ARMSTRONG IN-LINE AND INSERTION VORTEX FLOW METERS







In-Line Vortex Flow Meter

Armstrong International is pleased to offer Vortex technology for measurement of steam, liquid, and gas flows. All AVF in-line models provide multivariable measurement and mass flow output for applications in industrial and institutional environments.

The flow meter is available from ½" (15 mm) (DN 15) to 12" (300 mm) (DN 300) meter sizes handling process temps from -330°F (-200°C) to 750°F (400°C) and process connections up to ANSI Class 600 (PN 63). Multivariable options include temperature, pressure, and velocity measurements for a fully compensated mass flow rate. Output communication is available via analog 4-20ma, HART™ protocol, Modbus, and BACnet™.

FEATURES

- Volumetric or mass flow
- Velocity, temperature, pressure measurements integral to meter body
- Energy calculation and output available
- 1.5% of rate accuracy or better
- Turndown up to 100:1
- Push button digital display
- Remote electronics available
- FM, FMC, ATEX, IECEx Approved



Flanged Connection



Wafer Connection

AVF - Multivariable Measurement

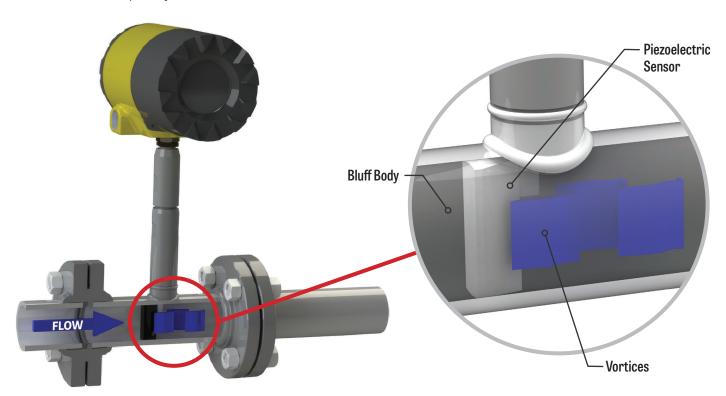


Vortex Shedder Technology

Since the early 1970s, vortex meters have been used as a versatile, reliable measurement solution. Applicable in a variety of fluids, vortex meters can be easily installed and deliver accurate measurement over a potentially impressive turndown.

Based on the Kármán vortex street, a vortex meter measures the frequency of vortices that are shed

behind a bluff body that is placed in a flow stream. As each vortex is shed, it creates high and low pressure zones which are sensed by a piezoelectric crystal. The flow meter's electronics convert these pressure pulses into electrical signals. Because the frequency of the vortices is directly proportional to the fluid's velocity, the electric signals can be used to calculate a flow rate.



Multivariable Options

V1 - VOLUMETRIC

Simply measures velocity and provides a volumetric flow rate. Typical for water and non-compressible fluid applications.

V2 - VELOCITY AND TEMPERATURE

Added temperature measurement via integral RTD is used to calculate compensated mass flow rate. Typical for saturated steam flows.

V3 - VELOCITY, TEMPERATURE, AND PRESSURE

Integral temperature and pressure sensors for fully compensated mass flow calculations. Capable of providing 3 outputs from a choice of 5 different process measurements: volumetric flow rate, mass flow rate, pressure, temperature, and density.

E1 - ENERGY

Energy measurement (Btu, joules, calories, Watthours, Megawatt-hours, HP-hours) using integral temperature reading for either supply or return side. Must be paired with a second temperature sensor on the opposite side (supply or return) of the process.



Performance Specifications

Accuracy							
Variable	Liquids	Gas & Steam					
Volumetric Flow Rate	±0.7% of rate	±1.0% of rate					
Mass Flow Rate	±1.0 % of rate	±1.5% of rate					
Temperature	±2.0°F (±1°C)	±2.0°F (±1°C)					
Pressure	±0.3% of full scale	±0.3% of full scale					
Density	±0.3% of reading	±0.5% of reading					

^{*}Mass flow rate accuracy of gas steam is based on 50-100% of pressure range

Process and Ambient Temperature							
Process Standard Temperature (code T)	-330°F to 500°F (-200°C to 260°C)						
Process High Temperature (code H)	-330°F to 750°F (-200°C to 400°C)						
Ambient Operating	-40°F to 140°F (-40°C to 60°C)						
Ambient Storage	-40°F to 185°F (-40°C to 85°C)						
Pressure Transducer Ratings							
Full Scale Operating Pressure	Max. Over-Range Pressure						
30 psia (2 bara)	60 psia (4 bara)						
100 psia (7 bara)	200 psia (14 bara)						
300 psia (20 bara)	600 psia (40 bara)						
500 psia (35 bara)	1000 psia (70 bara)						
1500 psia (100 bara)	2500 psia (175 bara)						

Repeatability						
Mass Flow Rate	±0.2% of rate					
Volumetric Flow Rate	±0.1% of rate					
Temperature	±0.2°F (±0.1°C)					
Pressure	±0.05% of full scale					
Density	±0.1% of reading					
Stability Over 12 Months						
Mass Flow Rate	±0.2% of rate					
Volumetric Flow Rate	Negligible					
Temperature	±0.9°F (±0.5°C)					
Pressure	±0.1% of full scale					
Density	±0.1% of reading					
Respon	se Time					
Adjustable from 1 to 100 seconds						

Power Requirements							
LP Option	12-36 VDC, 25mA, 1W max						
DC Option	12-36 VDC, 300mA, 9W max						
AC Option	100-240 VAC, 50/60Hz line power, 5W						
	Output Signals						
Analog	4-20 mA						
Alarm	Solid state relay, 40 VDC						
Totalizer Pulse	50 millisecond pulse, 40 VDC						
Volumetric or LP Mass	One analog, one totalizer pulse, HART™						
Multivariable	Up to three analog signals, three alarms, one totalizer pulse, HART™						
Multivariable	Modbus or BACnet [™] process monitoring						
	Display						
Alphanumeric 2	Alphanumeric 2 line x 16 character LCD digital display						
Six pushbuttons for full field configuration							
Pushbuttons can be operated with magnetic wand without removal of enclosure covers							
Display can be mounted in 90° intervals for better viewing							



Physical Specifications

Wetted Materials						
Standard	316L Stainless Steel					
Optional	Carbon Steel or Hastelloy C					
Approvals						
FM, FMC	CLASS I, DIV. 1, GROUPS B, C, D CLASS II/III, DIV. 1, GROUPS E, F, G Type 4X and IP66, T6, Ta = -40°C to 60°C					
ATEX	II 2 G Ex db IIB + T6 Gb II 2 D Ex IIIB T85°C Db IP66					
IECEx	CL I, ZN 1, AEx/Ex db IIB + H2 TG Gb ZN 21, AEx/Ex tb IIIB T85°C Db					

