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# UltraFlo® UF-500 Series

## Operating Manual



  
**ICON**™  
PROCESS CONTROLS

Corrosion-Free  
Instrumentation Equipment

Read the user's manual carefully before starting to use the unit.  
Producer reserves the right to implement changes without prior notice.

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Corrosion-Free  
Instrumentation Equipment

### Safety Information

Please always observe the following safety instructions!

Please pay attention to the safety instructions with the following pictograms and signal words in these operating instructions :



#### Warning | Caution | Danger

Indicates a potential hazard. Failure to follow all warnings may lead to equipment damage, injury, or death.



#### Do Not Use Tools

Use of tool(s) may damage product beyond repair and potentially void product warranty.

**Notice :** Is used to lead users to helpful information not related to personal injury.

## Intended Use

- ✓ The Flow Meter **UltraFlo®** should only be used for measuring the flow of pure, homogeneous liquids.
- ✓ The **UltraFlo®** is not intended for use in medical applications.
- ✓ The volume flow meter **UltraFlo®** is built in accordance with industry standard EN 61010 regulations (corresponds to VDE 0411 "Safety specifications for electrical measurement, control and laboratory devices").
- ✓ The manufacturer is not liable for any injury, damage or harm due to inappropriate or unintended use or modifications of the flow meter. Conversions and/or changes to the flow meter may only be made, if they are expressly performed in accordance with the operating instructions in this operating manual.

## Personnel for Installation, Commissioning and Operation



- ✓ Assembly, electrical installation, commissioning and maintenance of the flow meter must be carried out by qualified, trained personnel. The qualified personnel must have read and understood the operating instructions in this operating manual and must follow the operating instructions in this manual.
- ✓ The installer has to ensure that the flow meter is correctly connected according to the electrical connection diagrams in this operating manual.
- ✓ Serious injury or death from electric shock may occur if wiring, installation, disassembly or removal of wires is performed while electrical power is energized

## Technological Progress

The manufacturer reserves the right to revise, alter, or modify the flow meter to the most current technology without special prior notice. Further information about the latest updates and potential additions to these operating instructions are available from Truflo.

### Product Description

#### Convenience, Accuracy and Value in an Ultrasonic Flow Meter

The **Truflo® UF-500 Series** clamp-on ultrasonic flow meters are easy to install with exceptional long life performance and they require no alteration to current piping configurations.

The sensor sends over 50 pulses/sec in order to provide accurate measurement of liquid flow rates in full pipes and can be used in low pressure systems.

- ✓ **Wide Dynamic Flow Range 0.3 to 15 ft/s | 0.1 to 5 m/s**
- ✓ **Light weight**
- ✓ **Excellent External Corrosion Resistance**

# UltraFlo® UF-500

## Clamp-On Ultrasonic Flow Meter Sensor

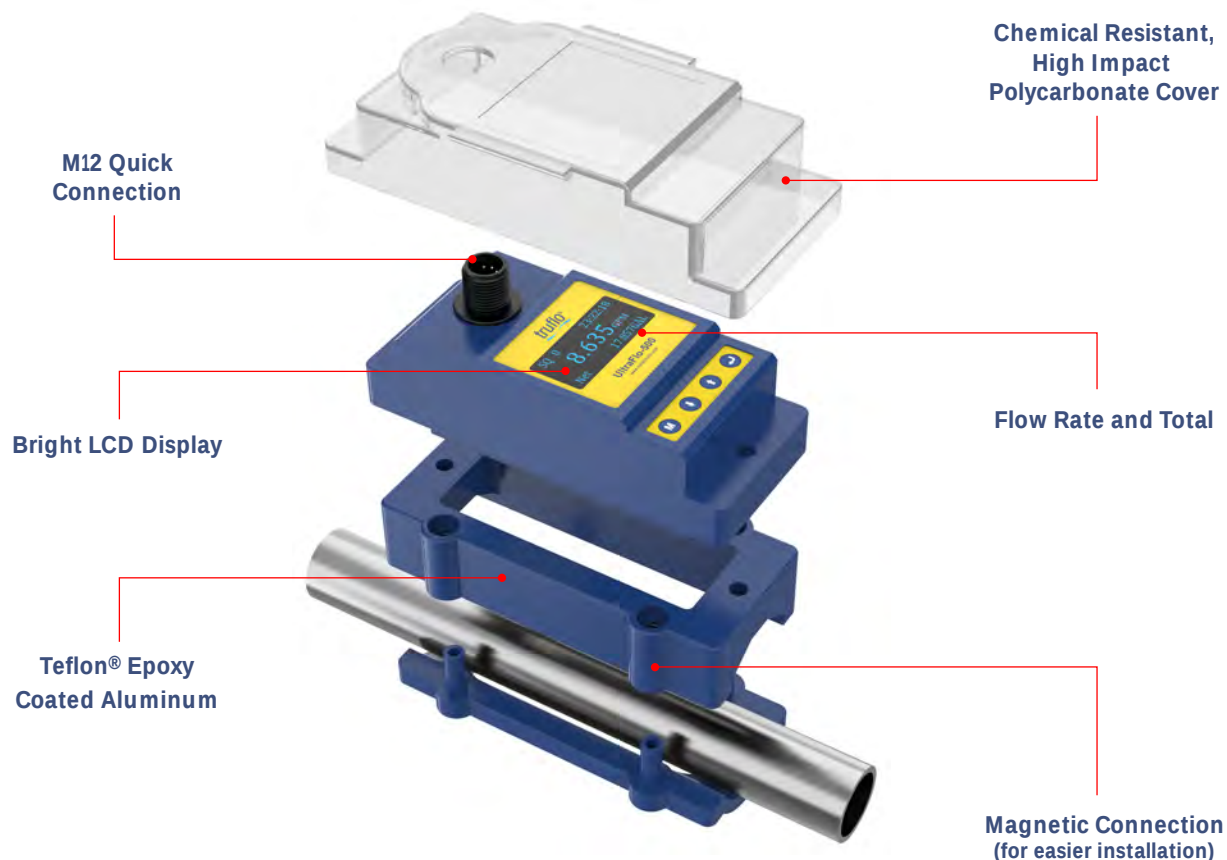


### Features

- ✓ Under 2 Minute Installation Time
- ✓ No Contact with Liquid
- ✓ No Moving Parts
- ✓ Simple to Install-No Cutting of Pipe
- ✓ 4-20mA | RS485 Output
- ✓ Flow Rate + Totalizer | Resettable
- ✓ Simple Programming
- ✓ Large Blue OLED Low Light Display
- ✓ Wide Dynamic Flow Range of 0.3 to 15 ft/s | 0.1 to 5 m/s
- ✓ High Accuracy |  $\pm 2.0\%$  of Full Scale
- ✓ Pipe Sizes  $\frac{1}{2}$  - 4"
- ✓ Suitable for RO Systems
- ✓ Excellent External Corrosion Resistance
- ✓ Data Logging



