

DRB - Turbine Wheel Flowmeter



Benefits and Features

- Flow ranges 1.5-8 GPM to 15-200 GPM
- Bronze or stainless steel bodies
- Frequency or 4-20 mA output
- Electronic displays and controllers
- Max. Pressure 580 PSIG

General Description

The DRB and DPE series turbine wheel flowmeters are an economical yet very reliable solution for measuring liquid flows in pipes up to 3 inches in diameter. The unique "insertion" impeller design protrudes minimally into the flow stream which minimizes head loss and allows measurement of dirty liquids, and liquids with high solid content, without risk of failure.

The DRB and DPE series feature a PVDF impeller supported on a sapphire bearing system which provides an exceptionally long life and excellent chemical resistance properties. The DRB and DPE series are available with either bronze or stainless steel threaded bodies. A Hall effect sensor detects the passing of permanent magnets imbedded in the impeller blades. The output of the Hall sensor is converted to a linear pulse or 4-20 mA signal. Optionally, a variety of displays and controllers is available to provide flow rate indication, analog outputs and programmable setpoint switches. The DRB and DPE series' combination of simple, reliable design and variety of body materials and electronics options makes them a sure solution for the toughest flow metering applications.

Specifications

Accuracy:

DRB Series $\pm 3\%$ of full scale
 DPE Series: $\pm 2.5\%$ of full scale

Maximum Pressure

DRB Series: 250 PSIG
 DPE Series: 580 PSIG

Operating Temperature: -10 to 176°F

Materials of Construction

Body: Bronze or 316 stainless steel

Impeller: PVDF

Axle: 316 stainless steel

Bearings: Sapphire

O-rings: Buna-N for bronze bodies, Viton for SS bodies

Piping Straight Run

Requirement: 20 X pipe diameter upstream 10 X pipe diameter downstream

Electrical Specifications

Frequency Output

Output Type: PNP open collector, 25 mA max.

Power Requirement: 14-28 VDC

Electrical Protection: NEMA 4X

Electrical Connection: Micro-DC plug, 4-pin male

4-20 mA Output

Output Type: 4-20 mA, 2-wire or 3-wire depending on model

Max. Loop Load: 500 ohms

Power Requirement: 24 VDC $\pm 20\%$

Electrical Connection: Micro-DC plug, 4-pin male or DIN 43650 (Hirschmann) plug

Electrical Protection: NEMA 4X

Compact Electronics

Output Type: 4-20 mA, 3-wire & PNP switch or 2 PNP switches

Switch Rating: 300 mA Max. short circuit protected flow switch or frequency transmitter

Power Requirement: 24 VDC $\pm 20\%$

Display Type: 3 digit LED

User Programmable Functions: Transmitter span, switch setpoint, lockout code

Housing: 304 SS, NEMA 4X

Electrical Connection: Micro-DC plug, 5-pin male

Electronic Display/Controller

Output Type: 4-20 mA, 4-wire and 2 adjustable setpoint relays

Relay Rating: SPDT 5 amps @ 230 VAC

Input Power: 115 VAC

Display Type: 3-1/2 digit LED and 270° bargraph

Enclosure: Epoxy coated aluminum and polycarbonate, NEMA 4X

DRB - Turbine Wheel Flowmeter

Ordering Information

Ordering Codes for DRB Series

Range GPM	Materials		Fitting	Output/Electronics
	Bronze	Stainless Steel		
1.5-8	DRB-1150	DRB-1250	N4=1/2" NPT	F300=Frequency output, Micro-DC plug L342 = 4-20 mA, 2-wire, Micro-DC plug L343=4-20 mA, 3-wire, Micro-DC plug L442=4-20 mA, DIN 43650 plug C34P=Compact electronic, 4-20 mA + 1 PNP switch C30R=Compact electronic, 2 PNP switches K442=Display & Controller Z340=Analog Indicator + 4-20mA, 3-wire
3-13	DRB-1155	DRB-1255	N5=3/4" NPT	
5.5-20	DRB-1160	DRB-1260	N6=1" NPT	
6.6-65	DRB-1165	DRB-1265	N8=1-1/2" NPT	
8-90	DRB-1170	DRB-1270	N9= 2" NPT	
15-200	DRB-1175	DRB-1275	NB=3" NPT	
Accessories				
Part Number 807.037=Mating 4-pin Micro-DC plug with 6 ft. cable for output F300, L342, L343 & Z340 Part Number 807.007=Mating 5-pin Micro-DC plug with 6 ft. cable for output C34P & C30R				

Example DRB-1150N4F300

Ordering Codes for DPE Series

Range GPM	Materials		Fitting	Output/Electronics
	Bronze	Stainless Steel		
2-8	DPE-1150	DPE-1250	N4=1/2" NPT	F300=Frequency output, Micro-DC plug L342=4-20 mA, 2-wire, Micro-DC plug L343=4-20 mA, 3-wire, Micro-DC plug L442=4-20 mA, DIN 43650 plug C34P=Compact electronic, 4-20 mA + 1 PNP switch C30R=Compact electronic, 2 PNP switches K442=Display & Controller Z340=Analog Indicator + 4-20mA, 3-wire
3-13	DPE-1155	DPE-1255	N5=3/4" NPT	
5.5-18.5	DPE-1160	DPE-1260	N6=1" NPT	
5.5-41	DPE-1165	DPE-1265	N8=1-1/2" NPT	
9-92	DPE-1170	DPE-1270	N9= 2" NPT	
30-200	DPE-1175	DPE-1275	NB=3" NPT	
Accessories				
Part Number 807.037=Mating 4-pin Micro-DC plug with 6 ft. cable for output F300, L342, L343 & Z340 Part Number 807.007=Mating 5-pin Micro-DC plug with 6 ft. cable for output C34P & C30R				

