Ultrasonic Flow meter quick start guide
Model: D118-HD

We also have an installation demo video on Youtube
Scan the QR code, search for 'D118 HD Overview & Demo'
or use this link: https://youtu.be/VXG8UNmsYMo

SCAN ME

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Please note that this guide will go through basic functions of the flow meter only for the purposes of 'getting started', for advance functions please see the full manual.

Wall mounting the transmitter:

1. At the bottom of the flow meter remove the M4 screw, then you can separate the wall bracket.
2. In the included accessories supplied you will find 4 screws and wall plugs, you can use them to mount the wall bracket onto a wall, post, enclosure etc…
3. Then hang the main transmitter on the mounting bracket and re-install the M4 screw (refer to Figure 2) to lock the transmitter and bracket together.

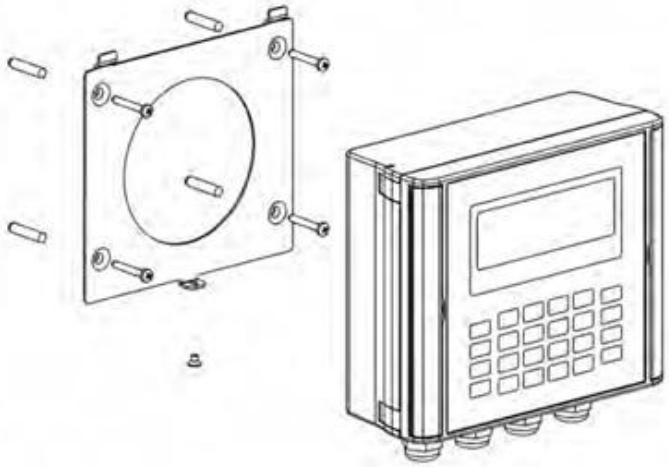


Figure 1: Host Installation Exploded View

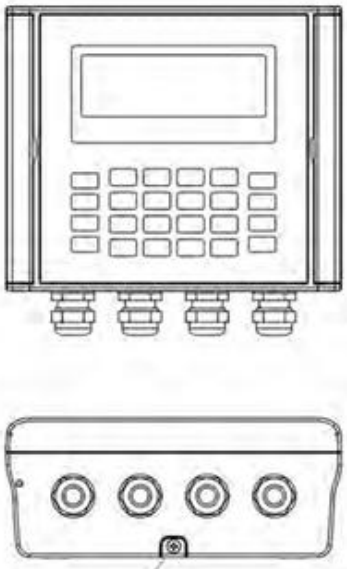


Figure 2

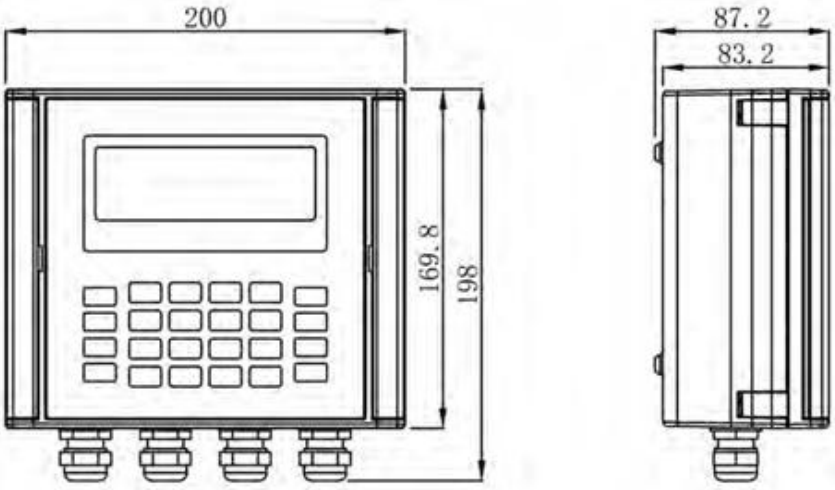


Figure 3: Host Overall Dimension Drawing (Unit: mm)

Transmitter Wiring:

Warning:
Wire in all connectors with the power off.
The instrument should be reliably grounded before installation and use.
Use either AC or DC power supply. Do not connect them both at the same time.

Open the case, flip open the left and right hinged screw covers and remove the 4 screws shown.

You will find the transmitter interface labels below each of the connection port

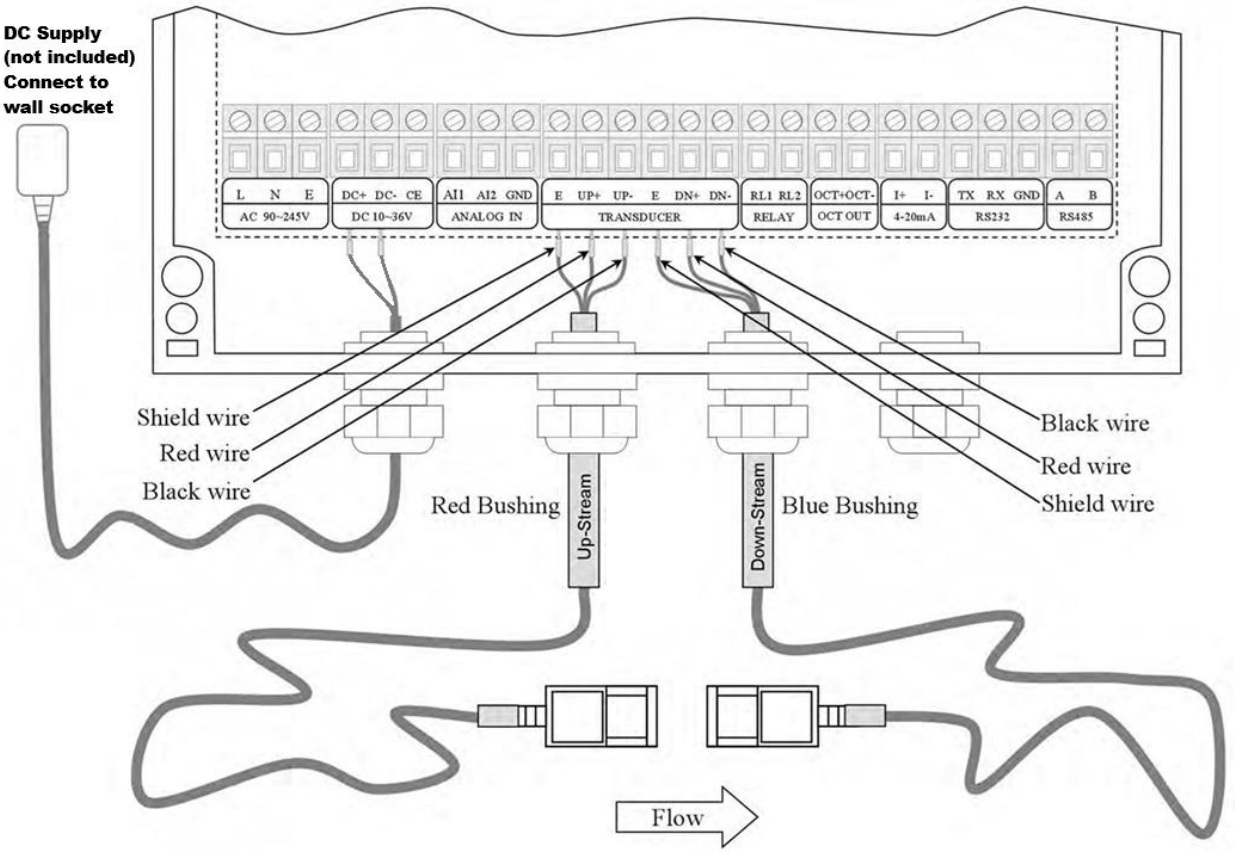
The transmitter can be connected to two types of power supplies: AC90~245V OR DC10~36VDC. But ensure that the power connection is consistent with the specifications displayed on the transmitter nameplate in case of model/spec change.