Sizing Considerations

Required Straight Piping Conditions						
Condition	Pipe Diameters (D)					
Condition	Upstream	Downstream				
One 90° elbow before meter	10D	5D				
Two 90° elbow before meter	15D	5D				
Two 90° elbows out of plane before meter	25D	5D				
Reduction before meter	10D	5D				
Expansion before meter	20D	5D				
Partially open valve before meter	25D	5D				

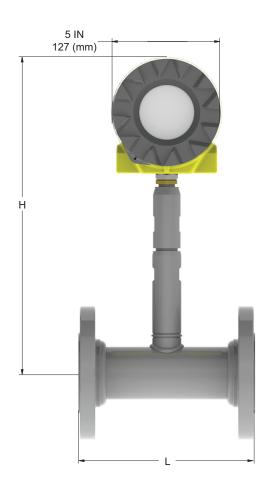
Velocity Range							
Maximum velocity, liquid	30 ft/sec (9 m/sec)						
Minimum velocity, liquid	1 ft/sec (0.3 m/sec)						
Maximum velocity, gas or steam	300 ft/sec (90 m/sec)						
Minimum velocity, gas or steam	$\frac{5}{\sqrt{\text{density (Lb/ft}^3)}}$ for ft/sec $\frac{6.1}{\sqrt{\text{density (kg/m}^3)}}$ for m/sec						

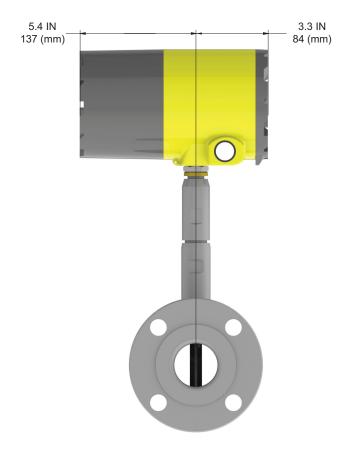


AVF Dimensions - Flanged

Class 150, 3	Model AVF 00, 600, and PN 16, P	N 40, PN 63	Approximate Weight LB (kg)			
Nominal Size	L Dim	H Dim	ANSI 150 (PN16)	ANSI 300 (PN40)	ANSI 600 (PN63)	
½ inch (15 mm)	7.88" (200 mm)	13.40" (340 mm)	12 LB (5.5 kg)	12.5 LB (5.7 kg)	13.4 LB (6.1 kg)	
3/4 inch (20 mm)	7.88" (200 mm)	13.50" (343 mm)	13 LB (5.9 kg)	14.1 LB (5.7 kg)	15.6 LB (7.1 kg)	
1 inch (25 mm)	7.88" (200 mm)	13.60" (345 mm)	13.5 LB (6.1 kg)	16.3 LB (7.4 kg)	16.4 LB (7.5 kg)	
1 ½ inch (40 mm)	7.88" (200 mm)	13.90" (353 mm)	16.3 LB (7.4 kg)	23.3 LB (10.6 kg)	24.6 LB (11.2 kg)	
2 inch (50 mm)	7.88" (200 mm)	14.20" (361 mm)	21.2 LB (9.6 kg)	26.8 LB (12.2 kg)	33.2 LB (15.1 kg)	
3 inch (80 mm)	7.88" (200 mm)	14.70" (373 mm)	33 LB (15.0 kg)	41 LB (18.6 kg)	56.1 LB (25.5 kg)	
4 inch (100 mm)	9.85" (250 mm)	15.20" (386 mm)	45.8 LB (20.8 kg)	66.8 LB (30.3 kg)	96 LB (43.6 kg)	
6 inch (150 mm)	11.82" (300 mm)	16.30" (414 mm)	68.3 LB (31 kg)	106.3 LB (48.2 kg)	194.3 LB (88.2 kg)	
8 inch (200 mm)	11.82" (300 mm)	17.30" (439 mm)	112.4 LB (51 kg)	168.4 LB (76.5 kg)	299 LB (136 kg)	
10 inch (250 mm)	14.79" (376 mm)	18.30" (465 mm)	188.3 LB (85.5 kg)	263.3 LB (119.1 kg)	462.3 LB (209.9 kg)	
12 inch (300 mm)	17.73" (450 mm)	19.30" (490 mm)	298.6 LB (135.6 kg)	402.6 LB (182.8 kg)	606.6 LB (275.4 kg)	

^{*}Add 11.5 LB (5 kg) For Remote Electronics.

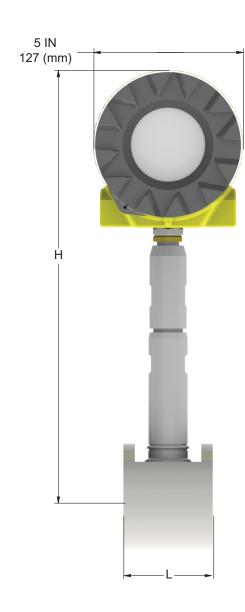


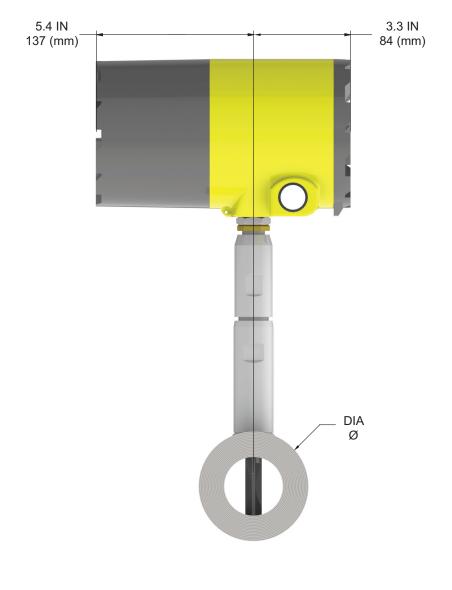


Armstrong International



Model AVF-W Wafer ANSI Class 600							
Nominal Size	L Dim	H Dim	Diameter Ø	LBS			
½ inch (15 mm)	2.56" (65 mm)	13.60" (345 mm)	1.38" (35 mm)	9.2 (4.2 kg)			
3/4 inch (20 mm)	2.56" (65 mm)	13.60" (345 mm)	1.69" (43 mm)	9.5 (4.3 kg)			
1 inch (25 mm)	2.56" (65 mm)	13.60" (345 mm)	2.00" (51 mm)	10.3 (4.7 kg)			
1½ inch (40 mm)	2.56" (65 mm)	13.90" (353 mm)	2.88" (73 mm)	12.1 (5.5 kg)			
2 inch (50 mm)	2.56" (65 mm)	14.10" (358 mm)	3.62" (92 mm)	14.1 (6.4 kg)			
3 inch (80 mm)	2.56" (65 mm)	14.60" (371 mm)	5.00" (127 mm)	18.7 (8.5 kg)			
4 inch (100 mm)	2.56" (65 mm)	15.10" (384 mm)	6.19" (157 mm)	23.4 (10.6 kg)			



