



# DR 5-30 Owner's Manual

# STOP

**DO NOT RETURN  
THIS PRODUCT  
TO THE STORE!**

Please contact GPI before returning any product. If you are missing parts or experience problems with your installation, our Customer Support Department will be happy to assist you.

GPI Customer Support  
800-835-0113 or  
316-686-7361



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### To the owner...

Congratulations on receiving your GPI DR 5-30 Meter. We are pleased to provide you with a meter designed to give you maximum reliability and efficiency.

Our business is the design manufacture, and marketing of liquid handling, agricultural, and recreational products. We succeed because we provide customers with innovative, reliable, safe, timely, and competitively-priced products. We pride ourselves in conducting our business with integrity and professionalism.

We are proud to provide you with a quality product and the support you need to obtain years of safe, dependable service.

President  
Great Plains Industries, Inc

## GENERAL INFORMATION

The purpose of this manual is to assist you in installing, operating and maintaining your digital fuel meter. Please take a few moments to read these instructions before installing and operating your fuel meter.



## SAFETY INSTRUCTIONS



The following safety alert symbols are used in this manual.



**DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

It is your responsibility to:

- Know and follow applicable national, state and local safety codes pertaining to installing and operating electrical equipment for use with flammable liquids.
- Know and follow all safety precautions when handling petroleum fuels.
- Ensure that all equipment operators have access to adequate instructions concerning safe operation and maintenance.

1. This meter is designed for use with Gasoline, Gasoline/Ethanol blends at levels designated as "gasohol" (E10 maximum), diesel and kerosene.

2. Do not use this equipment for dispensing any fluids other than those for which it was designed. Doing so may damage the meter and will void the warranty.

3. **⚠ DANGER** Observe precautions against fire or explosion when dispensing fuel. Do not operate the meter in the presence of any source of ignition including running or hot engines, lighted cigarettes, or gas or electric heaters.

4. **⚠ WARNING** Any components such as hose, nozzle, or pump added to your meter must be statically grounded and approved for use with petroleum fuels.

5. **⚠ WARNING** Avoid prolonged skin contact with petroleum fuels. Use protective goggles, gloves, and aprons in case of accidental splashing or spillage. Change saturated clothing and wash skin contact areas promptly with soap and water.

6. **⚠ WARNING** Part of the enclosure is constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should be cleaned only with a damp cloth.

7. **⚠ WARNING** The apparatus enclosure contains aluminum and is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.

8. **⚠ WARNING** To reduce the risk of ignition of a flammable or explosive atmosphere, batteries must be changed only in a location known to be non-hazardous.
9. **⚠ CAUTION** Use only Energizer® L91 (Ultimate Lithium) batteries.
  - Type: Lithium/Iron Disulfide.
  - Size: AA.
  - Voltage: 1.5V.
10. **⚠ WARNING** To reduce the risk of explosion do not mix new batteries with used batteries or mix batteries from different manufacturers.

### Product Description

The DR 5-30 Digital Fuel Meter is designed for the field measurement of thin viscosity petroleum fuels only and intended for use with pump systems in the 5 to 30 GPM or 19 to 114 LPM flow range (not intended for gravity flow systems).

Using computer electronics, this meter translates flow data from a rotating disc into calibrated units displayed on the face of the meter.

**NOTE:** A pulse access connection is also included to provide an open collector signal to a customer supplied remote device. (See Pulse Access Installation at the end of the Calibration Section.)

The computer electronics are designed specifically for use on the DR 5-30 Meter. The CMOS micro-processor-based electronics have extremely low power requirements and data retention capabilities in both RAM and ROM. Information is clearly displayed on a large 4-digit LCD readout with one-point floating decimal for totals from 0.1 to 9999. All opera-

tions are easily accessed with the three buttons on the front panel.

This meter is factory calibrated for diesel fuel. Field calibration feature is available for other fluids, see Calibration Section.

Upon receipt, examine your equipment for visible damage. The computer is a precision measuring instrument and should be handled as such. If any items appear damaged or missing, contact your distributor.

### Carton Contents

Meter .....	1 ea.
45° Fittings (Rotatable)...	2 ea.
Hardware Kit:	
Nuts .....	4 ea.
Bolts .....	4 ea.
O-rings .....	2 ea.
Strainer .....	1 ea.
Owner's Manual	
Literature .....	1 ea.
Strain Relief w/O-ring .....	1 ea.

Environmental seal for open collector signal output cable when required by users operation. (See Pulse Access Installation at the end of the Calibration Section.)

## INSTALLATION

Before installing your meter, review the safety instructions given above. Plan your meter installation by reviewing the following procedures:

Your system must be mounted on a vented tank. If the tank is unvented, your local dealer or distributor can supply a pressure cap.

If the meter is located in a rigid piping system where the fluid is trapped (for example, by gravity, valves or nozzles) thermal expansion of the fluid can create pressure spikes that can damage a meter.

Install a thermal relief valve or otherwise allow for thermal expansion of the fluid.

Prior to installation, determine the fitting angle desired and whether horizontal or vertical orientation is required. See Illustrated Parts List for assembly details.