Note that no power supply is included in the standard set, you can source your own or contact us for a quote.

You may need an electrician to wire in mains power. You should check for yourself local laws and regulations, but generally ordinary users can wire extra low voltage systems, so you can connect a 12v DC power supply to power this meter.

Connect the transducer wiring, the diagram below shows where these wires are to be connected. (your model may have slightly different port positions so please refer to the markings on the actual device)

Please wire in all required cables and ensure that all cables are run through the supplied cable glands and tightened up to prevent dust and water ingress.



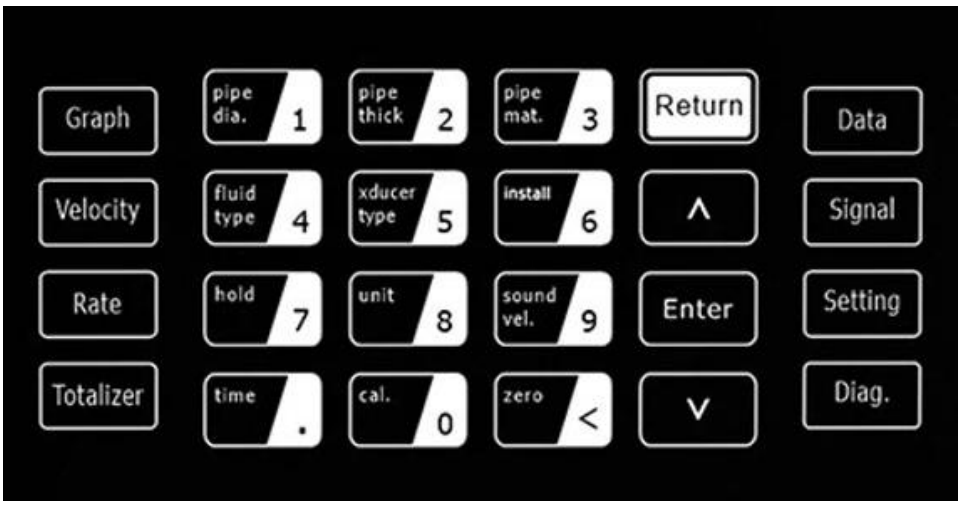
Powering on:

Connect the meter to a power source, and it will power on, once powered on it will display the startup screen.

When used for the first time or installed at a new installation site, parameters for the new installation site need to be entered. Any parameters entered by the user will be permanently saved until modified.
When the user changes parameters or moves the sensors, the instrument will immediately recalculate and adjust automatically, and work according to the newly entered parameters by the user.

Keypad functions:

The flowmeter keyboard is shown in the following figure, with explanations as follows:



cal. 0 ~ sound vel. 9 and time . are used for entering numbers. zero < Is used for left/backspace. These 0-9 keys are also dual function as shortcut keys to various functions/menus as indicated on the label.	
^ v	Used for up and down selection.
Enter	To enter/confirm selection
Graph	Shows the measured flow rate and a graph on one screen
Velocity	Shows the measured flow velocity
Rate	Shows the measured flow rate
Totalizer	Shows the flow totaliser, a cumulative quantity of flow since the totaliser was last reset.
Data	TF Data storage (SD card) interface, used to turn on/off logging and adjust interval.
Setting	Settings window interface, all parameter settings are performed through this interface.
Signal	Shows signal quality information
Diag.	Shows diagnosis information

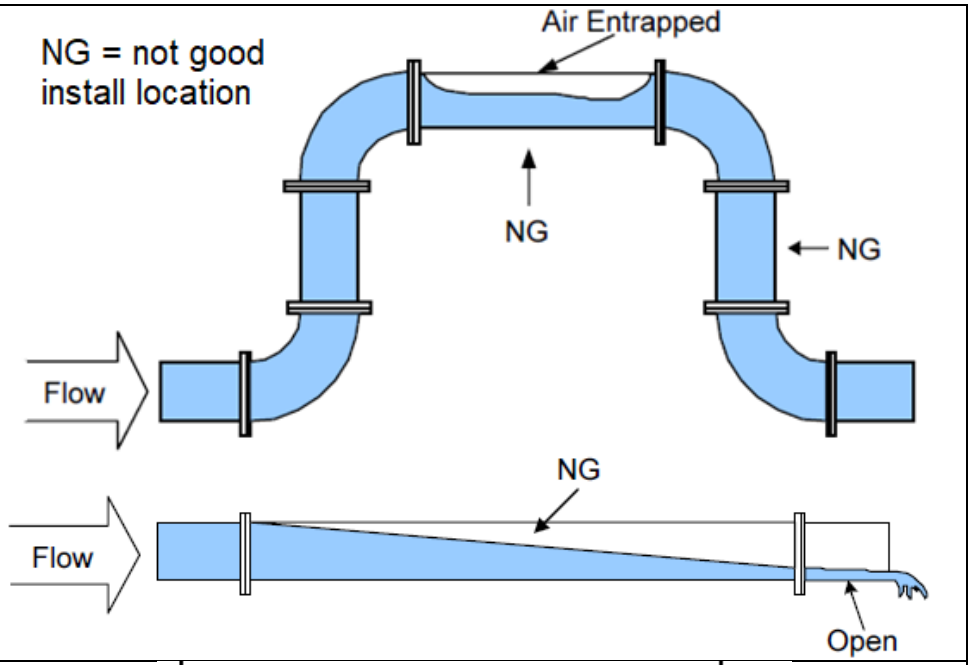
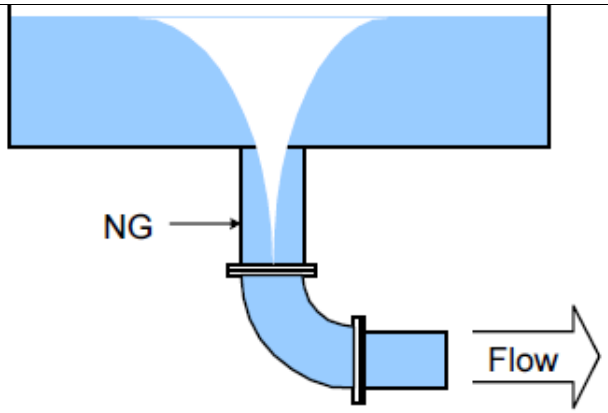
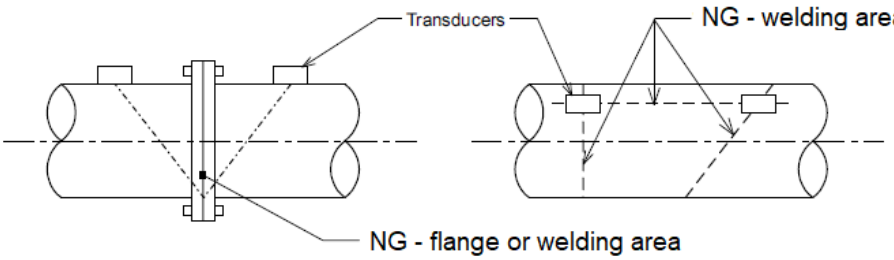
Select installation location:

The installation of ultrasonic flowmeter is the simplest among various types of flowmeters. It can be completed in only three steps: selecting an appropriate measuring point, entering the pipe parameters of the measuring point into the flowmeter, installing the sensor on the pipe, and then starting the measurement.

