DESCRIPTION

The Data Industrial® Series 200 flow sensors from Badger Meter® feature a six-bladed impeller design with a proprietary non-magnetic sensing mechanism. The forward swept impeller shape provides higher, more consistent torque and is less prone to be fouled by waterborne debris. The forward curved shape coupled with the absence of magnetic drag provides improved operation and repeatability at lower flow rates. This is especially true where the impeller is exposed to metallic or rust particles found in steel or iron pipes. As the liquid flow turns the impeller, a low impedance square wave signal is transmitted with a frequency proportional to the flow rate. The signal can travel up to 2000 feet between the flow sensor and the display unit without the need for amplification. All sensors except irrigation versions are supplied with 20 feet of Belden type 9320 two-conductor shielded cable.

MODEL 220SS (STAINLESS STEEL)

The 220SS sensors are used in most general flow measuring applications in metallic or non-metallic pipes. The sensor mounts in a 2 inch NPT pipe saddle or Threadolet® for installation in pipe sizes from 3 inches to more than 40 inches. Positioning nuts on the three threaded retaining rods allow the sensor to be accurately positioned to a standard insertion depth of 1-1/2 inches into the pipe. When this insertion depth is maintained, and there are at least 10 upstream and 5 downstream diameters of straight uninterrupted flow, an accuracy of +/–1 percent of full scale can be obtained from flow velocities of 0.5…30 feet/second (± 4.0 percent of reading within calibration range).

$C\epsilon$

SPECIFICATIONS

Wetted Materials for all Sensors	See *"Part Number Construction" on page2*	
Sensor Sleeve and Hex Adapter	Series 300 stainless steel	
Temperature Ratings	Standard version: 221° F (105° C) continuous service	
	High temperature version: 285° F (141° C) continuous service; 305° F (150° C) peak temperature (limited duration)	
Pressure Ratings	**At 100° F** 400 psi	**At 300° F (High Temperature Version Only)** 325 psi
Recommended Design Flow Range	0.5…30 ft/sec (0.15…9.1 m/sec) Initial detection below 0.3 ft/sec (0.09 m/sec)	
Accuracy	± 1.0% of full scale over recommended design flow range	
Repeatability	± 0.3% of full scale over recommended design flow range	
Linearity	± 0.2% of full scale over recommended design flow range	
Transducer Excitation	Supply voltage = 8V DC min. 35V DC max.	
	Quiescent current = 600 µA (typical)	
	OFF State (V_{High}) = Supply voltage – (600 µA * Supply impedance)	
	ON State (V_{Low}) = 1.2V DC @ 40 mA (15 Ω + 0.7V DC)	
Output Frequency	3.2…200 Hz	
Output Pulse Width	5 msec ±25%	
Electrical Cable for Standard Sensor Electronics	20 ft (6 m) of 2-conductor 20 AWG shielded UL type PTLC wire provided for connection to display or analog transmitter unit. Rated to 221° F (105° C). May be extended to a maximum of 2000 ft (610 m) with similar cable and insulation appropriate for application.	
Electrical Cable for IR Sensor Electronics	48 in. (122 cm) of UL style 116666 copper solid AWG 18 wire with direct burial insulation. Rated to 221° F (105° C).	
Certification	CE certified	

Badger Meter

Product Data Sheet
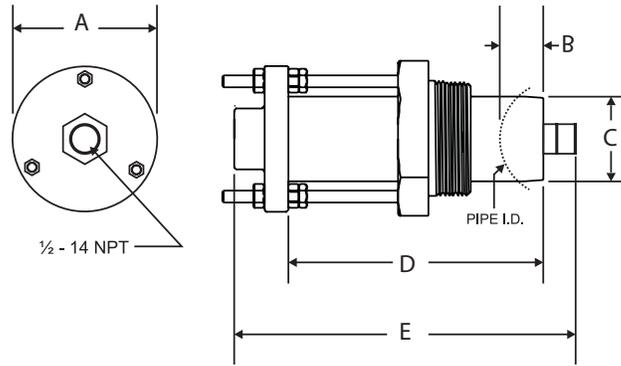
DIMENSIONS

A	B	C	D	E
3 in.	1-1/2 in.	1-3/4 in.	5-1/4 in.	7-1/8 in.
76 mm	38 mm	44 mm	133 mm	181 mm

Figure 1: Dimensions for 220SS

PART NUMBERING CONSTRUCTION

Standard Sensor

Example: 2 | 20 | SS | 00 | 0 | 5 | - | 1 | 2 | 1 | 1

STYLE
Standard Flow — 20

MATERIAL
Stainless Steel — SS

SIZE
Insert Style for pipe sizes 3" and up — 00

ELECTRONICS HOUSING
PPS — 0

ELECTRONICS
Standard Flow (STANDARD) — 5
IR-Irrigation — 6

O-RING
Viton® — 0
EPDM (STANDARD) — 1
Buna N — 8

SHAFT
Zirconia Ceramic — 0
Tungsten Carbide (STANDARD) — 2
316 Stainless Steel — 6

IMPELLER
Nylon (STANDARD) — 1
Tefzel® — 2

BEARING
UHMWPE (STANDARD) — 1
Tefzel® — 2
Teflon® — 3

High Temperature Sensor

Example: 2 | 20 | SS | 00 | 4 | 8 | - | 0 | 2 | 2 | 3

STYLE
Standard Flow — 20

MATERIAL
Stainless Steel — SS

SIZE
Insert Style for pipe sizes 3" and up — 00

ELECTRONICS HOUSING
PEEK — 4

ELECTRONICS
High Temperature — 8

O-RING
Viton® — 0

SHAFT
Tungsten Carbide (STANDARD) — 2

IMPELLER
Tefzel® — 2

BEARING
Teflon® — 3

Control. Manage. Optimize.

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