before taking them in for repairs.

## Safety Testing Approvals

The Fill-Rite 900D series meters have been tested for compliance to the standards set forth by Underwriters Laboratories (UL), UL Canada, ATEX, and other testing organizations. To determine which specific compliances apply to your particular meter, refer to the faceplate for information and compliance logos (see "Certification Information" on page 16 for details).



IECEX

## Replacement Parts Information

Replacement parts can be obtained through any authorized Fill-Rite dealer. Be sure to use only genuine Fill-Rite replacement parts for your service and maintenance needs. For a list of authorized dealers, please visit our web site at “www.fillrite.com”.



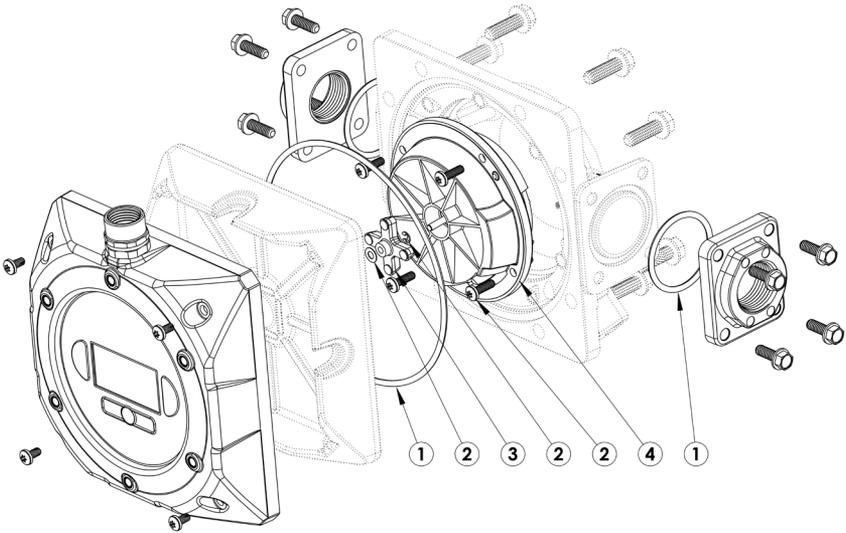
**WARNING!** Substitution of parts may impair intrinsic safety.

### Models with Intrinsically Safe Barrier

900CDP, 900CDP1.5, 900CDPBSPT, 900CDP1.5BPST

### Models without Intrinsically Safe Barrier

900CDPX, 900CDPX1.5, 900CDPXSPT, 900CDPX1.5BSPT



900 Series Digital Meter Replacement Parts Kits

Kit Number	#	Description	Qty
KIT900DKY	1	Required Seal	3
	2	Required Fasteners	6
	3	Magnetic Driver	1
	4	Chamber Assembly	1
KIT900DPBA	5	Intrinsically Safe Barrier	1

## 900 Series Digital Meters w/Pulser (w/Barrier)

Certain 900 Series Digital Meters (model number suffix of DP) can be powered externally and are equipped with an integral electronic pulser unit for use with Fuel Management Systems.

The Fuel Management System must be configured for current sinking or contact closure types of signals. The meter provides ten counts per unit of measure (in gallon, liter, and quart units of measure only; pulser does not operate in ounce, pint, or user specific units of measure).

For installations in explosive atmospheres, the intrinsically safe barrier must be used. This barrier provides safe electronic connection for all installations, and is mandatory where the meter is located in an area explosive fumes can accumulate (i.e: minimum 20' circle around gasoline pumping equipment). Further information on intrinsically safe barrier installations is located on page 12 and in the detailed wiring information included in the box with your meter.

## 900 Series Digital Meters w/Pulser (w/o Barrier)



For meter installations not located in explosive atmospheres, the intrinsically safe barrier is recommended, but not required. The barrier simplifies wiring and improves current sink and voltage quality, though the pulser in the meter is designed to function directly with Fuel Management Systems using a current sink output with a maximum load of 20mA. Further information on non-barrier installations is located on page 13 and in the detailed wiring information included in the box with your meter.