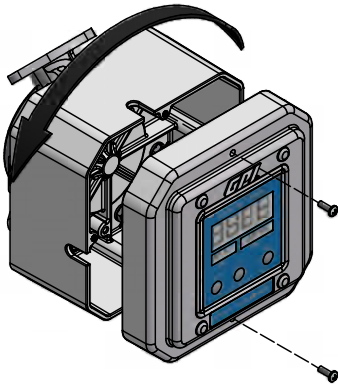
### Rotate Fittings

To rotate inlet and/or outlet fittings, remove the two nuts and bolts that secure each fitting. Rotate the fitting to the desired orientation. Whether installing or rotating fittings, make sure the O-ring is fully seated and the strainer is installed in the inlet opening of the meter body. Torque the nuts and bolts to 60-72 in-lb (recommended) or until tight.

### Change Meter/Cover Orientation

1. Remove the two screws that hold the cover in place and remove the cover (Figure 1).

Figure 1



2. You can now rotate the entire meter body or the cover to the desired orientation without further disassembly. Reassemble the cover in the desired rotational position and tighten the screws. The cover will fit in any of four rotational positions around the front of the meter body without affecting meter operation or accuracy.

### Meter Installation

1. Remove protective plugs from the meter inlet and outlet ports and install inlet/outlet fittings.
2. Wrap any threaded male connections with thread tape or use a pipe sealant compound compatible with petroleum fuels. We recommend thread sealant approved for flammable liquids at the inlet fitting in horizontal orientation.
3. Install the meter on the pump using an appropriately sized nipple. The meter's flow path is marked on the housing exterior with an arrow pointing toward the outlet port.
4. Install other system components on the meter and tighten.

To ensure accurate measurement, remove all air from the system before use. It is strongly recommended that accuracy be verified prior to use. To do this, remove all air from the system, measure an exact known volume into an accurate container, and verify the volume against the readout or recording equipment. If necessary, use a correction factor to figure final volume. For best results, accuracy should be verified periodically as part of a routine maintenance schedule.

### OPERATION

**ALWAYS FOLLOW SAFETY PRECAUTIONS WHEN OPERATING THIS EQUIPMENT. REVIEW THE SAFETY INSTRUCTIONS.**

Before use, visually check the meter to ensure it is securely connected to other system components and there is no leakage. Promptly wipe spilled fuel from the meter's exterior and other system components.

## Electronic

This meter is UL Listed as Intrinsically Safe for Class1, Division1, Group D.  $-29^{\circ}\text{C} < \text{Ta} < 60^{\circ}\text{C}$ .

NOTE: The UL Listing only applies to models with NPT threads.

## Computer Display

All operations are reflected in the three computer LCD readouts. The large center display represents the batch total for each fuel delivery. The small display on the left represents the units of measure being dispensed. The small display on the right represents the cumulative total of all fuel deliveries and cannot be reset. The LCD display has LED backlighting function that can be turned on when needed for viewing in low light or darkness.

## Computer Buttons

The three buttons on the face of the computer are used to perform their labeled functions (noted below) and other unlabeled functions described in the Calibration Section.

LIGHT: Press and hold to illuminate the backlight LCD display for viewing in low light or darkness. Judicious use of this feature will prolong battery life.

CAL: This button is used in the field configuration and calibration procedures described later in this manual.

RESET: Press and hold for about 3 seconds to reset the BATCH TOTAL to zero. This button is also used in the field configuration and calibration procedures described later in this manual.

## Activating the Meter

The computer is on continuously and always ready to perform. The computer is powered by off-the-shelf field replaceable batteries. When display becomes dim, faded or the low battery message appears (see below), the batteries need to be replaced. Reference the Maintenance Section for details.



## Batch and Cumulative Totals

The computer maintains two totals. The cumulative total provides continuous measurement and cannot be manually reset. The batch total can be reset to measure flow during a single use. The cumulative total is displayed on the small display on the right, labeled TOTAL. The batch total is displayed on the large centered display and is labeled BATCH TOTAL.

When the BATCH TOTAL reaches a display reading of 999.9 and the next rollover occurs, the floating decimal adjusts to the right and the BATCH TOTAL continues displaying in whole units only.

Press and hold the RESET button for about 3 seconds to reset the BATCH TOTAL to zero.

## Units

The unit of measure being dispensed is displayed in the small display on the left, labeled UNITS. The unit of measure can be changed in the field.

## Factory Configuration

All units with NPT fittings leave the factory configured for gallons. Units with BSPP fittings leave the factory

configured with litres. Other units of measure are programmed into the computer and can be invoked by “toggling” to their setting to suit your operational requirements. Press and hold the CAL button down for about 3 seconds to “toggle” to the next unit. Repeat this procedure to toggle to the next unit and continuing as needed to reach the unit of choice.

The following units of measure are programmed into the computer in the sequence shown:

US Gallons	<b>GAL</b>
Imperial Gallons	<b>GA,</b>
Liters	<b>LtR</b>
Pints	<b>Pt</b>
Quarts	<b>Qt</b>
Barrels (42g)	<b>bL</b>
Ounces	<b>ou</b>

(Special Order Units: Cubic Centimeters, Cubic Feet and Cubic Meters)

Switching between different units will not corrupt the Total’s contents, even while fluid is flowing since all numeric displays are appropriately scaled. For example, in gallon mode the computer totalizes 10.0 gallons. If the user switches to litre mode, the display will read 37.85 litres (the same volume, different unit).

**CALIBRATION**

The meter is accurately calibrated at the factory for use with diesel fuel. Due to differences in viscosity, flow rates or under extreme temperature conditions, readings using the Factory Calibration may show inaccuracies.