### Exploded View

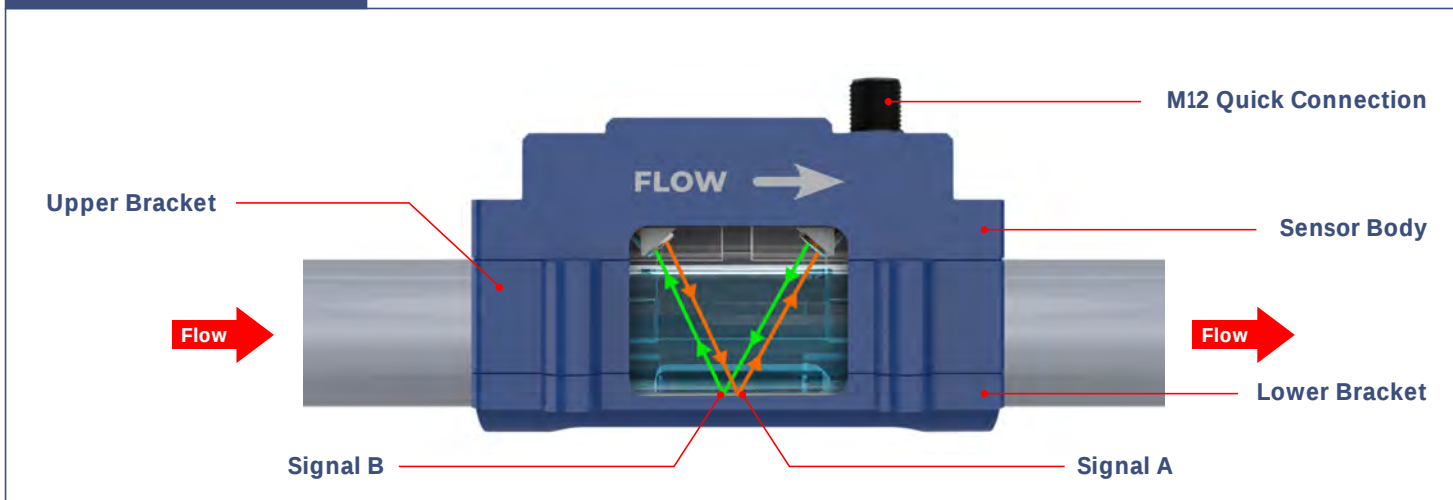


# UltraFlo® UF-500

## Clamp-On Ultrasonic Flow Meter Sensor



### Working Principle



### Technical Specifications

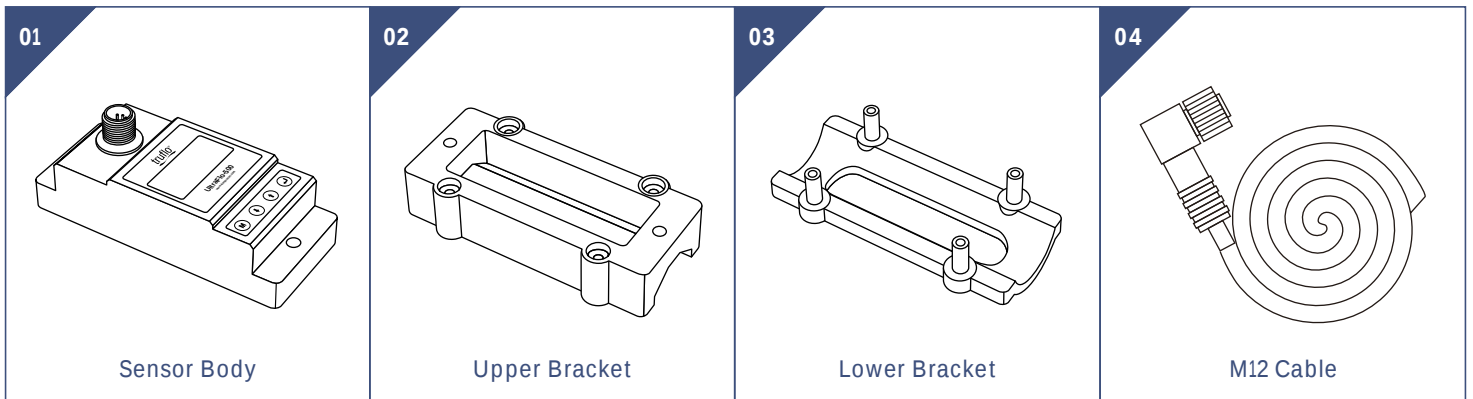
| General              |                                                                                                                                      |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy             | 2.0%                                                                                                                                 |
| Repeatability        | 0.8%                                                                                                                                 |
| Data Storage         | Day, Month and Year Flow Totalizer                                                                                                   |
| Response Time        | 2s                                                                                                                                   |
| Analog Output        | 4 ~20mA                                                                                                                              |
| Alarm Output         | OCT, High and Low Flow Alarm Function (option)                                                                                       |
| Communication        | RS485, Power Waste: 3W                                                                                                               |
| Power Supply         | 24 VDC                                                                                                                               |
| Cable Length         | 2m                                                                                                                                   |
| Keypad               | Four Light Touch Buttons                                                                                                             |
| Screen               | OLED 128* 64 Display Screen                                                                                                          |
| Units                | Metric and Imperial units are available.<br>Cubic Meters(m³), Liters(L), US Gallons(GAL), /hour, / min<br>Default Unit Setting : GPM |
| Totalizer            | Six Bit Digit                                                                                                                        |
| Liquid               | Water, Sea water, Oil...                                                                                                             |
| Pipe Material        | Carbon Steel   Stainless Steel   PVC   Copper   PVDF   PFA   PTFE   PU   Aluminum                                                    |
| Case Material        | Teflon® Epoxy Coated Aluminum   Aluminum                                                                                             |
| Environment Temp.    | 0°C - 50°C                                                                                                                           |
| Liquid Temp.         | 0°C - 50° C                                                                                                                          |
| Environment Humidity | 0-95% Relative Humidity Without Condensation                                                                                         |
| IP Grade             | IP54                                                                                                                                 |

