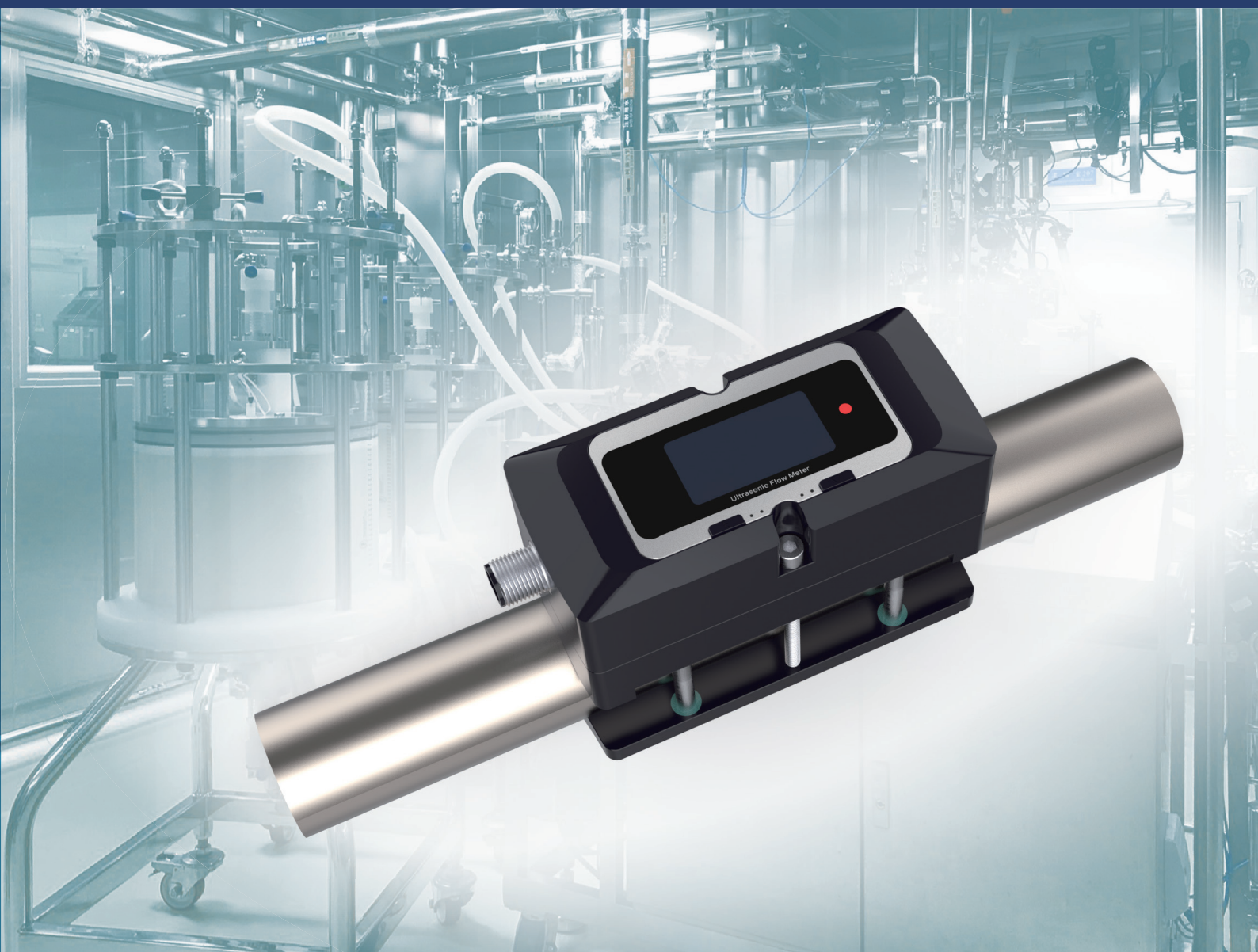


# Ultrasonic Flow Meter

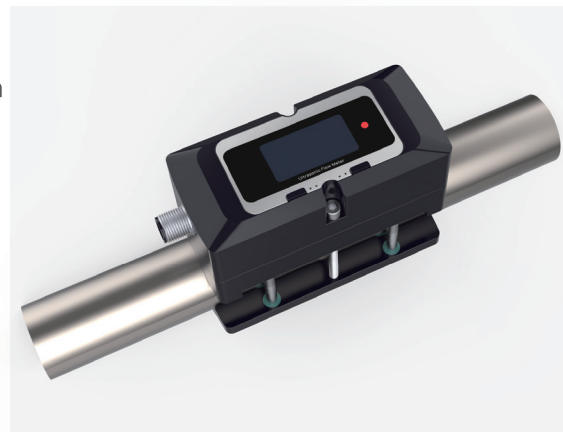
Clamp On Type- Small Pipe Size Solution



## Product Introduction

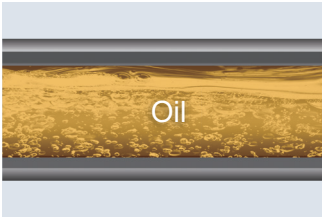
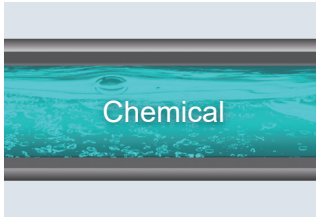
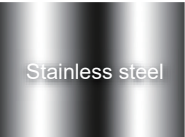
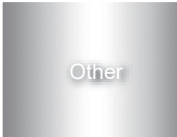
It is an integrated type transfer time ultrasonic flow meter with the clamp on type transducers. It is compact and very easy to install, making it suitable for flow process monitoring application involving various small pipe size. It is also another good choice for the devices process equipment liquid monitoring.

- Does not require the measured liquid to be conductive.
- Installation does not necessitate pipe cutting or process shutdowns, allowing operation to continue uninterrupted. There are no moving parts and no pressure loss.
- Installation could be performed without specialized training, just by an instructional video or step by step diagram.
- The enclosure is made of PP and fiberglass, ensuring durability in acidic or alkaline environment.



Adaptable different liquid types and pipe materials:

(Common examples, if not listed, please contact the factory for confirmation)

|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                     |                                                                                                                                                                                                                                                      |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>1</div> <div>Applicable fluid</div>           |  <div>Water</div>                                                                                                                                                                                                                                                                                               |  <div>Oil</div> |  <div>Chemical</div>                                                                                                                                            |
| <div>2</div> <div>Compatible piping material</div> | <div>Metal pipe Stainless steel,Carbon steel , Copper</div> <div><div>Stainless steel</div><div>Carbon steel</div><div>Copper</div></div> |                                                                                                     | <div>Resin pipe PVC, Other</div> <div><div>PVC</div><div>Other</div></div> |
| <div>3</div> <div>Compatible pipe line size</div>  | <div>DN10-DN40</div> <div>For DN8 and DN50-DN100 sizes ,<br/>please consult the manufacturer for details.</div> <div></div>                                                                                              |                                                                                                     |                                                                                                                                                                                                                                                      |

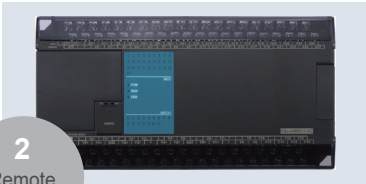
# Flow Watch

Provide many aspects of help for different flow measurement application requirements:



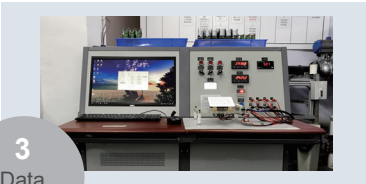
**1**  
Site display

Monitor the flow rate reading directly on the device.



**2**  
Remote monitoring

With the help of output, could send the information to PLC, central control room and etc.



**3**  
Data analysis

Record the data to improve efficiency.

