

Blancett®

Flow Meters



B1750 Positive Displacement Flow Meters

- Accuracy of $\pm 0.5\%$ of reading and repeatability of $\pm 0.1\%$
- No need for additional straight run piping
- Designed for fluids with a wide range of viscosities, as well as low flow rates
- Available in high strength aluminum or stainless steel housing

800-235-1638 ■ www.blancett.com

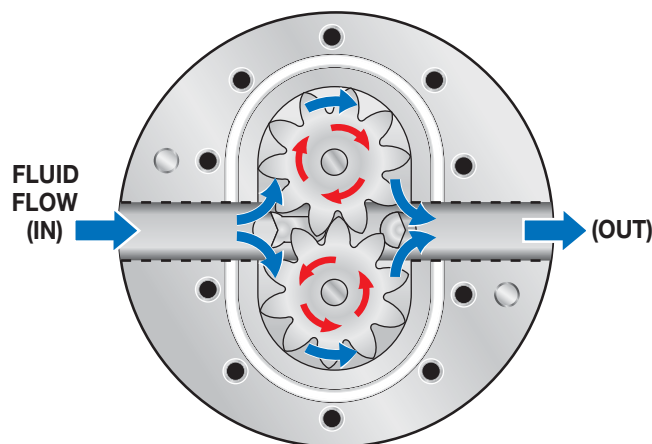


Introduction

The Blancett Model B1750 positive displacement flow meter provides high measurement accuracy, trouble-free operation and long service life for fluids over a wide viscosity range. Applications include lubricants, fuels, chemicals and solvents, oils and greases. The B1750 meter is bi-directional (using appropriate electronics) and has an extremely large turndown ratio - up to 400:1 in some models - with full accuracy at extremely low flow rates.

Operating Principle

Fluid entering the meter drives two gears. A non-intrusive sensor detects the movement of the gears and produces a sine wave pulse for each gear tooth that passes the path of the sensor face. The resulting pulse frequency is proportional to the actual flow rate, and it provides a highly accurate representation of the fluid flow. The meter is relatively insensitive to changes in viscosity and there is no need for straight run piping.



Specifications

Accuracy:

±0.5% over the published flow range with fluids >100 cP; over a 10:1 turndown (from maximum flow) with fluids <30 cP

Repeatability:

±0.1%

Pressure Rating:

5000 psi [345 bar] maximum

Operating Temperature:

-20 °F to +185 °F [-29 °C to +85 °C] aluminum

-20 °F to +400 °F [-29 °C to +204 °C] stainless steel

Connections:

Female NPT: 1/4", 3/4", or 1-1/4" (depending on meter size)

Materials of Construction:

Stainless steel (gears and bearings)

O-Ring:

Teflon®, Viton® (optional)

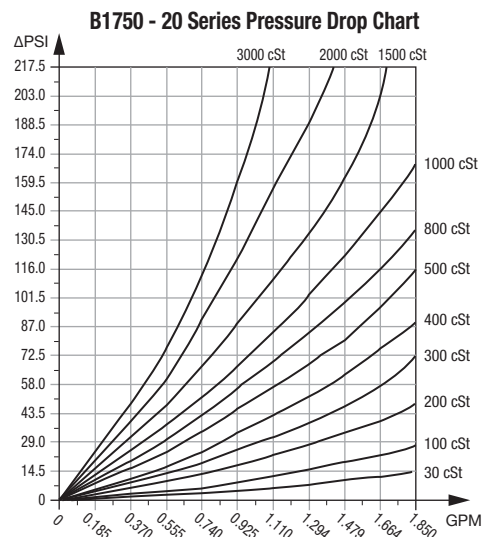
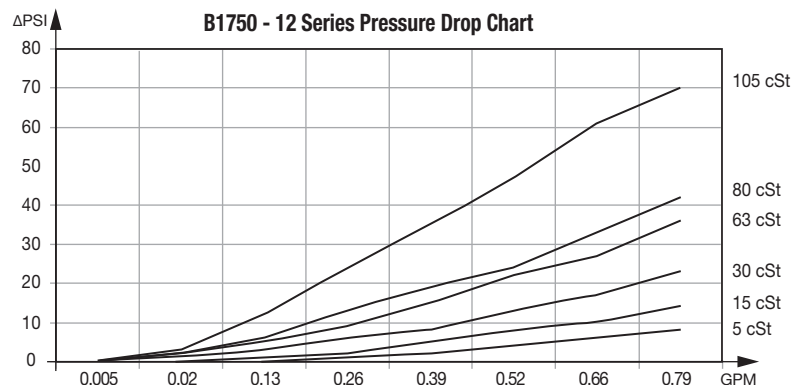
Housing:

