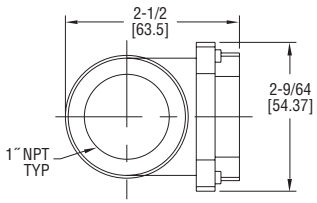
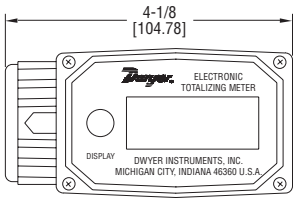
Series TTM Totalizing Flowmeter

Specifications - Installation and Operating Instructions





Measure batch and cumulative totals in liquid transfer systems with the Series TTM Electronic totalizing Meter. The meter is designed for any pump, pressure, or gravity feed system with a 3 to 30 GPM (10 to 100 LPM) flow range. View batch and cumulative totals on the large 4-digit LCD display. Batch totals can be reset to measure flow during a single use. The cumulative total will automatically reset to zero when a maximum reading of 9999 is obtained. Models designed for use in water applications are constructed of Nylon and rated to 150 psig (10.3 bar). Aluminum models are calibrated for fuels and rated to 300 psig (20.7 bar).

GENERAL INSTALLATION

Battery Connections

1. Remove the four Phillips-head screws and lift the faceplate from meter.
2. Remove tape from the end of one battery.
3. Replace the battery. Make sure the positive post is in the correct position.
4. Make sure the O-ring is fully seated and secure the faceplate with the four screws.

Calibration

The meter is permanently factory calibrated for measuring water or fuels depending on model. If installed and used correctly, inaccuracies of no greater than ±5% will be obtained.

Installation

This meter may be installed in-line either vertically or horizontally or at the end of a hose adjacent to a nozzle if present.

SPECIFICATIONS

Service: Compatible liquids.
Flow Range: 3 to 30 GPM (10 to 100 LPM).
Wetted Materials: Bearings: Ceramic; Shaft: Tungsten Carbide; Rotor: Nylon 6-6; Rings: 316 SS; Body: TTM10, 11: Nylon 6-6, TTM20, 21: Aluminum; Other: TTM20, 21: Ceramic Magnet.
Accuracy: ±5%.
Batch Total Maximum: 9,999.
Cumulative Total Maximum: 9,999.
Temperature Limits: 14 to 130°F (-10 to 54°C).
Pressure Limits: Nylon models: 150 psig (10 bar); Aluminum models: 300 psig (20 bar).
Pressure Drop: 2 psi (0.14 bar) @ 30 GPM (100 LPM).
Maximum Particulate Size: 350 microns.
Display: 4-digit LCD, 5/8˝ H.
Auto Shut-off: After 1 minute.
Connections: 1˝ female NPT.
Power: Two AAA alkaline batteries (included).
Battery Life: Approx. 9,000 hours.
Weight: Nylon models: 0.4 lb (190 g); Aluminum models: 0.7 lb (340 g).
Agency Approvals: CE.

Model No.	Application	Body Material	Units
TTM10	Water*	Nylon	Gallons
TTM11	Water*	Nylon	Liters
TTM20	Fuels†	Aluminum	Gallons
TTM21	Fuels†	Aluminum	Liters

*Calibrated for use with water; †Calibrated for use with gasoline, diesel fuel and kerosene

NOTE: If using the Nylon meter for measuring water, it is not recommended to install with metal connection or fittings. Install as follows:

1. If necessary, remove nozzle from hose.
2. Wrap all connections with 3 to 4 wraps of Pipe Thread Sealant Tape. Ensure the tape does not intrude into the flow path.
3. Attach meter to hose or plumbing with the arrow on the outlet port pointed in the direction of flow.
4. If necessary, attach nozzle to meter.
5. hand tighten the meter at the housing ends. Do not use a wrench or similar tools to tighten the meter housing. The housing may be damaged.

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OPERATION

Batch and Cumulative Totals

The meter maintains two totals. The batch total may be reset to measure flow during a single use. The cumulative total provides continuous measurement and my not be manually reset. The batch total is labeled TTL 1. The cumulative total is labeled TTL2.

When the cumulative total reaches a maximum reading of 9999, it will automatically reset to zero.

Press the DISPLAY button briefly to switch between the batch and cumulative totals.

Activate the Meter

Turn the meter ON by starting flow or briefly pressing the DISPLAY button. The meter will display the batch or cumulative total from last use.

Press DISPLAY briefly to display the batch total. Hold the DISPLAY button down for three seconds to reset the batch total to zero.

The meter is programmed to turn off automatically if not used for more than one minute.

MAINTENANCE

Proper handling and care will extend the life and service of the meter.

Turbine Rotor

The meter is virtually maintenance-free. However, it is important the rotor moves freely. Keep the meter clean and free of contaminants.

If the rotor does not turn freely, apply a penetrating lubricant on the rotor, shaft, and bearings. Remove any debris or deposits from the rotor using a soft brush or small probe. Be careful not to damage the turbine rotor or supports.

CAUTION: Blowing compressed air through the turbine assembly could damage the rotor.

Battery Replacement

The meter is powered by two AAA alkaline batteries which may be replaced while the meter is installed. When batteries are removed or lose power, the batch and cumulative totals reset to zero but the factor calibration is retained.

If the meter display becomes dim or blank, replace the batteries as follows:

1. Remove the four Phillips-head screws and lift the faceplate from meter.

2. Remove the old batteries and clean any corrosion from the terminals.

3 Install new batteries. Make sure the positive post is in the correct position.

4. When batteries are replaced, the faceplate will power ON. Check the display to ensure normal functions have resumed before assembling again.

5. Reseat the batteries, if necessary, and position the faceplate on the turbine housing. To avoid moisture damage, make sure the O-ring is fully seated. Tighten the four screws on the faceplate.

If the unit should need repairs, please contact Dwyer Instruments, Inc. before returning unit to review information relative to your application and obtain a return authorization number. When returning a product to the factory, carefully package and ship freight prepaid. Be sure to include a complete description of the application and problem and identify any hazardous material used with the product.

MAINTENANCE

Upon final installation of the Series TTM Totalizing Flowmeter, no routine maintenance is required. A periodic check of the system calibration is recommended. The Series TTM is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

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