## Electrical Installation Information

There are multiple electrical configurations for the 900DP Series Digital Meter, featuring two different power sources. It is critical that the meter be installed and wired correctly to ensure correct, safe operation.



**WARNING!** Electrical wiring should be performed **ONLY** by a licensed electrician in compliance with local, state, and national electrical codes (NEC/ANSI/NFPA 70, NFPA30, and NFPA 30A in US installations for example), as appropriate to the intended use of the meter. The barrier must be properly connected to an earth ground. Improper installation of this meter and barrier can result in equipment failure or damage, serious bodily injury, or death!



**CAUTION!** For meter installations using external power, the power should come from a dedicated circuit. No other equipment should be powered by this circuit. Wiring must be of sufficient size to carry the correct current for the meter. Voltage drop will vary with distance to meter and size of wire; refer to the National Electrical Code (NEC), or local codes, for Voltage Drop Compensation to be sure you are using the correct size wire for your application. Wiring between the barrier and meter **MUST NOT** exceed 850'. Refer to "Typical Installation" wiring information document DC000675-010 (included in the meter box) for details.



### **IMPORTANT! Explosion Proof versus Intrinsically Safe:**

There is a distinct difference between a product that is "Explosion Proof" versus a product that is "Intrinsically Safe". Intrinsically Safe products do not generate enough heat or energy to cause ignition or explosion. They are safe to use in an explosive atmosphere (i.e.: around fuel tanks, etc. where explosive vapors may be present). Explosion Proof products are designed to contain an explosion internally if one should occur. **Understanding the difference between the two is critical when installing a new item to be certain the installation is safe and to code.**

## Internal Power (Battery Power)

All 900DP Series Digital Meters are battery powered. The battery tray is located behind the faceplate (see illustration page 8). Power is supplied by two alkaline “AA” batteries. With normal use, these batteries should provide 2 – 4 years of service. The digital display has an integral warning of low battery level (see page 6 for details).



**WARNING!** To reduce the risk of explosion **DO NOT** mix old batteries with new batteries, or mix batteries of different manufacturers.



**WARNING!** Batteries may **ONLY** be replaced with the following:

Duracell MN1500    Duracell MX1500    Energizer E91

Incorrect battery selection presents a safety hazard.

## External Power

900DP Series Digital Meters can use an external power source to operate. **Regardless of the source (AC or DC), external power MUST be routed through the Intrinsically Safe Barrier any time the meter is installed in an explosive atmosphere. External power sources MUST be within the rated parameters of the intrinsically Safe Barrier and meter.**

### External AC Power

External AC power **CANNOT** be applied directly to the 900DP meter. **It must be routed through the Intrinsically Safe Barrier regardless of meter installation location. The 900DP Meter is not designed for direct AC power input. See Intrinsically Safe barrier wiring information on page 12 for additional information.**

### External DC Power

The 900DP meter can be powered directly by an external DC power source (such as a Fuel Management System) that operates within the meters parameters. The Intrinsically Safe Barrier **MUST** be used anytime the meter is installed in an explosive atmosphere. For additional information on non-barrier installations, see page 13.



900CDP Battery and Wiring Access



Intrinsically Safe Barrier

## Installation using the Intrinsically Safe Barrier



**WARNING!** The instructions on this page are intended as an introduction to the proper wiring procedure for the Series 900DP Digital Meter. Detailed wiring instructions and information are included in the 4 page document labeled: **“FILL-RITE SERIES 900DP METER, INTRINSICALLY SAFE FLOWMETER”** (control drawing DC000675-000), included in the box with your meter. These instructions **MUST BE READ AND UNDERSTOOD COMPLETELY PRIOR** to installation. See **“WARNING”** under “Electrical Installation Information” on page 10 and 11 prior to beginning installation.