To ensure measurement accuracy, priority should be given to selecting a pipe section with a uniform fluid flow field distribution as the measuring point. The specific point selection and installation must follow the following principles:

<table>
<tr>
<td>Select a pipe section that is completely filled with fluid such as the vertical part of the pipeline (only with upward fluid flow direction) or a horizontal pipe section filled with fluid. The diagram's show some examples of areas unsuitable for installation.

• Avoid the highest point in a system, there may be entrapped air

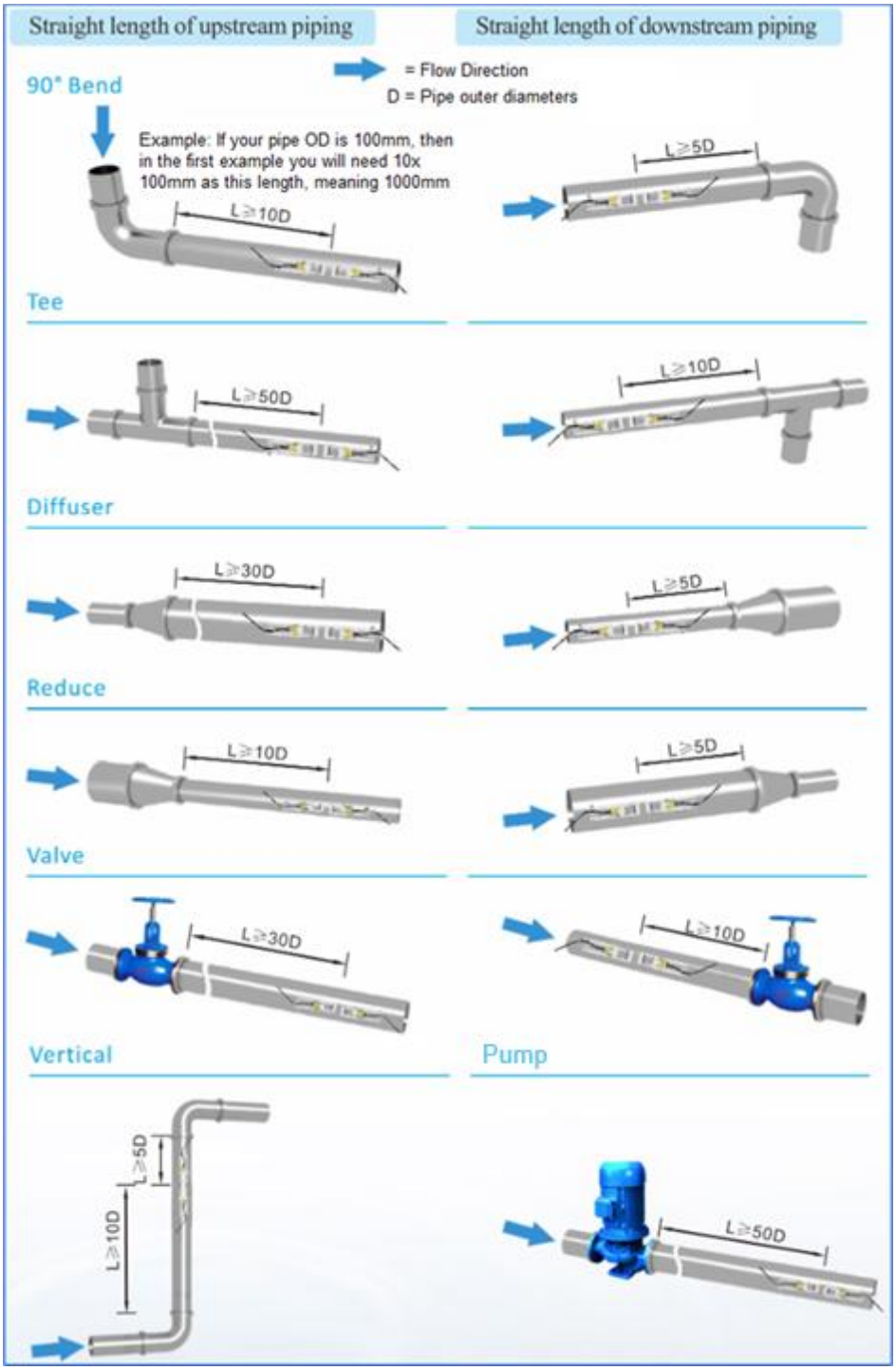
• Avoid a pipe open end.</td>
<td> 
</td>
</tr>
<tr>
<td>Avoid entrained air:
Measurement may not be possible if there is entrained air at the transducer position.
If installing on vertical pipes, it should not be used where flow direction is downward, as the pipe may not be completely full, it would work best on a vertical pipe where the flow direction is from bottom to top.</td>
<td> 
</td>
</tr>
<tr>
<td>Avoid mounting in areas spanning flanges or welded sections of pipe.</td>
<td> 
</td>
</tr>
<tr>
<td>Confirm the temperatures at the measuring point is within the meter's capability</td>
<td>  </td>
</tr>
</table>

- Evaluate condition of the inner pipe wall. Select a pipe section with no scaling or pitting on the inner wall.

- Select a suitable pipe material. A pipe with uniform material and dense structure should be selected to ensure that ultrasonic waves can be stably transmitted in the pipe and reduce signal loss.
  There is a selection of pre-programmed pipe materials, if your pipe material is not one of those you can select 'other', then you can find out the sound speed of that material in m/s, and manually enter it.

- Note that it can only be used with rigid fixed wall pipework, not a flexible hose with a braid for example.

- Ensure that there are sufficient uniform straight pipe sections before and after the measuring point so that the flow is non turbulent inside the pipe. There should be no valves, elbows, reducers, or other devices that may interfere with the flow field within this range. The recommended lengths of straight pipe sections are shown in the diagrams below



Select an area with a straight run of pipe of at least 15x the pipe OD (or more in many cases as shown)

Transducer mounting methods:

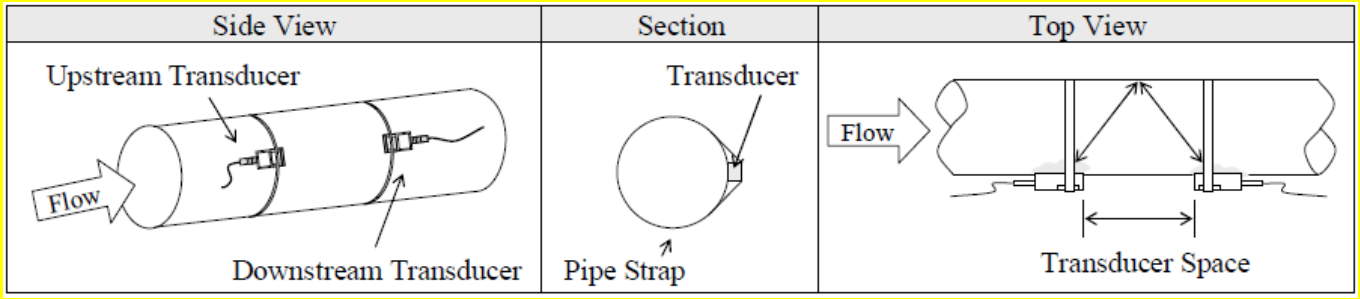
Three transducer mounting methods are available, **V method, Z method** and **N method.**

V method

The V method is considered the standard method. It usually gives a more accurate reading and is used on pipe diameters ranging from 25mm to 400mm. It is also the most convenient to use and setup.

