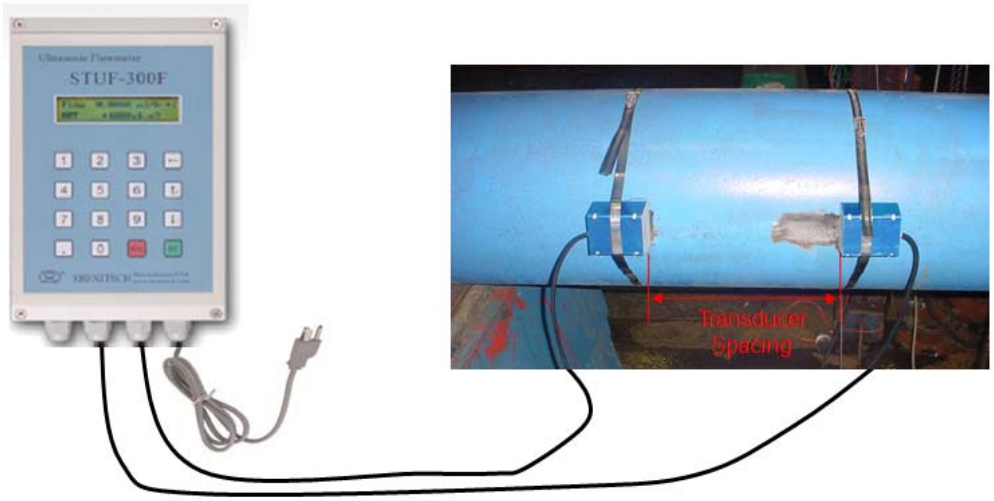
STUF-300FxB Quick Start



This Quick Start is provided solely to help you get the flowmeter up and running as quickly as possible. For complete information on the flowmeter and its operation procedures, please refer to the User's Manual.

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Four steps to get your wall-mount flowmeter up and running.

Step 1. Wire and Power up

Open the main unit cover (Figure 1).

Wire the power supply and transducer cables according the wiring diagram shown in Figure 2.

Put back the cover.

Plug the power cord into a wall outlet. The meter will be on immediately. It goes through a self-checking process to make sure everything is working properly. After a few seconds, main unit will enter into normal working status.

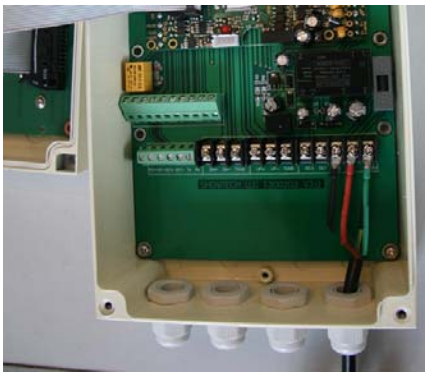


Figure 1. Remove main unit cover.