For improved accuracy under such conditions, the computer allows for “field” calibration, that is, user entry of custom calibration parameters.

**NOTE:** The calibration screw on the side of the meter is used to achieve accurate calibration at the factory. User adjustment of this screw will invalidate the factory calibration settings.

The computer “field” calibration can be user changed or modified at any time using the calibration procedure described in this section. All calibration information is visible to the user in the three display windows during the calibration process.

Totals or flow rate derived from the field calibration are invoked when “FLdCAL” is intermittently visible (every 4 seconds) in the TOTAL display window during normal use (see below).



This is a visible cue that the meter is operating in field calibration. Factory calibration has no visible cue during normal use.

**Verify Accuracy Before Beginning Field Calibration**

For the most accurate results, dispense at a flow rate which best simulates your actual operating conditions. Avoid “dribbling” more fluid or repeatedly starting and stopping the flow. This can result in less accurate calibrations.

**Field Calibration Procedures**

1. Purge air from the meter and fuel system by dispensing fuel into a container until a full flow occurs. Close the nozzle.

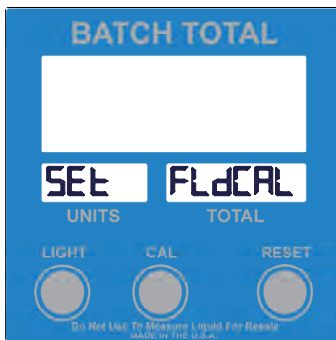
2. Reset the Batch Total to zero by pressing the reset button.
3. Pump into a graduated calibration container to a specified quantity. For the greatest accuracy, be sure the container is placed on a level surface and a consistent flow rate is used. When topping off the calibration container, use a quick-open and quick-close method until the mark is reached (avoid dribbling).
4. Compare the meter display to the quantity in the container. If the meter display does not register the quantity in the container, adjust the meter by using the “correction factor” method.

### Correction Factor Method

This method allows the user to enter an electronic correction factor into the computer by adjusting its calculations as a percentage factor (plus or minus) from the Factory Calibration.

1. To calibrate, press and hold the CAL and RESET buttons simultaneously for about 3 seconds until you see “SEt FLdCAL” in the two lower displays (Figure 2).

Figure 2



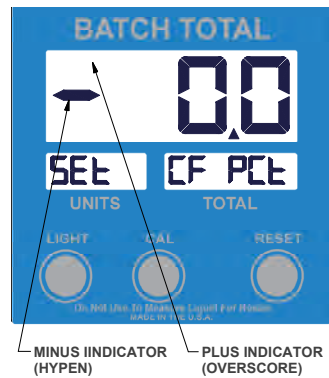
2. Release the buttons and you will see “SEt CF Pct” in the two lower displays and “0.0” in the large

display and a blinking plus/minus indicator to its left (Figure 3).

A blinking character indicates that it is “active” and can be “toggled”.

You are now in the field calibration mode and correction values from -99.9% to +99.9% can be entered. The plus/minus indicators appear either as an “overscore” character for plus, or a “hyphen” character for minus.

Figure 3



The CAL button “toggles” this character from plus to minus. The “overscore” symbol is only visible when active. It is shown with a dashed outline in the graphic for positional reference only.

The RESET button selects the character to “toggle” and the CAL button “toggles” this character.

3. The RESET button can then be pushed to select the numeric positions. Press the CAL button to scroll from 0 to 9. Enter the percentage of change you want the display to correct (i.e. If the display reads less than actual, then a plus correction is needed and if the display reads more than actual, a minus correction is needed). When satisfied with

the value, press both CAL and RESET buttons simultaneously. "CALEnd" will be displayed in the TOTAL display (Figure 4) and unit will now be in normal operation with field calibrated correction factor invoked.

NOTE: Factory testing has determined that unleaded gasoline has a correction factor of approximately +3.0.

Figure 4



4. "FLdCAL" will be displayed in the TOTAL display window (about every 4 seconds) during normal operation, as a visual cue that you have invoked and are operating in Field Calibration mode.
5. All remaining units of measure remain selectable and the entered correction will be applied to all units of measure.
6. To return to factory calibration, press and hold both CAL and RESET buttons simultaneously for about 3 seconds until "FACcCAL" is displayed in TOTAL display (Figure 5). Then release buttons. Unit will return to normal operation in the factory calibration mode.

Figure 5



### Pulse Output Access

The DR 5-30 electronics design has an output pulse available for customers seeking to send information to interfacing equipment. This output pulse is an open collector (a.k.a. current sinking or NPN) signal suited for transmission over a 2-conductor, customer supplied cable.

This output is NOT scaled to any particular pulse per unit of measure (i.e. 10 pulses per litre or 100 pulses per gallon). It is raw meter pulses that equate to approximately 185 pulses per gallon of diesel at 20 GPM or approximately 180 pulses per gallon of unleaded gasoline at 20 GPM. Temperature, plumbing configurations, fluid types and flow rate will affect the actual value.

The customer must verify accuracy of equipment before usage.

An environmental sealing strain relief with O-ring is included with the DR 5-30 for customer use when employing the pulse output capability of the meter.

Recommended cables (or equivalent): Belden 9501 or 9363, Carol C0451 or Alpha 5640B2201. The strain relief provided with the DR 5-30 Meter will accept a cable of .12-.26 inches O.D.



