High Performance Transit-Time Flow Meter

FEATURES

- Accuracy +/- 0.5% of reading from 1.6 ft./s to 40 ft./s (0.49 m/s to 12 m/s)
- Repeatability +/- 0.15% of reading
- Wide bi-directional Flow range of 1.6 to 40 ft/s (0.49 m/s to 12 m/s)
- Available with standard clamp-on transducers -40°F to 176°F (-40°C to 80°C) or high temperature clamp-on transducers -40°F to 300°F (-40°C to 150°C)
- Available with standard (1.5 inch (30 mm) diameter) insertion transducers or small (0.75 inch (19 mm) diameter) insertion transducers for pipes smaller than 16 inches (DN 400) -40°F to 176°F (-40°C to 80°C)
- Available with insertion high temperature transducers (1.5 inch (30 mm) diameter) -40°F to 300°F (-40°C to 150°C)
- One meter for a wide range of pipe sizes from 1inch to 200 inches (25 mm to 5000 mm)
- Clamp-on sensors require no pipe cutting, no plant shut-down, are a hygenic measurement leading to lower installation and labor costs
- Daily, monthly and yearly totalized flow
- Internally configured batch controller makes batch control convenient
- 1GB SD card high memory data logger
- Modbus RTU, RS-232, RS-485
- Energy monitoring option; accepts two direct-wired RTD's

SIERRA
EXPERIENCE OUR PASSION FOR FLOW!

www.sierrainstruments.com

InnovaSonic® 205i

ISO REGISTERED 9001

DESCRIPTIONS

Sierra's InnovaSonic® 205i ultrasonic flow meter incorporates the latest developments in digital signal processing to deliver highly accurate and repeatable flow measurement for a wide variety of liquids and pipe sizes. The 205i has sophisticated electronics coupled with powerful ultrasonic transducers to make this universal transit-time flow meter the top choice of industry leaders.

An easy-to-read display and clear, user-friendly menu selections make using the instrument simple and convenient. Short cut key buttons for flow, totalized flow, velocity, fluid, signal and diagnostics make set up and data collection even easier. High temperature clamp-on and insertion options are available, making the unit more flexible. PCA's inside the meter have been modularized, enabling field swap out for upgrades.

The 205i also features a large alpha-numeric display, parallel operation of positive, negative and net flow totalizers (with user-selectable scale factors), and configurable pulse, analog and frequency outputs. SD data logging capability is included and energy monitoring is fully supported.

The 205i offers low power consumption and high reliability. The instrument can be configured via keypad without any additional programming devices. It is packaged in a die cast NEMA 4X (IP65) housing, and is available in your choice of non-invasive clamp-on or insertion transducer configurations.

PERFORMANCE SPECIFICATIONS

Flow Range
flow range 1.6 to 40 ft./s (0.49 m/s to 12 m/s)

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

Repeatability
+/- 0.15% of reading

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

OPERATING SPECIFICATIONS

Output

Analog:	0/4 to 20mA current loop (max load 750 Ω)
Pulse output:	0 to 9999Hz, OCT, (min. and max. frequency is adjustable)
Relay output:	SPST, max 1Hz, (1A@125VAC or 2A @ 30VDC)
Digital output:	RS-232, RS-485

Power Supply
90 to 250 VAC, 48 to 63 Hz and
10 to 36 VDC (both are available on each unit)

Keypad
16 (4×4) key with push buttons

Display
40 character, 2 line (20×2) lattice alphanumeric, backlit LCD

Temperature
Transmitter: -40°F to 140°F (-40°C to 60°C)
Clamp-on transducer: -40°F to 176°F (-40°C to 80°C)
Insertion transducer: -40°F to 176°F (-40°C to 80°C)
Clamp-on high-temperature transducer: -40°F to 300°F (-40°C to 150°C)
Insertion high-temperature transducer: -40°F to 300°F (-40°C to 150°C)

Insertion Transducer Pressure
Max operating pressure, 300 psig (20 barg)

Humidity
Up to 99% RH, (non-condensing).