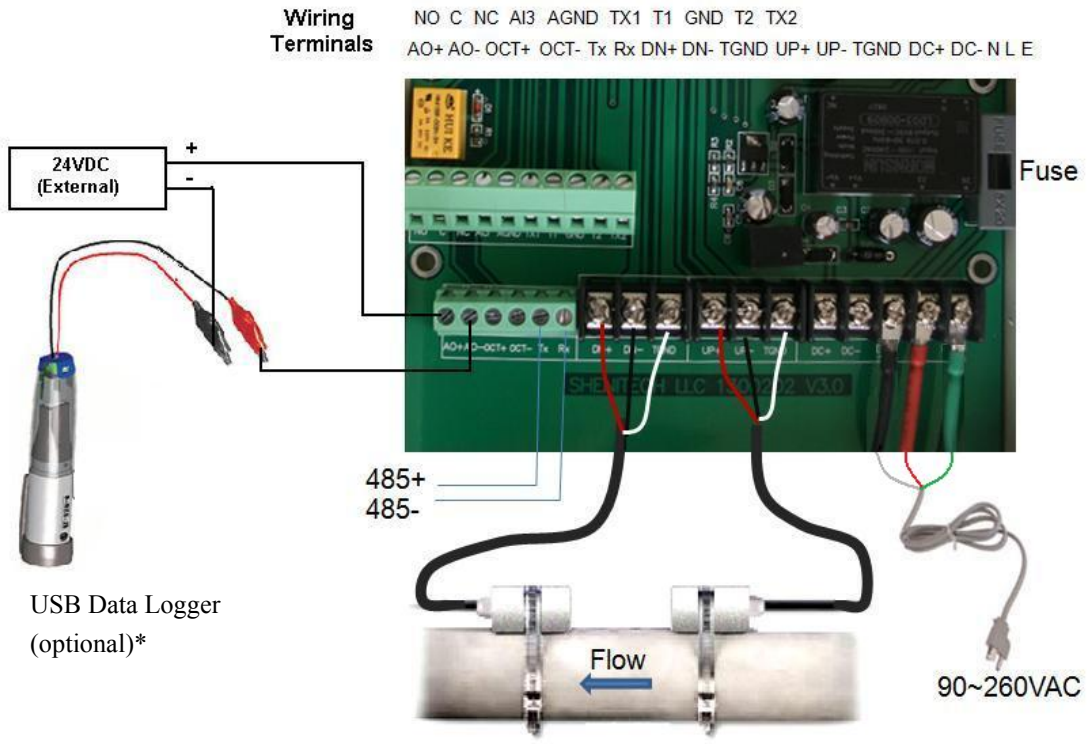


Figure 2. Wiring diagram

**Note: If you have ordered USB data logger, you need to program the data logger with your computer first before wiring it to the flowmeter unit. Otherwise, the data logger will not log data.*

Step 2. Program the Main Unit

2.1. Enter pipe info

Pipe OD: Switch to menu window M11 by pressing keys MENU, 1 and 1 orderly. Then, press the ENT key to enter into edit mode, key in the pipe outer diameter, and press the ENT key to confirm.

Wall-thickness: Press the ▼/- key to scroll down to the next menu, M12. Press ENT to enter into edit mode. Key in the pipe wall-thickness value. Press ENT again to confirm.

Note: For pipe OD or Wall-thickness, please go to www.shenitech.com.

Note: to change the value of a menu window, you need always press the ENT key first to enter into edit mode. After keying in the new parameter, you need press ENT again to confirm the change.

Pipe Material: Press ▼/- to scroll down to M14. Press ENT and then use ▼/- to select the proper item. If pipe material is not shown on the list (non-standard material), select Others. Press ENT to confirm.

Note: If your pipe material is PVC or other plastics, please DO NOT select "5. PVC" in M14. Instead, select "9. Others". Then, enter 3478ft/s (1060m/s) in M15.

Sound Speed in Pipe Wall: If you selected Others in the above step, then, press ▼/- to scroll down to M15. Enter the sound speed of your pipe material. If your pipe is plastic, enter 3478ft/s (or 1060m/s). Press ENT to confirm.

Pipe lining: If your pipe has lining inside, enter the lining information on menu windows M16-M18.

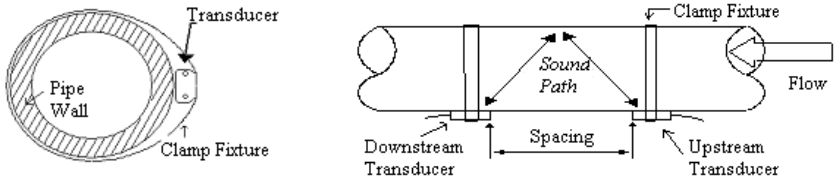
2.2. Enter fluid info

Fluid Type: Switch to menu M20 (simply press keys MENU, 2 and 0 orderly.) Then, press ENT, select the item that matches your fluid type and press ENT again.
If you do not find a match (non-standard fluid), select Others.

Sound Speed in Fluid: If you selected Others in the above step, then, scroll down to M21. Press ENT, key in the sound speed of the fluid and press ENT again.
You can find sound speed information in the User's Manual.

2.3. Enter transducer info

Transducer Type: Switch to M23. Press ENT, select the proper transducer type from the list, then, press ENT again.
If you have S1/M1/L1- type transducer, select *Standard-S1 / Standard-M1* / *Standard-L1*, respectively.
Mounting Method: Scroll down to M24, select the proper installation method and ENT.
For 1" ~ 12" pipes, use the V-method (see figure below). For 12" and larger pipes, use the Z-method.



V-method Installation

Mounting Spacing: Scroll down to M25. The displayed value is the mounting spacing between the two transducers. Write down this number, as you will need it later when installing the transducers.

Transducer Scale Factor: Switch to M45. Press ENT and then enter the scale factor of the transducer you are going to use. Press ENT again to confirm the change.
Save Configuration: Switch to M26, press ENT, select item 1 and press ENT to save.

Step 3. Install Transducers

Please see the Appendix I and II for installation details.

Step 4. Fine Tuning

Switch to M90 for signal strength S (UP or DN) and signal quality Q, and then go to M91 for transit-time ratio R. There are three important numbers displayed on these two menu windows.Their values shall fall into the right ranges in order to justify the reading:

S: 600 ~ 990
Q: 60 ~ 99.
R: 97% ~ 103%

If these values are not in the above ranges, you need to verify the parameters you have entered in Step 2. If you believe your entries are correct and the three numbers are still off their ranges, you may need to check your installation. Here are some tips:

- Make sure the transducer mounting area on the pipe is coating-free and smooth
- Moving transducers closer to or away from each other will increase or decrease the transit-time ratio R.
- For copper pipes of 1" or less and stainless steel pipes of 1.5" and less, we recommend to use flow-cell transducers to achieve better results.