## Specification

|                            |                                                                                                                                                                                                                                             |               |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
| Enclosure material         | PP and F                                                                                                                                                                                                                                    |               |                |
| Mounting screw             | SS304                                                                                                                                                                                                                                       |               |                |
| Enclosure protection class | IP54                                                                                                                                                                                                                                        |               |                |
| Vibration resistance       | 10 to 55 Hz, double amplitude 1.5 mm, 2 hours in each XYZ axis                                                                                                                                                                              |               |                |
| Impact resistant           | 100 m/s <sup>2</sup> 16 ms pulse, 1000 times each for X, Y and Z axis                                                                                                                                                                       |               |                |
| Models                     | DN10、DN15、DN20、DN25、DN32、DN40                                                                                                                                                                                                               |               |                |
| Flow range                 | DN10                                                                                                                                                                                                                                        | DN15          | DN20           |
|                            | 0.35 - 30 LPM                                                                                                                                                                                                                               | 0.55 - 60 LPM | 0.95 - 100 LPM |
|                            | DN25                                                                                                                                                                                                                                        | DN32          | DN40           |
|                            | 1 - 150 LPM                                                                                                                                                                                                                                 | 1.5 - 260 LPM | 2.5 - 400 LPM  |
| Pipe material              | Metal /PVC, PP, PE or PVDF rigid plastic pipe (Common examples, if not listed, please contact the factory for confirmation)                                                                                                                 |               |                |
| Medium                     | Water, Alcohol, Liquid gasoline, Chemical solvent and other fixed composition liquid other liquid (Single liquid medium without solid particles or impurities) /Common examples, if not listed, please contact the factory for confirmation |               |                |
| Medium temperature         | Standard :-10°C - 65°C<br>Middle temperature transducers: -10°C - 105°C                                                                                                                                                                     |               |                |
| Accuracy                   | < 2% FS.                                                                                                                                                                                                                                    |               |                |
| Response time              | 0.5s-3s                                                                                                                                                                                                                                     |               |                |
| Power supply               | 20-28VDC≥1A                                                                                                                                                                                                                                 |               |                |
| Electric power             | 1W                                                                                                                                                                                                                                          |               |                |
| Power and I/O connection   | M12-A type aviation plug (Five-cores)                                                                                                                                                                                                       |               |                |
| Output                     | 4-20mA                                                                                                                                                                                                                                      |               |                |
| Communication              | RS485 Modbus                                                                                                                                                                                                                                |               |                |
| Display                    | 1.5' Oled display                                                                                                                                                                                                                           |               |                |
| Keyboard                   | 2 touch buttons                                                                                                                                                                                                                             |               |                |
| Environment temperature    | -10°C - 60°C (No freezing)                                                                                                                                                                                                                  |               |                |

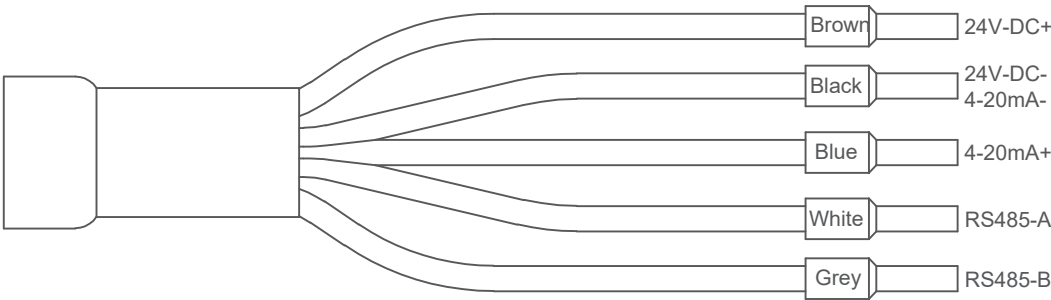
Connection/ Wiring

Connection/ Wiring type :  
M12-A type aviation plug (Five-cores)

Connection/wiring definition

| Color | Definition      | Mark                     |
|-------|-----------------|--------------------------|
| Brown | 24VDC 1A        | Power in +               |
| Black | Flow 4-20mA OUT | 4-20mA OUT +             |
| Blue  | 0V              | Power in -/ 4-20mA OUT - |
| White | A               | RS485                    |
| Grey  | B               |                          |

Wiring diagram



## Installation Settings

Easy to install

With just two steps of setting, you could make an installation and power on for use. No need make any movements to do the adjustable.

### 1、Menu: OD setting

| Setting |          |    |
|---------|----------|----|
| OD.     | a 12.0   | mm |
| THK.    | c 1.0    | mm |
| FI.     | 0. Water |    |

The outer diameter parameters supported by each specification are as follows:

| Pipe size | OD(mm)                                      | Flow range     | illustration                                                                         |
|-----------|---------------------------------------------|----------------|--------------------------------------------------------------------------------------|
| DN8       | Please contact the factory for confirmation |                |                                                                                      |
| DN10      | Ø12mm-Ø18mm                                 | 0.35 - 30 LPM  |    |
| DN15      | Ø18mm-Ø23mm                                 | 0.55 - 60 LPM  |   |
| DN20      | Ø23mm-Ø28mm                                 | 0.95 - 100 LPM |  |
| DN25      | Ø28mm-Ø33mm                                 | 1 - 150 LPM    |  |
| DN32      | Ø33mm-Ø44mm                                 | 1.5 - 260 LPM  |  |
| DN40      | Ø44mm-Ø52mm                                 | 2.5 - 400 LPM  |  |