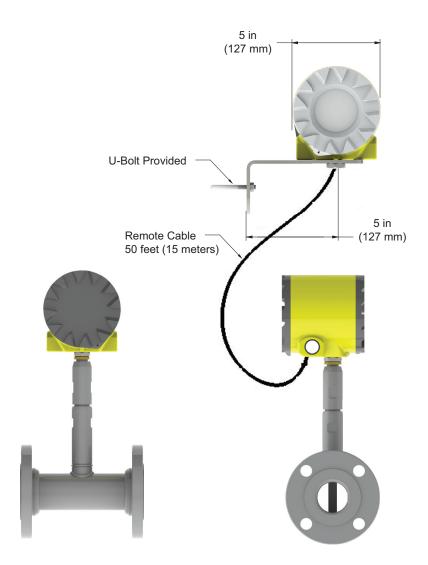


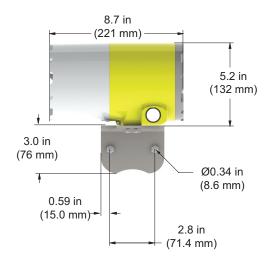
Armstrong International

The Americas | Asia | India | Europe, Middle East, Africa



AVF Remote Electronics Option





Remote electronics option available on all models

AVF Ordering Information

	ct Code								
-		strong Inline Vortex							
		ss Connections							
	150	ANSI 15		inge					
	300	ANSI 3							
	600	ANSI 6		-					
	W	Wafer							
		PN 16	411310	00#					
	16								
	40	PN 40							
	63	PN 63							
		Body S							
		05		ch nom					
		75		ch nom					
		1	1 inch	n nomir	nal bor	e (25 m	ım)		
		15	1 ½ ir	nch nor	minal b	ore (40	Omm)		
		2	2 inc	h nomi	nal bor	e (50 n	nm)		
		3	3 inc	h nomi	nal bor	e (80 n	nm)		
		4	4 inc	h nomi	nal bor	e (100	mm)		
		6	6 inc	h nomi	nal bor	e (150	mm)		
		8	8 inc	h nomi	nal bor	e (200	mm)		
		10	10 inc	ch nom	inal bo	re (250	Omm)		
		12	12 inc	ch nom	inal bo	re (300	O mm)		
			Body	/ Mater	ial				
			SS	316 S	tainles	s Steel			
			CS	Carb	on Ste	el			
			Н	Haste	elloy				
				Elect	ronics	;			
				D	NEM	A 4X Eı	nclosure		
				R1	Rem	ote NEI	MA 4X Enclosure, 50 foot cable (15 meters)		
				R2			MA 4X Enclosure, 25 foot cable (7 meters)		
					Mult	ivarial	ble Options		
					V1		metric		
					V2		city, Temperature		
					V3		city, Temperature, Pressure		
					V4		city, Temperature, External Pressure		
					E1	Ener			
					E2		gy, Pressure		
							t Power		
						LP	12-36VDC, 25mA, 1W max, loop powered, output option 1 only		
						DC	12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7		
						AC	10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7		
							Output		
							1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only		
							2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power		
							3 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power		
							4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power		
							Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power		
							6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power		
							7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power		
							Temperature Options		
							T Standard temperature, Process temperature -330°F - 500°F (-200°C - 260°C)		
						H High temperature, Process temperature up to 750°F (400°C) Pressure Options N No pressure sensor			
						1 Maximum 30 psia (2 bara), Proof 60 psia (4 bara)			
							2 Maximum 100 psia (7 bara), Proof 200 psia (14 bara)		
							3 Maximum 300 psia (20 bara), Proof 600 psia (41 bara)		
							4 Maximum 500 psia (34 bara), Proof 1000 psia (64 bara)		
							5 Maximum 1500 psia (100 bara), Proof 2500 psia (175 bara)		
	- 1	1					\		



Insertion Vortex Flow Meter

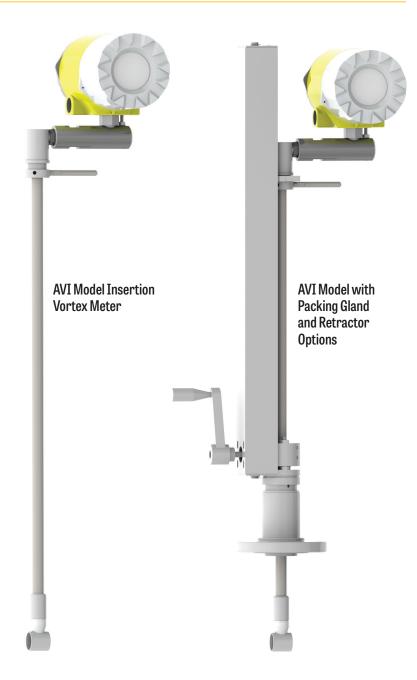
The Insertion Vortex Flow Meter

The AVI insertion models provide all the same multivariable measurement and mass flow output features as the AVF in-line model in a robust, welded design.

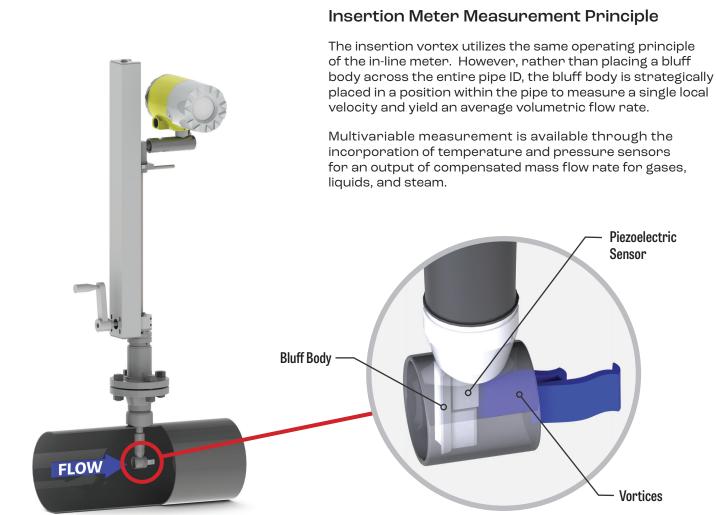
The AVI is available for pipe sizes 2" (50 mm) (DN 50) and above with either flanged or NPT process connections up to ANSI Class 600 (PN63). Optional retractor tool provides easy hot-tap installation and removal.

