

## Paddle Wheel Flowmeter



measuring  
•  
monitoring  
•  
analyzing

DRB



- Measuring Ranges: 1.5...8 GPM to 15...200 GPM
- Measuring Accuracy:  $\pm 3\%$  of Full Scale
- $p_{\max}$ : 250 PSIG
- $t_{\max}$ : 176 °F
- Connection: 1/2" NPT...3" NPT
- Material: Brass, Stainless Steel
- Output: Pulse, 4-20 mA, LED or LCD Display, Contacts



Order from: **C A Briggs Company**

622 Mary Street; Suite 101; Warminster, PA 18974

Phone: 267-673-8117 - Fax: 267-673-8118

[Sales@cabriggs.com](mailto:Sales@cabriggs.com) - [www.cabriggs.com](http://www.cabriggs.com)

KOBOLD Instruments, Inc.  
1801 Parkway View Drive  
Pittsburgh, PA 15205



## Paddle Wheel Flowmeter Model DRB

### Description

The DRB series paddle wheel flowmeters are an economical yet 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 for measurement of dirty liquids and liquids with high solid content, without risk of failure. They feature a PVDF impeller supported on a ceramic bearing system which provides an exceptionally long life and excellent chemical resistance properties. They are available with either brass 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 are available to provide flow rate indication, analog outputs and programmable setpoint switches. The combination of simple, reliable design and the variety of body materials and electronics makes the DRB a sure solution for the toughest flow metering applications.

### Fields of Application

- Monitoring Cooling Water
- General Mechanical Engineering
- Waste Water Treatment
- Heavy Goods Industry
- Chemical Industry

### Technical Details

<b>Measuring Accuracy:</b>	± 3% of Full Scale
<b>Process Temperature:</b>	-10...176°F
<b>Ambient Temperature:</b>	Max. 176°F
<b>Max. Op. Pressure:</b>	250 PSIG / 68°F
<b>Max. Pressure Loss</b>	

<b>DRB-..50:</b>	0.73 PSIG
<b>DRB-..55, DRB-..60:</b>	0.44 PSIG
<b>DRB-..65:</b>	0.58 PSIG
<b>DRB-..70:</b>	0.29 PSIG
<b>DRB-..75:</b>	0.15 PSIG

**Protection:** IP 65

### Materials

<b>Housing:</b>	Brass 316 Stainless Steel
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### Seals

<b>Brass Version:</b>	NBR
<b>SS Version:</b>	FKM
<b>Turbine Wheel:</b>	PVDF
<b>Axle:</b>	316 Stainless Steel
<b>Bearing:</b>	Ceramic

### Electronics

#### Frequency Output (..F300)

<b>Power Supply:</b>	12 - 28 V <sub>DC</sub>
<b>Power Consumption:</b>	10 mA
<b>Pulse Output:</b>	PNP, Open Collector, Max. 25 mA
<b>Electrical Conn.:</b>	Plug Connector M12x1

#### Frequency Output with Frequency Divider (..F390)

<b>Power Supply:</b>	24 V <sub>DC</sub> ±20%
<b>Power Consumption:</b>	15 mA
<b>Pulse Output:</b>	PNP, Open Collector, Max. 25 mA
<b>Electrical Conn.:</b>	Plug Connector M12x1
<b>Division Ratio:</b>	1...1/128, Factory Set

#### Analog Output (..L343)

<b>Power Supply:</b>	24 V <sub>DC</sub> ±20%
<b>Output:</b>	4-20 mA, 3-wire
<b>Max. Load:</b>	500 Ω
<b>Electrical Conn.:</b>	Plug Connector M12x1

#### Compact Electronics (..C3xx)

<b>Display:</b>	3-segment LED
<b>Analog Output:</b>	4...20 mA Adjustable, Max. 500 W
<b>Switching Outputs:</b>	1 (2) Semiconductor PNP or NPN, Factory Set
<b>Contact Operation:</b>	N/C/N/O Contact, Programmable with 2 Buttons
<b>Setting:</b>	24 V <sub>DC</sub> ±20%, 3-wire Technology, Approx. 100 mA
<b>Supply:</b>	
<b>Electrical Conn.:</b>	Plug Connector M12x1

