Minisonic Quick start Guide – For Water.

The Minisonic P kit is normally supplied as a converter and at least one set of probes The probes are selected to suit your application and pipe size. They should have markings on them to confirm what type they are. (Normally, SE1586, SE1515, SE1599)

Programing

1. Switch the Minisonic P **ON** by pressing the button on the right hand side of the unit. The display cycles and settles on the flow measurement screen "Q = 0.00 xx/x" and "seek echo" this changes to "FAULT Q"
2. Press **F** until "Pipe Settings" is displayed now press ↓ to dispaly the "ext. D1 parameter". Use the **+** & **–** keys to set your exact outside pipe diameter.
3. Press ↓ to display "Pipe1" and use **+** or **–** to select your pipe material.
4. Press ↓ to display "Thickness1" and use **+** or **–** to enter your pipe thickness. (If you do not know the thickness of your pipework, there is a pipe table download available on the www.Flowline.co.uk website under Clamp On, Minisonic P)
5. Press the **F** key to display "Probe/Echo Settings" is displayed. Press ↓ to display "Probe =SExxxx", press the **+** or **–** to select your probes
6. Press ↓ to display "Probe mounting=". Use the **+** or **–** to change the "probe mounting" to "V" (V is the standard probe mounting)
7. Press **F** to display "Measurement Display" then ↓ until "Probe = SExxxx" is displayed and under this "D.S1= xxx mm" The D.S1 is the distance that the probes must be mounted apart based on the details just entered.

Probes are normally supplied in a graduated slide rule, probes should have a thumb wheel that can be turned clockwise to retract the probe into the mounting, this enables easier fixing to the pipe.

Fixing Probes

8. Each probe also has a marking on its side that we measure the Probes Spacing from (D.S Distance). Locate the markings on your upstream and downstream probe and move them to the correct distance. Now lightly tighten the thumb screws to retract the probes. Once this is done add a generous amount of the ultrasonic gel across the face of the probe.
9. The probe mounting should be attached to the side of the pipe (not the top or bottom) Now check again the DS distance as you unscrew the thumb screws. As the probes connect to the pipe you should see ultrasonic gel seeping out.
10. You can now attach the probe cables, the upstream probe should connect to the cable with the "1" marking, and the downstream probe the "2" marking. If this is incorrectly attached you will simple get a negative flow reading.
11. When all of the previous steps have been completed, and your pipe is flooded with water (moving or not) you should have a flow reading (the meter should no longer say fault Q), if it still shows flow fault please call for assistance 01707 375 564

Output

12. On the flow screen (Q= xxx x/x), press the down arrow till you see "Gain (ESC) =xxdB" (dB is a measure of how hard the meter is working) and "IQ = xx%" (IQ is the percentage of signals emitted vs. returned). We would like to see the dB as low as possible (under 30 is great, it will work up to 69dB) and an IQ of 100% is preferred.
13. Now Press the down arrow till you see "V. = xxx m/s" and "S.Sound". V. is the speed at which your water is moving through the pipe. "S.Sound" is the speed that the sound waves travel through your water, this is an output from the meter so can be used to verify your installation as long as you know the temperature of the water, please check this against the table over the page.

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Check list for Speed of Sounds Waves in water

Water Temperature	S.Sound m/s
0 °c	1402
10 °c	1447
20 °c	1482
30 °c	1509
40 °c	1529
50 °c	1543
60 °c	1551
70 °c	1555
80 °c	1554
90 °c	1550
100 °c	1543

Water with Glycol 5% Temperature	S.Sound m/s
10°c	1450
20 °c	1472
30 °c	1496
40 °c	1519
50 °c	1542

Probe Alignment Diagram