# UltraFlo® UF-500

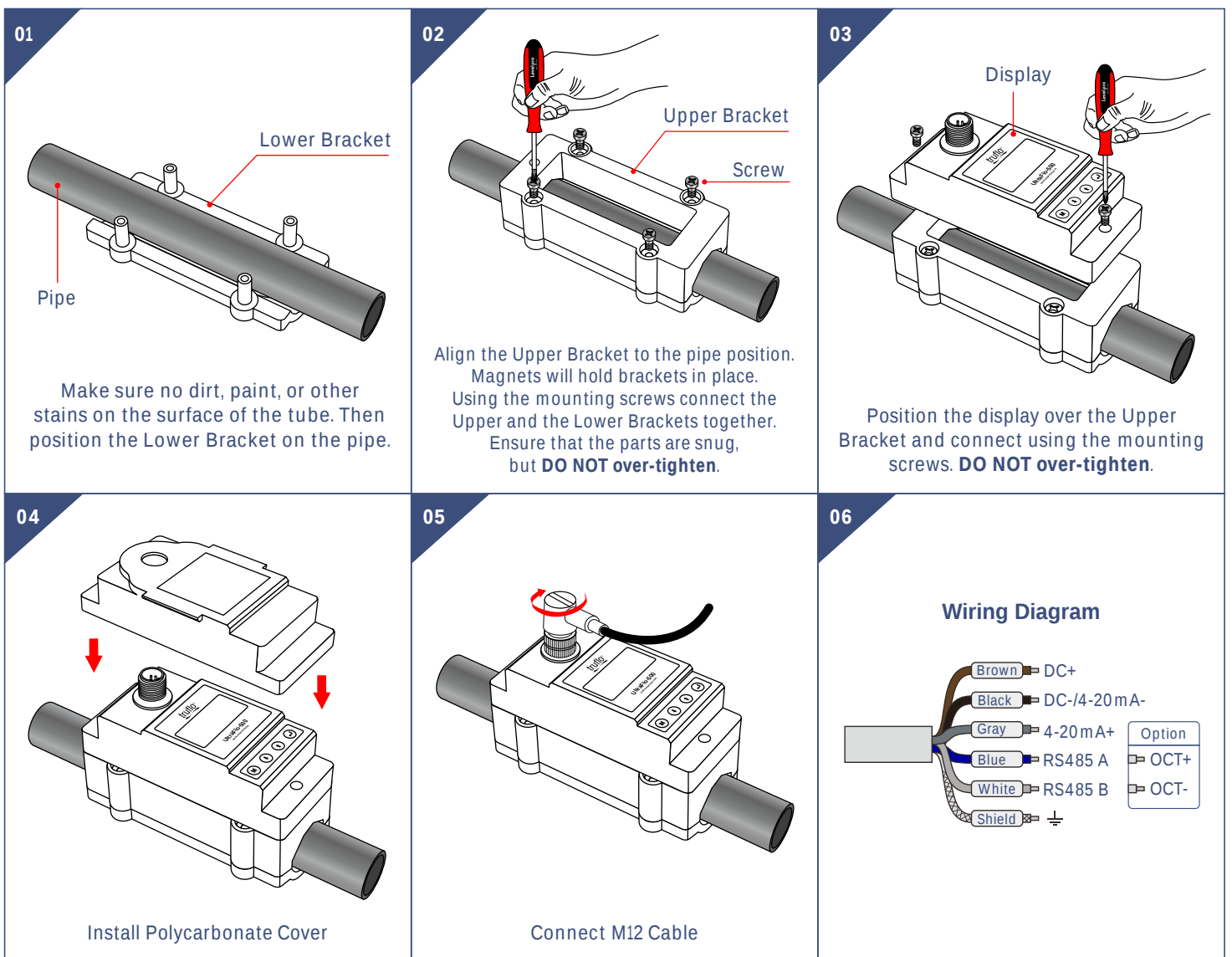
## Clamp-On Ultrasonic Flow Meter Sensor



### Components



### Installation and Connection

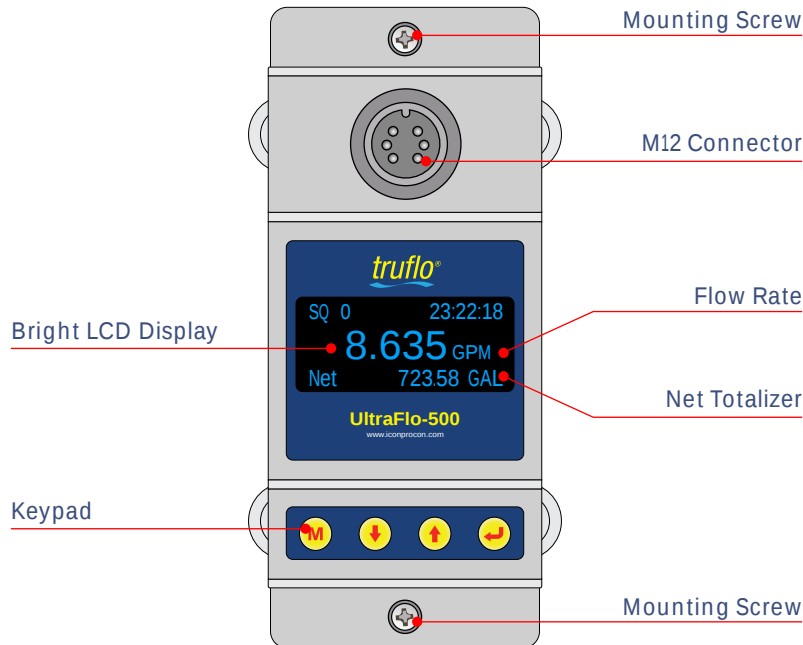


# UltraFlo® UF-500

## Clamp-On Ultrasonic Flow Meter Sensor



### Panel Function



### Keypad Functions

Follow these Guide Lines when using the Flow Meter Keypad:

Press to Enter the Programming Mode or to return to the previous menu during programming.

Press to Scroll Up or Down

Press to move to the Next Digit

Press to Select Digits (0-9)

Press to Confirm Selection.

### Powering ON

When connected to a VDC Power Supply the Ultrapro 500 will begin to run self-diagnosis program

### Signal Quality (SQ value)

SQ value is short for Signal Quality. It indicates the level of the signal detected. SQ value is indicated by numbers from 0~99. 00 is the minimum signal could be detected and 99 represents the maximum. Normally, the transducer position should be adjusted repeatedly and coupling compound should be checked frequently until the signal quality detected is as strong as possible.