6061 - T6 aluminum or 303 stainless steel

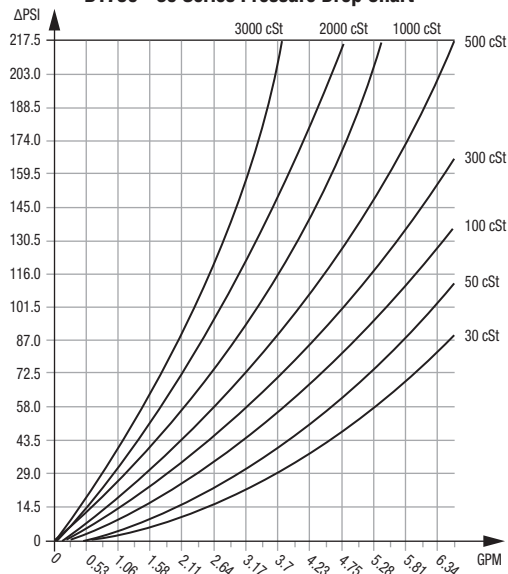
K-factor

The K-factor represents the number of output pulses transmitted per unit volume of liquid passing through the positive displacement meter. Each meter has a unique K-factor that is determined during factory calibration. The K-factor is very constant and linear over the published flow range when liquid viscosity is greater than 100 cP. When liquid viscosity is less than 100 cP positive displacement meters can experience "fluid slip" in the measuring chamber due to migration of liquid around the internal moving parts. As a result, the linear (constant K-factor portion) measuring range of the flow meter is reduced. At viscosities less than 30 cP, positive displacement meters maintain published linearity over a 10:1 turndown range from the maximum published flow rate.