This quick start guide will demonstrate setting up this V method, see the full manual for more info on other methods

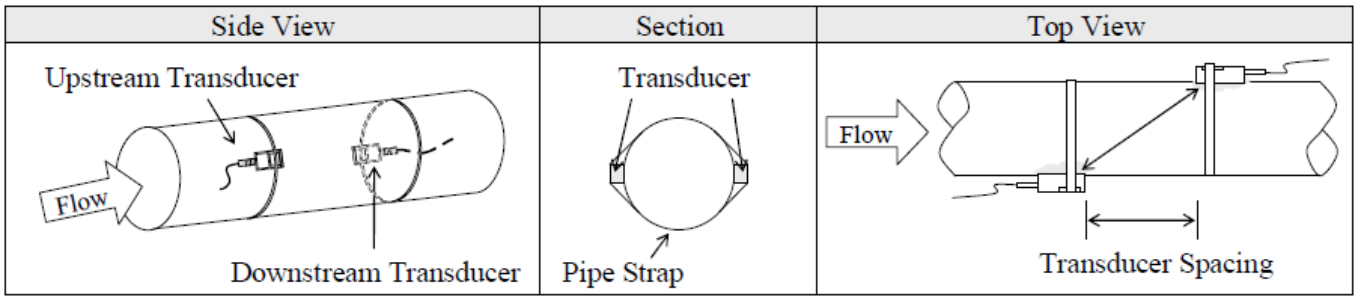
V method – can be used for 25mm to 400mm pipes



Z Method

The signal transmitted in a Z method installation has less attenuation than a signal transmitted with the V method, therefore is good to use when the pipes are large, there are some suspended solid in the fluid, or the scaling and liner are too thick. This is because the Z method utilizes a directly transmitted (rather than reflected) signal which transverses the liquid only once. While the Z method can measure on pipe diameters over 100mm, it is recommended to use this method for pipe diameters over 300mm.

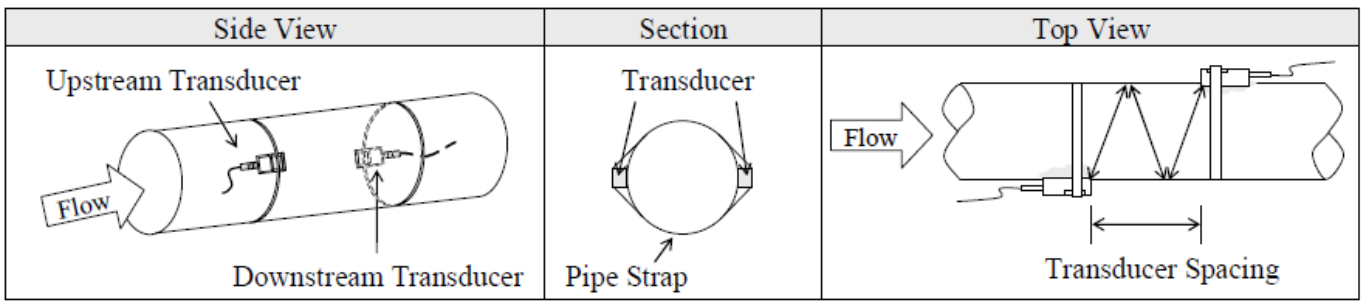
Z method – can be used on pipes over 100mm



N Method (uncommonly used)

With the N method, the sound waves traverse the fluid three times and bounce twice off the pipe walls. It is suitable for small pipe diameter measurement. The measurement accuracy can be improved by extending the transit distance with the N method which this helps to achieve on small pipes

N method – while uncommon – it can be used on small pipes usually under 50mm



Setup of instrument parameters:

This guide will only tell you about the most basic menu's – for a full description about each menu's function please see the full manual

All parameters entered must be accurately otherwise the flowmeter will not work properly – the meter's functionality and accuracy are tied directly to a quality installation.

Now that a suitable installation location has been decided, and by now you should select the best mounting method for your pipe, we will need to program the pipes parameters into the flow meter, For example: measuring a carbon steel pipe with a specification of DN200, pipe outer diameter of 219mm, pipe wall thickness of 6mm, measuring water as the medium, no lining material, and V-type installation type. The operation steps are as follows: (For the usage instructions of insertion sensor settings, please refer to the appendices.)

1. After turning on the device, enter the flow data display window interface. There are 6 such interfaces, which can be switched to for viewing by pressing [∧] [∨]

2. **Select pipe material**

   Press [Setting] to enter the settings window interface. "1. Flow Setup",

   Press [Enter] then select "01.Pipe Material",

   Press [Enter] again, select pipe material. "01. Carbon Steel" in this example.

   Press [Enter] to save and return.

   NOTE: If your pipe material is not shown you can select 'other', then in the menu 1-06 'sound velocity' you can manually input the sound velocity of that pipe material which you may be able to find with a web search

3. **Setup Outer Diameter**

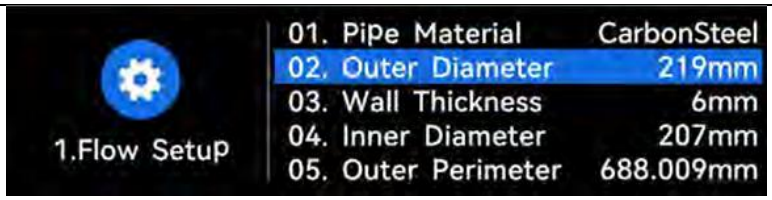
   Press [∨] scroll down the list until you reach item number 1-02: Outer Diameter

   Press [Enter] and type the pipe OD. 219mm in this example.

   Press [Enter] again to save and return.

   HINT:

   Press [pipe dia. 1] to quickly enter menu 1-02



4. **Set Pipe Wall Thickness**

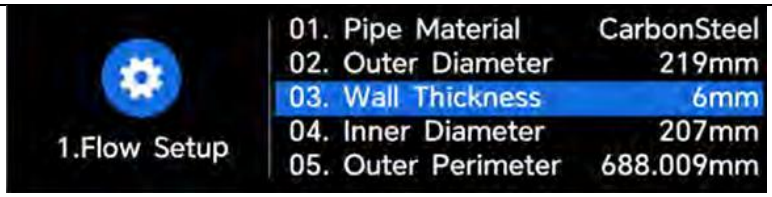
Press [V] scroll down the list until you reach item number 1-03: Wall Thickness

Press [Enter] and enter 6mm

Press [Enter] again to save and return.

