Quick Install Guide

This Quick Install Guide is Applicable for the InnovaSonic® 210.

A copy of this Quick Install Guide and the 210 Instruction Manual are included on the product information CD included in your shipment. The information is also available for download.

Keypad Functions

The InnovaSonic 210i keypad offers 12 dual-function keys for operation of the menu system plus six quick-setup keys. For quick setup of your InnovaSonic, simply press any of the keys across the top to get the desired menu parameter instantly.

Follow these guidelines when using the InnovaSonic 210i menu system:

- Keys [cal. 0] to [sound vel. 9] and [date/ time .] are the menu codes to input information required for flow measurement.

- Use [zero <] to delete characters to the left.

- Use [∧/+] and [∨\-] to return to the last menu or open the next menu. These keys acts as "+" and "-" when used to enter numbers.

- [Menu] is used to select a menu using two digit numbers from the menu. To enter a selected menu, press [Menu] key first then press your selected digit numbers. Hit enter to save the selected menu. For example, to input a pipe outside diameter, press [Menu] [pipe dia. 1] [pipe dia. 1] keys, where "11" is the window ID to display the parameter for pipe outside diameter.

- After all data is selected use [Enter] to confirm your choices.

- Use [Data] to enter / exit the SD card storage interface.

- [Rate], [Velocity], [Signal], [Totalizer], [Graph], [Diag.] are shortcuts to the windows for Flow Rate, Velocity, Signal Quality, POS Totalizer, Graph, and Diagnosis.
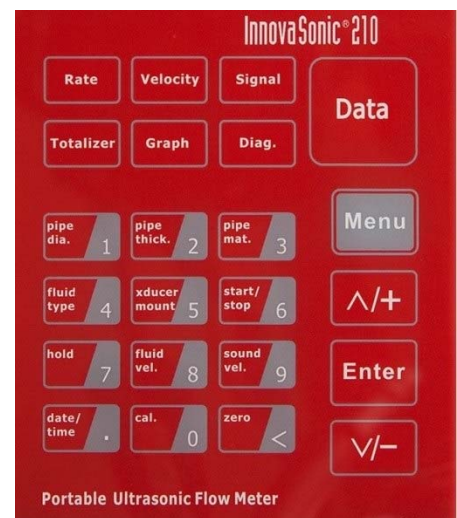

Figure 1. InnovaSonic 210i Keypad with Dual Function Keys

Installation Steps

1. Plug in the transducers (See Figure 2). Open the hinged top cover of the electronics. Figure 2 shows 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.
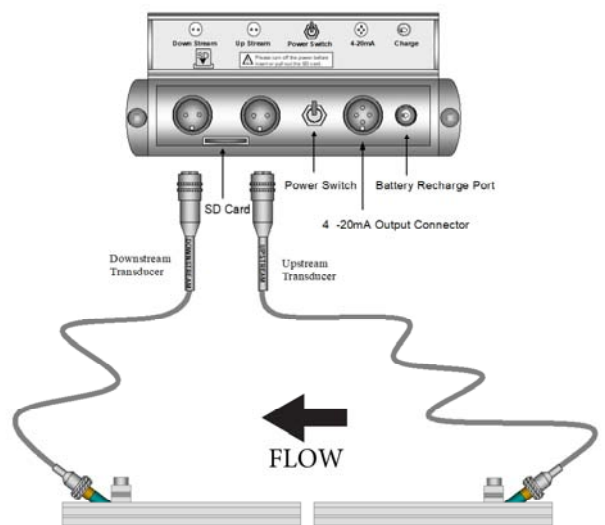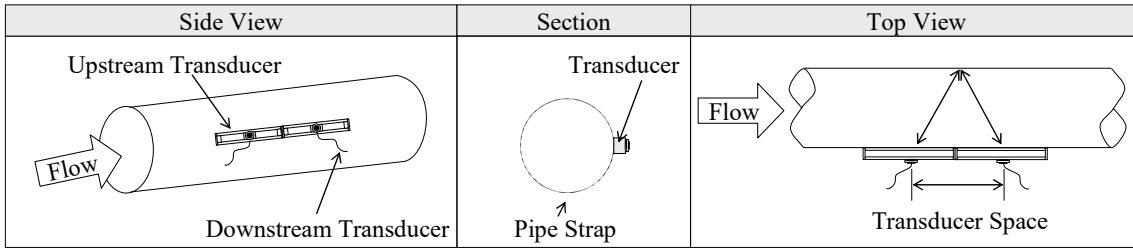
Figure 2. Transducer Connections

2. Select the mounting method depending on the pipe diameter.

Side View	Section	Top View
Upstream Transducer / Flow / Downstream Transducer	Transducer / Pipe Strap	Flow / Transducer Space

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

Side View	Section	Top View
Upstream Transducer / Flow / Downstream Transducer	Transducer / Pipe Strap	Flow / Transducer Spacing
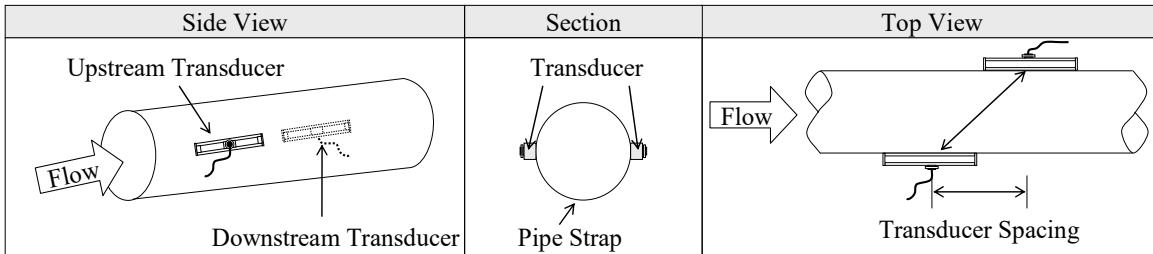
Z Method Pipes: 400mm to 1200mm (16 inches to 48 inches); signal is directly transmitted

3. Turn on the meter.

4. Enter the pipe setup parameters.
   Note:

   a) The distance (spacing) between the upstream and downstream transducers is calculated using the pipe parameters you enter.

   b) Metrics or English units are selected in Menu 30.