Example DPE-1150N4F300



DRB/DPE with Analog Indicator



DRB/DPE with compact electronics

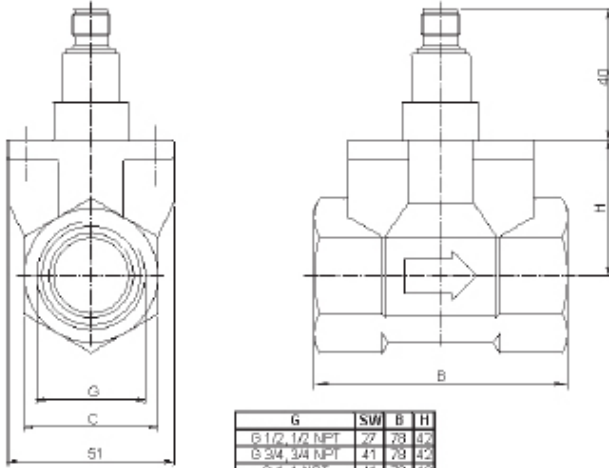


DRB/DPE with display /controller

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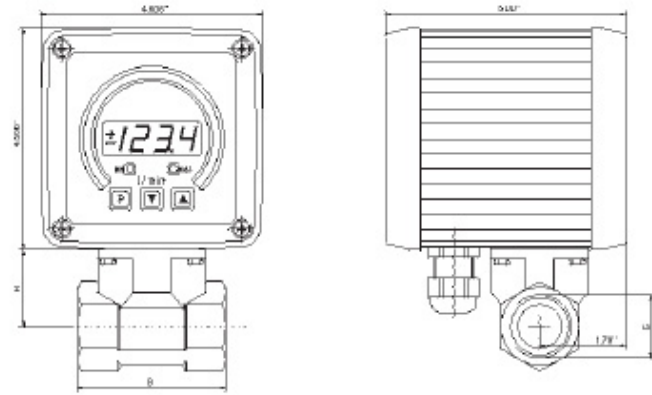
↩ Dimensions

DRB/DPE transmitter only (frequency or 4-20 mA)



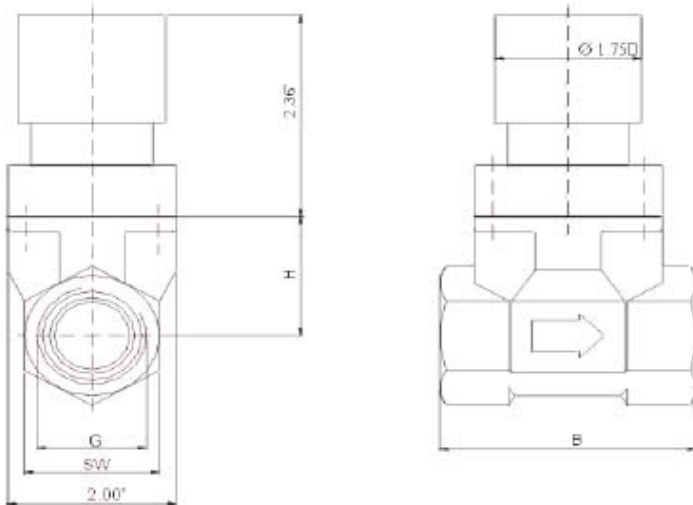
G	SW	B	H
G 1/2, 1/2 NPT	27	28	42
G 3/4, 3/4 NPT	41	29	42
G 1, 1 NPT	41	29	42
G 1 1/2, 1 1/2 NPT	65	28	57
G 2, 2 NPT	70	81	55
G 3, 3 NPT	100	108	72

DRB/DPE with display & controller



G	SW	B	H
G 1/2, 1/2 NPT	1.06"	3.07"	1.65"
G 3/4, 3/4 NPT	1.61"	3.07"	1.65"
G 1, 1 NPT	1.61"	3.07"	1.65"
G 1 1/2, 1 1/2 NPT	2.16"	3.07"	2.24"
G 2, 2 NPT	2.75"	3.18"	2.16"
G 3, 3 NPT	3.93"	4.17"	2.83"

DRB/DPE with compact electronics



G	SW	B	H
G 1/2, 1/2 NPT	1.06"	3.07"	1.65"
G 3/4, 3/4 NPT	1.61"	3.07"	1.65"
G 1, 1 NPT	1.61"	3.07"	1.65"
G 1 1/2, 1 1/2 NPT	2.16"	3.07"	2.24"
G 2, 2 NPT	2.75"	3.18"	2.16"
G 3, 3 NPT	3.93"	4.17"	2.83"