IDEAL PARA DEF

SOTERA® SYSTEMS

FR1118P10
MEDIDOR DIGITAL EN LÍNEA PARA DEF

Los clientes de Tuthill están habituados a los productos fiables y de gran calidad que funcionan en cualquier situación. Es por eso que estamos seguros de que nuestro nuevo medidor digital en línea FR1118P10 satisfará y excederá sus expectativas.

El medidor digital FR1118P10 es ideal para realizar mediciones de transferencias de DEF, agua y detergentes. Es fácil de manipular y de usar. Se puede instalar en línea o en el extremo de un tubo flexible, antes de la boquilla.

Gracias a la tecnología de medición de turbina, el medidor FR1118P10 mide líquidos de manera precisa y conveniente. Tiene una pantalla LCD de cinco dígitos fácil de leer, con un totalizador para dar seguimiento al uso total.

El medidor digital en línea FR1118P10. Es otro producto Sotera de gran calidad, que proporciona lo que nuestros clientes se han habituado a recibir de nosotros: fiabilidad, facilidad de uso y valorización.

GARANTÍA DE 1 AÑO

CARACTERÍSTICAS

- **Velocidad de flujo de 11 a 98 lpm**
- **Presión máxima de 4,8 bar**
- **Entrada/salida de 1" NPT**
- **Lectura de cinco dígitos con totalizador con restablecimiento**
- **Precisión de +/- 1 %**
- **Sistema de medición de la turbina**
- **Instale ya sea en línea o al final de la manguera de suministro**
- **Hecho de polipropileno con sellos de EPDM**
- **Para usar con agua, líquido de escape diesel (DEF, por sus siglas en inglés) o detergentes.**
- **Mide en:**
  - **Galones - Cuartos de galón - Pintas - Litros**

NO USAR con gasolina, diesel o keroseno

Tuthill
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Fort Wayne, Indiana 46809
www.sotera.com | 260.747.7524

SOTERA™
SYSTEMS

FR1118-P10

User's Manual

WARNING

Read carefully and understand all INSTRUCTIONS before operating.
Failure to follow the safety rules and other basic safety precautions may result in serious personal injury. Save these instructions in a safe place and on hand so that they can be read when required.

Tuthill
PUMP YOUR HEART INTO IT

1. INTRODUCTION

1.1 Technical Data

1.1.1 The turbine digital meter is designed for use with the following low viscosity fluids:

- Diesel Exhaust Fluid
- Water (**NOT** for human consumption)

WARNING! Use of other fluids may cause inaccurate readings and can damage the meter!

1.1.2 Flow Rate: 3-26 GPM, flow rates outside of this range may have reduced accuracy.

1.1.3 Operating pressure: 10BAR / 145PSI

1.1.4 Inlet/Outlet: 1" NPT

IMPORTANT! Not suitable for retail sale of dispensed fluids!

1.2 LCD DISPLAY

The meter display features two numerical registers and several function or status indicators.

#	Description
1	Register (5 digit, from 0.1-99999).
2	Battery condition.
3	"Calibration" mode.
4	Resetting current total to 0.
5	Totalizer Register (total cumulative fluid dispensed).
6	Rate of flow being displayed.
7	Unit of measure (liters, gallons, quarts, pints).

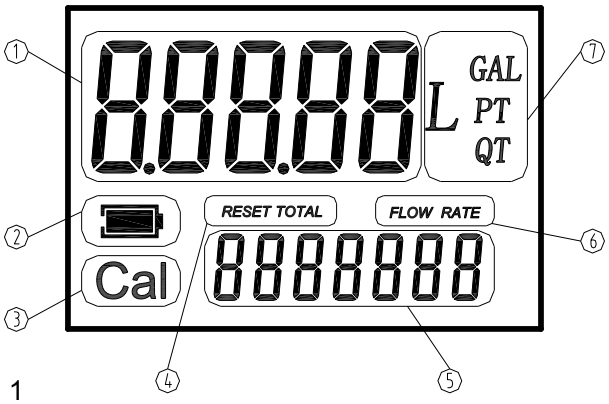


Fig. 1

1.3 USER BUTTONS

The face of the turbine digital meter has two buttons (MENU and RESET) which individually perform two main functions and together, other secondary functions. The main functions performed are:

- "RESET" key: resetting the Register and resettable total (reset total)
- "MENU" key: entering calibration mode.
- Used together, the two keys permit entering configuration mode.