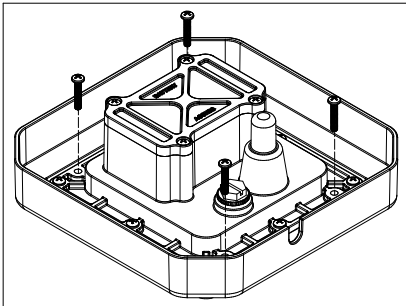
A UL listed Intrinsic Safe Barrier is required for pulse output usage. It must be suitable for the entity parameters listed on Control Drawing 126340-01 supplied in this manual.

### Pulse Access Installation

To install cable to access the pulse output signal, follow the instructions given below.

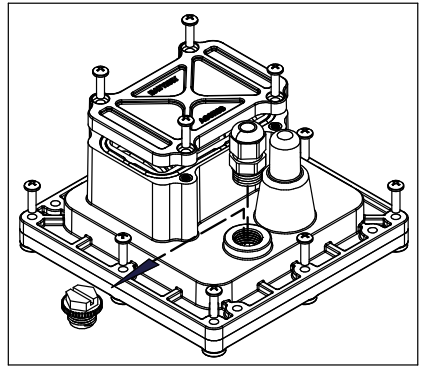
1. Remove the cover (retained by two screws) from the meter body and place it face down on work surface away from fuel source.
2. Remove the computer display assembly (retained by four screws) from the cover and place face down on work surface (Figure 6).

Figure 6



3. Remove the threaded plastic plug and O-ring from the computer display assembly back housing and install the strain relief w/O-ring into the vacated threaded hole and tighten to 4-5 in-lb (recommended) or until tight. Leave domed top screw seal of strain relief loose for now (Figure 7).

Figure 7

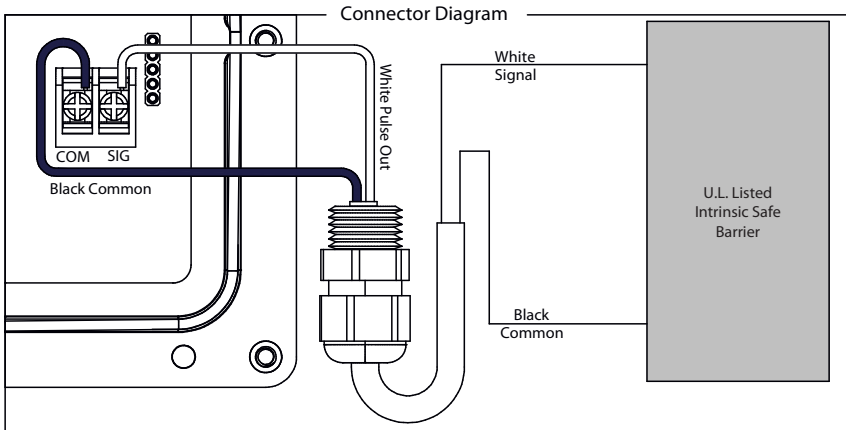


**WARNING** To reduce the risk of ignition of a flammable or explosive atmosphere, batteries must be changed only in a location known to be non-hazardous.

4. Remove the batteries from the battery compartment.
5. Remove the computer display back housing (retained by eight screws) from the computer, leaving all interior wiring intact (Figure 7).
6. Strip 6 inches of jacket from one end of cable, then strip .25 inches of insulation from the black and white wires. Tinning the ends with solder is recommended.
7. Thread stripped cable end through strain relief and connect white wire to outboard position (SIG) of terminal block and black wire to inboard terminal (COM). An internal wiring diagram decal is on inside of computer display for reference (Figure 8).

**CAUTION** If using a 3-conductor cable, do not connect the third wire. This pulse access does not require connection of a third wire. Doing so may cause damage.

Figure 8



8. Adjust the cable so the jacket ends at the bottom end of the strain relief and tighten the domed top to environmentally seal the cable entry.
9. Reinstall the computer display back housing onto the computer, ensuring the O-ring is securely seated and no wires are pinched. Tighten screws.
10. Reinstall batteries, ensuring the O-ring is securely seated and no wires are pinched. Tighten screws.
11. Reassemble computer display to cover and tighten screws. Reattach cover to meter body, running cable through side slot in cover.

#### Clean or Replace Strainer:

1. Remove the nuts and bolts at the inlet fitting. Remove the fitting, O-ring, and strainer.
2. Using a fine brush, clean the strainer. Replace the strainer as necessary.
3. Wipe clean the inlet, housing, and O-ring groove. Coat the O-ring with oil or light grease. Make sure the O-ring is fully seated. Replace the strainer.
4. Position the inlet fitting in the desired orientation and torque the nuts and bolts to 60-72 in-lb (recommended) or until tight.

Reference 126340-01 drawing in this manual and included with this product for specifications regarding Safety Barriers and their installation.

## MAINTENANCE

### Mechanical

The meter's strainer should be cleaned at regular intervals, especially when low flow is detected.

### Electronic

The computer electronics is powered by four AA size 1.5 volt lithium batteries.

#### **⚠ WARNING**

Use only Energizer® L91 (Ultimate Lithium) batteries.

- Type: Lithium/Iron Disulfide.
- Size: AA.
- Voltage: 1.5V.

**CAUTION** Lithium batteries are used because of their wide temperature operating range and safety. Any other cell type is not recommended.

**WARNING** To reduce the risk of explosion do not mix new batteries with used batteries, or mix batteries from different manufacturers.