PHYSICAL SPECIFICATIONS

Transmitter
NEMA 4X (IP65), die-cast aluminum

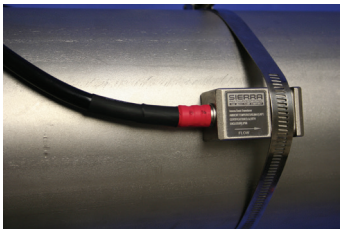
Transducer
Encapsulated design standard/maximum cable length: 30 ft/1000 ft (9 m/305 m), IP 67

Weight
Transmitter: Approximately 4.7 lb. (2.15 kg)
Transducer: approximately 2.0 lb. (0.9 kg) (standard)

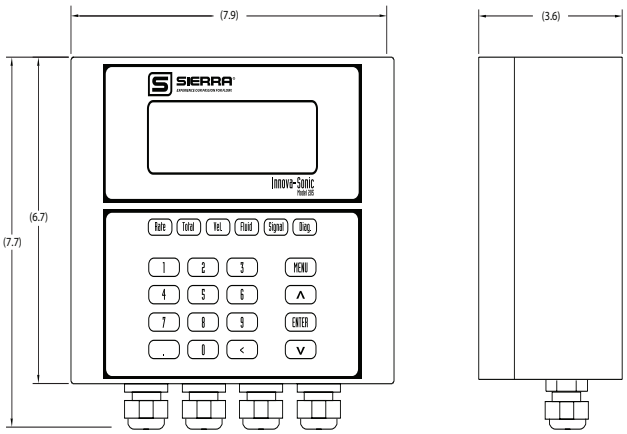
DIGITAL COMMUNICATION

Modbus RTU

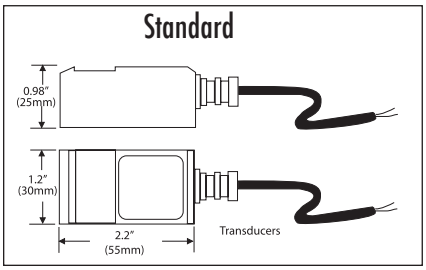
TYPICAL CLAMP-ON INSTALLATION

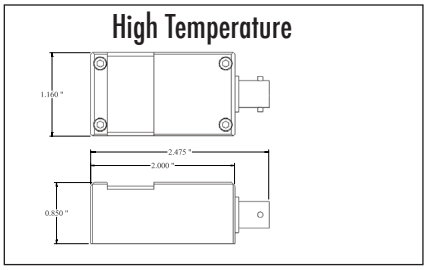


TRANSMITTER DIMENSIONAL SPECIFICATIONS

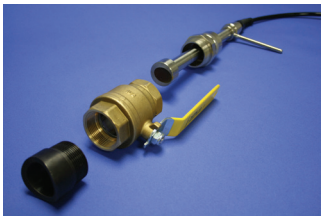


CLAMP-ON TRANSDUCER DIMENSIONAL SPECIFICATIONS





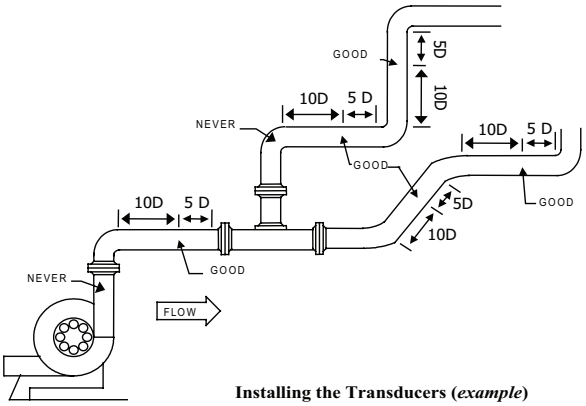
TYPICAL INSERTION INSTALLATION