SQ 99 01:58  
3.368 GPM  
Net 723.58 GAL

# UltraFlo® UF-500

## Clamp-On Ultrasonic Flow Meter Sensor



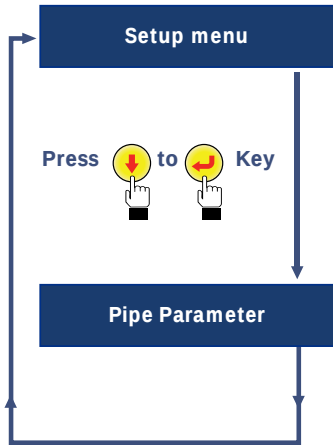
### Display Description

| STEPS                                                     | DISPLAY                                                             | OPERATION                                                                                                                                       |
|-----------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Main Display</b><br>Press  Key                         | SQ 99 12:30:18<br><b>3.368</b> GPM<br>Net 768.89 GAL                | When power is on, the flow meter will display <u>Flow Rate</u> / <u>Net Totalizer</u> .<br>Signal quality & Time.                               |
| <b>Totalizer</b><br>Press  Key                            | Runtime 216h<br>Day 79.068 GAL<br>Mth. 3839.8 GAL<br>Year 3768 GAL  | Press  to Display <b>Run time</b> / <b>Day Totalizer</b> / <b>Month Totalizer</b> / <b>Year Totalizer</b><br>Press  to Return to Previous Menu. |
| <b>Flow Rate / S.TOT Totalizer</b><br>Press  Key          | SQ 99 12:30:18<br><b>3.368</b> GPM<br>S.ToT 23.89 GAL               | Press  to Display <b>Flow Rate</b> / <b>S.TOT Totalizer</b><br>Press  to Return to Previous Menu.                                               |
| <b>Flow Rate / Velocity / Net Totalizer</b><br>Press  Key | SQ 99 12:30:18<br>Vel 1.068 f/s<br>Flow 3.339 GPM<br>Net 768.89 GAL | Press  to Display <b>Velocity</b> / <b>Flow Rate</b> / <b>Net Totalizer</b><br>Press  to Return to Previous Menu.                               |
| <b>Velocity / Net Totalizer</b><br>Press  Key             | 20-03-18 12:30<br><b>1.868</b> f/s<br>Net 768.89 GAL                | Press  to Display <b>Velocity</b> / <b>Net Totalizer</b> ,<br>Press  to Return to Previous Menu.                                                |

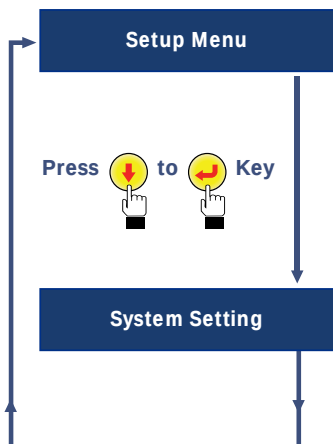
### Setup Menu

| STEPS                             | DISPLAY                                                                                                               | OPERATION                                                                                                                                                                                                                            |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Main Display</b><br>Press  Key | SQ 99 12:30:18<br><b>3.368</b> GPM<br>Net 768.89 GAL                                                                  | Power on Main Display shows <u>Flow Rate</u> & <u>Net Totalizer</u>                                                                                                                                                                  |
| <b>Setup Menu</b>                 | <b>Setup menu</b><br>0. Pipe parameter<br>1. System setting<br>2. Calibration<br>3. Output setting<br>4. History data | Press  to Display Setup Menu.<br>The following options are available (using the  or  Buttons)<br><b>0. Pipe parameter</b><br><b>1. System setting</b><br><b>2. Calibration</b><br><b>3. Output setting</b><br><b>4. History data</b> |

### Pipe Parameter Setup Menu

| STEPS                                                                            | DISPLAY                                                                                                               | OPERATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Setup menu</b><br>0. Pipe parameter<br>1. System setting<br>2. Calibration<br>3. Output setting<br>4. History Data | Press <b>M</b> to display Setup menu.<br>The following options are available (using the  or  buttons)<br><b>0. Pipe Parameter</b><br><b>1. System Setting</b><br><b>2. Calibration</b><br><b>3. Output Setting</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                  | <b>Pipe Setting</b><br>0. Outer diameter<br>1. Wall thickness<br>2. Material<br>3. Fluid type                         | Press  , Select 0. Pipe parameter, then  to Display :<br>The following options are available (using the  or  buttons)<br><b>0. Outer diameter</b><br><b>1. Wall thickness</b><br><b>2. Material</b> : Press  or  can option PVC, Carbon steel, Steel, Copper, PVDF, PFA, PTFE, PU, Aluminum.<br><b>3. Fluid type</b> : Press  or  to choose between Water, Sea Water, Oil...other. |

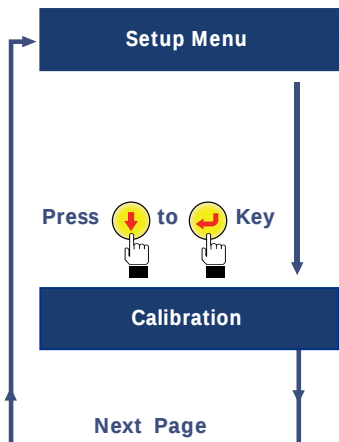
### System Setting Setup Menu

| STEPS                                                                              | DISPLAY                                                                                                                                                                                                 | OPERATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Setup menu</b><br>0. Pipe parameter<br><b>1. System setting</b><br>2. Calibration<br>3. Output setting                                                                                               | Press <b>M</b> to display Setup menu.<br>The following options are available (using the  or  buttons)<br><b>0. Pipe parameter</b><br><b>1. System setting</b><br><b>2. Calibration</b><br><b>3. Output setting</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                    | <b>System setting</b><br>0. System Unit<br>1. Flow Rate Unit<br>2. Total Unit<br>3. Total Reset<br>4. Time Set<br>5. System Lock<br>6. System INFO<br>7. Display dir<br>8. Damping<br>9. Display format | Press  , Select 1. System setting then  to display:<br>The following options are available (using the  or  buttons)<br><b>0. System Unit</b> : Press  or  to choose between Metric, English.<br><b>1. Flow Rate Unit</b> : Press  or  to choose between m <sup>3</sup> /h, LPM, GPM, LPH.<br><b>2. Total Unit</b> : Press  or  to choose between m <sup>3</sup> , L, GAL.<br><b>3. Total Reset</b> : Press  then Parameters will be reset.<br><b>4. Time Set</b> :<br><div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 5px; margin-right: 10px;"> yy-mm-dd    hh:mm<br/> 19-06-20    12:30 </div> <div> When modifying, the default is 30 seconds. Generally, it is unnecessary to modify date &amp; time as the system is equipped with a highly reliable perpetual calendar chip. </div> </div> |

