

## Quick Installation Instructions for InnovaSonic® 210i

### Keypad Functions

Follow these guidelines when using the flow meter keypad:

0 ~ 9 and  to input numbers.

 Backspace or delete characters to the left.

 Return to the last menu or open the next menu. Acts as “+” and “-” when used to enter numbers.

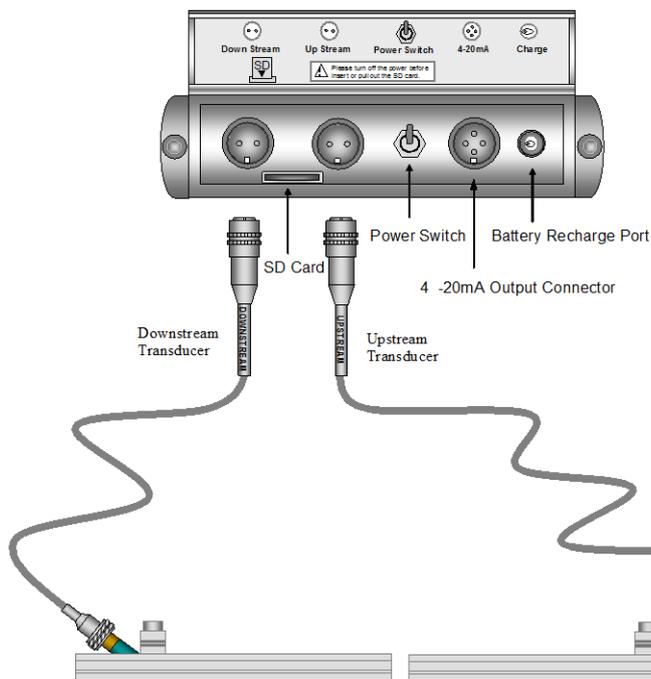
 Select a menu. Press this key first, input a two-digit menu number and the selected menu data will be displayed. For example, to input a pipe outside diameter, press  1 1 where “11” is the window ID to display the pipe outside diameter.  Enter/Confirm to complete the input. The

Data key  Enters and exits the SD card storage interface.       are shortcuts to the windows for Flow Rate, POS Totalizer, Velocity, Fluid Type, Signal Quality and Diagnostics.



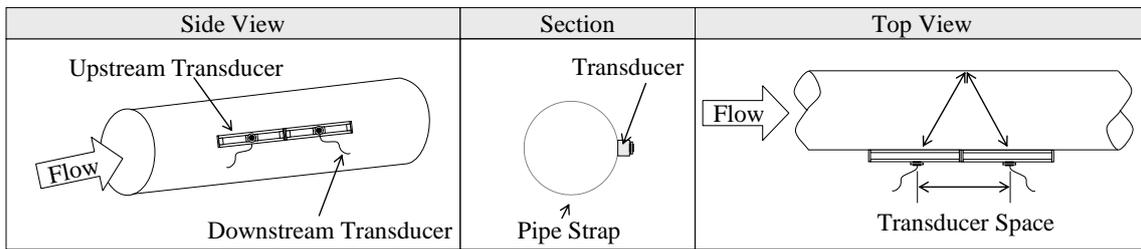
### 1. Plug in the Transducers

Open the hinged top cover of the electronics. Shown from left to right on the panel of the 210i are the downstream transducer connector, upstream transducer connector, the battery recharge port (charge the transmitter or connect to a standby power supply), and the 4-20mA output connector.

