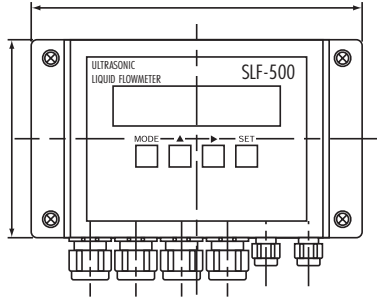


Ultrasonic Liquid Flow Meter

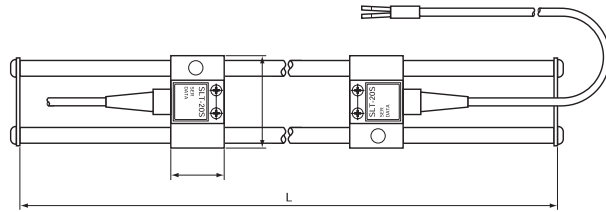
Quick Setup Guide for Model SLF-500

What's Included:

- 1) SLF-500 Display/Transmitter
- 2) SLT-20S Sensors (2 qty) with Cabling
- 3) Mounting Rails for V and Z Configuration
- 4) Coupling Grease



SLF-500 Display/Transmitter



SLT-20S Sensor

Wiring:

Loosen the four screws that fasten the cover of the Display/Transmitter and open the cover.

Connecting the Sensors (CN3)

Sensor Wire		Terminal Location/Marking	Sensor Mounting Location
Sensor Location	Color (Polarity)	Terminal Name	
Upstream	Red (+)	U	Upstream Sensor
	Black (-)	UG	
Downstream	Red (+)	D	Downstream Sensor
	Black (-)	DG	

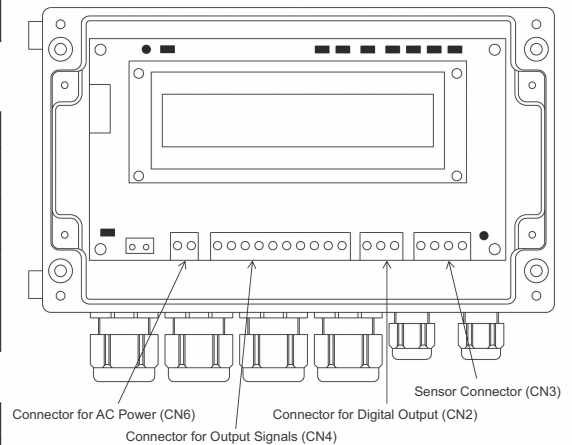
Connect power and signal wiring

Power Supply (CN6)

Power Supply		Terminal Location/Marking		Notes
	Polarity	Terminal Number	Terminal Name	
Power Supply AC		1	AC (U)	AC 85-264 V
		2	AC (V)	

Analog Output (CN4)

Signal	Terminal Location/Marking		Notes	
	Polarity	Terminal Number		Terminal Name
Power Supply AC	+	3	I+	4-20mA Load Resistance: 450 Ω max
	-	4	I-	



Start-up:

The display will come on once power is applied. At this point you can begin setting the installation parameters.

Navigating the Menu:

The display keys operate as follows:

- [↑] Pressing the [↑] key changes your selection or increments the numerical value.
- [→] Pressing the [→] key moves the cursor or decrements the numerical value.
- [SET] Pressing the [SET] key finalizes your numerical data entry or data selection.
- [MODE] Pressing the [MODE] key returns you to the previous screen or displays the initial value.

Basic Set-up

Menu:

1. Measure: Allows for selection of measured value displayed
2. Setting: Used for initial parameter set-up or change to set parameters
3. Confirm: Allows to view and confirm current parameters set
4. Adjustment: Typically used by FTI service for calibration
5. Option: Optional functions typically used by FTI service

Measure:

1. Flow rate: Typical selection, instantaneous flow rate
2. Velocity: Displays cross-sectional average fluid velocity
3. + Total Flow: Displays positive total flow
4. - Total Flow: Displays negative total flow
5. Total Flow: Displays net flow; positive minus negative total flow
6. Flow & Total: Displays instantaneous flow and total flow

Setting:

1. Full Scale: Set maximum flow rate for analog output range (0 to 999,999)
2. Rate unit: Set unit of measure (GPH, GPM, LPH, LPM, FPM, FPS)
3. Pipe O.D.: Set pipe OD in mm
4. Material: Set pipe material (1. PVC, 2. SUS, 3. Steel, 4. PFA, 5. Others: must set speed of sound)
5. Thickness: Set pipe thickness in mm
6. Lining: Set liner material (1. None, 2. Tar Epoxy, 3. Mortar, 4. Others: must set speed of sound)
7. Thickness Lin: If linear is selected this will allow you to set linear thickness
8. Set Up Sensor: 1. V installation, 2. Z installation. V installation is typical for line sizes under 6 inch
9. Fluid: Select fluid to be measured. (1. Water, 2. Others: must set speed of sound)
10. Install Dim.: The display will now show the installation dimension in mm. This is how far apart to space the sensors. **At this point flow can be measured or the remainder of the menu can be completed.**
11. Reverse Flow: Set-up of reverse flow rate output
12. Analog Range: Set-up of the reverser flow output (1. 4-12-20mA, 2. 20-4-20mA)
13. Hysteresis: Set for reverse flow measurement, allows easier ID of flow near zero
14. Digital Out: Turns digital output on or off.
15. Pulse Mode: Turns on High (pulse width 1.6 ms; 1 p/s to 300 p/s) or low (pulse width 50 ms; 1 P/h to 10 P/s) If turned on you will set pulse volume (0.1 to 100 L or G)
16. Damping: Averaging flow rate output 0-20 sec to smooth output
17. Low Cut: Set low-cut to read zero below specified range, as % of Full Scale
18. Select Output: Set-up contact outputs

Meter Installation:

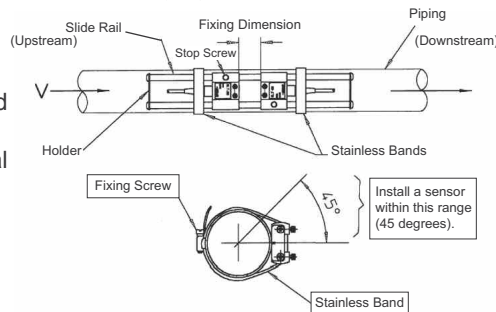
Sensors should be located with a minimum of 10 upstream and 5 downstream pipe diameters of straight run and where pipe will remain completely full.

The pipe surface should be clean of all rust, dirt and paint.

Installation of Transducers:

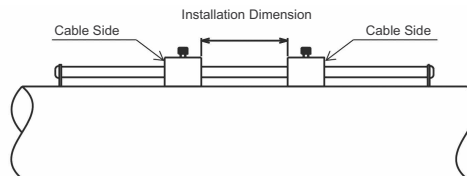
Install the transducer to the pipe after applying the

coupling agent on wave radiation surface. When fixing the transducers to a horizontal pipe, they should be placed within 45 degrees from the horizontal sectional line (as shown to the right). There is no orientation restriction for vertical piping.



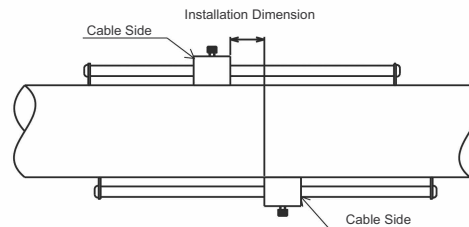
V Installation:

For a pipe bore diameter of 4" (100 mm) or more where the length of the slide rail is insufficient, remove the support fitting off the rail and connect the rail with an extension rail which is provided as an accessory part.



Z Installation:

Remove the support fitting off the slide rail and pull one of the transducers/detectors out from the rail. Then, install the removed transducer/detector on the extension rail which is provided as an accessory part.



Notes: When you install a SLT20S transducer onto 1.5" or less metal pipe, use minimal amount of coupling agent (silicon adhesive), less than 1mm thickness.

1. Press the detector with the coupling agent onto the pipe perpendicularly. Then, fasten the guide rail firmly onto the pipe using customer supplied straps
2. Make sure that the notches in the support fittings on the opposite ends (forming a center line) are accurately located on the center of the pipe.
3. The transducers/detectors can be installed in any direction, whether upstream or downstream. However, the signal line of the detector installed on the upstream side must be connected with "U and UG" on the signal converter terminal block. Likewise, the signal line of the transducer/detector installed on the downstream side must be connected with "D and DG".