FEATURES

- I Compensated mass flow and energy calculations for gases, liquids, and steam
- Hop tap installation does not require shut down or process interruption
- I Up to ±1.5% accuracy over a wide turndown in flow rates
- I Reliable construction no moving parts
- I Analog, HART™, Modbus, and BACnet™ communication
- I FM, FMC, ATEX, IECEx Approved







Sizing Considerations

Required Straight Piping Conditions							
Condition	Pipe Diameters (D)						
Collultion	Upstream	Downstream					
One 90° elbow before meter	10D	5D					
Two 90° elbow before meter	15D	5D					
Two 90° elbows out of plane before meter	25D	5D					
Reduction before meter	10D	5D					
Expansion before meter	20D	5D					
Partially open valve before meter	25D	5D					

Velocity Range								
Maximum velocity, liquid	30 ft/sec (9 m/sec)							
Minimum velocity, liquid	1ft/sec (0.3 m/sec)							
Maximum velocity, gas or steam	300 ft/sec (90 m/sec)							
Minimum velocity, gas or steam								

Armstrong International



AVI Specifications

Performance Specifications

	Accuracy							
Variable	Liquids	Gas & Steam						
Volumetric Flow Rate	±1.2% of rate	±1.5% of rate						
Mass Flow Rate	±1.5 % of rate	±2.0% of rate						
Temperature	±2.0°F (±1°C)	±2.0°F (±1°C)						
Pressure	±0.3% of full scale	±0.3% of full scale						
Density	±0.3% of reading	±0.5% of reading						

^{*}Mass flow rate accuracy of gas steam is based on 50-100% of pressure range

Process and Ambient Temperature						
Process Standard Temperature (code T)	-330°F to 500°F (-200°C to 260°C)					
Process High Temperature (code H)	-330°F to 750°F (-200°C to 400°C)					
Ambient Operating	-40°F to 140°F (-40°C to 60°C)					
Ambient Storage	-40°F to 185°F (-40°C to 85°C)					
Pressure Trans	sducer Ratings					
Full Scale Operating Pressure	Max. Over-Range Pressure					
30 psia (2 bara)	60 psia (4 bara)					
100 psia (7 bara)	200 psia (14 bara)					
300 psia (20 bara)	600 psia (40 bara)					
500 psia (35 bara)	1000 psia (70 bara)					
1500 psia (100 bara)	2500 psia (175 bara)					

Repeatability					
Mass Flow Rate	±0.2% of rate				
Volumetric Flow Rate	±0.1% of rate				
Temperature	±0.2°F (±0.1°C)				
Pressure ±0.05% of full scale					
Density	±0.1% of reading				
Stability Over 12 Months					
Mass Flow Rate ±0.2% of rate					
Volumetric Flow Rate Negligible					
Temperature	±0.9°F (±0.5°C)				
Pressure	±0.1% of full scale				
Density	±0.1% of reading				
Respon	se Time				
Adjustable from 1 to 100 seconds					

Power Requirements					
LP Option	12-36 VDC, 25mA, 1W max				
DC Option	12-36 VDC, 300mA, 9W max				
AC Option	100-240 VAC, 50/60Hz line power, 5W				
	Output Signals				
Analog	4-20 mA				
Alarm Solid state relay, 40 VDC					
Totalizer Pulse 50 millisecond pulse, 40 VDC					
Volumetric or LP Mass	One analog, one totalizer pulse, HART™				
Multivariable	Up to three analog signals, three alarms, one totalizer pulse, HART™				
Multivariable	Modbus or BACnet [™] process monitoring				
	Display				
Alphanumeric 2 line x 16 character LCD digital display					
Six pushbuttons for full field configuration					
Pushbuttons can be operated with magnetic wand without removal of enclosure covers					
Display can be mou	nted in 90° intervals for better viewing				



Operating Specifications

Pressure Ratings						
Style Connection	Process	Rating Code	Ordering			
	2" (50 mm) MNPT	ANSI 600#	CT8			
Compression	2" (50 mm) 150# flange	ANSI 150#	CF8150			
Fitting	2" (50 mm) 300# flange	ANSI 300#	CF8300			
	2" (50 mm) 600# flange	ANSI 600#	CF8600			
	2"(50 mm) MNPT	50 psig (3.5 barg)	PT8			
Packing Gland	2" (50 mm) 150# flange	50 psig (3.5 barg)	PF8150			
olalia	2" (50 mm) 300# flange	50 psig (3.5 barg)	PF8300			
	2" (50 mm) MNPT	ANSI 300#	PT8RR			
Packing Gland & Removable Retractor	2" (50 mm) 150# flange	ANSI 150#	PF8150RR			
Removable Retractor	2" (50 mm) 300# flange	ANSI 300#	PF8300RR			
	2" (50 mm) MNPT	ANSI 600#	PT8R			
Packing Gland &	2" (50 mm) 150# flange	ANSI 150#	PF8150R			
Permanent Retractor	2" (50 mm) 300# flange	ANSI 300#	PF8300R			
	2" (50 mm) 600# flange	ANSI 600#	PF8600R			

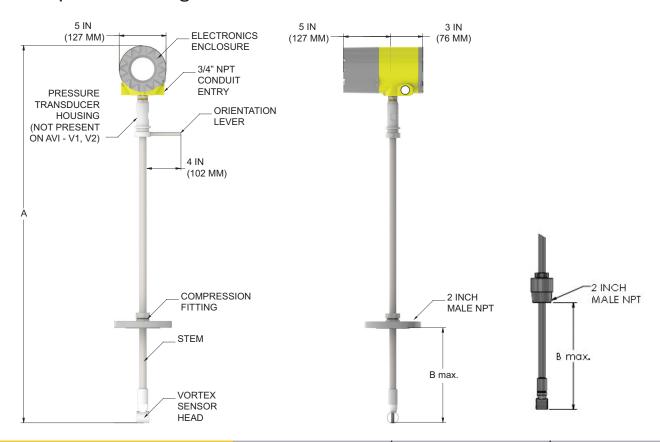
Physical Specifications

	Wetted Materials
Standard	316L Stainless Steel
DuPont Teflon based	d thread sealant on models with pressure transducer
DuPont Teflon packi	ng on standard temperature models with packing gland
Graphite based pac	king on high temperature models with packing gland
	Approvals (Pending)
FM, FMC	CLASS I, DIV. 1, GROUPS B, C, D CLASS II/III, DIV. 1, GROUPS E, F, G Type 4X and IP66, T6, Ta = -40°C to 60°C
ATEX	II 2 G Ex d IIB + H2 T6 II 2 D EX tD A21 IP66 T85°C, Ta = -40°C to 60°C
IECEx	Ex d IIB + H2 T6 Ex tD A21 IP66 T85°C, Ta = -40°C to 60°C