#### ADI-1 Electronics (..Kx42)

<b>Display:</b>	Bargraph, 5-Digit Digital Display
<b>Analog Output:</b>	4...20 mA, 0-10 V <sub>DC</sub>
<b>2 Switching Outputs:</b>	Relay /Changeover Contact, Max. 250 V <sub>AC</sub> /5 A Resistive Load, Max. 30 V <sub>DC</sub> / 5 A with 4 buttons
<b>Setting:</b>	
<b>Power Supply:</b>	100...240 V <sub>AC</sub> ±10% or 18...30 V <sub>AC</sub> / 10...40 V <sub>DC</sub>
<b>Electrical Conn.:</b>	Pluggable Terminal Block via Cable Gland

#### ZED Totalizing Electronic (..E34R)

<b>Display:</b>	LCD, 2 x 8 Digit, Illuminated Grand Total, Resettable Total, and Flow Quantities Unit Selectable
<b>Analog Output:</b>	4...20 mA Adjustable
<b>Load:</b>	Max. 500 Ω
<b>Switching Output:</b>	2 Relays, Max. 250V/5A/1000 VA
<b>Settings:</b>	via 4 Buttons
<b>Functions:</b>	Reset, MIN/MAX Memory, Flow Monitor, Monitoring for Part and Total Quantity, Language
<b>Power Supply:</b>	24 V <sub>DC</sub> ±20%, 3-wire
<b>Power Consumption:</b>	Approx. 170 mA
<b>Electrical Conn.:</b>	Pluggable Terminal Block via Cable Gland

#### ZED Batching Electronic (..G34R)

<b>Display:</b>	LCD, 2 x 8 digit, Illuminated Grand Total, Resettable Total, and Flow Quantities, Unit Selectable
<b>Analog Output:</b>	4...20 mA Adjustable
<b>Load:</b>	Max. 500 Ω
<b>Switching output:</b>	2 Relays, Max. 250V/5A/1000 VA
<b>Settings:</b>	via 4 Buttons
<b>Functions:</b>	Batching (Relay S2), Start, Stop, Reset, Fine Batching Correction Amount, Flow Switch, Total Quantity, Language
<b>Power Supply:</b>	24 V <sub>DC</sub> ±20%, 3-wire
<b>Power Consumption:</b>	Approx. 170 mA
<b>Electrical Conn.:</b>	Pluggable Terminal Block via Cable Gland



**Order Details** (Example: **DRB-1150 N4 F300**)

Model				Evaluating Electronics
(GPM)	Material		Process Connection	<p><b>Frequency Output</b>                      ..F300 = Frequency Output, Plug Connector M12 x 1                      ..F390 = Frequency Divider 1...1/128, Plug Connector M12x 1</p> <p><b>Analog Output</b>                      ..L343 = 4-20 mA Output, 3-wire, M12 x 1 Plug Connector</p> <p><b>Compact Electronic*</b>                      ..C30R = LED-Display, 2 x Open Collector, PNP, Plug Connector M12 x 1                      ..C30M = LED-Display, 2 x Open Collector, NPN, Plug Connector M12 x 1                      ..C34P = LED-Display, 4-20 mA, 1 x Open Collector PNP, Plug Connector M12 x 1                      ..C34N = LED-Display, 4-20 mA, 1 x Open Collector NPN, Plug Connector M12 x 1</p> <p><b>ADI-1 Rate/Totalizing Electronic*</b>                      ..K042 = Bargraph/Digital Display, 100-240 VAC, 4-20mA &amp; 0-10 VDC, 2 SPDT Contacts                      ..K342 = Bargraph/Digital Display, 10-40 VDC, 4-20mA &amp; 0-10 VDC, 2 SPDT</p> <p><b>ZED Rate/Totalizing Electronic*</b>                      ..E34R = LCD, 2x 8-digit, 24 VDC, 4-20 mA, 2 SPDT Contacts</p> <p><b>ZED Batching Electronic*</b>                      ..G34R = LCD, 2x 8-digit, 24 VDC, 4-20 mA, 2 SPDT Contacts</p>
	Brass	Stainless Steel		
1.5...8	DRB-1150..	DRB-1250..	..N4.. = 1/2" NPT	
3.0...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	

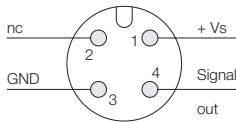
**Accessory Cables**

807.037 = 4-Pin Micro-DC Connector with 6-foot Cable for Output Types F300, F390, & L343  
 807.007 = 5-Pin Micro-DC Connector with 6-foot Cable for Output Types C3xx