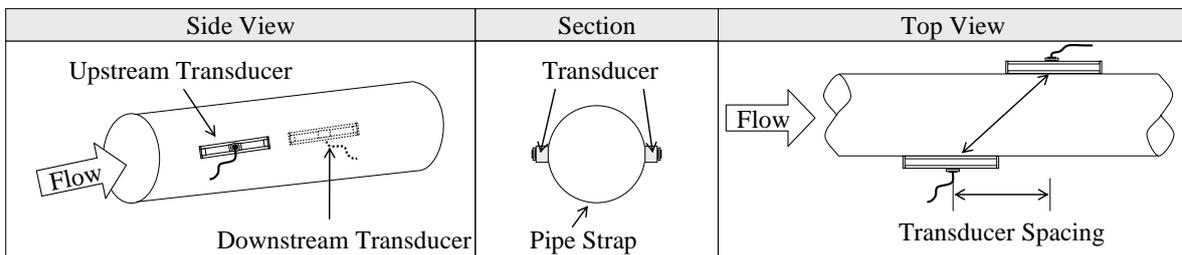


## 2. Select the Mounting Method Depending on the Pipe Diameter

V Method: Pipes 50mm to 400mm (2" to 16")...signal bounces off pipe wall



Z Method Pipes: 400mm to 1200mm (16" to 48")...signal is directly transmitted



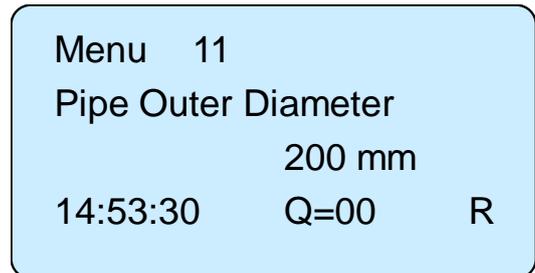
### 3. Turn the meter on. Charge the battery ahead of time.

### 4. Enter the Pipe Setup Pipe Parameters. The Meter will calculate the Transducer spacing to use.

**Example:** Let us assume you have a DN200 (8") pipe, measuring water, Material is carbon steel with no liner. These parameters should be entered as follows:

#### Step 1. Pipe outside diameter

Press **Menu** **1** **1** keys to enter menu 11, enter the pipe outside diameter, then press the **ENT** key. You can use a tape measure to measure this. Note 14:53:30 is the time, Q is the Quality, and R is a diagnostics code. Don't worry about these for now. Note if you know the pipe's inner diameter, you can instead enter that in Menu 13.



### Step 2. Pipe wall thickness

Press the **Menu** **1** **2** key to enter menu 12, enter the pipe wall thickness (wall thickness for various pipe schedules can be found in the appendix), then press the **ENT** key.

Menu 12  
Pipe Wall Thickness  
6 mm  
14: 54: 00      Q=00    R

### Step 3. Pipe material

Press the **Menu** **1** **4** key to enter menu 14, press the **ENT** key, use the **^/+** or **v/.** key to select the pipe material from the drop-down menu, and then press the **ENT** key.

Menu14  
Pipe Material  
0. Carbon Steel  
14: 54: 45      Q=97    R

### Step 4. Liner material parameters

(Including thickness and sound velocity, if needed)

Press the **Menu** **1** **6** key to enter menu 16, press the **ENT** key, use the **^/+** or **v/.** key to select liner material from the drop-down menu, and then press the **ENT** key.

Menu 16  
Liner Material  
0. None, No Liner  
14: 55: 10      Q=97    R

### Step 5. Fluid type

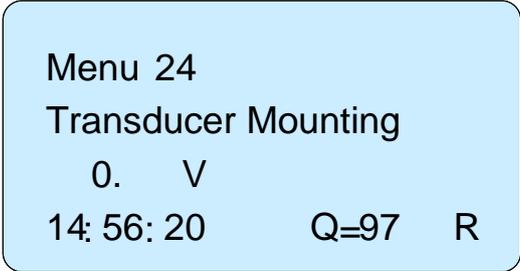
Press the **Menu** **2** **0** key to enter menu 20, press the **ENT** key, use the **^/+** or **v/.** key to select fluid type from the drop-down menu, then press the **ENT** key.

Menu 20  
Fluid Type  
0. Water  
14: 55: 58      Q=97    R

### Step 6. Transducer mounting methods

Press the **Menu** **2** **4** key to enter menu 24, press the **ENT** key, use the **^/+** or **v/-** key to select transducer-mounting from the drop-down menu, then press the **ENT** key.