HINT:

Press [pipe thick 2] to quickly enter menu 1-03



NOTE: ID and outer perimeter will self-update based on those OD and thickness that was entered, if OD is 219 and wall thickness is 6, then it already knows that ID is 207mm.

Or if you know ID and thickness enter them accordingly and it will calculate the other

5. **Set Fluid Type**

Press [V] scroll down the list until you reach item number 1-07: Fluid Type

Press [Enter] and select your fluid type. In this example '01.water'

Press [Enter] again to save and return.

HINT:

Press [pipe thick 2] to quickly enter menu 1-03

NOTE: If your liquid is not shown you can select 'other', then in the menu 1-08 below 'fluid sound vel' you can manually input the sound velocity of that fluid which you may be able to find with a web search. You can also enter 1-09 viscosity for 'other' fluids.

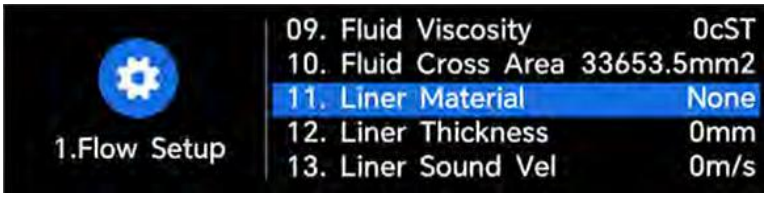
6. **Set Liner Material**

Press [V] keep scrolling down the list until you reach item number 1-11: Liner material

Press [Enter] and select your liner type. In this example '01.none'

Press [Enter] again to save and return.

NOTE: if your material is not listed, select 'other' and manually input a sound velocity on menu 1-13 'liner sound vel'

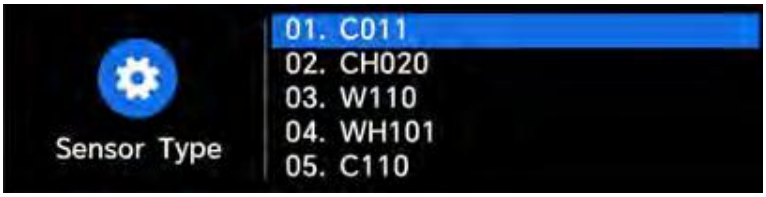


7. **Set flow sensor type**

Press V keep scrolling down the list until you reach item number 1-14: Sensor type

Press Enter and select your sensor type
Our default standard set is ‘C011’ but you may have a special model, you can check the info plate on the sensors themselves.

Press Enter again to save and return.



8. **Sensor Installation Method**

Press V keep scrolling down the list until you reach item number 1-15: Sensor Mounting

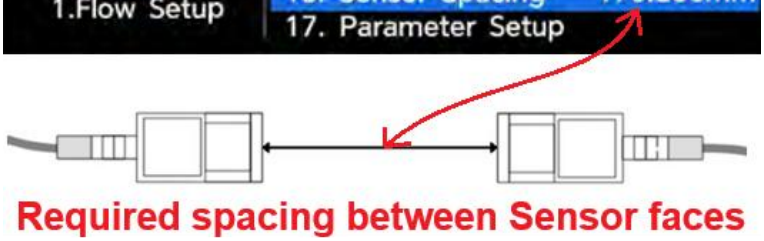
Press Enter and select your mounting method.
In this example ’01.V’

9. **Sensor Installation Spacing**

Press V keep scrolling down the list until you reach item number 1-16: Sensor spacing

Based on all the parameters you have entered, the meter will show the required sensor spacing. Take note of the displayed spacing and install the sensors this distance apart between the faces of the two sensors

Now you can proceed with the steps of preparing the pipework and installing the sensors



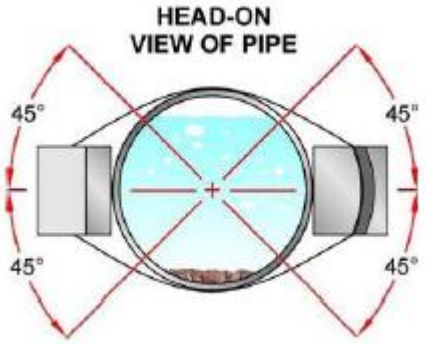
Pipe preparation

So by now you should have already selected the ideal location to install the flow meter transducers.

Remember to consider the possibility of sediment at the bottom of the pipe and the presence of an air pocket at the top of the pipe.

Because of this it is best to install the transducers on the side of the pipe usually within 45° of a horizontal pipe, as shown.

In addition, avoid flanges and welding areas and select a smooth portion of the pipe to install the transducers.



Transducer mounting methods:

Now that you know the **required sensor spacing** from the previous step, and you have selected a suitable location for the installation with enough distance upstream and downstream away from bends, pumps, valves etc… you can prepare the pipe for mounting the transducers. Using a polisher or sandpaper make the mounting position clean of all rust, mud, scale, painting etc. Ensure the polished area is larger than transducer surface area.	
Polish one mounting area first, measure out the required sensor spacing, and then you can polish the other area accordingly. A clean, polished mounting surface is very important for good signal. For plastic pipe, clean it of painting, sticky oil, adhesives, etc.	

Transducer installation and fixing

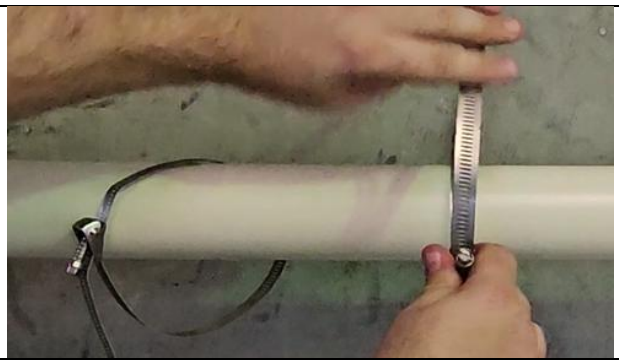
Now the transducers can be installed onto the pipe.
The mounting conditions and positioning directly influences the flow value accuracy and system long-term operation reliability so it is important to mount the transducers correctly and accurately, the transducers should be spaced apart at the distance shown on the meter after parameter setup. (as per page 11)

Included with the flow meter is some stainless-steel straps and couplant.

Apply a blob of coupling compound on the face of each transducer, ensure there are no air gaps between the transducers and the pipe wall.