### 2、Menu: wall thickness setting

| Setting |          |    |
|---------|----------|----|
| OD.     | a 13.0   | mm |
| THK.    | c 1.0    | mm |
| FI.     | 0. Water |    |

specification are as follows:

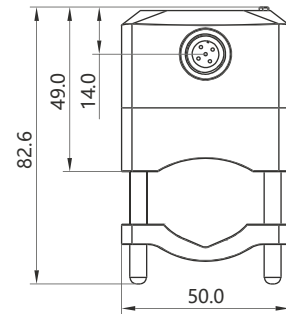
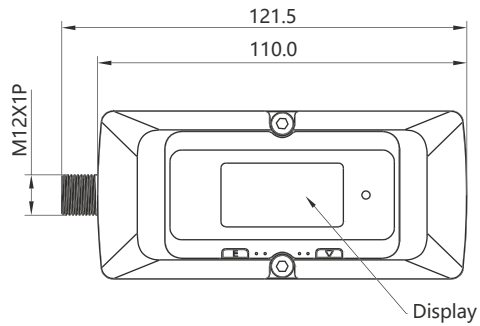
|           |                                                                 |
|-----------|-----------------------------------------------------------------|
| DN10-DN40 | 1.0mm、1.5mm、2.0mm、2.5mm、3.0mm、<br>3.5mm、4.0mm、4.5mm、5.0mm、5.5mm |
|-----------|-----------------------------------------------------------------|

For each specification product and each application, please setting the pipe wall thickness according to the site information value. After setting, the inner diameter should not be lower than the lower limit of the specification.

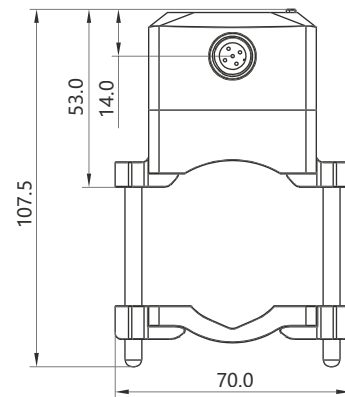
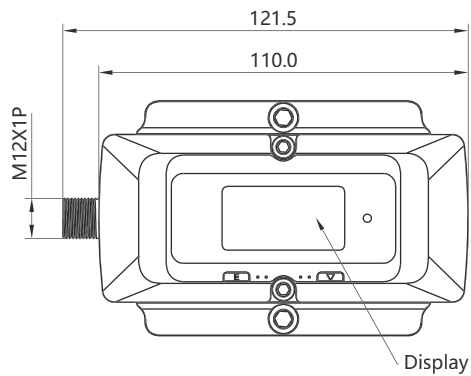
Take DN10 as an example, after setting the outer diameter and wall thickness, the inner diameter value should not be less than 10mm.

## Size Drawing (Unit: mm)

### DN10-DN25



### DN32-DN40



## Ordering confirmation

| Model          | Description                                                  |
|----------------|--------------------------------------------------------------|
| F7             | Pipe size: DN10-DN40                                         |
|                | Velocity : 0.15m/s-10m/s;                                    |
|                | Accuracy : < 2% FS (< 1.5% FS after calibration )            |
|                | Medium: water/ single medium liquid without solid impurities |
|                | Power supply: 20-28VDC/≥1A                                   |
|                | Transducer temperature range: -10~65°C or -10~105°C          |
|                | Cable length: 2m                                             |
| Code           | Pipe size                                                    |
| 10A            | DN10 OD 12-18mm                                              |
| 15A            | DN15 OD 18-23mm                                              |
| 20A            | DN20 OD 23-28mm                                              |
| 25A            | DN25 OD 28-33mm                                              |
| 32A            | DN32 OD 33-44mm                                              |
| 40A            | DN40 OD 44-52mm                                              |
| DN8、DN50-DN100 | Please contact the factory                                   |
| Code           | Temperature Range                                            |
| TT02S          | -10-65°C                                                     |
| TT03S          | -10-105°C                                                    |
| Code           | Output(choose 2 out of 4)                                    |
| A              | 4-20mA                                                       |
| M              | Modbus(RS485)                                                |
| O              | OCT(Frequency)                                               |
| R              | 1 Relay                                                      |
| Code           | Options                                                      |
| T              | Display and measure the liquid temperature                   |

### Example

20A

DN20 (OD 23-28mm) Clamp on ultrasonic flow meter, transducer temperature range -10-65 °C,24VDC power supply with 4-20mA and RS485(Modbus) output, cable length 2m.