



Non-contact  
Measurement

**1:400**

Ultra-wide  
Turndown Ratio



High Bubble and  
Impurity Tolerance



F203B Series

# Ultrasonic Flow Meter

New-generation Clamp-type  
Ultrasonic Liquid Flow Meter



# PITOT TUBE FLOWMETER

## Product Overview

The working principle of the F203B ultrasonic flowmeter is mainly based on the propagation characteristics of ultrasonic waves in a fluid, measuring flow rate by detecting time delays. Because the ultrasonic flowmeter uses a non-contact measurement method and does not need to directly contact the fluid, it has a wide range of applications

Utilizing FPGA integrated circuit technology, the algorithm integrates threshold comparison gate circuit delay methods and high-speed ADC correlation methods, achieving a measurement rate greater than 300 times per second. Compared to traditional capacitive charging algorithms with measurement rates below 50 times per second, this ensures more accurate and reliable measurement results

There is also a significant improvement in the bubble tolerance within the measurement pipe diameter, with the capability to withstand continuous bubbles or impurities for up to 5 seconds

The unique flip cover design hides all screws after installation, and the use of longer-lasting membrane buttons provides a more comfortable key feel

## Product Advantages



### Non-contact Measurement

Ultrasonic properties are not affected by changes in fluid properties



### Ultra-wide Turndown Ratio

Ultra-wide turndown ratio of 1:400



### High Bubble and Impurity Tolerance

Maintain stable and accurate measurement in complex working conditions



### Sensor Protection Code IP68

- Non-contact measurement, unaffected by changes in fluid properties, capable of maintaining stable and accurate measurement in complex environments
- Ultra-wide turndown ratio of 1:400, with a measuring range from 0.03 m/s to 12 m/s
- FPGA integrated circuit combined with high-speed ADC algorithm, with a measuring rate greater than 300 times per second to ensure the accuracy
- Fully isolated electrical structure, completely filtering out field disturbances
- With data logging function, allows long-term data recording via an internal SD card (optional)
- Standard RS232/RS485 Modbus interface
- Sensor protection code IP68, applicable to various harsh environments
- Clamp-type installation, suitable for pipe diameter DN25 ... DN1200

# Technical Data

| Flow            |                                | Display               |                                                                                                                                                                                  |
|-----------------|--------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measuring Range | ±0.03 ... ±12 m/s              | Screen                | 240*128 LCD                                                                                                                                                                      |
| Accuracy        | ±1 %RD                         |                       |                                                                                                                                                                                  |
| Repeatability   | 0.2 %RD                        |                       |                                                                                                                                                                                  |
| Linearity       | ±1 %RD                         |                       |                                                                                                                                                                                  |
| Diameter        | DN25 ... DN1200                |                       |                                                                                                                                                                                  |
| Output          |                                | Operating Environment |                                                                                                                                                                                  |
| Analog Output   | 4 ... 20 mA, max load 750 Ω    | Operating Temperature | Transmitter: -20 ... +60 °C<br>Sensor: -40 ... +80 °C (standard temperature)<br>Sensor: -40 ... +130 °C (high temperature)<br>Sensor: -40 ... +180 °C (special high temperature) |
| Pulse Output    | 0 ... 10 KHz                   | Ambient Humidity      | 0 ... 99% RH, non-condensing                                                                                                                                                     |
| Digital Output  | Modbus RTU (RS485)             |                       |                                                                                                                                                                                  |
| Power           |                                | Other                 |                                                                                                                                                                                  |
| Power           | 10 ... 36 VDC / 90 ... 245 VAC | Protection Code       | Transmitter: IP65<br>Sensor: IP68                                                                                                                                                |
|                 |                                | Material Cable        | Transmitter: ABS + PC<br>Standard / Max: 9 / 300 m                                                                                                                               |

## Order Information

| Model   | Digital Output | Analog Output | Sensor     | Data Logging | Description                                                                                                                                                                                                           |
|---------|----------------|---------------|------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F203B   |                |               |            |              | Ultrasonic flow meter, wall-mounted transmitter, with 5m cable, with metal tensioner and coupling agent (suitable for pipe diameter DN25 ... DN1200)                                                                  |
| F203B-T |                |               |            |              | Ultrasonic flow meter, wall-mounted transmitter, with 5m cable, with metal tensioner and coupling agent, with temperature sensor and cold/heat energy measuring function (suitable for pipe diameter DN25 ... DN1200) |
|         | 1              |               |            |              | Modbus RTU (RS485)                                                                                                                                                                                                    |
|         |                | 1             |            |              | 4 ... 20 mA + OCT pulse output                                                                                                                                                                                        |
|         |                |               | F0105 0004 |              | Calmp-type, IP68, operating temperature -40 °C ... +80 °C (Default)                                                                                                                                                   |
|         |                |               | F0105 0007 |              | Calmp-type, IP68, operating temperature -40 °C ... +130 °C                                                                                                                                                            |
|         |                |               | F0105 0008 |              | Calmp-type, IP68, operating temperature -40 °C ... +180 °C                                                                                                                                                            |
|         |                |               |            | V0013 0001   | None (Default)                                                                                                                                                                                                        |
|         |                |               |            | F0105 0005   | Data logging function + SD card (32G memory)                                                                                                                                                                          |

\* For more selection parameters, please consult sales

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