AVI Dimensions

AVI Compression Fitting Models



	Model AVI - V1, V2		CL/Comp Act Length in (mm)		rd Length nm)	EL/Extended Length in (mm)	
			В	A	В	A	В
CT8	Compression Fitting, Male NPT	21.6 (549)	9.8 (249)	38.0 (965)	26.2 (665)	50 (1 270)	38.2 (970)
CF8150	Compression Fitting, 2 Inch, 150 LB Flange	21.6 (549)	10.9 (277)	38.0 (965)	27.3 (693)	50 (1270)	39.3 (998)
CF5016	Compression Fitting, DN50, PN16 Flange	21.6 (549)	10.9 (277)	38.0 (965)	27.3 (693)	50 (1 270)	39.3 (998)
CF8300	Compression Fitting, 2 Inch, 300 LB Flange	21.6 (549)	10.8 (274)	38.0 (965)	27.2 (691)	50 (1 270)	39.2 (996)
CF5040	Compression Fitting, DN50, PN40 Flange	21.6 (549)	10.8 (274)	38.0 (965)	27.2 (691)	50 (1270)	39.2 (996)
CF8600	Compression Fitting, 2 Inch, 600 LB Flange	21.6 (549)	10.4 (264)	38.0 (965)	26.8 (681)	50 (1270)	38.8 (986)
CF5063	Compression Fitting, DN50, PN63 Flange	21.6 (549)	10.4 (264)	38.0 (965)	26.8 (681)	50 (1270)	38.8 (986)

	Model AVI - V3		CL/Comp Act Length in (mm)		nrd Length mm)	EL/Extended Length in (mm)		
			В	А	В	А	В	
СТ8	Compression Fitting, Male NPT	24.6 (625)	9.8 (249)	41.0 (1 041)	26.2 (665)	53 (1346)	38.2 (970)	
CF8150	Compression Fitting, 2 Inch, 150 LB Flange	24.6 (625)	10.9 (277)	41.0 (1 041)	27.3 (693)	53 (1346)	39.3 (998)	
CF5016	Compression Fitting, DN50, PN16 Flange	24.6 (625)	10.9 (277)	41.0 (1 041)	27.3 (693)	53 (1346)	39.3 (998)	
CF8300	Compression Fitting, 2 Inch, 300 LB Flange	24.6 (625)	10.8 (274)	41.0 (1 041)	27.2 (691)	53 (1346)	39.2 (996)	
CF5040	Compression Fitting, DN50, PN40 Flange	24.6 (625)	10.8 (274)	41.0 (1 041)	27.2 (691)	53 (1346)	39.2 (996)	
CF8600	Compression Fitting, 2 Inch, 600 LB Flange	24.6 (625)	10.4 (264)	41.0 (1 041)	26.8 (681)	53 (1346)	38.8 (986)	
CF5063	Compression Fitting, DN50, PN63 Flange	24.6 (625)	10.4 (264)	41.0 (1 041)	26.8 (681)	53 (1346)	38.8 (986)	

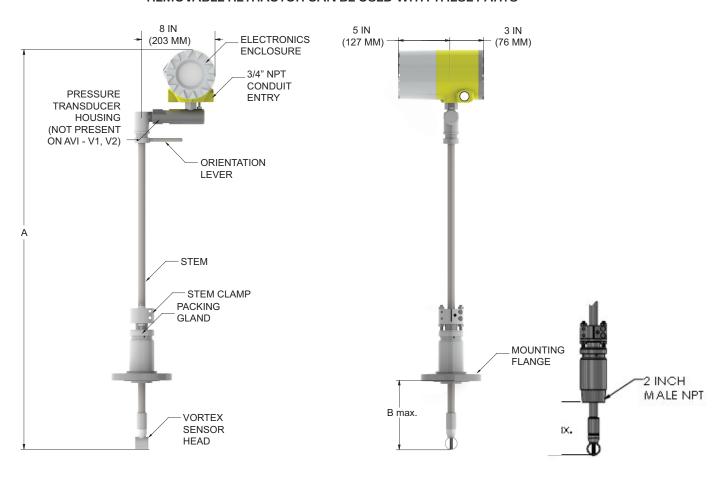
Armstrong International

The Americas | Asia | India | Europe, Middle East, Africa



AVI Packing Gland Models

REMOVABLE RETRACTOR CAN BE USED WITH THESE PARTS

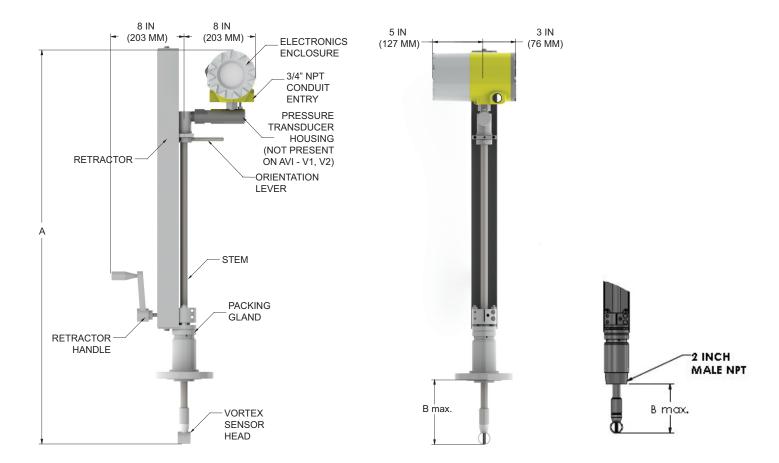


	Model AVI		ord Length mm)	EL/Extended Length in (mm)		
		А	В	А	В	
PT8	Packing Gland, Male NPT	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF8150	Packing Gland, 2 Inch, 150 LB Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF5016	Packing Gland, DN50, PN16 Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF8300	Packing Gland, 2 Inch, 300 LB Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF5040	Packing Gland, DN50, PN40 Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	