**WARNING** To reduce the risk of a flammable or explosive atmosphere, batteries must be changed only in a location known to be non-hazardous.

**CAUTION** Always remove batteries before separating the computer from the computer display back housing.

Removing the batteries before storing the meter will extend battery life. If the meter's readout should become dim, blank or the low battery message appears (see below), the batteries should be replaced. Replacement batteries are available as an off-the-shelf general consumer item.

## LobAtt

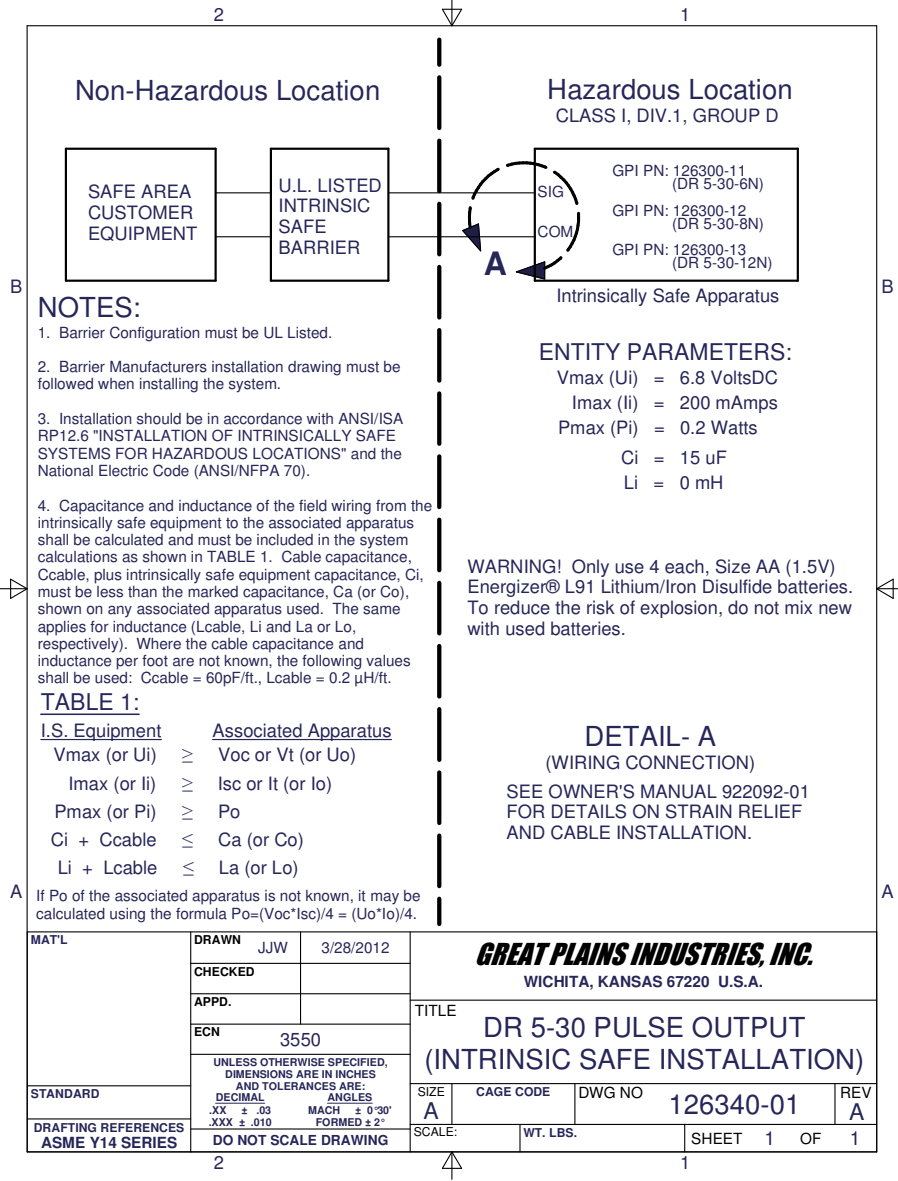
When batteries are disconnected or fail the Batch and Cumulative Totals will maintain the value they had. Factory and Field Calibration Curves are retained in the meter's computer when power is lost.

It is strongly recommended that battery check and terminal cleaning be a part of a routine maintenance schedule. Battery terminals should be cleaned annually. Batteries can be replaced without removing the meter from the piping system.

## Replace Batteries

1. Remove the two screws that retain the aluminum cover on the meter and remove the cover with the attached computer display assembly.
2. Remove the four screws that retain the battery access cover. The O-ring seal should be retained in the housing gland by molded-in retainers.
3. Lift the battery holder from its cavity and remove the batteries.
4. Check the battery terminals and remove any corrosion.
5. Install the new batteries. When the batteries are installed correctly, the computer powers on automatically and the readout displays information.
6. Return the battery holder to its cavity. Make sure the O-ring seal is fully seated and replace the battery cover. Tighten the four screws.
7. Do not clean exterior of the computer assembly with Isopropyl Alcohol.