Please visit our support website at http://www.shenitech.com/support/stuf300 for more details.

The sound speed information in menu M92 might also be useful for debugging. The displayed value should be close to the one you have entered in step 2.2. If you have entered fluid type in step 2.2 instead, and you do not know the fluid sound speed, you can find this information in the Appendix of the User's Manual.

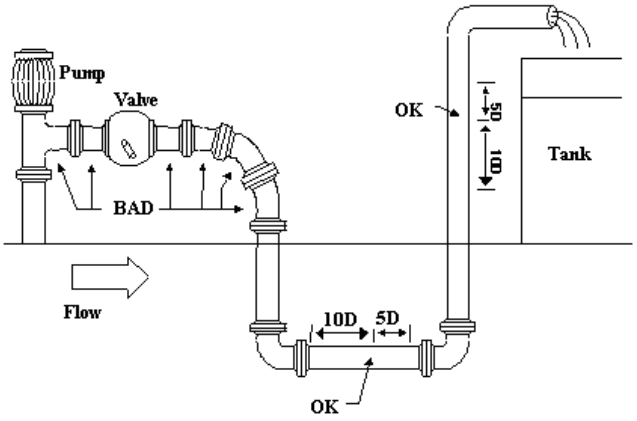
If all the three parameters are good, and the measurement sound speed in M92 looks reasonable, your installation is done. You are ready to look at your measurement results on menu window M00.

Appendix I

Site Selection Guide

Find the mounting site according to the following rules

(A) Pipe must be full of liquids at the measurement site.
(B) No heavy corrosion of deposition inside of the pipe.
(C) Must be a safe location.
(D) The straight run of the pipe must not be shorter than 15D as a general guideline, where D is the pipe diameter. Insufficient straight pipe length will degrade the accuracy of the results.
(E) The transducer mounting site should be 10D straight run upstream and 5D straight run downstream (see the following drawing.)
(F) If there are flow disturbing parts such as pumps, valves, etc. on the upstream, the straight pipe length should be increased. The disturbance strength of those flow conducting parts will be (low to high):
Single Bend -> Pipe Reduction / Enlargement -> Outflow Tee -> Same Plane Multiple Bends -> Inflow Tee -> Out of Plane Multiple Bends -> Valve -> Pump



Appendix II

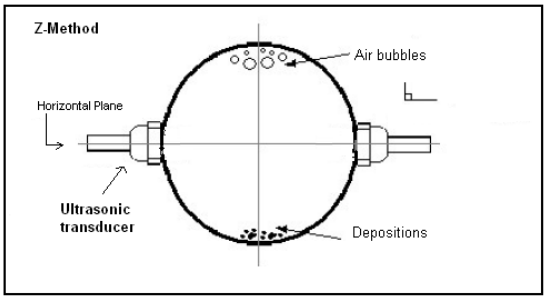
Clamp-on Transducer Installation Guide

A.1. Mark Transducer mounting Spots

First, determine which installation method to use.

Mark the mounting spots according to the transducer spacing suggested in M25.

For Z-method, you may need to make a template in order to make the spots precisely.



Notice: For horizontal pipe line, it is recommended to install the transducers on the side instead of on the top or bottom of the pipe. This is to avoid air bubbles on the top and sediments on the bottom of the pipe.

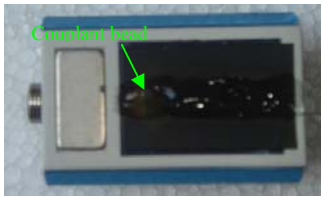
A.2. Prepare the Pipe Surface

Clean the pipe surface where the transducers will be mounted. Remove rust and paint. Sand the surface if not smooth. Use wet cloth to wipe off the powder after sanding. Dry up the surface. A dry, clean surface will ensure a good acoustic bond between transducer and pipe.

A.3. Prepare the Transducer

Clean the transducer surface. Keep the surface dry.

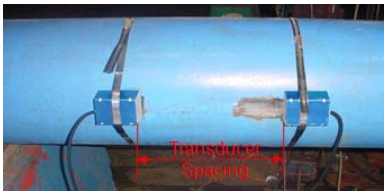
Put couplant on transducer surface as shown in the right figure. Do not put couplant more than necessary, especially for small pipe.



A.4. Install the Transducers

Connect the mounting fixture around the pipe. Leave the metal strip loose so you can slip the transducer underneath.

Apply a small amount of couplant in the prepared area of the pipe where transducers will be in contact.



Slip the transducer under the clamp fixture. Make sure that the transducer cable connectors are towards outside! Tighten the screw of the metal strip. Do the same thing for the other transducer. Use the figure on the right as a reference.

If the pipe material is metal, you do not need the clamp fixture. The transducers will automatically attach to the pipe by magnetic force.

Finally, connect the transducer cables to the main unit if not yet connected.

