

# GRYVOZE®

Digital Turbine Fuel Flow Meter



## PRODUCT MANUAL

# Dear Customer

Thank you for purchasing our products. We specialize in the field of transmission and measurement equipment. This manual contains important information about the specifications, installation, operation, and testing of your device. Please take a few minutes to read through the manual.

The philosophy behind our products is to provide high-quality liquid measurement solutions that offer the most precise, safest, and most economical transmission systems for every user.

If any of our products do not meet your expectations for any reason, we would like to hear from you. We welcome and appreciate your feedback and suggestions. Thank you again for choosing GRYVOZE products. We look forward to serving you again in the future.

 [info@gryvoze.com](mailto:info@gryvoze.com)

## Safety Instructions

To ensure safe and efficient operation, it is essential to read and adhere to the following warnings and precautions:

1. This flow meter does **not support waterproofing**. Do not place this product in humid environments, submerge it in water, or expose it to rain to prevent damage. (We also have an upgraded waterproof version for sale. If you are interested, please feel free to consult with us.)
2. As this product is made of aluminum alloy, it is not recommended for use with drinking water or corrosive liquids.
3. Installation on copper pipes may lead to electrochemical corrosion. If you plan to install it on copper pipes, we recommend purchasing our anti-corrosion model of the flow meter.
4. The flow rate of the liquid in the pipe must be within the specified range of this product, ensuring stable water pressure and constant flow rate. Otherwise, data inaccuracies may occur.
5. This product features a batteries level indicator that will notify you 1-4 weeks in advance when the batteries is low. Please replace the batteries promptly.
6. This product has been calibrated at the factory to ensure accurate readings right out of the box. This means you do not need to calibrate the instrument yourself, saving time and hassle.
7. In cases where liquid backflow may occur, it is recommended to use a check valve in conjunction with this product.

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## Specifications

Main Body Material	Aluminum alloy
Chamber Material	303 stainless steel
Pressure Rating	6 bar (0.6 MPa)
Accuracy	±1%
Waterproof Rating	Not waterproof
EMI Protection	Supported, can be used even next to motors.
Measurement Units	QTS, PTS, L, GAL(US), m <sup>3</sup>
Suitable Liquids	Diesel, gasoline, kerosene, water, and other liquids (not suitable for drinking water, corrosive, or viscous liquids)
Battery	Two 1.5V AAA alkaline batteries are expected to last for one year.
Standby Function	Supported, with automatic sleep after 10 minutes of inactivity. It wakes up automatically with water flow or by pressing any button.
Operating Temperature	-10°C to +80°C (14°F to 176°F)

## Product Description

1. Data can be retained even when the battery is replaced.
2. Data can be displayed floating from 0.001 to 999,999 (x1), 9,999,999 (x10), or 99,999,900 (x100).
3. All functions can be easily operated using the two buttons on the flow meter panel.

## Flow Meter Panel



## Two Forms of use



Instantaneous Flow



Total Cumulative Flow

# Installation

## Please confirm once again that

1. The dimensions of the pipe and flow meter are compatible.
2. The flow rate of the liquid in the pipe is within the specified range for this product.
3. Avoid submerging the product in water or exposing it to rain, as it is not waterproof.
4. Ensure the liquid you are using is within the applicable range for this product.

## Installation Instructions

1. All flow meters can only measure flow in one direction, indicated by the turbine outlet or the arrow on the back of the unit.
2. If the flow meter is installed according to the water flow direction but the display appears upside down, remove the four screws from the display panel, rotate the display 180°, and then reinstall the screws.



# Saved Data

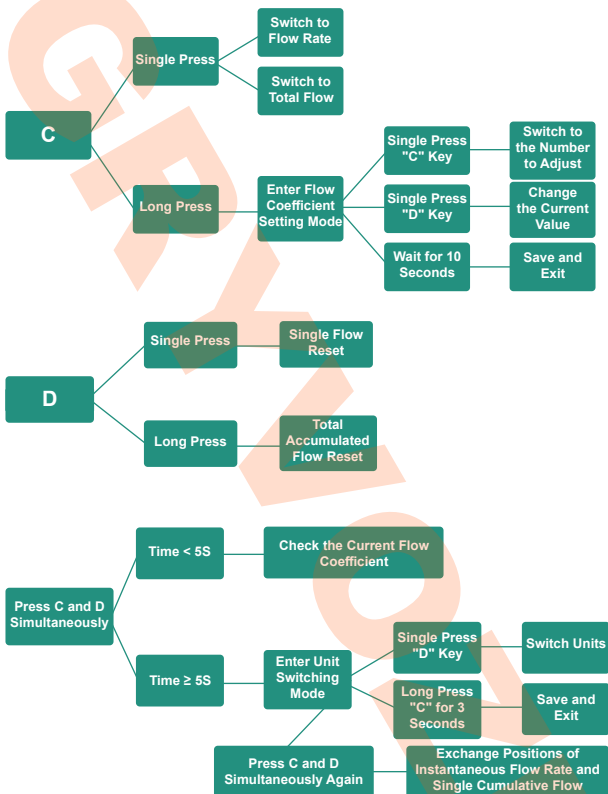
The flow meter saves two types of data: Single Flow and Total Accumulated Flow.

- Single Flow Reset: Press the “Display” button once to reset the single flow data.
- Total Accumulated Flow Reset: Hold down the “Display” button for 5 seconds to reset the total accumulated flow data.

# Button Usage Diagram

CALIBRATE key simply called "C" key.

DISPLAY key simply called "D" key.



# View Data And Reset

## Single Measurement Reset

Press the “D” key once.