Next Page

| STEPS                                              | DISPLAY                                                                                                                                                                                                                                                                                        | OPERATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>Previous Page</div> <div>System Setting</div> | <div>System setting</div> <div>0. System Unit</div> <div>1. Flow Rate Unit</div> <div>2. Total Unit</div> <div>3.Totalizer Reset</div> <div>4. Time Set</div> <div>5. System Lock</div> <div>6. System INFO</div> <div>7. Display dir</div> <div>8. Damping</div> <div>9. Display format</div> | <div>5. System lock</div> <div>System lock</div> <div>System Unlocked</div> <div>System Unlocked</div> <div>ENT to lock</div> <div>ENT key word</div> <div>0000</div> <div>System lock</div> <div>System locked OK</div> <div>System lock</div> <div>System locked</div> <div>System lock</div> <div>ENT to unlock</div> <div>ENT key word</div> <div>0000</div> <div>System lock</div> <div>System Unlocked OK</div> <div>Once the system is locked, any modifications to the system are prohibited, but the parameter is readable. "Unlock" using your designated password. The password is composed of 1 to 4 numbers.</div> <div>6. System INFO</div> <div>System INFO</div> <div>Flowmete</div> <div>SN:30001399</div> <div>V1.00</div> <div>Manual Totalizer</div> <div>ENT To Start</div> <div>Manual Totalizer</div> <div>ENT To Stop</div> <div>1.239 m³/h</div> <div>SQ99 1.056L</div> <div>Manual Totalizer</div> <div>ENT To Restart</div> <div>1.239 m³/h</div> <div>SQ99 1.056L</div> <div>Display serial number (SN) of the meter. This SN is the only one assigned to each flow meter ready to leave the factory. The factory uses it for files setup and for management by the user.</div> <div>Press  5 times to enter Manual Totalizer; The manual totalizer is a separate totalizer. Press  to start, and press  to stop it. It is used for flow measurement and calculation.</div> <div>7. Display dir</div> <div>Display dir</div> <div>0. Normal</div> <div>1. Inversion</div> <div>Select the display direction of the screen, which can be rotated by 180 degrees. Display Inversion (180 degree rotation) to be mentioned as a key feature</div> <div>8 . Damping</div> <div>Damping</div> <div>003</div> <div>When the flow regime is unstable and the display value changes greatly, damping can be set to adjust the measurement response speed of the product. The unit is in seconds.</div> <div>9. Display format</div> <div>Display format</div> <div>0. x 0.001</div> <div>1.x 0.01</div> <div>2.x 0.1</div> <div>The display digit of the measured value can be set through the zoom function. It is displayed after the decimal point by default 3 digits. You can choose to display 2 digits after the decimal point, 1 digit after the decimal point and 0 digit after the decimal point.</div> |

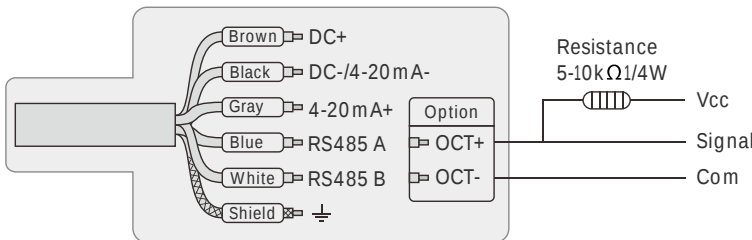
### Calibration Setup Menu

| STEPS                                                                            | DISPLAY                                                                                                                | OPERATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Setup menu</b><br>0. Pipe parameter<br>1. System setting<br><b>2. Calibration</b><br>3. Output setting              | Press <b>M</b> to display <b>Setup Menu</b> .<br><br>The following options are available (using the  or  buttons)<br><br><b>0. Pipe parameter</b><br><b>1. System setting</b><br><b>2. Calibration</b><br><b>3. Output setting</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                  | <b>Calibration</b><br>0. Scale factor<br>1. 4-20mA CAL<br>2. Set Zero<br>3. Low flow Cut<br>4. Manual zero<br>5. HiAGC | Press  , Select <b>2. Calibration</b> , then  to display:<br><br>The following options are available (using the  or  buttons)<br><br><b>0. Scale factor</b><br><br><div>             Scale factor<br/>             1.000           </div> <p>Refers to the ratio between the "actual value" and "reading value". For example, when the measurement is 2.00, and it is indicated at 1.98 on the instrument, the scale factor reading is 2/1.98. This means that the best scale factor constant is 1.01.</p> <hr/> <b>1. 4-20mA CAL</b><br><br>Check if the current loop has been calibrated before leaving the factory. Press  move  to display 4 mA or 20mA , and at the same time, check with an am meter to verify that Current Loop output displayed values. It is necessary to re-calibrate the current loop, if over the permitted tolerance.<br><br><div> <div>4mA Calibrate<br/>25492</div> <div>20mA Calibrate<br/>4555</div> </div> <p>The displayed value has no meaning, but is only used for internal records. Correct only by up and down Key operation, check the displayed value of am meter (multimeter).</p> <hr/> <b>2. Set Zero : Press  ;</b> reset "Zero Point" which was set by the user.<br><br><div> <div>Set zero<br/>Ent to set zero<br/>Reset zero</div> <div>             Set zero<br/>Waiting...<br/>SQ 88<br/>Vel 0.035 f/s           </div> </div> <p>After setting, return to the main interface and the flow is "0". If you return to the main interface, the flow is not "0", the setting is unsuccessful. Check whether the installation is correct or not.</p> <hr/> <b>3. Low flow cut :</b> Flow rate falls below the low flow cutoff value.<br><br><div>Low flow cut<br/>0.0500 f/s</div> <p>This function can prevent that when the pump stops working and the liquid flows at a low speed in the pipe, data accumulation error caused by continuous reading of flow meter. Input is generally recommended 0.05f/s as the low flow cut-off point. The low flow cut-off value is independent of the measurement results.</p> |

