

# Portable Ultrasonic Flow Meter with Bluetooth Android Tablet PC

## FEATURES

- Accuracy of +/- 0.5% of reading from 1.6 ft./s to 40 ft./s (0.49 m/s to 12 m/s)
- Repeatability of +/- 0.15% of reading
- Wide flow range 1.6 to 40 ft/s (0.49 m/s to 12 m/s)
- Clamp-on transducers in magnetic rack
- 16 feet (5 m) of cabling standard
- Pipes 1 inch to 200 inches (25 mm to 5000 mm)
- Battery operated for 8 hours without recharge
- Bluetooth connectivity to tablet PC
- Easy-to-use menu system (installed on tablet)
- 1 GB SD memory card for data logging
- Pelican-style case with everything needed to make immediate measurement



# INNOVASONIC<sup>®</sup> 210



## DESCRIPTION

**S**ierra's InnovaSonic<sup>®</sup> 210 ultrasonic flow meter with Bluetooth Android tablet PC makes field-portability its primary feature. The 210 replaces keyboards and cabling with a Bluetooth-enabled Android tablet to control data acquisition and processing more conveniently than ever before. Users can browse the collected data, make statistical analyses, display graphs and perform other analytics.

The 210 is ideal for precisely measuring a wide range of liquid flows. Its high-powered ultrasonic pulse with improved digital signal processing requires just one set of transducers for a wide range of pipe sizes and materials, including metal, plastic and concrete. While principally designed for clean liquids, the 210 operates effectively with the minimal quantity of air bubbles or suspended solids found in most industrial applications.

The 210 provides a powerful and extremely user-friendly programming menu that includes instantaneous flow rate, positive total, negative total, net total, velocity, date and time, and daily flow results. Its 1GB SD memory card promises high-capacity data logging and a rechargeable lithium-ion battery supports continuous operation for a minimum of 8 hours. A plug-in spare battery extends this operating time to 24 hours.

A fully field-portable, lightweight, yet rugged and totally self-contained flow measurement package, the 210 comes standard with a sturdy and convenient pelican-style carrying case, non-invasive clamp-on transducers installed into compact mounting racks (magnetic and cable mount), coupling compound and a start-up CD. And it's easy to use and sets up in just five minutes or less.



[www.sierrainstruments.com](http://www.sierrainstruments.com)



## APPLICATIONS

With its field flexibility and ability to easily control data acquisition, the 210 improves your process in the following applications:

- Water, sewage (with low particle content) and seawater
- Water supply and drainage water
- Power plants (nuclear power plants, thermal and hydropower plants), heat energy, boiler feed
- Water and energy management systems
- Metallurgy and mining applications (cooling water and acid recovery)
- Petroleum and chemicals
- Food, beverage and pharmaceutical
- Marine operation and maintenance
- Water conservation management
- Pulp and paper
- Pipeline leak detection
- Regular inspection, tracking and collection

## PERFORMANCE SPECIFICATIONS

### Liquids Measured

Designed for clean liquids; operates effectively with the minimal quantity of air bubbles or suspended solids found in most industrial applications

### Flow Range

1.6 to 40 ft/s (0.49 m/s to 12 m/s)

### Flow Accuracy

+/-0.5% of reading from 1.6 ft./s to 40 ft./s ( 0.49 m/s to 12 m/s)

### Flow Repeatability

+/- 0.15% of reading

### Linearity

+/- 1.0% of full scale

### Pipe Size

1 inch to 200 inches (25 mm to 5000 mm)

### Temperature Ranges

Transmitter: -40 °F to 140 °F (-40 °C to 60 °C)

Measuring medium: -40 °F to 176 °F (-40 °C to 80 °C)

## OPERATING SPECIFICATIONS

### Output

Analog: 0/4 to 20mA current loop (maximum load 750 ohms)

### Power Requirements

Battery operated, internal rechargeable, 11.1 VDC battery power (continuous operation 8 hours)

Wall-plug recharger; plug-in spare battery (continuous operation for 16 hours)