# CONTROL DRAWING (126340-01)



**NOTES:**

1. Barrier Configuration must be UL Listed.
2. Barrier Manufacturers installation drawing must be followed when installing the system.
3. Installation should be in accordance with ANSI/ISA RP12.6 "INSTALLATION OF INTRINSICALLY SAFE SYSTEMS FOR HAZARDOUS LOCATIONS" and the National Electric Code (ANSI/NFPA 70).
4. Capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and must be included in the system calculations as shown in TABLE 1. Cable capacitance, C<sub>able</sub>, plus intrinsically safe equipment capacitance, C<sub>i</sub>, must be less than the marked capacitance, C<sub>a</sub> (or C<sub>o</sub>), shown on any associated apparatus used. The same applies for inductance (L<sub>able</sub>, L<sub>i</sub> and L<sub>a</sub> or L<sub>o</sub>, respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used: C<sub>able</sub> = 60pF/ft., L<sub>able</sub> = 0.2 μH/ft.

**TABLE 1:**

I.S. Equipment	Associated Apparatus
V <sub>max</sub> (or U <sub>i</sub> ) ≥	V <sub>oc</sub> or V <sub>t</sub> (or U <sub>o</sub> )
I <sub>max</sub> (or I <sub>i</sub> ) ≥	I <sub>sc</sub> or I <sub>t</sub> (or I <sub>o</sub> )
P <sub>max</sub> (or P <sub>i</sub> ) ≥	P <sub>o</sub>
C <sub>i</sub> + C <sub>able</sub> ≤	C <sub>a</sub> (or C <sub>o</sub> )
L <sub>i</sub> + L <sub>able</sub> ≤	L <sub>a</sub> (or L <sub>o</sub> )

If P<sub>o</sub> of the associated apparatus is not known, it may be calculated using the formula  $P_o = (V_{oc} \cdot I_{sc}) / 4 = (U_o \cdot I_o) / 4$ .

**ENTITY PARAMETERS:**

- V<sub>max</sub> (U<sub>i</sub>) = 6.8 VoltsDC
- I<sub>max</sub> (I<sub>i</sub>) = 200 mAmps
- P<sub>max</sub> (P<sub>i</sub>) = 0.2 Watts
- C<sub>i</sub> = 15 uF
- L<sub>i</sub> = 0 mH

**WARNING!** Only use 4 each, Size AA (1.5V) Energizer® L91 Lithium/Iron Disulfide batteries. To reduce the risk of explosion, do not mix new with used batteries.

**DETAIL- A**

(WIRING CONNECTION)

SEE OWNER'S MANUAL 922092-01 FOR DETAILS ON STRAIN RELIEF AND CABLE INSTALLATION.

<b>MAT'L</b>	<b>DRAWN</b> JJW 3/28/2012	<b>GREAT PLAINS INDUSTRIES, INC.</b> WICHITA, KANSAS 67220 U.S.A.			
	<b>CHECKED</b>				
	<b>APPD.</b>	<b>TITLE</b> <b>DR 5-30 PULSE OUTPUT</b> <b>(INTRINSIC SAFE INSTALLATION)</b>			
	<b>ECN</b> 3550				
<b>STANDARD</b>	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES AND TOLERANCES ARE: DECIMAL ANGLES .XX ± .03 MACH ± 0°30' .XXX ± .010 FORMED ± 2°				
<b>DRAFTING REFERENCES</b> ASME Y14 SERIES	<b>DO NOT SCALE DRAWING</b>	<b>SIZE</b> A	<b>CAGE CODE</b>	<b>DWG NO</b> 126340-01	<b>REV</b> A
<b>SCALE:</b>		<b>WT. LBS.</b>	<b>SHEET 1 OF 1</b>		

## TROUBLESHOOTING - MECHANICAL

SYMPTOMS	PROBABLE CAUSE	CORRECTIVE ACTION
Meter counter does not operate. (Normal fuel delivery)	<ol style="list-style-type: none"> <li>1. Foreign material in nutator assembly.</li> <li>2. Broken nutator disc pin or defective nutator assembly.</li> </ol>	<p>Remove and clean nutator assembly.</p> <p>Install new nutator assembly.</p>
Meter counter does not operate.  (little or no fuel flow)	<ol style="list-style-type: none"> <li>1. Clogged strainer in meter.</li> <li>2. Other system components malfunctioning.</li> <li>3. Foreign material in nutator assembly.</li> </ol>	<p>Clean or replace strainer.</p> <p>Check all system components, tank to nozzle for clogs and/or malfunctions. Repair as necessary.</p> <p>Remove and clean nutator assembly.</p>
Fuel leakage.	<ol style="list-style-type: none"> <li>1. Leakage between coverplate and housing.</li> <li>2. Leakage at fittings.</li> <li>3. Leakage at threads.</li> </ol>	<p>Remove coverplate and inspect for damaged, missing or incorrectly seated seal. Replace as required.</p> <p>Remove fittings and inspect for damaged, missing or incorrectly seated seals. Replace as required.</p> <p>Remove meter and reseal all threaded connections with thread tape or pipe thread sealing compound approved for use with flammable liquids.</p>