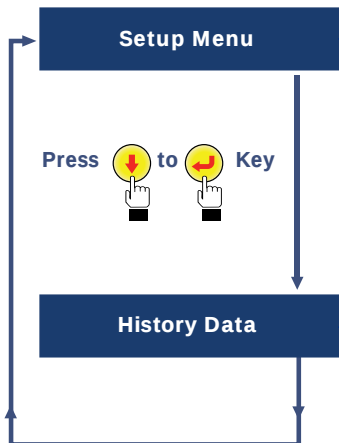
|                                         |                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Previous Page</p> <p>Calibration</p> | <p><b>Calibration</b></p> <ul style="list-style-type: none"> <li>0. Scale factor</li> <li>1. 4 &amp; 20mA CAL</li> <li>2. Set Zero</li> <li>3. Low flow Cut</li> <li>4. Manual zero</li> <li>5. HiAGC</li> <li>6. Negative Flow</li> </ul> | <p>Generally, pipes made of SS304 or SS316 are with wall thickness of more than 2mm. In practical use, it will receive false signals due to the interference of pipe wall signals, It is recommended that the low flow rate should be cut off at 0.08m/s or above.</p> <hr/> <p><b>4. Manual zero</b></p> <p>Manual zero<br/>0.0000 m<sup>3</sup>/h</p> <p>This method is not commonly used and is only suitable for experienced operators. It is not suitable for other parties. Manually input the value and add it to the measured value to obtain the actual value.</p> <hr/> <p><b>5. Hi AGC</b></p> <p>Hi AGC<br/>0. OFF</p> <p>High gain switch do not needs to be set generally, could try to switch on for special pipes with weak signal detected.</p> |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Output Setting Setup Menu

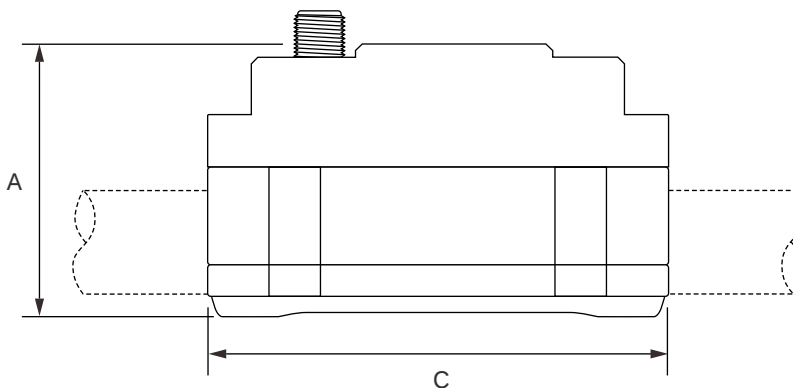
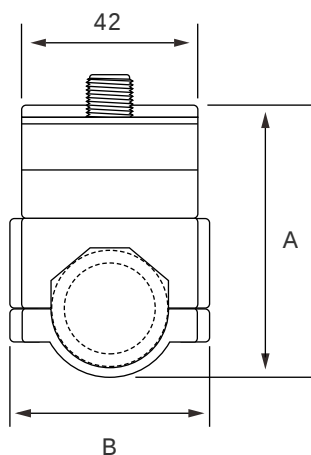
| STEPS                                                                      | DISPLAY                                                                                                                                                                                             | OPERATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Setup Menu</p>                                                          | <p><b>Setup menu</b></p> <ul style="list-style-type: none"> <li>0. Pipe parameter</li> <li>1. System setting</li> <li>2. Calibration</li> <li>3. Output setting</li> <li>4. History data</li> </ul> | <p>Press <b>M</b> to display Setup menu.</p> <p>The following options are available (using the <b>↓</b> or <b>↑</b> buttons)</p> <ul style="list-style-type: none"> <li>0. Pipe parameter</li> <li>1. System setting</li> <li>2. Calibration</li> <li>3. Output setting</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p>Press <b>↓</b> to <b>Key</b></p> <p>Output Setting</p> <p>Next Page</p> | <p><b>Output setting</b></p> <ul style="list-style-type: none"> <li>0. RS485 Setup</li> <li>1. 4-20mA range</li> <li>2. Alarm value</li> <li>3. OCT output</li> <li>4. OCT multiplier</li> </ul>    | <p>Press <b>↓</b>, Select <b>3. Output setting</b>, then <b>↓</b> to display:</p> <p>The following options are available (using the <b>↓</b> or <b>↑</b> buttons)</p> <hr/> <p><b>0. RS 485 Setup</b></p> <p><b>RS485 Setup</b></p> <ul style="list-style-type: none"> <li>0. Network addr</li> <li>1. RS485 Baudrate</li> <li>2. RS485 Parity</li> <li>3. RS485 Stopbits</li> </ul> <p>This window is used to set RS 485 serial port. It must match the equipment's connected parameters. First select baud rate: 2400, 4800, 9600, 19200 are selectable</p> <p>Then select : None. Data length : 8 Stop bit is fixed length. Factory default value for serial port parameter is "9600, 8, None, 1"</p> <hr/> <p><b>1. 4-20mA range</b></p> <div> <div>4mA value<br/>0.00 GPM</div> <div>20mA value<br/>15.00 GPM</div> </div> <p>Set the Current Loop output value according to the flow value at 4mA, and 20mA. The flow unit is GPM.</p> |

| STEPS                                              | DISPLAY                                                                                                                                                                                   | OPERATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>Previous Page</div> <div>Output Setting</div> | <b>Output setting</b> <ul style="list-style-type: none"> <li>0. RS485 Setup</li> <li>1. 4-20mA range</li> <li>2. Alarm value</li> <li>3. OCT output</li> <li>4. OCT multiplier</li> </ul> | <h3>2. Alarm Value (Optional)</h3> <div> <b>Alarm value</b> <ul style="list-style-type: none"> <li>0. Low value</li> <li>1. High value</li> </ul> </div> <p>Enter the low alarm value; any measured flow lower than the low value, will activate the alarm in the OCT hardware or relay output signal.<br/>Enter the high alarm value; any measured flow higher than the high value, will activate the alarm in the OCT hardware or relay output signal.</p> <hr/> <h3>3. OCT output (Applicable to OCT output model)</h3> <div> <b>OCT output</b> <ul style="list-style-type: none"> <li>0.Total Pulse</li> <li>1.Alarm output</li> <li>2.No Signal</li> </ul> </div> <p>The OCT output in the flow meter is a kind of isolated collector open circuit output with program mable open and close qualifications. The user can program the open and close functions under the following conditions: the system alarm signals are being activated or the totalizer pulse is being transmitted.<br/>Pulses are cumulative output, and the equivalent of each pulse is 0.01L~ 100m3, It can be set through the menu.<br/>The maximum number of pulses output per second is 40.</p> <p><b>OCT Wiring Diagram:</b><br/>To select OCT output, an external 5-10K pull-up resistor shall be connected at the OCT + end; Add a 5-24vcd power supply at VCC and com ends, as shown in the figure:</p>  <hr/> <h3>4. OCT multiplier (Applicable to OCT output model)</h3> <div> <b>OCT multiplier</b> <ul style="list-style-type: none"> <li>0. x0.001</li> <li>1. x0.01</li> <li>2. x0.1</li> </ul> </div> <p>Select OCT pulse output multiple</p> |