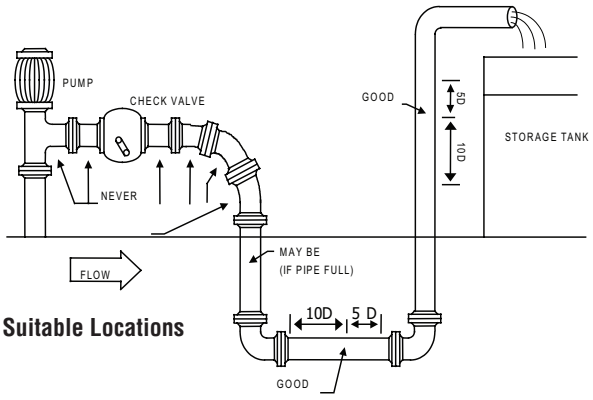
Standard Insertion Transducer

Small (3/4 inch) Insertion Transducer

SUITABLE LOCATIONS



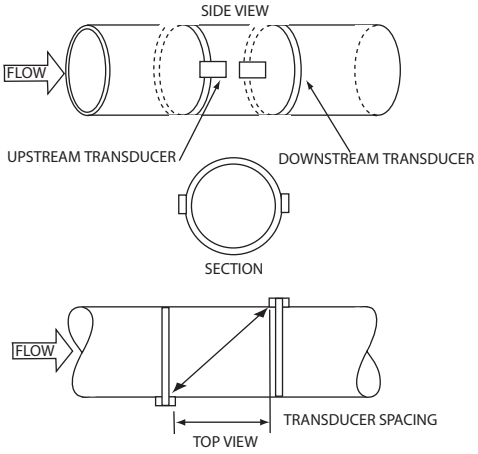
Installing the Transducers (*example*)



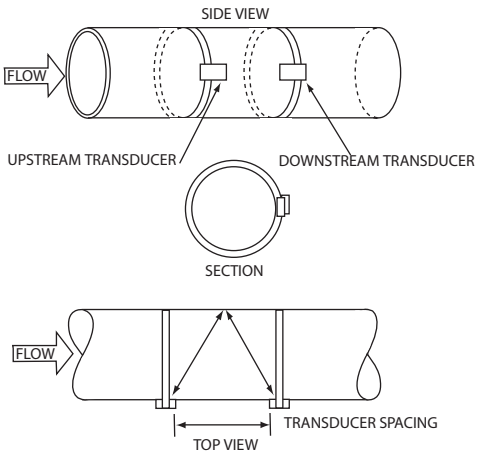
Suitable Locations

TRANSDUCER SPACING REQUIREMENTS

Z Method

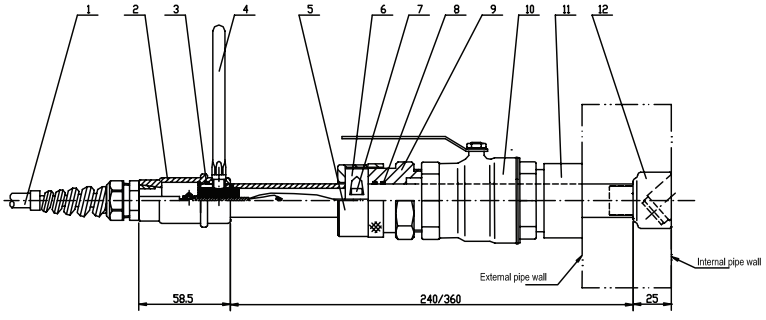


V Method

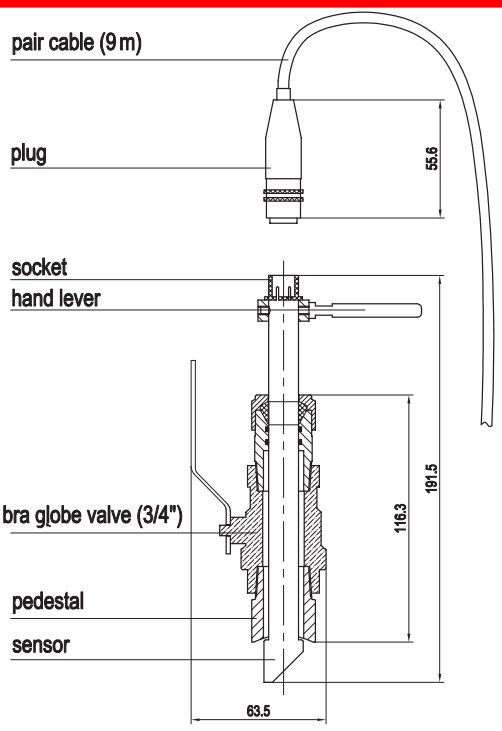


INSERTION TRANSDUCER

	DIMENSIONAL SPECIFICATIONS-STANDARD INSERTION SENSOR		
No.	**Parts**	**No.**	**Parts**
1	Cable	7	Set Screw
2	End Connector	8	O-Ring
3	O-Ring	9	Nut
4	Alignment Handle	10	Ball Valve
5	Locking Sleeve	11	Mounting Collar
6	Locking Collar	12	Transducer Housing