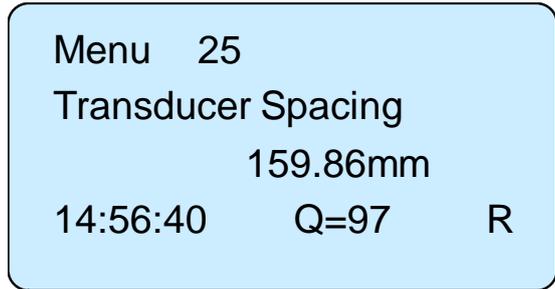
(Details on Chapter 4)



### Step 7. Transducer spacing

Press the **v/-** **2** **5** key to enter menu 25, accurately install the transducer according to the displayed transducer mounting spacing and the selected mounting method.

(Details in Chapter 4).



5. **Put the transducers on the pipe with a great amount of coupling compound.** If the pipe is magnetic, the racks will stick to the pipe. If the pipe is non-magnetic use supplied pipe straps.
6. **CHECK THE DIAGNOSTICS TO SEE IF YOUR MEASUREMENT IS GOOD.** PRESS THE SIGNAL BUTTON AND IT WILL BRING UP MENU 90. PRESS THE DIAGNOSTICS BUTTON AND IT WILL BRING UP MENU 8.

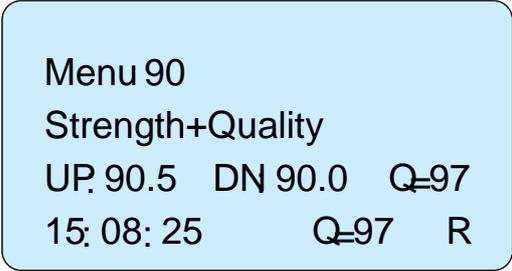


**Menu 90: Signal Strength and Signal Quality**

Display the measured signal strength and signal quality Q value upstream and downstream.

Signal strength is indicated from 00.0-99.9. A reading of 00.0 indicates no signal detected, while 99.9 indicates maximum signal strength. Normally the signal strength should be ≥60.0. Signal quality Q is indicated by 00-99. Therefore, 00 indicates the poorest signal while 99 indicates the best signal. Normally, signal quality Q value should be better than 50.

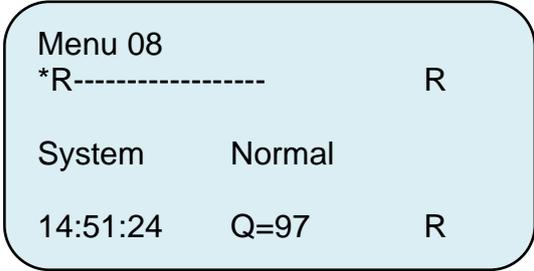
Next, press the diagnostics button and Menu 08 will appear.



**Menu 08: System Error Codes...you want to see an R!**

Display the operating condition and the system error codes. More than one error code can occur at the same time.

The explanations of error codes and detailed resolution methods can be found in "Error Diagnosis".



- 7. IF YOU HAVE GOOD Q AND AN "R", YOUR MEASUREMENT IS GOOD. HIT THE "RATE" BUTTON OR MENU 00 TO LOOK AT THE FLOW AND TOTALIZER.**



**SIERRA<sup>®</sup>**

***EXPERIENCE OUR PASSION FOR FLOW!***

**Email Technical Support:** [service@sierrainstruments.com](mailto:service@sierrainstruments.com)

**24 Hour Live Help Online:** [www.sierrainstruments.com](http://www.sierrainstruments.com) (Click "Sales & Service" button)

**Telephone Technical Support:** North America: 800.866.0200 or 831.373.0200 ; Europe, Middle East, Africa + 31 72 5071 400 ; Asia: + 8620 3435 4870

**PN: 47-0447B**