### Humidity

0 to 99%, non-condensing

### Data Logging

1 GB SD card

## PHYSICAL DESCRIPTION

### Transmitter

NEMA 13 (IP 54)

### Transducers

Clamp-on, encapsulated design, double-shielded cable; standard 16 ft (5m); magnetic rack mounted

### Electronic Dimensions

H = 7.8 inches (19.5 cm) W = 5.3 inches (13.5 cm) D = 1.4 inches (3.5 cm)

### Portable Case

Fully portable, pelican-style case for easy transport

### Transmitter Weight

2.2 lb (1.0 kg)

## USER INTERFACE AND SOFTWARE

### Tablet and Operating System

7-inch (17.8 cm) Android OS 4.0 Tablet PC

Installed memory: 1 GB SD memory card

### Wireless Communication

Communicates with the 210 via wireless Bluetooth

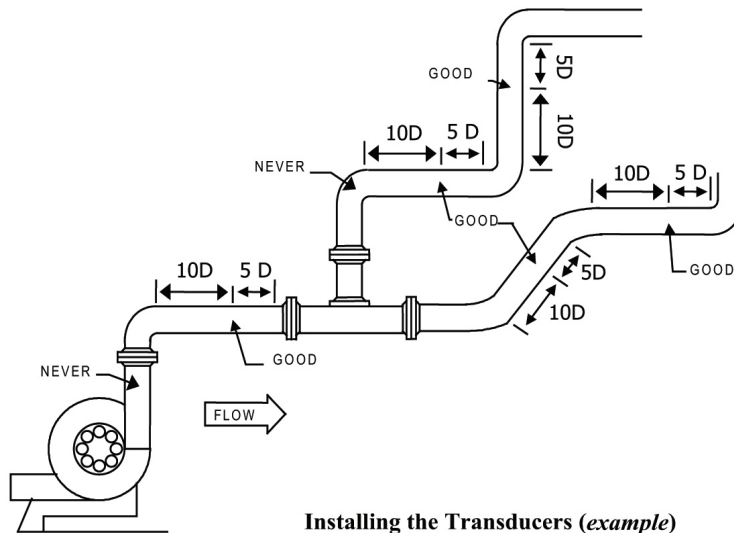
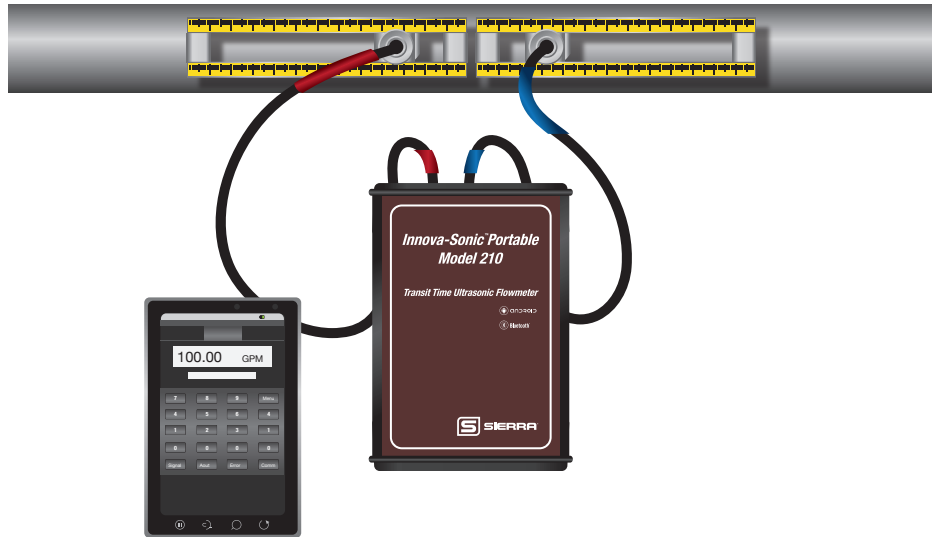
### Software

- Sierra 210 mobile application with data acquisition and display setup; quick setup menu; data graphing function
- Complete diagnostics with input/output configuration