Standard Insertion Transducer



Small (3/4 inch) Insertion Transducer

ORDERING THE MODEL 205I

Parent	Feature 1	Feature 2	Feature 3	Option
	-	-	-	-

Instructions: To order a 205i, please fill in each block by selecting the codes from the corresponding features below.

Parent Number	
205i	InnovaSonic® Digital Correlation Transit-Time Flow meter Installation Method: Wall mount. 1.6 to 40 ft./s (0.49 m/s to 12 m/s); accuracy +/- 0.5% of reading from 1.6 to 40 ft/s (0.49 m/s to 12 m/s); repeatability +/- 0.15% of reading; output 0/4~20 mA dc, OCT, relay (SPST), frequency; power supply 90- 250VAC, 48 to 63 Hz and 10 to 36 VDC; pipe size 1 inch to 200 inches (25 mm to 5000 mm); display 20 x 2, alphanumeric, backlit LCD; keypad 16 touch keys (4 x 4) . 1 GB SD card high-memory data logging, maximum memory 512 days of data. Transducer hazard area classification Ex d II BT4 (Not ATEX or IECEx approved) . Modbus RTU, RS-232 and RS-485 standard. Installation kit includes 2 inch x 44 inches (50.8 mm x 1114.6 mm) pipe straps suitable for 12 inch (304.8 mm) pipe max diameter pipe. Customer is responsible for connection to larger pipes.
205i NRG-1	InnovaSonic® Thermal Energy/BTU Meter for Chill Fluids Same as above but includes two direct RTD inputs, two analog 4-20 mA DC inputs available for temperature transmitters. Energy monitoring software standard (Kjoules or BTU). Direct RTD inputs chill meter version: -13°F to 167°F (-25°C to 75°C). Please contact factory with application details.
205i NRG-2	InnovaSonic® Digital Correlation Transit-Time Flow meter 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.

Note: The following lists standard product/pricing. Sierra will work with you for special requests. Please submit your request using the RFQ/Specials tab in this price list.

Feature 1: Enclosure	
1	NEMA 4X (IP 65); Die-cast aluminum machined enclosure

Feature 2: Transducer	
S	Clamp-on transducer, operating temperature: -40°C to 80°C (-40°F to 176°F) IP 68
SHT	High temperature clamp-on -40°C to 150°C (-40°F to 300°F) IP 68
W	Insertion transducer, operating temperature: -40°C to 80°C (-40°F to 176°F). 1.5-inch (38.1 mm) DIA Insertion transducer. Suitable for pipes 2.0 inches (50.8 mm) or greater; IP 68
WHT	Insertion transducer, operating temperature: -40°C to 150°C (-40°F to 300°F). 1.5-inch (38.1 mm) DIA Insertion transducer. Suitable for pipes 2.0 inches (50.8 mm) or greater; IP 68
WS	Insertion transducer (small), operating temperature: -40°C to 80°C (-40°F to 176°F). 3/4-inch Insertion transducer. Suitable for pipes 16.0 inches (406.4 mm) or smaller; IP 68

Note: Insertion transducers include ball valves (1.5-inch); 3/4-inch for small insertion, carbon steel installation seat for ball valve (brass), mounting kit (includes 4 screws and four plastic bushings) and seal kits (consult factory for other materials)

Feature 3: Transducer Cable	
30	30 ft (9m) standard cable length
(X)	Special length up to 300 ft. (90 m)

Option: NIST Traceable Certificate	
NIST	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-205i

Model Number: 205i-1-S-30

Ships in 2 Days

Online Store Catalog

www.sierrainstruments.com/shop

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