AVI Dimensions

AVI Packing Gland Models with Permanent Retractor



	Model AVI	SL/Standa in (r	rd Length nm)	EL/Extended Length in (mm)		
	With Permanent Retractor	А	В	А	В	
PT8R	Packing Gland, Male NPT	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF8150R	Packing Gland, 2 Inch, 150 LB Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF5016R	Packing Gland, DN50, PN16 Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF8300R	Packing Gland, 2 Inch, 300 LB Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF5040R	Packing Gland, DN50, PN40 Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF8600R	Packing Gland, 2 Inch, 600 LB Flange	40.5 (1 029)	21.5 (546)	52.5 (1 334)	33.5 (851)	
PF5063R	Packing Gland, DN50, PN63 Flange	40.5 (1029)	21.5 (546)	52.5 (1 334)	33.5 (851)	





Process Connections CT8 Compression, 2 inch NPT CR850 Compression, 2 inch NDF Flange CF5010 Compression, DNSO PNIS Flange CF5040 PRSO Compression, DNSO PNIS Flange PRSO Packing Gland, Zinch NPT PR8100 PR8	Arm	nstrong	Insertion	Vortex						
CF8150 Compression, 2 inch 150 a Flange CF8300 Compression, DNSO PN16 Flange CF8400 Compression, DNSO PN16 Flange CF8600 Compression, DNSO PN 40 Flange CF8600 Compression, DNSO PN 40 Flange CF8601 Compression, DNSO PN 40 Flange CF8602 Compression, DNSO PN 40 Flange CF8603 Compression, DNSO PN 40 Flange PR870 Packing Gland, 2 inch 500 a Flange PF870 Packing Gland, 2 inch 500 a Flange, Retractor PF870 Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor PF8800R Packing Gland, 2 inch 500 a Flange, Retractor Probe Length S Standard Length C Compact Length C Compact Length C Compact Length E Extended Length C Compact Length C C Compact Lengt	Pro	cess Co	nnection	S						
CF5016 Compression, DN50 PN16 Flange CF5040 Compression, 2 mch 300 # Flange CF6040 Compression, 2 mch 300 # Flange CF6040 Compression, DN50 PN16 Flange CF5052 Compression, DN50 PN16 Flange FP5062 Compression, DN50 PN16 Flange PP507 Packing Gland, 2 mch 150 # Flange PF5016 Packing Gland, 2 mch 150 # Flange PF5016 Packing Gland, 2 mch 300 # Flange PF5040 Packing Gland, 2 mch 300 # Flange PF5040 Packing Gland, 2 mch 150 # Flange PF5040 Packing Gland, 2 mch 150 # Flange, Retractor PF5068 Packing Gland, 2 mch 150 # Flange, Retractor PF5068 Packing Gland, 2 mch 150 # Flange, Retractor PF5060 Packing Gland, 2 mch 160 # Flange, Retractor PF5060 Packing Gland, 2 mch 160 # Flange, Retractor PF5060 Packing Gland, 2 mch 160 # Flange, Retractor PF5060 Packing Gland, 2 mch 160 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF5060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gland, 2 mch 600 # Flange, Retractor PF060 Packing Gla	C	СТ8	Compr	ession,	2 inch NP	PT				
CF8000 Compression, 2 inch 300 æ Flange CF8000 Compression, DNSO PN 40 Flange CF8000 CF8003 Compression, DNSO PNA 9 Flange P8003 Packing Gland, 2 inch 150 æ Flange PF8106 Packing Gland, 2 inch 150 æ Flange PF8107 Packing Gland, 2 inch 150 æ Flange PF8008 Packing Gland, 2 inch 150 æ Flange PF8000 Packing Gland, 2 inch 150 æ Flange PF8000 Packing Gland, 2 inch 150 æ Flange PF8150R Packing Gland, DNSO PNA0 Flange PF8150R Packing Gland, DNSO PNA0 Flange PF8150R Packing Gland, DNSO PNA0 Flange, Retractor PF8008 Packing Gland, DNSO PNA0 Flange, Retractor PF8008 Packing Gland, 2 inch 1500 æ Flange, Retractor PF8008 Packing Gland, 2 inch 1500 æ Flange, Retractor PF8008 Packing Gland, DNSO PNA0 Flange, Retractor PF8008 Packing Gland, DNSO PNA0 Flange, Retractor PF8008 Packing Gland, 2 inch 1500 æ Flan	CF	8150	Compr	ession,	2 inch 150	0# FI	ange			
CF5040 Compression, DN50 PN 40 Flange CF8080 Compression, 2 inch 600 # Flange CF5083 Compression, 2 inch 600 # Flange PF819 Packing Gland, 2 inch 150 # Flange PF819 Packing Gland, 2 inch 150 # Flange PF8300 Packing Gland, DN50 PN16 Flange PF8300 Packing Gland, DN50 PN16 Flange PF8300 Packing Gland, DN50 PN40 Flange PF8400 Packing Gland, DN50 PN40 Flange PF8506 Packing Gland, DN50 PN40 Flange PF8507 Packing Gland, DN50 PN40 Flange, Retractor PF8508 Packing Gland, DN50 PN40 Flange, Retractor PF8300R Packing Gland, DN50 PN40 Flange, Retractor PF8400R Packing Gland, DN50 PN40 Flange, Retractor PF8400R Packing Gland, DN50 PN40 Flange, Retractor PF8508R Packing Gland, DN50 PN40 Flange, Retractor PF8508R Packing Gland, DN50 PN40 Flange, Retractor PF8600R Packing Gland, DN50 PN40 Flange, Retractor Probe Length 8 Standard Length C Compact Length E Extended Length E Extended Length C Compact Length E Extended Length V Volunteric V V Volunteric V V Volunteric V V Volocity, Temperature V 3 Velocity, Temperature, External Pressure E E Energy, Pressure Input Power L P I 2-36VDC, 55mA, IW max, Joop powered, output option 1 only DC I2-36VDC, 55mA, IW max, Joop powered, output option 1 only DC I2-36VDC, 55mA, IW max, Joop powered, output option 1 only DC I2-36VDC, 55mA, IW max, Joop powered, output option 1 only DC I2-36VDC, 55mA, IW max, Joop powered, output option 1 only DC I2-36VDC, 55mA, IW max, Joop powered, output option 1 only DC I2-36VDC, 55mA, IW max, Joop powered, output option 1 only DC I2-36VDC, 55mA, IW max, Joop powered, output option 1 only DC I2-36VDC, 55mA, IW max, Joop powered, output option 2, 3, 4, 5, 6, 7 Output One 4-20mA analog ou	CF	5016	Compr	ession,	DN50 PN	116 FI	ange			
CF8600 Compression, 2 inch 600 a Flange CF5032 Compression, DNSO PNSS Flange PF8	CF	8300	Compr	ession,	2 inch 30	0# F	ange			
P8 Packing Gland, Zinch NDT PF5016 Packing Gland, Zinch NDT PF5016 Packing Gland, Zinch NDT PF5016 Packing Gland, Zinch NDT PF5017 Packing Gland, Zinch NDT, Retractor PF5000 Packing Gland, Zinch NDT, Retractor PF5000 Packing Gland, Zinch NDT, Retractor PF5018 Packing Gland, Zinch NDT, Retractor PF5018 Packing Gland, Zinch NDT, Retractor PF5018 Packing Gland, Zinch NDD PN0 Flange, Retractor PF5018 Packing Gland, Zinch NDD PN0 Flange, Retractor PF5008 Packing Gland, DND PN0 Flange, Retractor PF00 Langth S Standard Length C Compact Length E Extended Length E Extended Length E Extended Length E Extended Length R Remote NEMA 4X Enclosure, 25 foot cable (15 meters) R R Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Multivariable Options VI Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, External Pressure E Extended Length E Energy E Energy, Pressure Input Power Input Po	CF	5040	Compr	ession,	DN50 PN	I 40 F	lange			
P78 Packing Gland, 2 inch NPT P78150 Packing Gland, 2 inch 150# Flange P78300 Packing Gland, DNSD PNI6 Flange P78300 Packing Gland, DNSD PNI6 Flange P78400 Packing Gland, DNSD PNI6 Flange P788 Packing Gland, DNSD PNI6 Flange, Retractor P788 Packing Gland, 2 inch 150# Flange, Retractor P789 Packing Gland, DNSD PNI6 Flange, Retractor P78900 Packing Gland, 2 inch 150# Flange, Retractor P78900 Packing Gland, DNSD PNI6 Flange, Retractor P78900 Packing Gland, DNSD PNI6 Flange, Retractor P7900 Packing Gland, DNSD PN	CF	8600	Compr	ession,	2 inch 60	00# F	ange			
PF8150 Packing Gland, 2 inch 150# Flange PF8300 Packing Gland, 2 inch 300# Flange PF8300 Packing Gland, DN50 PN40 Flange PF8400 Packing Gland, 2 inch 300# Flange PF8506 Packing Gland, 2 inch 150# Flange PF8506 Packing Gland, 2 inch 150# Flange, Retractor PF8507 Packing Gland, 2 inch 300# Flange, Retractor PF8508 PR8600 Packing Gland, DN50 PN40 Flange, Retractor PF8600 Packing Gland, DN50 PN40 Flange, Retractor Probe Length S Standard Length C Compact Length E Extended Length E Ex	CF	5063	Compr	ession,	DN50 PN	163 F	ange			
PR5016 PR5020 Packing Gland, Dix Do PN16 Flange PF5040 Packing Gland, Zinch 300 a Flange PF5040 Packing Gland, Zinch NDT, Retractor PF50408 PR508 PR508 PR508 PR509 Packing Gland, Zinch S00 a Flange, Retractor PF50408 PF5063R PF5063R PF5063R PF5063R PS508 PR509 PR	F	PT8	Packing	g Gland	, 2 inch N	PT				
PF8300 PF6040 PF6040 PF6040 PF8150R Packing Gland, 2 inch N97, Retractor PF8150R Pecking Gland, 2 inch N97, Retractor PF6040R PF8300R Packing Gland, 2 inch 150# Blange, Retractor PF6040R PF8000R PF6040R PF8000R PF6040R PF	PF	8150	Packing	g Gland	, 2 inch 15	0# F	lange			
PF5040 Packing Gland, DN50 PN40 Flange PF8150R Packing Gland, 2 inch 150# Flange, Retractor PF6040R PR5040R PR5040R PR5040R PR5040R PF5040R PF5040R PF5040R PF5040R PF5040R PF5040R PF5040R PR5053R PF5040R PF5040R PF5040R PF5040R PF5040R PF5040R PF5040R PR5053R S S Standard Length E E E E E E E E E E E E E E E E E E	PF5016 Packing Gland, DN50 PN					N16 F	lange			
PRSTOR PRSTOR PRSTOR PRSTOR Packing Gland, 2 inch NPT, Retractor PFS016R PRSTOR Packing Gland, 2 inch SOD PNIS Flange, Retractor PRSTOR PRSTOR PRSTOR Packing Gland, 2 inch SOD PNIS Flange, Retractor PRSTOR PRSTO	PF	8300	Packing	g Gland	, 2 inch 30	00#	Flange			
PF8150R Packing Gland, 2 inch 150 # Flange, Retractor PF800R Packing Gland, DN50 PN16 Flange, Retractor PF800R Packing Gland, DN50 PN40 Flange, Retractor PF800R Packing Gland, 2 inch 300 # Flange, Retractor PF800R Packing Gland, 2 inch 600 # Flange, Retractor PF800R Packing Gland, 2 inch 600 # Flange, Retractor PF800R Packing gland, DN50 PN83 Flange, Retractor Probe Length S Standard Length C Compact Length Electronics D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 50 foot cable (17 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, IW max, loop powered, output option 1 only DC 12-36VDC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, DC or AC power 5 Three 4-20mA analog output, scaled frequency, one elarm, one pulse, Modbus, DC or AC power 5 Three 4-20mA analog output, scaled frequency, one elarms, one pulse, MRART™, DC or AC power 7 Three 4-20mA analog output, scaled frequency, three alarms, one pulse, MRART™, DC or AC power Three 4-20mA analog output, scaled frequency, three alarms, one pulse, MRART™, DC or AC power Three 4-20mA analog output, scaled frequency, three alarms, one pulse, MRART™, DC or AC power Three 4-20mA analog output, scaled frequency, three alarms, one pulse, MRAT™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, MRAT™, DC or AC power	PF!	5040	Packing	g Gland	, DN50 PI	N40 I	lange			