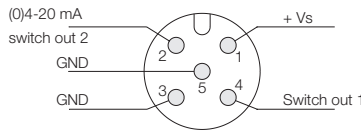
\* Please specify flow direction when ordering

**Electrical Connection**

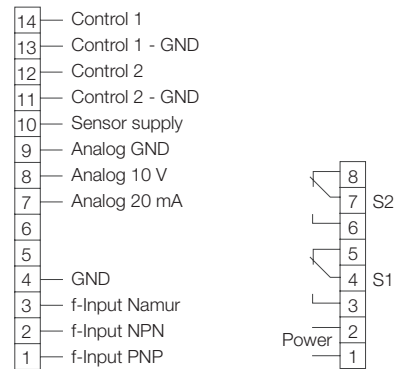
**DRB-..F., DRB-..L3..3-wire**



**DRB-..C3..**



**DRB-..Kx42\*, ..E34R\*, ..G34R\***



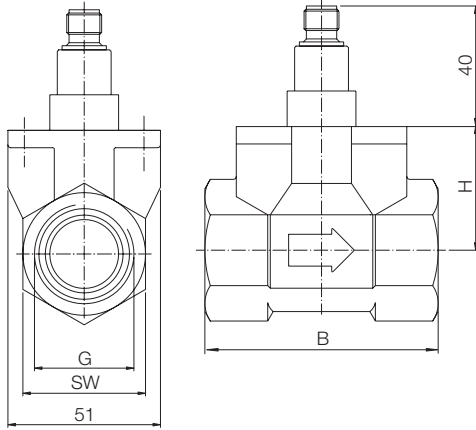
\*Note: Consult model specific user manual for exact pin-out designations



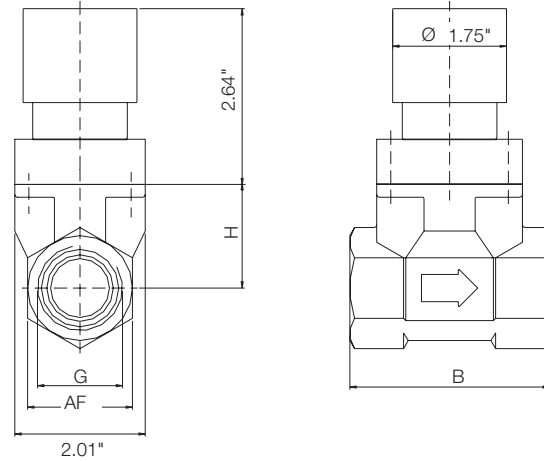
**Paddle Wheel Flowmeter Model DRB**

**Dimensions**

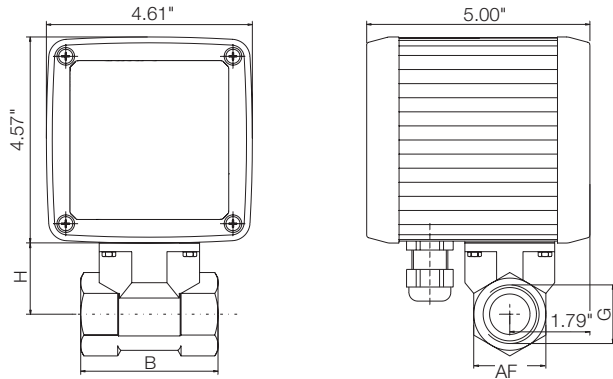
**Model: DRB-..F3x0, ..L343** (with Freq. or Analog Output)



**Model: DRB-..C3xx** (with Compact Electronics)



**Model: DRB-..Kx42, ..E34R, ..G34R**  
(with ADI-1 or ZED Evaluating Electronic)



**Weights**

G	AF	B	H
1/2" NPT	1.06"	3.07"	1.57"
3/4" NPT	1.61"	3.07"	1.65"
1" NPT	1.61"	3.07"	1.65"
1-1/2" NPT	2.17"	3.07"	2.24"
2" NPT	2.76"	3.19"	2.28"
3" NPT	3.97"	4.17"	2.95"

Sensor		Electronics	
Model	Weight	Model	Weight
1/2"	approx. 1.66 lbs	Frequency Output	0.28 lbs
3/4"	approx. 2.32 lbs	Analog Output	0.28 lbs
1"	approx. 1.99 lbs	Compact Electronic	approx. 1.43 lbs
2"	approx. 3.31 lbs	ADI-1 Electronics	3.09 lbs
3"	approx. 6.62 lbs	ZED Electronics	3.09 lbs

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