1.4 BATTERY REPLACEMENT

The battery in your in-line digital meter is not replaceable. To minimize the possibility of fire or explosion, it is a sealed unit that does not allow for user replacement. Do not attempt to open or replace the battery in your meter.

2. INSTALLATION

The inlet and outlet for this meter is 1″ NPT. It can be easily connected to a pipe or nozzle.

3. DAILY USE

3.1 BUTTON USAGE, CALIBRATION AND MEASUREMENT UNIT CHANGE

- **Reset the present total (See Fig. 2)**

1) When the meter is in standby mode, press the RESET key.
2) The display shows all the segments at once.
3) The meter resets to display "0" on the resettable register.

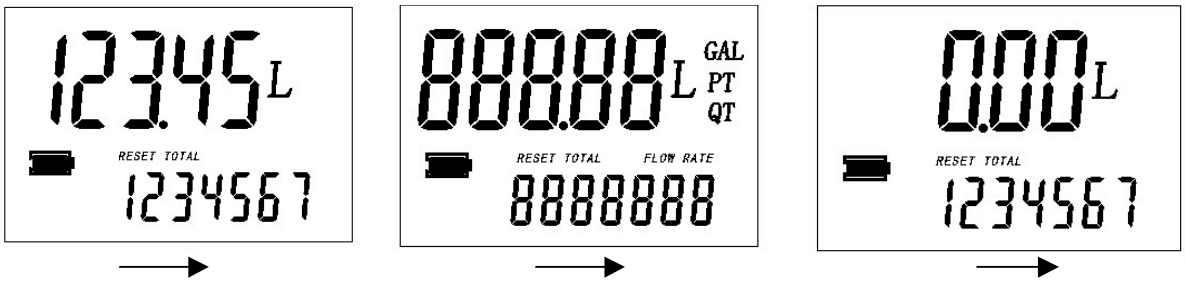


Fig. 2

- **Show current correction factor and general total (See Fig. 3)**

Press MENU and RESET together and hold for two seconds.
Value “1.4000” is the correction factor which can be reset;
“1234567” is the non-resettable total.

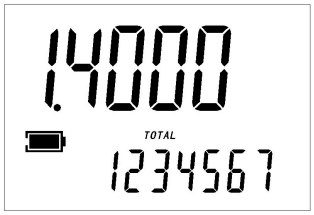


Fig. 3

- **Measurement unit change (See Fig. 4)**

Press MENU and RESET together and hold for five seconds.
The current unit of measure will begin to flash. Press RESET to choose a different unit of measure, then press MENU to confirm.

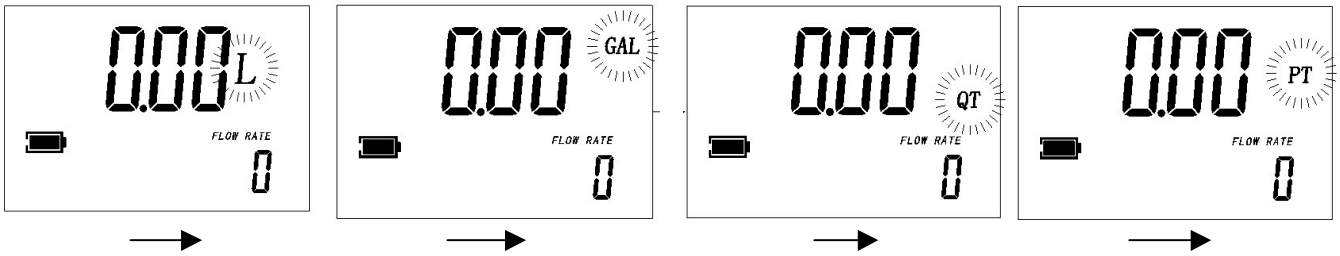


Fig. 4

3.2 RESET THE RESETTABLE TOTALIZER (SEE FIG. 5)

When the meter is in standby, press the RESET key for 2 seconds to reset the totalizer.