### Data Logging Setup Menu

| STEPS                                                                                                                                                                                                                                                                    | DISPLAY                                                                                                               | OPERATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Press  to  Key</p> | <b>Setup menu</b><br>0. Pipe parameter<br>1. System setting<br>2. Calibration<br>3. Output setting<br>4. History data | Press  to display <b>Setup menu</b> .<br><br>The following options are available (using the  or  buttons)<br><br>0. Pipe parameter<br>1. System setting<br>2. Calibration<br>3. Output setting<br>4. History data |
|                                                                                                                                                                                                                                                                          | <b>History data</b><br>0.By Day<br>1.By Month<br>2.By Year                                                            | Press  , Select <b>4. History data</b> , then  to display:<br><br>0. <b>By Day</b> : Display Totalizer flow for days.<br>1. <b>By Month</b> : Display Totalizer flow for months.<br>2. <b>By Year</b> : Display Totalizer flow for years.                                                            |

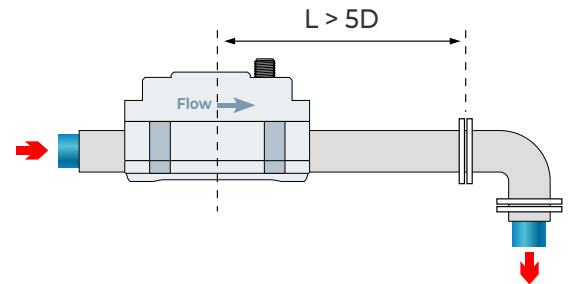
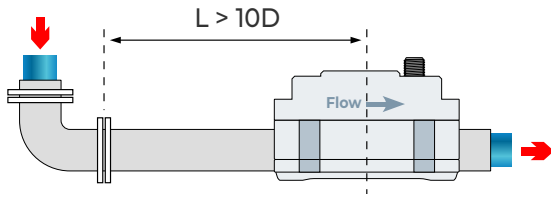
### Dimensions



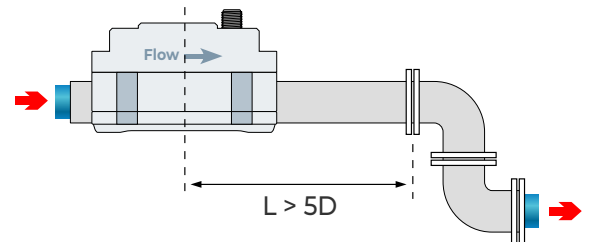
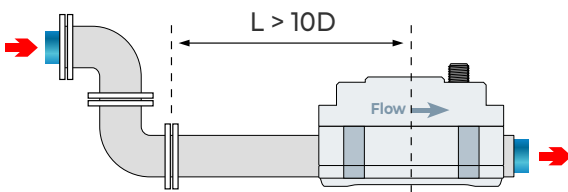
| Model     | Pipe OD | OD Range  | A (mm) Max | B(mm) | C(mm) |
|-----------|---------|-----------|------------|-------|-------|
| UF500-15  | ½"      | 16.5 - 23 | 86         | 52    | 106   |
| UF500-25  | 1"      | 30-35     | 91         | 58    | 106   |
| UF500-40  | 1-½"    | 48-54     | 110        | 78    | 106   |
| UF500-50  | 2"      | 58-68     | 126        | 91    | 130   |
| UF500-50  | 3"      | 88-96     | 154        | 119   | 150   |
| UF500-100 | 4"      | 108-116   | 177        | 143   | 174   |

### Installation Positions

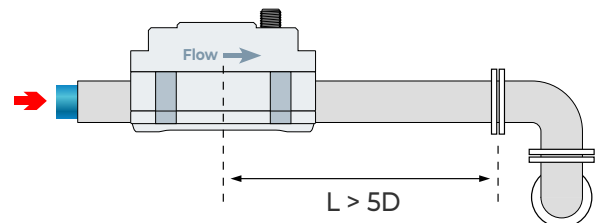
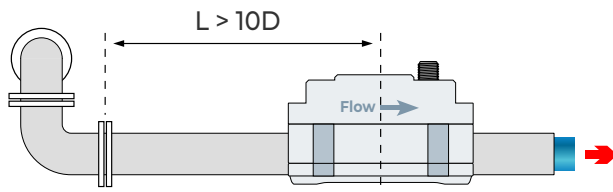
#### Source : 90° Elbow



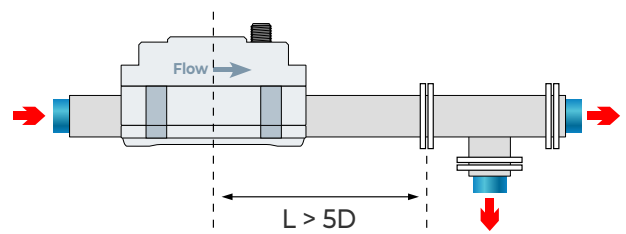
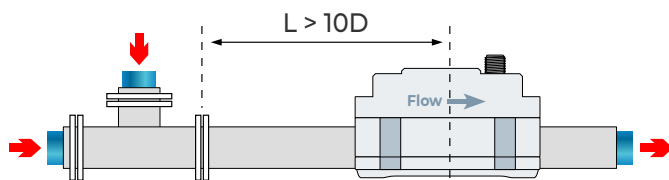
#### Source : 2 x 90° Elbow in One Plane



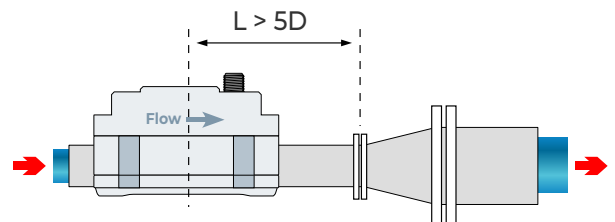
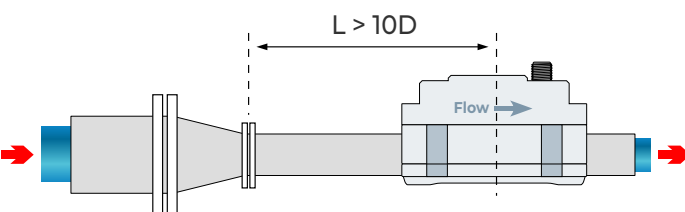
#### Source : 2 x 90° Elbow in Different Plane