**WARNING!** Substitution of components will impair intrinsic safety!



**WARNING!** To prevent ignition of combustible or flammable atmosphere, disconnect power before servicing.



**WARNING!** To prevent ignition of flammable or combustible atmosphere, do not use a volt meter or similar powered tools during live maintenance.



**WARNING!** Intrinsically Safe Barrier must be housed in a environmentally safe container.



The Intrinsically Safe Barrier is designed to work with the following incoming power sources:

12 - 40 VDC  
or  
90 - 240 VAC, 50 - 60 Hz

(US: 120 VAC, 60Hz, Load Neutral Ground)  
(EU: 230 VAC, 50Hz, Load Neutral Ground)

- A) Output to Meter  
Power: +  
Power: -  
Pulsar Signal
- B) Output to FMS  
1 - Output  
2 - Unused  
3 - Output
- C) AC Power Input  
Line  
Ground  
Neutral
- D) DC Power Input  
DC+  
DC-

## Meter Installation (w/o Intrinsically Safe Barrier)



**WARNING!** The instructions on this page are intended as an introduction to the proper wiring procedure for the Series 900DP Digital Meter. Detailed wiring instructions and information are included in the 4 page document labeled: “**FILL-RITE SERIES 900DP METER, INTRINSICALLY SAFE FLOWMETER**” (control drawing DC000675-000), included in the box with your meter. These instructions **MUST BE READ AND UNDERSTOOD COMPLETELY PRIOR** to installation. See “**WARNING**” under “Electrical Installation Information” on page 10 and 11 prior to beginning installation.



For meter installations not located in explosive atmospheres, the intrinsically safe barrier is recommended, but not required. The barrier simplifies wiring and improves current sink and voltage quality. The pulser in the meter is designed to function directly with Fuel Management Systems using a current sink output with a maximum load of 20mA.

The Series 900DP Digital Meter can be wired directly to an external DC power source that operates within the meters parameters (7.5 - 28 VDC, .2A). Any external power sources should be clean DC from a dedicated circuit. The connections are made at the terminals on back of the meter. Note the three connections; “+” and “-” for external DC power, and “S” for pulser signal.



**WARNING! DO NOT** install the Series 900DP meter in explosive atmospheres without the Intrinsically Safe Barrier!



Three wire cable coming into the meter should be limited to only as much as is necessary to complete the wiring. **Excess wiring should not be left inside the meter.**

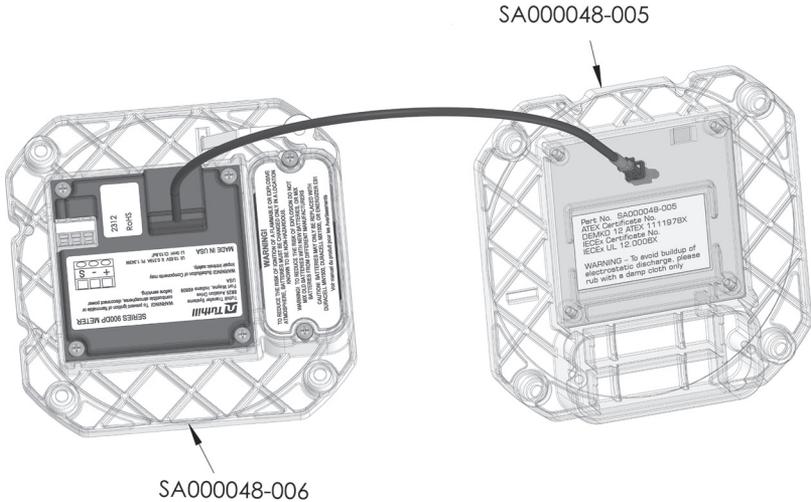


Auxiliary power and pulser connection at meter. Note three connections: DC+, DC-, and Pulser Signal.

## Reed Switch Information (cabinet models only)



**WARNING! CONDITIONS FOR SAFE USE:** The Remote Reed Switch Assembly Part No. SA000048-005 is provided with a non-metallic housing. Care must be taken to avoid ignition hazards due to potential electrostatic charging hazard.