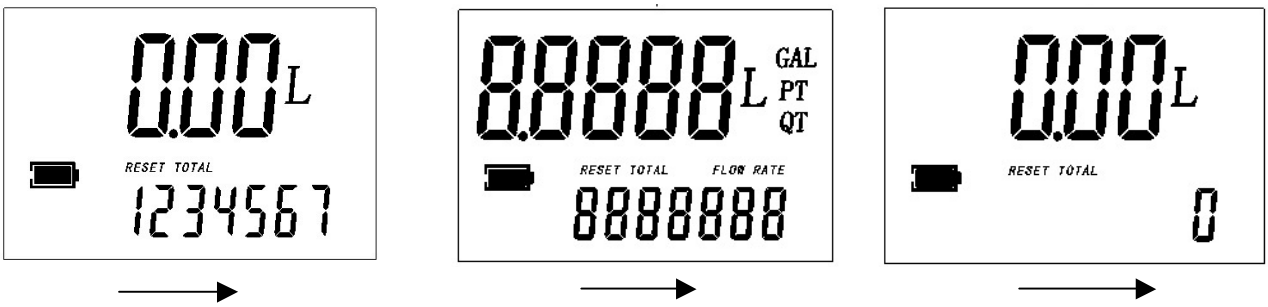


Fig. 5

3.3 Calibration Procedure (Using the Correction Factor)

Carefully follow the procedure indicated below.

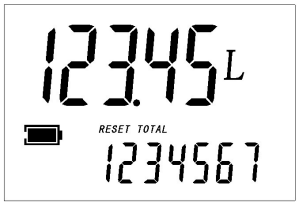
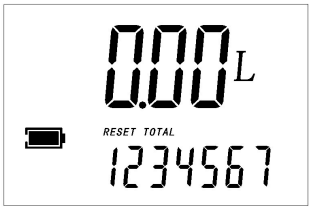
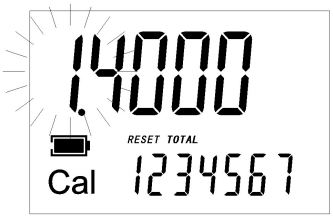
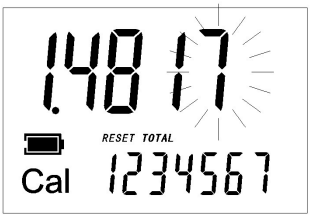
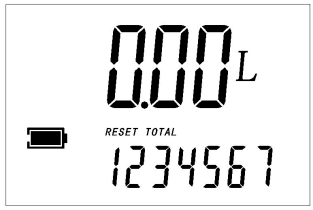
FORMULA

Proper correction factor = current correction factor× (actual value / display value)

Example:

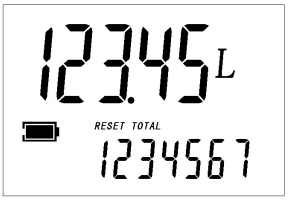
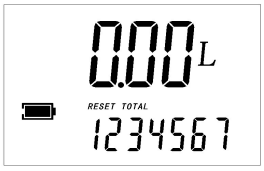
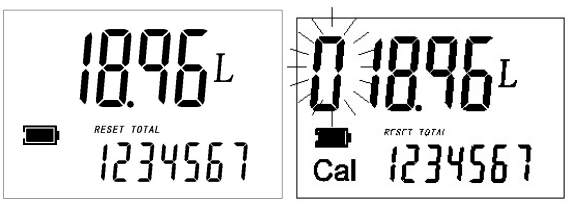
Actual value: 20.75 Display value: 18.96 Current correction factor: 1.000