### Android Tablet Functionality (included)

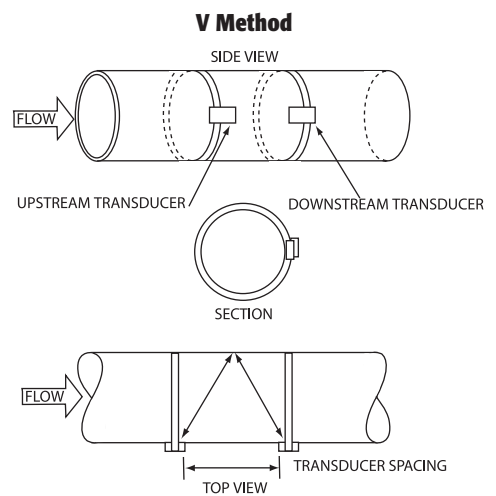
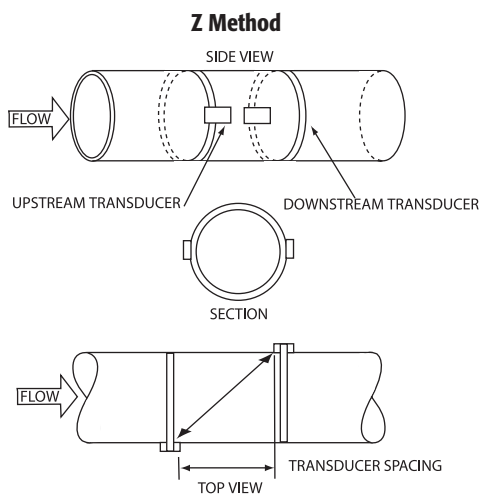
- Wi-Fi and 3G functionality for web browsing and USB connectivity
- VGA and 3MP resolutions respectively front and back-facing cameras with G-sensor that reorients the screen
- Access to the Google Android app store featuring over 100,000 applications

## INSTALLATION EXAMPLES



**Installing the Transducers (example)**

## TRANSDUCER SPACING REQUIREMENTS



## ORDERING THE MODEL 210

**210** -  -  -   
 Feature 1      Feature 2      Option

Instructions: To order a 210, please fill in each block by selecting the codes from the corresponding category below.

Parent Number	
<b>210</b>	InnovaSonic® Portable Ultrasonic Flow Meter with Bluetooth Android Tablet PC Portable digital correlation transit time flow meter; flow range 1.6 to 40 ft/s (0.49 m/s to 12 m/s); accuracy +/-0.5% of reading from 1.6 ft./s to 40 ft./s ( 0.49 m/s to 12 m/s); repeatability of +/- 0.15% of reading; linearity +/- 1.0% of full scale; clamp-on transducers; pipe size 1 inch to 200 inches (25 mm to 5000 mm); 4-20 mA DC output; rechargeable battery (8 hours duration); spare battery and wall-mounted charger (includes international plug set); 1 GB SD memory card; Android tablet with bluetooth connectivity, pelican-type case.

Feature 1: Tablet PC Interface	
<b>1</b>	Android OS tablet PC 7-inch (17.8 cm); Android OS 4.0 tablet communicates to transmitter via bluetooth and Sierra 210 App

Feature 2: Transducer and Cable Length	
<b>16</b>	Clamp-on portable transducers with two magnetic mounting racks. Operating temperature -40°C to 80°C (-40°F to 176°F), 16 ft (5m) standard cable length

Option: NIST Traceable Certificate	
<b>NIST</b>	5-point calibration certification traceable to NIST (add two weeks to standard delivery)

**STOCKED FOR IMMEDIATE DELIVERY VIA ONLINE STORE**

[www.sierrainstruments.com/shop/ultrasonic-210](http://www.sierrainstruments.com/shop/ultrasonic-210)

Model Number: 210-1-16

**Ships in 2 Days**

Online Store Catalog

[www.sierrainstruments.com/shop](http://www.sierrainstruments.com/shop)