Example: Let us assume you have a 168 mm (6.61 inches) outside diameter pipe measuring water. The material is carbon steel with no liner. These parameters should be entered as follows:

Step 1. Pipe Outside Diameter

Press [pipe dia. 1] or [Menu] [pipe dia. 1] [pipe dia. 1], to enter the pipe outside diameter, and then press the [Enter] key.

Note 12:01:00 is the time, Q is the Quality, and R is a diagnostics code. Don't worry about these for now.

2014-01-20 12:01:00

MENU
11

Q   CODE
99   R

Total:m3
197.265

Pipe Outer Diameter
168.00 mm

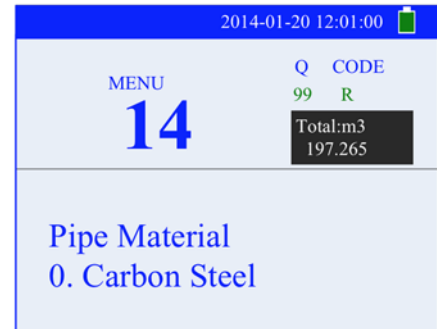**Step 2. Pipe Wall Thickness**

Press [pipe thick. 2] or [Menu] [pipe dia. 1] [pipe thick. 2] then [Enter] to enter the pipe wall thickness (wall thickness for various pipe schedules can be found in the 210i Instruction Manual, Appendix 1).

Step 3. Pipe Material

Press [pipe mat. 3] or [Menu] [pipe dia. 1] [fluid type 4] then [Enter]. Use the [∧/+] or [∨\-] keys to select pipe material from the drop-down menu, and then press the [Enter] key.

Step 4. Fluid Type

Press [fluid type 4] or [Menu] [pipe thick. 2] [cal. 0] then [Enter]. Use the [∧/+] or [∨\-] keys to select fluid type from the drop-down menu, and then press the [Enter] key.
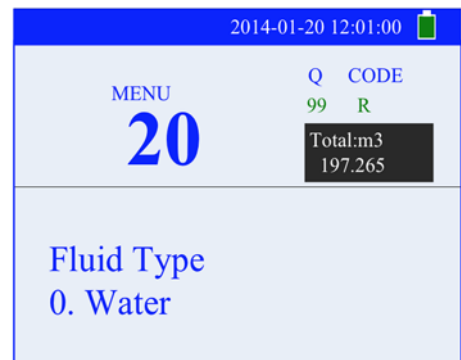
Step 5. Transducer Mounting Methods

Press [xducer type 5] or [Menu] [pipe thick. 2] [fluid type 4] then [Enter]. Use the [∧/+] or [∨\-] keys to select transducer-mounting method from the drop-down menu, and then press the [Enter] key. See 210 Instruction Manual, Chapter 4 of instruction manual for details.

Step 6. Transducer Spacing

Press the [∨\-] [pipe thick. 2] [xducer type 5] keys to enter Menu 25. Accurately install the transducer according to the displayed transducer mounting spacing and the selected mounting method. Note: The spacing should be face to face. (See 210 Instruction Manual, Chapter 4 for details.)
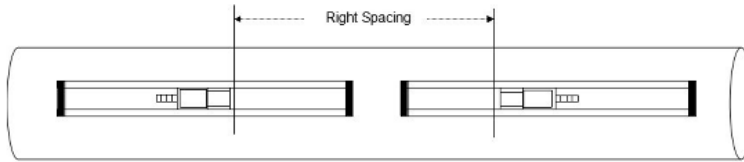
Figure 4. InnovaSonic 210i Correct Spacing

5. The transducer mounting racks have a convenient scale. Slide the transducers in the rack to the correct spacing. Put the transducers on the pipe with an ample 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. The pipe must be 100% full of fluid before proceeding.

6. Press the [Diag.] button. It will show the signal strength, quality and state. A "System Normal" state indicates good strength of >60 and good quality >50.
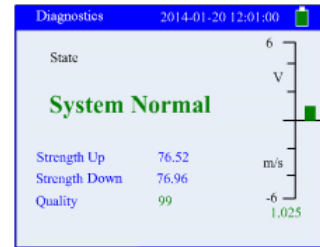
7. Press [Menu] [sound vel. 9] [pipe dia. 1], this display the TOM/TOS. This is the ratio of the measured transit-time and calculated transit time. An acceptable ratio is 100±3%. If this is out of range, check the spacing, pipe parameters, and fluid sound velocity. Flow measurements will not be accurate unless this is in range.

8. If the diagnostics and TOM/TOS are good, press the [Rate] button or [Menu] [cal. 0] [cal. 0] to look at the flow and totalizer.
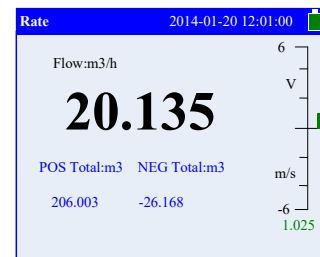
NOTE: The information presented is for a quick start-up for the InnovaSonic 210i. Other parameters are referenced in the 210 Instruction Manual.

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