## Technical Specifications and Information

**Dimensions:** 6.75" (H) x 8.46" (W) x 4.10" (D)

**Accuracy:**  $\pm 1.25\%$

**Repeatability:**  $\pm 0.25\%$  at calibrated flow rate.

**Flow Rate:** 6 to 40 GPM (22.7 to 151.4 LPM)

**Pressure Rating:** 50 psi (3.5 Bar)

**Construction:** Aluminum

**Units of Measure:** Ounces, pints, quarts, liters, gallons, 1 special "unit of measure" option.

**Counter:** 4 digit resettable counter; (.01 – 9999 units).

**Totalizers:** 7 digit non-resettable "Master" totalizer, 7- digit resettable secondary.

**Mounting Options:** Can be installed for vertical or horizontal mounting by rotating display accordingly.

**Power Supply:** 2 "AA" batteries (Dura-cell MN1500, MX 1500, or Energizer E91 Alkaline batteries only); optional external power through Intrinsically Safe Barrier.

**Expected Battery Life:** 2 – 4 years of normal use with standard Alkaline batteries.

**Operating Temperature Range:**  $-40^{\circ}$  to  $60^{\circ}$  C (Pulser units have face heat for extended use down to  $-40^{\circ}$ ; note that display goes blank below  $-40^{\circ}$  but meter and pulser will continue to operate normally).\*

\*See Specific Conditions of Use on page 15.

## Dimensions



## Specific Conditions of Use

The following information is provided in compliance with UL standards to define specific safety parameters under which this appliance must be operated.



**WARNING!** Batteries may **ONLY** be replaced with the following:

Duracell MN1500    Duracell MX1500    Energizer E91

Incorrect battery selection presents a safety hazard.



**WARNING! CONDITIONS FOR SAFE USE:** The Remote Reed Switch Assembly Part No. SA000048-005 is provided with a non-metallic housing. Care must be taken to avoid ignition hazards due to potential electrostatic charging hazard.

The Series 900DP meters may be used in an ambient temperature range of -40°C to +80°C when backup battery cells are not installed, and in an ambient temperature range of -40°C to +60°C when backup battery cells are installed.

The housing of the Series 900 DP meter is made of powder coated aluminum. Care must be taken in installation to make sure the powder coated aluminum meter case does not wear away to expose bare metal, or that it is not installed where friction sparking may occur.

## Warranty Information

Your quality Tuthill / Fill-Rite product carries a full manufacturers limited warranty. For terms and conditions of that warranty please visit [www.fillrite.com](http://www.fillrite.com). Tuthill Corporation recommends you retain your sales receipt as proof of purchase.

## Certification Information

The following is a list of standards used to attain certification:

IEC 60079-0, 6th ed.,  
 IEC 60079-11, 6th ed.,  
 IEC 60079-26, 2nd ed.,  
 EN 60079-0:12+A11:2013,  
 EN 60079-11:2012,  
 EN 60079-26:2007,  
 CAN/CSA C22.2 No. 60079-0:11,  
 CAN/CSA C22.2 No. 60079-11:14,  
 UL 913, 7th ed. (Rev. 2011-09-23),  
 UL 60079-0, 5th ed.,  
 UL 60079-11, 5th ed.,  
 CAN/CSA C22.2 No. 157-92.



## Entity Parameters

The Series 900DP meter has the following entity parameters:

$U_i = 13.65 \text{ V}$      $I_i = 0.319 \text{ A}$      $P_i = 1.343 \text{ W}$      $L_i = 0 \text{ mH}$      $C_i = 10.8\mu\text{F}$



**WARNING!** Substitution of components will impair intrinsic safety!



**WARNING!** To prevent ignition of combustible or flammable atmosphere, disconnect power before servicing.



**WARNING!** To prevent ignition of flammable or combustible atmosphere, do not use a volt meter or similar powered tools during live maintenance.