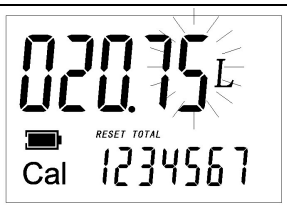
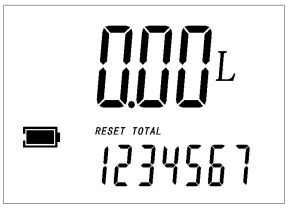
Proper correction factor : 1.000×(20.75/18.96)=1.000×1.094=1.094

1	Wait for the meter to go into standby (blank screen).	
2	With the meter in stand-by mode, reset the resettable total by pressing the “RESET” button.	
3	Press and hold the MENU button until the first digit in the display begins to flash (approximately 3 seconds). The meter is in calibration mode.	
4	Press the RESET button to choose the right digit from 0 to 9. Press the MENU button to start the next digit. So the digit of correction factor can be changed one by one.	
5	Make sure the correction factor is right, press the MENU button. Keep it pressed until the meter exits calibration mode (approximately 3 seconds). The factor is now saved.	

3.4 MODIFY THE CORRECTION FACTOR IN FIELD

PLEASE CAREFULLY FOLLOW THE PROCEDURE INDICATED BELOW.

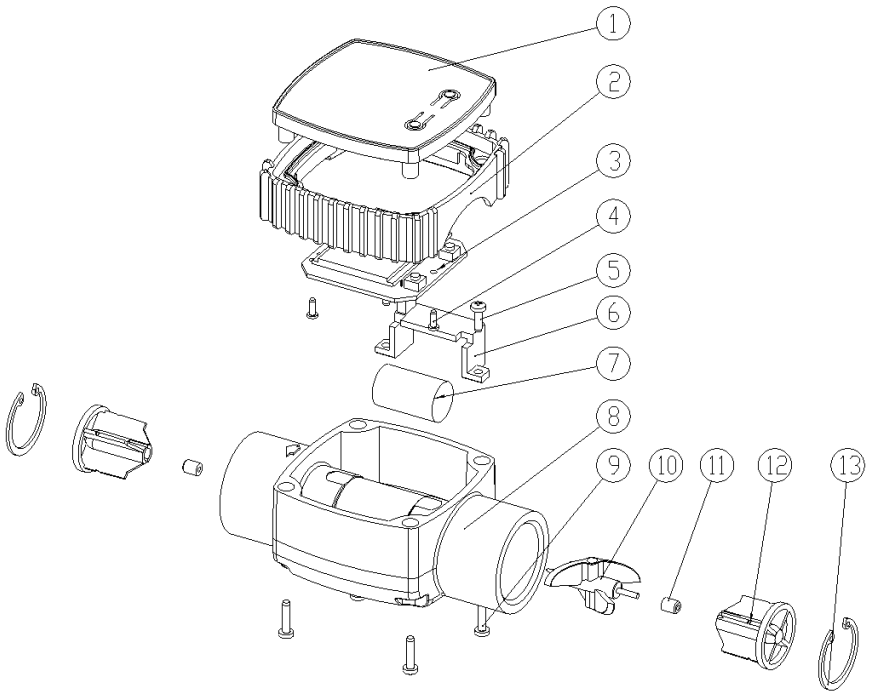
1	Wait for the meter to go to standby.	
2	Reset the register.	
3	Start dispensing into a calibration can. Stop dispensing when 5 gallons of volume is reached. Read the amount displayed vs. the actual amount dispensed into the calibration can. The volume that is displayed on the LCD is the Display Value, not the Actual Value. 	