PF5016R Packing Gland, DN50 PN16 Flange, Retractor PF5040R Packing Gland, 2 inch 300 # Flange, Retractor PF5040R Packing Gland, 2 inch 600 # Flange, Retractor PF5063R Packing Gland, DN50 PN40 Flange, Retractor PF5063R Packing Gland, DN50 PN40 Flange, Retractor PF5063R Packing Gland, DN50 PN65 Flange, Retractor PF5063R Packing Gland, DN50 PN65 Flange, Retractor PF5063R Standard Length C Compact Length Electronics D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (17 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 300mA, 9W max, output option 1 only DC 12-36VDC, 55 mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 500mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, DC or AC power 5 Three 4-20mA analog output, scaled frequency, one alarm, one pulse, McAR™, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, McAR™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, McAR™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, McAR™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, McAR™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, McAR™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, McAR™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, McAR™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, McAR™, DC or AC power										
PF8300R PF5040R PF5060R PF5060R PF5063R PF506										
PF5040R PR8600R PR8600R PR600R PR5063R Packing gland, DN50 PN63 Flange, Retractor Probe Length S Standard Length C Compact Length E Extended Length E Extended Length Remote NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature, Pressure V3 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure L1 L1 2-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 AC 10-240NAC, 5W max, output options 2, 3, 4, 5, 6, 7 AC 10-420mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power T Three 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power T Three 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power T Three 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power T Three 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power T Three 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power T Three 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power T Three 4-20mA analog output, scaled frequency, three alarms, one pulse, HART™, DC or AC power T Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power T Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power										
PF860R PF508R Pcobe Length S Standard Length C Compact Length Electronics D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 25 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Wolumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, IW max, loop powered, output option 1 only DC 12-36VDC, 30 omA, 9W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BART™, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BARCH™, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power	_						•			
Probe Length S Standard Length C Compact Length E Extended Length Electronics D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 25 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) V1 Volumetric V2 Velocity, Temperature, Pressure V3 Velocity, Temperature, Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 5W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 0 no 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power										
S Standard Length C Compact Length E Extended Length Electronics D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 5 Three 4-20mA analog output, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power										
S Standard Length C Compact Length Electronics D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, MART™, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, MART™, DC or AC power	PF5	5063R				N63 F	lange, Retractor			
C Compact Length Electronics D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 AC 10-420mA analog output, scaled frequency, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 5 Three 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 5 Three 4-20mA analog output, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power				1						
Electronics D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature, Pressure V3 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 5 Three 4-20mA analog output, scaled frequency, three alarms, one pulse, MART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, MART™, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power						-				
Betwork Standard Sta										
D NEMA 4X Enclosure R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36 VDC, 25 mA, 1W max, loop powered, output option 1 only DC 12-36 VDC, 30 0mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-24 OVAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20 mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20 mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 4 One 4-20 mA analog output, scaled frequency, one alarm, one pulse, MART™, DC or AC power 5 Three 4-20 mA analog outputs, scaled frequency, one alarms, one pulse, MART™, DC or AC power 5 Three 4-20 mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20 mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20 mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20 mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20 mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power			E			gth				
R1 Remote NEMA 4X Enclosure, 50 foot cable (15 meters) R2 Remote NEMA 4X Enclosure, 25 foot cable (7 meters) Multivariable Options V1 Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1					1	۰, ۲				
Multivariable Options V1 Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 5 Three 4-20mA analog output, scaled frequency, three alarms, one pulse, HART™, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power										
Multivariable Options V1 Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power										
V1 Volumetric V2 Velocity, Temperature V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, DP ower only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 5 Three 4-20mA analog output, scaled frequency, three alarms, one pulse, HART™, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power				KZ						
V2 Velocity, Temperature V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 4 One 4-20mA analog output, scaled frequency, three alarms, one pulse, HART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power							•			
V3 Velocity, Temperature, Pressure V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power					-					
V4 Velocity, Temperature, External Pressure E1 Energy E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power										
E2 Energy, Pressure Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power										
Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power										
Input Power LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power										
LP 12-36VDC, 25mA, 1W max, loop powered, output option 1 only DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power										
DC 12-36VDC, 300mA, 9W max, output options 2, 3, 4, 5, 6, 7 AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power										
AC 10-240VAC, 5W max, output options 2, 3, 4, 5, 6, 7 Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power										
Output 1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC power 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC power										
1 One 4-20mA analog output, scaled frequency, one pulse, HART™, LP power only 2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC pow 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC pow 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC pow										
2 One 4-20mA analog output, scaled frequency, one alarm, one pulse, HART™, DC or AC power 3 One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power 4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC pow 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC pow 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC pow							• • •			
One 4-20mA analog output, scaled frequency, one alarm, one pulse, Modbus, DC or AC power One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC pow Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC pow Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC pow										
4 One 4-20mA analog output, scaled frequency, one alarm, one pulse BACnet™, DC or AC power 5 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC pow 6 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC pow 7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC pow										
 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, HART™, DC or AC pow Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC pow Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC pow 										
 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, Modbus, DC or AC pow Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC pow 										
7 Three 4-20mA analog outputs, scaled frequency, three alarms, one pulse, BACnet™, DC or AC po										
							John Med on p. 10			