#### Source : T-Section

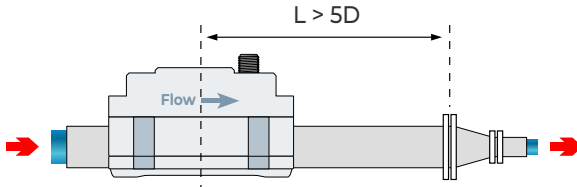
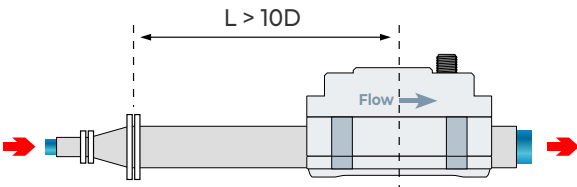


#### Source : Reducer

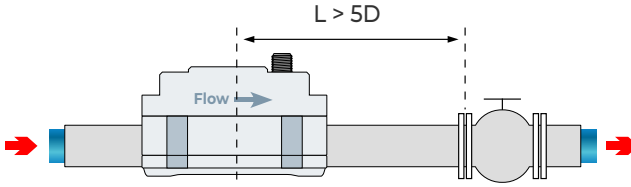
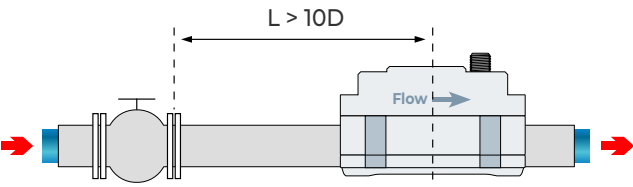


Installation Positions

Source : Diffuser



Source : Valve



### Warranty, Returns & Limitations

## Warranty

Icon Process Controls warrants to the original purchaser of its products that such products will be free from defects in materials and workmanship under normal use and service in accordance with instructions furnished by Icon Process Controls for a period of one year from the date of sale of such products. Icon Process Controls' obligation under this warranty is solely and exclusively limited to the repair or replacement, at Icon's option, of the products or components, which Icon examination determines to its satisfaction to be defective in material or workmanship within the warranty period. Icon Process Controls must be notified within thirty (30) days pursuant to the instructions below of any claims of lack of conformity under this warranty. Any product repaired under this warranty will be warranted only for the remainder of the original warranty period. Any product provided as a replacement under this warranty will be warranted for the full 1 year from the date of sale.

## Returns

Products cannot be returned to Icon Process Controls without Icon's prior authorization. To return a product that is thought to be defective please submit a customer return (MRA) request form and follow the instructions therein. All warranty and non-warranty product returns to Icon Process Controls must be shipped prepaid and insured. Icon will not be responsible for any products lost or damaged in shipment.

## Limitations

**This warranty does not apply to products which:**

- 1) Are beyond the warranty period or are products for which the original purchaser does not follow the warranty procedures outlined above;
- 2) Have been subjected to electrical, mechanical or chemical damage due to improper, accidental or negligent use;
- 3) Have been modified or altered;
- 4) Anyone other than service personnel authorized by Icon have attempted to repair;
- 5) have been involved in accidents or natural disasters;
- 6) Are damaged during return shipment to Icon Process Controls.

**Icon Process Controls reserves the right to unilaterally waive this warranty and dispose of any product returned to Icon where :**

- 1) There is evidence of a potentially hazardous material present with the product;
- 2) The product has remained unclaimed at Truflo for more than 30 days after Icon Process Controls has dutifully requested disposition.

This warranty contains the sole express warranty made by Truflo in connection with its products. ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED. The remedies of repair or replacement as stated above are the exclusive remedies for the breach of this warranty. IN NO EVENT SHALL LEVELPRO BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND INCLUDING PERSONAL OR REAL PROPERTY OF OR INJURY TO ANY PERSON. THIS WARRANTY CONSTITUTES THE FINAL, COMPLETE AND EXCLUSIVE STATEMENT OF WARRANTY TERMS AND NO PERSON IS AUTHORIZED TO MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS ON BEHALF OF Icon Process Controls.

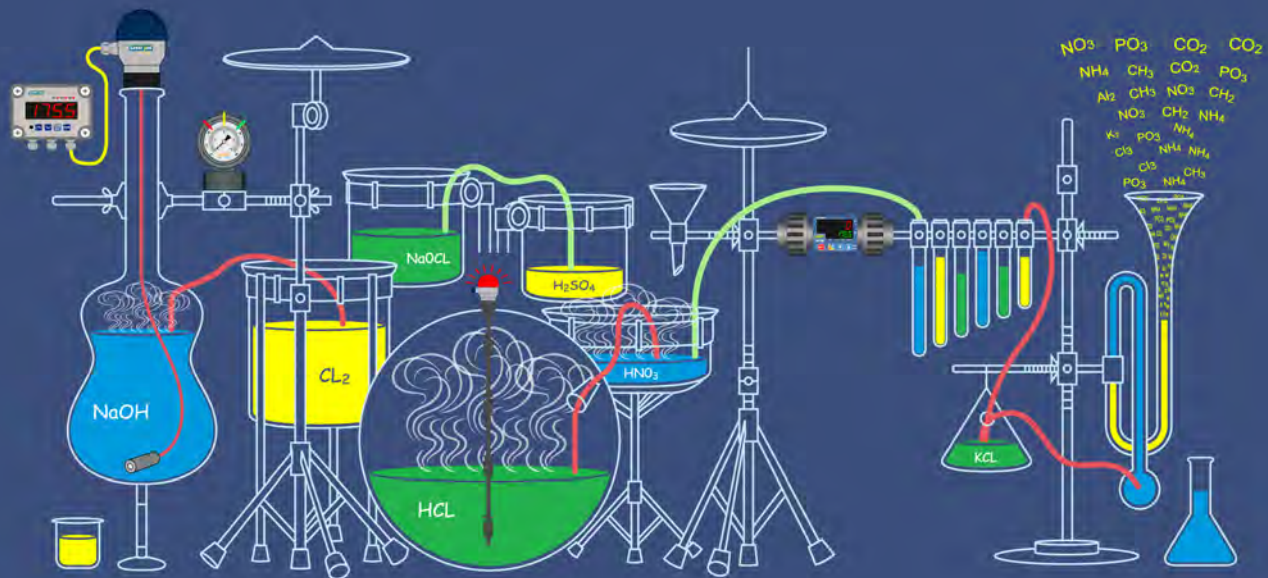
If any portion of this warranty is held to be invalid or unenforceable for any reason, such finding will not invalidate any other provision of this warranty.

For additional product documentation and technical support visit [www.iconprocon.com](http://www.iconprocon.com) | e-mail: [sales@iconprocon.com](mailto:sales@iconprocon.com) | support@iconprocon.com | Ph: 905.469.9283



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