## TROUBLESHOOTING - ELECTRONICS

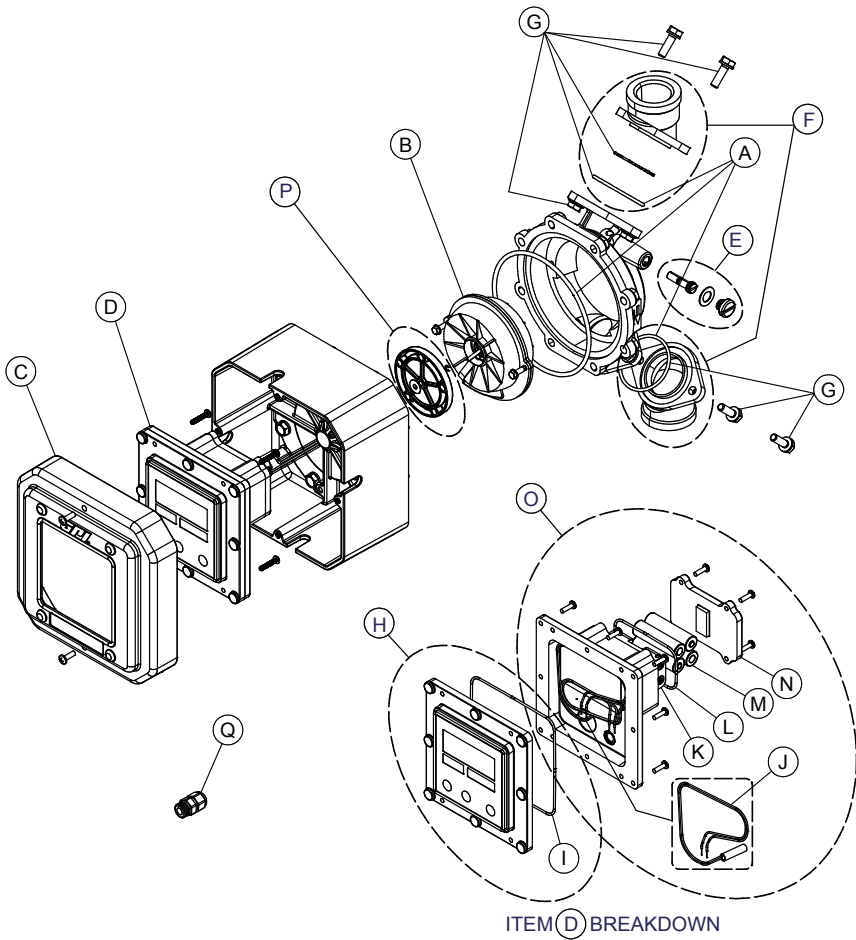
SYMPTOMS	PROBABLE CAUSE	CORRECTIVE ACTION
Meter is not accurate.	<ol style="list-style-type: none"> <li>1. Field Calibration not performed properly.</li> <li>2. Factory Calibration not suitable for liquid being measured.</li> <li>3. Meter operated below minimum flow rate.</li> <li>4. Installed too close to electrically "noisy" environment.</li> </ol>	<p>Field Calibrate again or select Factory Calibration.</p> <p>Perform a Field Calibration according to Calibration Section.</p> <p>Increase flow rate.</p> <p>Install correctly.</p>
Readout faded or blank.	<ol style="list-style-type: none"> <li>1. Batteries weak, dead, or not connected.</li> <li>2. Computer defective.</li> </ol>	<p>Check and replace batteries if necessary.</p> <p>Contact the factory.</p>
Normal flow rate but meter does not count.	<ol style="list-style-type: none"> <li>1. Field Calibration not performed correctly.</li> <li>2. Computer defective.</li> <li>3. Reed switch sensor defective.</li> </ol>	<p>Field Calibrate again or select Factory Calibration.</p> <p>Contact the factory.</p> <p>Replace sensor.</p>
Reduced flow rate and meter does not count.	<ol style="list-style-type: none"> <li>1. Below minimum flow rate.</li> </ol>	<p>Increase flow.</p>
Cannot get meter into Field Calibration.	<ol style="list-style-type: none"> <li>1. Wrong button sequence.</li> <li>2. Computer circuit board defective.</li> <li>3. Button defective.</li> </ol>	<p>Proceed with calibration according to the Calibration Section.</p> <p>Replace computer. Contact the factory.</p> <p>Replace computer. Contact the factory.</p>

## SPECIFICATIONS

<b>MECHANICAL</b>	
Flow Range	5 to 30 GPM / 19 to 114 LPM
Typical Accuracy	± 2%
Type	Nutating Disc
Housing Material	Aluminum
Maximum Working Pressure	50 PSIG / 3.4 bar
Inlet/Outlet Fitting Size	3/4", 1", or 1-1/2"
Threads	NPT or BSPP
Approximate Ship Weight	8.0 lbs. / (3.63 kg)
<b>Maximum Dimensions: (In Top to Bottom Flow Configuration)</b>	
Width:	6.6 Inches / (16.8 cm)
Height:	7.0 Inches / (17.8 cm)
Depth:	6.1 Inches / (15.5 cm)

<b>ELECTRONICS</b>			
<b>Standard Features Include:</b> 2 Totalizing Registers 1 Factory Calibration Curve 1 Field Calibration Curve 7 Units of Measure (Selectable)		Units of Measure: US Gallons, Quarts, Imperial Gallons, Barrels (42g), Litre, Ounces & Pints	
<b>Special Order Units:</b>		Units of Measure: Cubic Centimeters, Cubic Feet and Cubic Meters	
<b>Field Calibration Correction:</b> Minimum Maximum		-99.9% +99.9%	
<b>Readout Totals:</b> Batch Total Cumulative Total		0.1 to 9999 1 to 999999	
<b>Pulse Signal Output:</b> (Current Sinking) NPN/Open Collector Frequency		10-100 Hz	
<b>Entity Parameters: (For Safety Barrier)</b>			
Vmax (Ui)	6.8 VoltsDC	Ci	15 uF
Imax (Ii)	200 mAmps	Li	0 mH
Pmax (Pi)	0.2 Watts		
<b>Temperatures:</b> Operational Storage		-20° F to +140° F (-29° C to +60° C) -40° F to +158° F (-40° C to +70° C)	
<b>Power:</b> Internal Power Supply		4 AA Lithium Batteries at 1.5 Volts Each	
<b>Battery Life:</b>		2-4 years (Depends on frequency of backlight use)	
NOTES:    1. Accuracy is factory calibrated using diesel fuel. 2. Cable strain relief and O-ring are supplied with every meter for pulse access.			