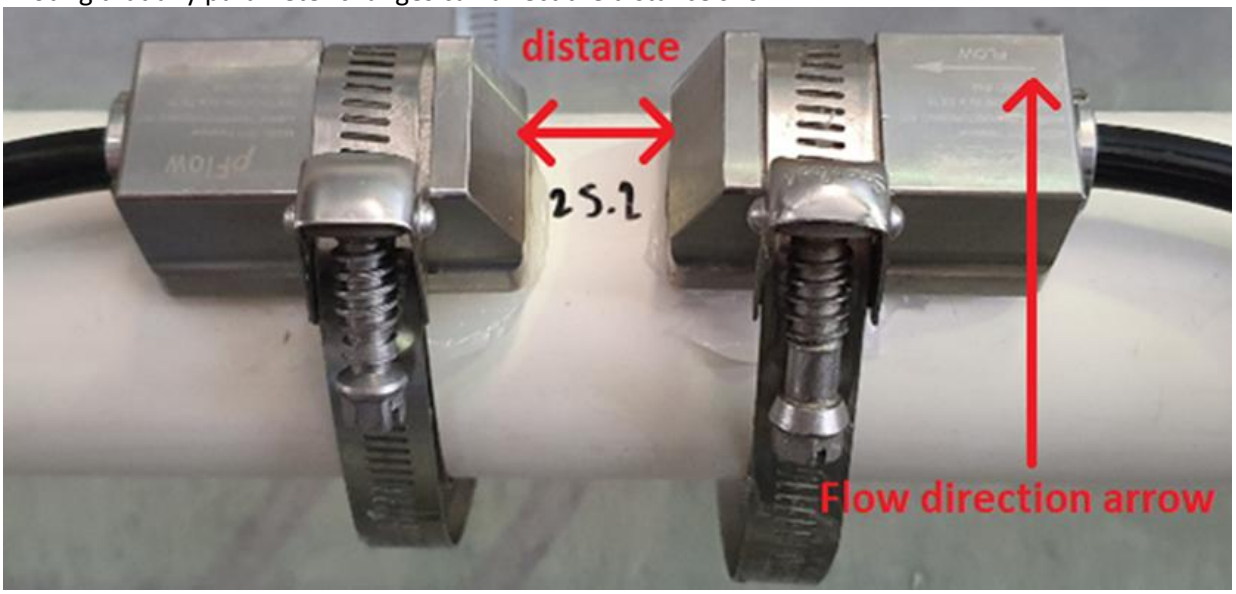
Prepare the stainless-steel straps on the pipe leaving enough slack to slide the transducer into place and tighten up.

Note that the included metal straps obvious can only handle pipe sizes to a certain point, if you have very large pipework then ratchet straps are a handy way to easily mount sensors.



Ensure you place upstream and downstream transducers in accordance with flow direction and check the arrow on the transducer for flow direction. Make sure that the transducers are mounted is parallel on the pipe.
Then slide the transducer into position and tighten down the stainless strap.

Double check that the spacing distance matches what your flow meter sensor spacing says during parameter entry. Noting that any parameter changes can affect the distance shown.



Press Rate to view instantaneous flow rate
Soon after installation is complete if flow is passing through the pipework, it should display a flow measurement.

Checking installation, signal strength and quality

Once the sensors are properly installed, and flow is going through the pipe, the flow meter should just start measuring, however there are a few key checks you should perform to ensure installation is optimal.

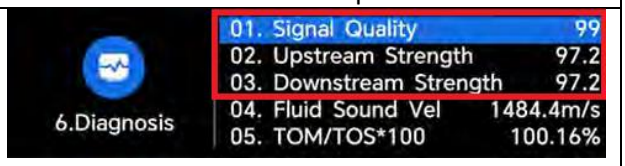
Signal strength and quality

Displayed by pressing Signal or select window 6 to view the displays of menus 6-01, 6-02, and 6-03).

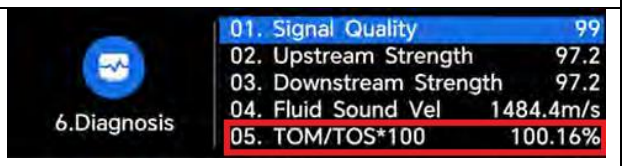
These indicate detected strength and quality of the signal both from upstream and downstream directions.

00.0 = no signal
99.9 = maximum signal
65.0+ = minimum requirement for normal operation

The stronger the signal strength detected, the better the instrument reliability and stability will be.



Sound Velocity Ratio (TOM/TOS)
Transit time ratio indicates if the transducer mounting spacing is accurate. If the installation and parameters and been completed correctly the **normal transit time ratio should be 100±3** (97% ~ 103%)



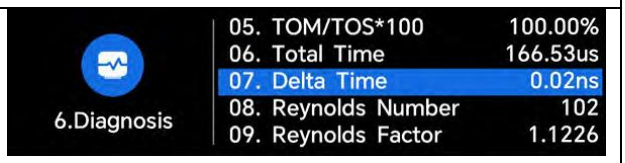
Total Propagation Time and Propagation Time Difference

Displayed by pressing Signal (or select menus 6-06/07 in the window menu).

The fluctuation of the time difference should be less than ±20% Under normal circumstances
Essentially just check if the values are jumping around a lot

However, when the pipe diameter is too small or the flow velocity is too low, the fluctuation of the time difference may be slightly larger.

When the "time difference" reading fluctuates too much, the displayed flow rate and flow velocity will also jump sharply. If this occurs, it indicates that the signal quality is too poor, which may be caused by poor pipeline conditions, improper sensor installation, or incorrect parameter input.



If any of these values are out of range:

- Ensure enough couplant has been applied
- Check the transducer installation position and re-check the spacing is correct
- If the parameters are entered correctly (pipe outside diameter, wall thickness, pipe material, liner, etc.)
- If the scale is too thick or the pipe mounting is distorted in shape, etc.
- Check that the cables are well terminated, tight and not shorting to other cables
- If necessary, re-consider the mounting area or method.

You can also check the troubleshooting steps outlined in the troubleshooting section at the back of this guide.

Flow data display after completing setup

After power-on, the flow data display window is entered automatically.

If you are in other menus, you can also press Return several times to reach the very first menu

When on this first window, pressing ∧ or ∨ you can switch and select among 6 different data display windows in sequence.	

Flow Data Display Window	Description
1. Flow rate/Velocity	Displays instantaneous flow rate and instantaneous flow velocity
2. POS/NEG/NET Totaliser	Displays the current positive, negative, and net cumulative quantities
3. POS Daily/Monthly/Yearly totaliser	Displays the positive cumulative quantities of the current year, month, and day respectively. To query historical cumulative quantities, enter the "3. Totalizer Settings" submenu window, then select the "Historical Cumulative Quantity Query" option to query.
4. NEG Daily/Monthly/Yearly totaliser	Displays the negative cumulative quantities of the current year, month, and day respectively.
5. NET Daily/Monthly/Yearly totaliser	Displays the net cumulative quantities of the current year, month, and day respectively.
6. System State	*R - Indicates the system is working normally *I - Indicates no signal detected *G - Indicates gain adjustment in progress

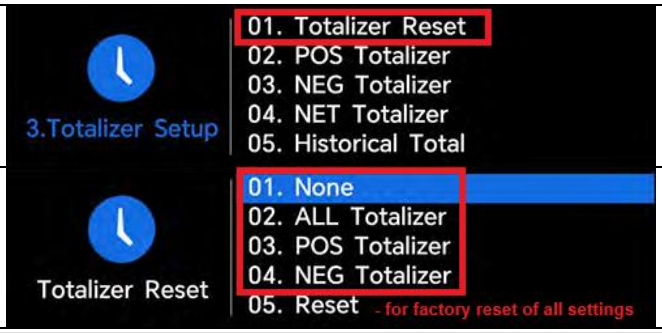
You can also press these shortcut keys to access the relevant key menus	
Graph	Show a graph view of recent flow & Instantaneous flow Use UP/DN to switch to show the graph & velocity
Velocity	Show flow velocity
Rate	Show instantaneous flow rate
Totalizer	Show the cumulative quality since last time the totaliser was reset Use UP/DN to switch various totaliser displays