4	Press and hold the MENU button until the far right digit flashes. Press the RESET button to choose the right digit from 0 to 9. Press the MENU button to go the the next digit so that the Actual Value can be input.	
5	Make sure the correction factor is right and then press and hold the MENU button until the meter exits calibration mode (approx. 3 seconds). The meter is now calibrated and will return to standby.	

4. Troubleshooting

Problem	Possible Cause	Corrective Action
LCD: no indication	Bad battery contacts	Check battery contacts
Imprecise measurement	Wrong Correction Factor	With reference to paragraph 3.3 & 3.4, check the Correction Factor
	The meter works below minimum acceptable flow rate	Increase the flow rate until acceptable flow rate has been achieved (3 – 26 GPM)
Reduced or zero flow rate	Turbine blocked	Clean the turbine.
The meter does not count, but the flow rate is correct	Incorrect installation of gears after cleaning	Repeat the reassembly process.
	Possible electronic card problems	Contact your meter distributor.

5. DIAGRAM AND PARTS LIST



No	Description	Qty.
1	Meter Cover	1
2	Rubber Protection	1
3	Electric Board	1
4	Pin	1
5	Self-Tap Screw	2
6	Battery Holder	1
7	Self-tap	3
8	Meter body	1
9	Self-Tap Screw	4
10	Turbine	1
11	Bearing	2
12	Bearing Holder	2
13	Retaining Clip	2

LIMITED WARRANTY POLICY

Revision Date: August 1, 2014
Fill-Rite and Sotera Products

Tuthill Transfer Systems ("Manufacturer") warrants each consumer buyer of its products ("Buyer") from date of sale that goods of its manufacture ("Goods") shall be free from defects of materials and workmanship.

The duration of the warranty is as follows:

From Date of Sale	Not to Exceed the Following Period from Date of Manufacture	Product Series	
Five Years	60 Months	SP100 Series Pumps	400 Series Pumps
Two Years	27 Months	Heavy Duty Pumps and Meters, 820, 825, and 850 Meters	Cabinet Pumps, Cabinet Meters, TN Meters, TM Meters, TS Meters
One Year	15 Months	Standard Duty Pumps and Meters, 1600 Pumps	Accessories Parts

* proof of purchase should be presented to place of purchase
** see Appendix for definition of “Heavy Duty” and “Standard Duty” products

End users must contact the place where they purchased the product to process a warranty. “Place of purchase” is defined as any authorized TTS Distributor, including any and all retail stores, mail order houses, catalogue houses, on-line stores, commercial distributors.

Manufacturer’s sole obligation under the foregoing warranties will be limited to either – at Manufacturer’s option – replacing defective goods (subject to limitations hereinafter provided) or refunding the purchase price for such Goods theretofore paid by the buyer, and Buyers exclusive remedy for breach of any such warranties will be enforcement of such obligations of the Manufacturer. If the Manufacturer so requests the return of such Goods, the Goods will be redelivered to the manufacturer in accordance with Manufacturer’s instructions FOB Factory.

The remedies contained herein shall constitute the sole recourse of the Buyer against the Manufacturer for breach of warranty. **IN NO EVENT SHALL THE MANUFACTURER'S LIABILITY FOR ANY CLAIM FOR DAMAGES ARISING OUT OF THE MANUFACTURE, SALE, DELIVERY, OR USE OF THE GOODS EXCEED THE PURCHASE PRICE.**

The foregoing warranties will not extend to goods subject to misuse, neglect, accident, improper installation or maintenance, or have been repaired by anyone other than the Manufacturer or its authorized representative. **THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE OF ANY OTHER TYPE, WHETHER EXPRESSED OR IMPLIED.** No person may vary the forgoing warranties or remedies, except in writing signed by a duly authorized officer of the Manufacturer. The Buyer's acceptance of delivery of the Goods constitutes acceptance of the foregoing warranties and remedies, and all conditions and limitations thereof.