# ILLUSTRATED PARTS LIST



ITEM D BREAKDOWN



## KITS AND ACCESSORIES

Item	Part No.	Description
<b>A</b>	126530-09	Seal Kit - (1 housing O-ring, 2 fitting O-rings)
<b>B</b>	126530-08	Nutator Assembly Kit – Includes hardware
<b>C</b>	126530-18	Computer Cover Kit – Includes hardware
<b>D</b>	126530-19	Computer Display Kit – Includes hardware & batteries
<b>E</b>	126530-11	Calibration Screw Kit – (1 Cal-screw, 1 washer, 1 O-ring)
<b>F</b>	126530-12	Fitting Kit for 3/4-inch NPT (2 fittings, 2 fitting O-rings, 1 strainer, 4 cap screws & nuts)
<b>F</b>	126530-13	Fitting Kit for 3/4-inch BSPP (2 fittings, 2 fitting O-rings, 1 strainer, 4 cap screws & nuts)
<b>F</b>	126530-14	Fitting Kit for 1-inch NPT (2 fittings, 2 fitting O-rings, 1 strainer, 4 cap screws & nuts)
<b>F</b>	126530-15	Fitting Kit for 1-inch BSPP (2 fittings, 2 fitting O-rings, 1 strainer, 4 cap screws & nuts)
<b>F</b>	126530-16	Fitting Kit for 1-1/2-inch NPT (2 fittings, 2 fitting O-rings, 1 strainer, 4 cap screws & nuts)
<b>F</b>	126530-17	Fitting Kit for 1-1/2-inch BSPP (2 fittings, 2 fitting O-rings, 1 strainer, 4 cap screws & nuts)
<b>G</b>	126530-10	Hardware Kit – (2 fitting O-rings, 1 strainer, 4 cap screws & nuts, 4 cap screws & nuts)
<b>H</b>	126530-20	Computer Kit – Includes computer O-ring
<b>I</b>	90100407	Computer O-ring
<b>J</b>	126530-21	Reed Switch Sensor Kit
<b>K</b>	126530-22	Battery Holder Kit
<b>L</b>	901004-09	Battery Compartment O-ring
<b>M</b>	90200784	Battery – (AA lithium-4 ea. required)
<b>N</b>	126530-23	Battery Door Kit – Includes hardware
<b>O</b>	126530-24	Computer Display Back Kit – Includes hardware, batteries, sensor
<b>P</b>	126530-25	Drive Key Signal Generator Kit – Includes magnets, washer, retainer ring
<b>Q</b>	126530-26	Strain Relief Kit- Includes O-ring
	125066-1	Cable – 10 ft. (Not shown-Used w/pulse access feature)
	125066-20	Cable – 20 ft. (Not shown-Used w/pulse access feature)
	125066-500	Cable – 100 ft. (Not shown-Used w/pulse access feature)

## PARTS AND SERVICE

For warranty consideration, parts, or other service information, contact your local distributor. If you need further assistance, please contact GPI Customer Service Department in Wichita, Kansas during normal business hours at 1-800-835-0113.

To obtain prompt, efficient service, always be prepared with 1.) The model number of your meter, 2.) The manufacturing date located on the back of the meter, and 3.) Specific information, as necessary, obtained from the Illustrated Parts List. For warranty work always be prepared with proof of purchase date.

Please contact GPI before returning any parts. It may be possible to diagnose the trouble and identify needed parts without returning parts. GPI can also inform you of any special handling requirements you will need to follow covering the transportation and handling of fuel transfer equipment. Before packing for shipment, make sure the meter is thoroughly drained and free of fuel and vapors.

## CAUTION

Do not return meters or parts without specific authority from the GPI Customer Service Department. Due to strict regulations governing shipment of flammable liquids, meters may be refused and returned to the sender if sent without authorization.



## Limited Warranty Policy

Great Plains Industries, Inc. 5252 E. 36<sup>th</sup> 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 from date of purchase as evidenced by the original sales receipt. A 30 month warranty from product date of manufacture will apply in cases where the original sales receipt is not available. Reference product labeling for the warranty expiration date based on 30 months from date of manufacture. 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.

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, contact the GPI Customer Service Department at 316-686-7361 or 800-835-0113. Or by mail at:

Great Plains Industries, Inc.  
5252 E. 36<sup>th</sup> St. North  
Wichita, KS, USA 67220-3205

GPI 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).



5252 East 36th Street North  
Wichita, KS USA 67220-3205  
TEL: 316-686-7361  
FAX: 316-686-6746

**GREAT PLAINS INDUSTRIES, INC.**

*"A Great Plains Ventures Subsidiary"*

[www.gpipumps.net](http://www.gpipumps.net)

**1-800-835-0113**