Impeller
Data Industrial®

Flow Sensors

Series 220PVCS Insertion Style Flow Sensors

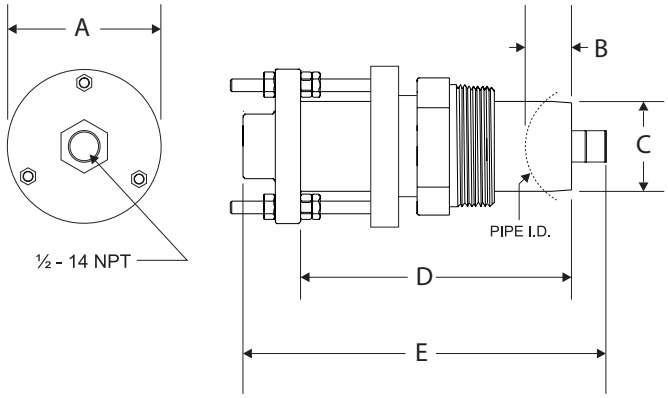
DESCRIPTION

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 ft between the flow sensor and the display unit without the need for amplification. All sensors except irrigation versions are supplied with 20 ft of Belden type 9320 two-conductor shielded cable.

MODEL 220PVCS

The 220PVCS flow sensor is an insertion style flow sensor constructed of non-metallic materials for all wetted parts. These sensors are designed for service in corrosive liquids. The metallic trim, in non-wetted areas, is 316 stainless steel. The sensor mounts in a 2 in. NPT thread and may be attached to the pipe with a saddle or other types of mounting hardware.

DIMENSIONS



A	B	C	D	E
3-1/4 in.	1-1/2 in.	1-9/10 in.	8 in.	9-11/16 in.
83 mm	38 mm	48 mm	203 mm	249 mm

Figure 1: Dimensions for 220PVCS

SPECIFICATIONS

Wetted Materials	Impeller & Bearing: Tefzel®
	Shaft: Zirconia ceramic
	Housing: Glass reinforced polyphenylene sulfide (PPS)
	O-Ring: Ethylene propylene (EPDM)
	Sleeve & Mounting Adapter: Polyvinyl chloride (PVC)
Trim	316 stainless steel
Maximum Pressure	100 psi (6.9 bar) @ 68° F (20° C)
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 uA (typical)
	OFF State (V_{High}) = Supply voltage – (600 uA * 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).
Certifications	CE certified

DIMENSIONS

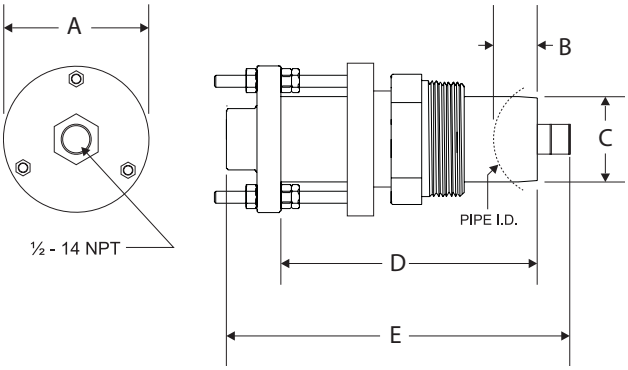


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Figure 2: Dimensions for 220PVCS

PART NUMBERING CONSTRUCTION

Example:	2	20	PVS	00	0	5	-	1	0	2	2
STYLE											
Standard Flow		20									
MATERIAL											
PVC Sleeve w/Stainless Steel Trim			PVS								
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

Control. Manage. Optimize.

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