## Check Total Accumulated

Under the “Initial Interface Display,” press the C key once to enter the total accumulated display (TOTAL). To return to the “Initial Interface Display,” press the C key again.

## Total Accumulated Reset

Press and hold the D key for 5 seconds to clear the total accumulated value.

# On-Site Calibration

After installing the turbine flowmeter in the designated location, it should be calibrated under actual working conditions to improve its measurement accuracy and precision.

On-site calibration requires adjusting the coefficient of the flowmeter. Pressing the C and D keys simultaneously allows you to view the coefficient of the flowmeter. Hold down the C key for 10s to enter the coefficient setting mode (the coefficient will blink). Then press “C” key to choose the number you want to adjust, when the number jumps, press “D” key to change the number value. After adjustment, wait for 10 seconds for the mode to automatically exit.

# Calibration Formula

**Calibrated Coefficient = Actual Flow Rate / Displayed Flow Rate \* Coefficient Before Calibration.**

For example, if the flowmeter displays 98L when testing 100L of liquid, and the coefficient is displayed as 1000, the coefficient should be adjusted to:  $100\text{L} / 98\text{L} * 1000 \approx 1020$ .

# Initial Coefficients

The initial coefficients for all flowmeter sizes are set at 1000, but they can be adjusted based on your needs and the properties of the measured media to achieve more accurate, overestimated, or underestimated measurement results.



# Metering Unit Setting

1. Press and hold both the C and D keys for more than 5 seconds to enter unit setting mode.



2. The factory default measurement unit is L (liters). You can switch between Gal (US gallons), Qts (quarts), Pts (pints), L (liters), and m<sup>3</sup> by pressing the "d" key.



3. Press and hold the 'C' key for 5 seconds to save and exit the unit setting mode.



**Note:** For energy efficiency, the chip limits processing, so previous flow data is not retained when switching units. Clear the accumulated total to avoid inaccuracies. This is common across all flow meters, though often not mentioned by manufacturers.

# Zoom In to Show Instantaneous Flow

1. Simultaneously press and hold the C and D keys for more than 5s to enter the metering unit setting.



2. Display Interface for metering Unit setting Mode.



3. In this mode, press the C key and the D key simultaneously again, and the positions of the instantaneous flow and the single cumulative flow will be swapped.



4. After switching successfully, the instantaneous flow is displayed at the top of the interface, and the single cumulative flow is displayed at the bottom.



# Troubleshooting

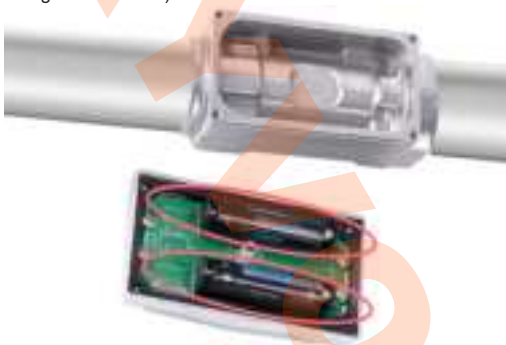
Symptoms	Possible Causes	Corrective Actions
Displayed data is inaccurate	Not properly calibrated.	Recalibrate or use default calibration (1000).
	Unstable water flow and/or water pressure.	Use stable water flow and water pressure whenever possible.
	Flow meter operating at low flow rates.	Replace with a smaller flow meter or increase the flow rate.
	Turbine bearings are clogged.	Remove the instrument, clean it using a brush, and ensure the turbine rotates smoothly.
	Flow meter installed in the wrong direction.	Remove the flow meter and install it with the arrow on the side or back pointing in the direction of water flow. If the panel is upside down, remove the four screws and reinstall the panel correctly.
Display is unclear, not showing, or shows abnormalities	Battery power is insufficient or depleted.	Remove the panel, check and replace the battery.
	The flow meter panel is damaged.	Contact us for a repair solution.
	The product has taken in water.	Contact us for a repair solution.
Flow rate is normal, but the display does not count	Not properly calibrated.	Recalibrate or use default calibration (1000).
	Turbine is stuck.	Remove the instrument, use a brush to clean it, and ensure the turbine rotates smoothly.
	Chip malfunction.	Contact us for a repair solution.
	Below minimum flow rate.	Replace with a smaller instrument or increase the flow rate.
The product has an oily smell	The white oil used for factory calibration testing is colorless, non-toxic, and odorless.	Simply rinse with detergent to clean and remove the oil.
Why is the total accumulated data incorrect after switching units?	After switching units, the total accumulated data will be inaccurate.	Reset the total accumulated data to zero and remeasure.
The flow meter has no power, but it cannot be removed from the pipe	Replacing the battery does not require removing the flow meter from the pipe.	Remove the four screws on the panel to take off the panel and replace the battery.

# Steps To Replace The Battery

1. Remove the four screws on the panel.



2. Remove the panel and replace the two AAA batteries in the panel.  
(Note: The flow meter does not need to be removed from the pipe when replacing the batteries.)



3. Reinstall the panel and screw them back in.



# Warranty

We provide a 1-year warranty on this product. We will assess the damage and offer repair, replacement, or compensation. The warranty period starts from the date you receive the product. The warranty does not apply in the following situations:

1. The product has been altered or modified in unreported areas.
2. The product has been subjected to negligence, misuse, abuse, damage, or has not been installed or operated according to the instructions.

If you encounter any problems during the usage, you can provide us with feedback, and we will give you a satisfactory response.



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## GRYVOZE Disclaimer

1. We is not liable for any direct, indirect, or consequential damages resulting from the use of this product.
2. We does not provide any warranty of fitness for any particular purpose other than the intended design use.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state or region to region.