AVI Ordering Information (continued)

emp	eratu	re Options					
Г		Standard temperature, Process temperature -330°F - 500°F (-200°C - 260°C)					
1			re, Process temperature up to 750°F (400°C)				
	-	ssure Optio					
	N	No pressui					
	1	·	30 psia (2 bara), Proof 60 psia (4 bara)				
	2		100 psia (7 bara), Proof 200 psia (14 bara)				
	3		300 psia (20 bara), Proof 600 psia (41 bara)				
	4		500 psia (34 bara), Proof 1000 psia (64 bara)				
	5	Maximum	1500 psia (100 bara), Proof 2500 psia (175 bara)				
	Т	Mount Su	pport & Special Requirement Options				
		NMH	No Mounting Hardware				
		B8CF15	Flanged Ball Valve & Hardware, 2" ASME 150#, CS				
		B8SF15	Flanged Ball Valve & Hardware, 2" ASME 150#, 316SS				
		B8CF30	Flanged Ball Valve & Hardware, 2" ASME 300#, CS				
		B8SF30	Flanged Ball Valve & Hardware, 2" ASME 300#, 316SS				
		B8CF60	Flanged Ball Valve & Hardware, 2" ASME 600#, CS				
		B8SF60	Flanged Ball Valve & Hardware, 2" ASME 600#, 316SS				
	G8CF15 Flanged Gate Valve & Hardware, 2" ASME 150#, CS						
		G8SF15	Flanged Gate Valve & Hardware, 2" ASME 150#, 316SS				
		G8CF30	Flanged Gate Valve & Hardware, 2" ASME 300#, CS				
		G8SF30	Flanged Gate Valve & Hardware, 2" ASME 300#, 316SS				
		G8CF60 Flanged Gate Valve & Hardware, 2" ASME 600#, CS					
	G8SF60 G8SF60-Flanged Gate Valve & Hardware, 2" ASME 600#, 316SS						
		2TOLC	2" TOL, CS (only available with NPT)				
		2TOLS	2" TOL, 316SS (only available with NPT)				
	N	NMH					
$\overline{}$							

Notes	Armstrong

Armstrong International



INTELLIGENT THERMAL UTILITIES SOLUTIONS FROM A GLOBAL LEADER IN ENERGY MANAGEMENT AND ENJOYABLE EXPERIENCES

Armstrong International

The Americas | Asia | Europe, Middle East, Africa armstronginternational.com