Additional key menus of interest

Changing the units

unit 8	Press the 'unit' key, here is a window for adjusting units of both instantaneous flow rate and totaliser. There are several units you can choose from (then also Day / hour / minute / second)

Reset the totaliser:

Press Setting then ∨ ∨ to get to the 3rd setup window '3. totaliser setup' (Menu 3-01)	
Press Enter then choose what totaliser you want to reset, NONE, ALL, POS, OR NEG. Typically just all The '05'. Reset resets whole meter to factory settings	

Data logging

Capacity: Standard configuration is 16GB (since SD / TF cards are often updated from OEMs, it's subject to change)

Data collection interval: The user can set between 1 and 3600 seconds according to needs

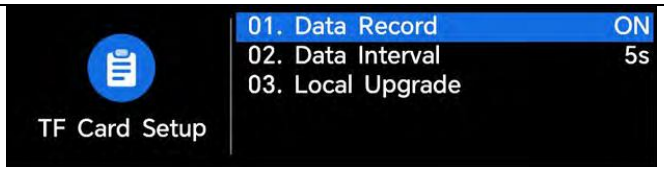
Data storage content: Date/time, instantaneous flow rate, flow velocity, net cumulative quantity, positive cumulative quantity, negative cumulative quantity.

Data storage format:
1=25-08-10,16:27:33
2=+1.741873E+02m3/h
3=+2.531482E+00m/s
4=+2.817220E+02m3
5=+2.817603E+02m3
6=-3.825382E-02m3

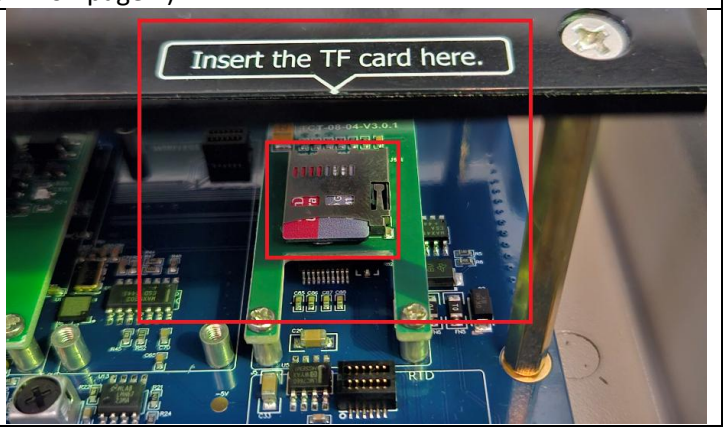
File system format: FAT32
File storage type: Text file (.TXT)
Number of files: More than 1000 (If instrument is working and collection is turned on, the TF card generates 1 file per day)
File name format: 8-digit number indicative of the date, formatted yyyymmdd, yyyy=year, mm=month, dd=day.
For example, 20250516 represents May 16, 2025.
The size of each stored data is 120 bytes. If the storage interval is set to 5 seconds, the size of the file stored in 24 hours is 1203600/524＝2073600 bytes≈2.1MB. Then, a 1GB card can store data for 1024/2.1=487.6≈487 days.

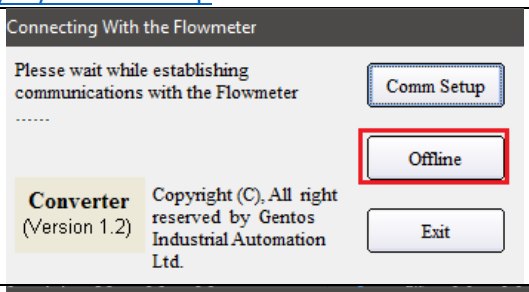
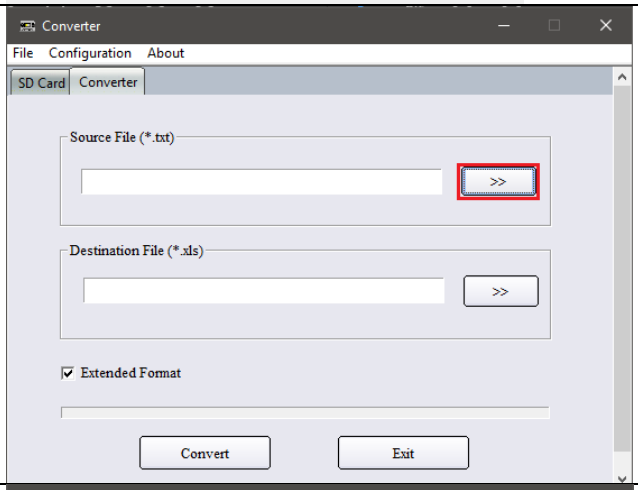
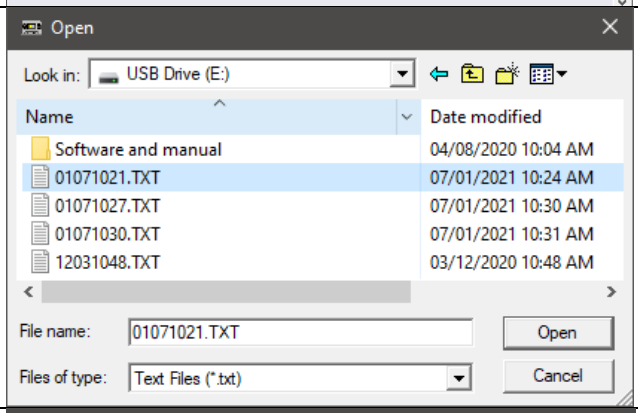
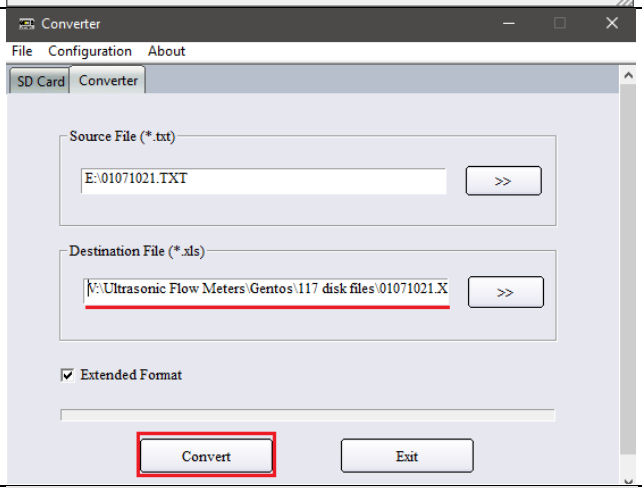
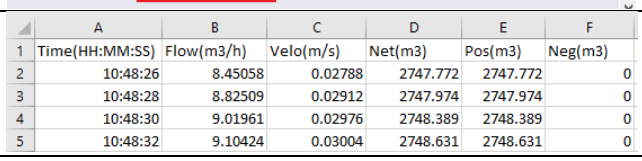
Be aware when the capacity of the SD card is full, new data will overwrite oldest dated data automatically. Though the files are small so it would take a while to fill the SD card.

To begin data logging

Inside the flow meter an SD card is included, open the case and ensure the SD card is correctly installed.	
Generally, by default, logging will already be turned on. You can check by pressing the Data button. Here you can choose: **Data Record** - on/off **Data interval** - which is how often the unit will take a log, choose any interval setting from 1 to 3600 seconds	

To retrieve logged data

Turn off power to the flow meter Then open the flow meter case (screw positions are shown on page 4)	
Remove the SD card from the flow meter	

Using the included SD card reader, insert the SD card into the reader, then insert the card reader into a USB port on a Microsoft windows-based computer.	
Open the software called Converter.exe; It can be downloaded from here: https://www.zedflo.com.au/wp-content/uploads/2022/09/Converter.zip	
Press the 'Offline' button	
Press the button to select a source file, which is .txt format	
This prompt will appear, navigate to the SD card folder and you will find your logged data in .txt files Select the one you want to convert, then press Open	
Note the destination location that it will save to, or you can manually select a location, now press 'Convert'	
It will convert the file into an .xls file, open the newly converted file and you will see your logged data. Use this as you see fit, create graphs etc in excel.	

	A	B	C	D	E	F
1	Time(HH:MM:SS)	Flow(m3/h)	Velo(m/s)	Net(m3)	Pos(m3)	Neg(m3)
2	10:48:26	8.45058	0.02788	2747.772	2747.772	0
3	10:48:28	8.82509	0.02912	2747.974	2747.974	0
4	10:48:30	9.01961	0.02976	2748.389	2748.389	0
5	10:48:32	9.10424	0.03004	2748.631	2748.631	0

Basic Troubleshooting

A few key points to consider if you are having measurement problems:

- First, it's suggested to read over this guide in full again or perhaps watch the demonstration video linked on the cover page of this guide, you might pick up a mistake made during initial setup.
- Pipe parameters entered must be accurate; otherwise, the flowmeter will not work properly.
- Ensure transducer wiring has been terminated correctly and tightly, not shorting to other wires.
- Try to clean and/or polish the outer surface of the pipe where the sensors are mounted.
- Apply plenty of coupling compound to the transducer to ensure adequate contact with the pipe wall.
- Check to be sure the mounting spacing is accordance with the displayed value during setup on menu 1-16 (see page 11)
- Ensure transducers are mounted parallel at the pipe's centreline and in the correct flow direction
- While checking the signal strength and Q value, if required you can move the transducers together slowly around the mounting site until the strongest signal can be obtained, eg. Perhaps slightly up/down/left/right. (but maintain correct spacing between sensors)
- Ensure the pipe surface is sanded/polished and free from dirt where the transducers are mounted.
- Keep the flowmeter away from the electromagnetic interference area to ensure its proper operation, In one rare case with another meter we have seen the power supply cause some electronic interference, it may be worth trying a different power supply if required.
- Heavy vibrations on a pipe can also cause issues, you may need to choose an area with less vibrations.
- Ascertain there is not too much air or solids in the fluid, ultrasonic signals cannot get through air and solids in the flow will block signals too.
- Pay special attention to those pipes that formed by steel rolls (pipe with seams), since such pipe is often irregular and so the signal beam may not travel correctly within the pipe.
- Check to be sure the transducer mounting method has been selected properly, the pipe is not worn-out, and the liner is not too thick.
- Make sure there is indeed fluid in the pipe, or the transducer is not too close to a valve, elbow, pipe size change, pump etc…
- You can also try another mounting method instead, V mounting method is most common to use, however it requires the signal to "bounce" off the pipe and therefor can degrade the signal or if the pipe is pitted slightly the signal may bounce unreliably. If you instead use Z method for example the transducers are mounted on opposite sides of the pipe and therefore no "bouncing" is required and should provide a stronger signal when setup correctly, refer to page 8 for the full OEM manual.
- If there is still no signal detected, the measurement site must be changed. Perhaps try another section of pipe, you might be able to find a better location noting the recommendations on pages 6-7
- Might be worth performing a factory reset and re-configuring all parameters from scratch, factory reset option is shown in the totaliser reset menu, shown on page 15 of this guide.

You may need to reference the full manual for further installation instructions, remembering that this guide is just a quick start guide and the full OEM manual has a lot more detailed information.

Frequently asked Questions and Answers

Question: New pipe, high quality material, and all installation requirements met: why still no signal detected?

Answer: Check pipe parameter settings, installation method and wiring connections. Confirm if the coupling compound is applied adequately, the pipe is full of liquid, transducer spacing agrees with the screen readings and the transducers are installed in the right direction.

Question: Old pipe with heavy scale inside, no signal or poor signal detected: how can it be resolved?

Answer: Check if the pipe is full of fluid. Try the Z method for transducer installation (If the pipe is too close to a wall, or it is necessary to install the transducers on a vertical or inclined pipe with flow upwards instead of on a horizontal pipe). Carefully select a good pipe section and fully clean it, apply a wide band of coupling compound on each transducer face (bottom) and install the transducer properly. Slowly and slightly move each transducer with respect to each other around the installation point until the maximum signal is detected. Be careful that the new installation location is free of scale inside the pipe and that the pipe is concentric (not distorted) so that the sound waves do not bounce outside of the proposed area.

For pipe with thick scale inside or outside, try to clean the scale off, if it is accessible from the inside. (Note: Sometimes this method might not work, and sound wave transmission is not possible because of a layer of scale between the transducers and pipe inside wall).

Question: Why is the flow rate still displayed as zero while there is fluid obviously inside the pipe and a symbol of "R" displayed on the screen?

Answer: Check to see if "Set Zero" was carried out with fluid flowing inside the pipe
If an incorrect “Set Zero” has been carried out, do it again correctly or recover the factory default

Question: The pipe is not full of liquid or there is no flow in the pipe, it displays an unstable or wrong reading adding to the totaliser.

Answer: Pipe must be full of liquid, if not, enter setup menu 5-07 to setup an Empty Pipe Q Value less than normal Q value (pipe is full of liquid), this can be used to cut off readings to display zero reading when signal is low.

Question: The pipe is full and flowing, but only at a very low speed, why is the flow meter is displaying 0 flow?

Answer: The meter has a ‘Low Flow cut-off Value’. If the flow rate falls below the low flow cut-off value, the flow indication is deemed to be ZERO. This can prevent nuisance readings causing the totaliser to accumulate the flow when the actual flow is “0” after a pump was shut down for example. Generally, 0.03m/s is recommended to enter as the flow cut-off point. This can be found in setup menu 5-02

The low flow cut-off value has no relation to the measurement results once the velocity is higher than the flow cut-off value.

Question: Why is the flow reading on the display not the same as a trusted known flow rate?

Answer: If you have a known flow rate on a pipe and this flow meter is not reading as expected then the flow meter may need to be “tared” or “zeroed”. Just like scales for example, the zero point sometimes needs to be reset.
First, the zero may have accidently been set to an incorrect point, in which case you can re-set the zero point to the factory point using calibration window 7-02

Alternatively, if you install the flow meter on a full pipe with no flow you can use calibration window 7-01 to set a new zero point.
See the full manual for more information on this.

If the zero point is fine, your flow meter may need re-calibration, it is recommended to have the flow meter calibrated regularly to maintain best accuracy.