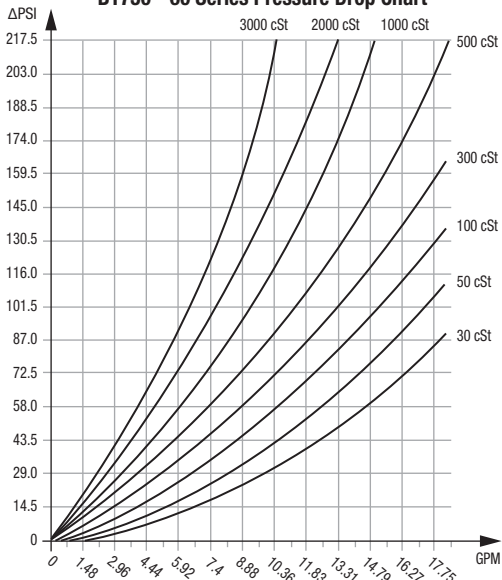
Flow Rate vs. Pressure Drop



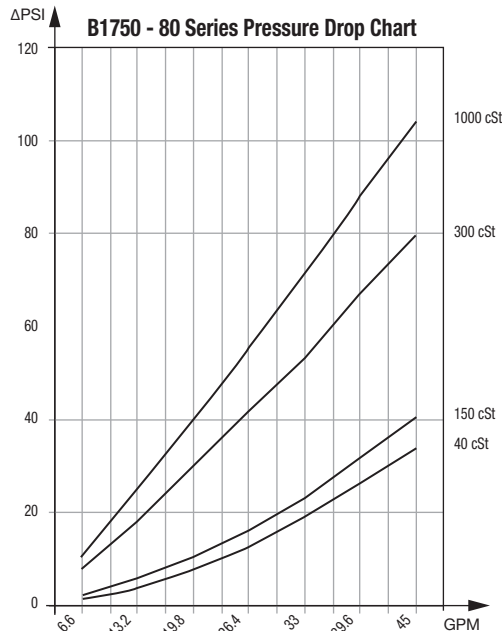
B1750 - 30 Series Pressure Drop Chart



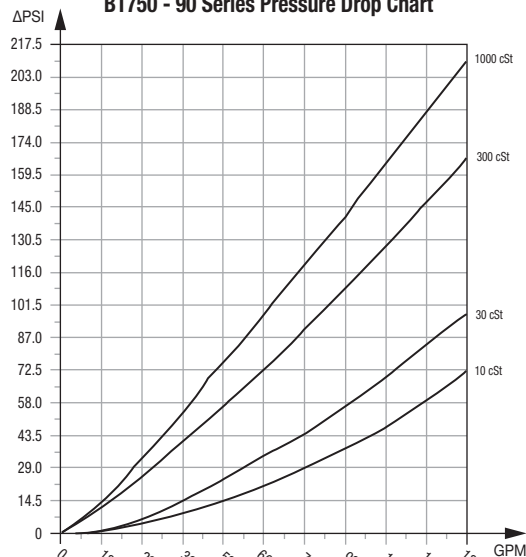
B1750 - 60 Series Pressure Drop Chart



B1750 - 80 Series Pressure Drop Chart



B1750 - 90 Series Pressure Drop Chart



Ordering Information

Model B1750 Positive Displacement Flow Meters

Aluminum Housing - 185 °F Maximum Fluid Temperature					
Part Number ¹	Seal Material	End Connection	Flow Ranges ³		K-factor ² Pulses/Gal
			GPM	LPM	
B175-A12	Teflon® Standard	¼" Female NPT	0.003-0.80	0.011-3.03	53,000
B175-A20		¼" Female NPT	0.01-2.00	0.04-7.6	15,900
B175-A30		½" Female NPT	0.03-7.00	0.11-26.5	6,600
B175-A60		¾" Female NPT	0.05-20.0	0.19-75.7	1,800
B175-A80 ⁴		1-¼" Female NPT	0.5-60.0	1.9-227	1,600~
B175-A90 ⁴		1-¼" Female NPT	1-120	3.8-454	800~
B175-A12-V	Viton®	¼" Female NPT	0.003-0.80	0.011-3.03	53,000
B175-A20-V		¼" Female NPT	0.01-2.00	0.04-7.6	15,900
B175-A30-V		½" Female NPT	0.03-7.00	0.11-26.5	6,600
B175-A60-V		¾" Female NPT	0.05-20.0	0.19-75.7	1,800
B175-A80-V ⁴		1-¼" Female NPT	0.5-60.0	1.9-227	1,600~
B175-A90-V ⁴		1-¼" Female NPT	1-120	3.8-454	800~

303 Stainless Steel Housing - 400 °F Maximum Fluid Temperature					
Part Number ¹	Seal Material	End Connection	Flow Ranges ³		K-factor ² Pulses/Gal
			GPM	LPM	
B175-S12	Teflon® Standard	¼" Female NPT	0.003-0.80	0.011-3.03	53,000
B175-S20		¼" Female NPT	0.01-2.00	0.04-7.6	15,900
B175-S30		½" Female NPT	0.03-7.00	0.11-26.5	6,600
B175-S60		¾" Female NPT	0.05-20.0	0.19-75.7	1,800
B175-S80 ⁴		1-¼" Female NPT	0.5-60.0	1.9-227	1,600~
B175-S90 ⁴		1-¼" Female NPT	1-120	3.8-454	800~
B175-S12-V	Viton®	¼" Female NPT	0.003-0.80	0.011-3.03	53,000
B175-S20-V		¼" Female NPT	0.01-2.00	0.04-7.6	15,900
B175-S30-V		½" Female NPT	0.03-7.00	0.11-26.5	6,600
B175-S60-V		¾" Female NPT	0.05-20.0	0.19-75.7	1,800
B175-S80-V ⁴		1-¼" Female NPT	0.5-60.0	1.9-227	1,600~
B175-S90-V ⁴		1-¼" Female NPT	1-120	3.8-454	800~

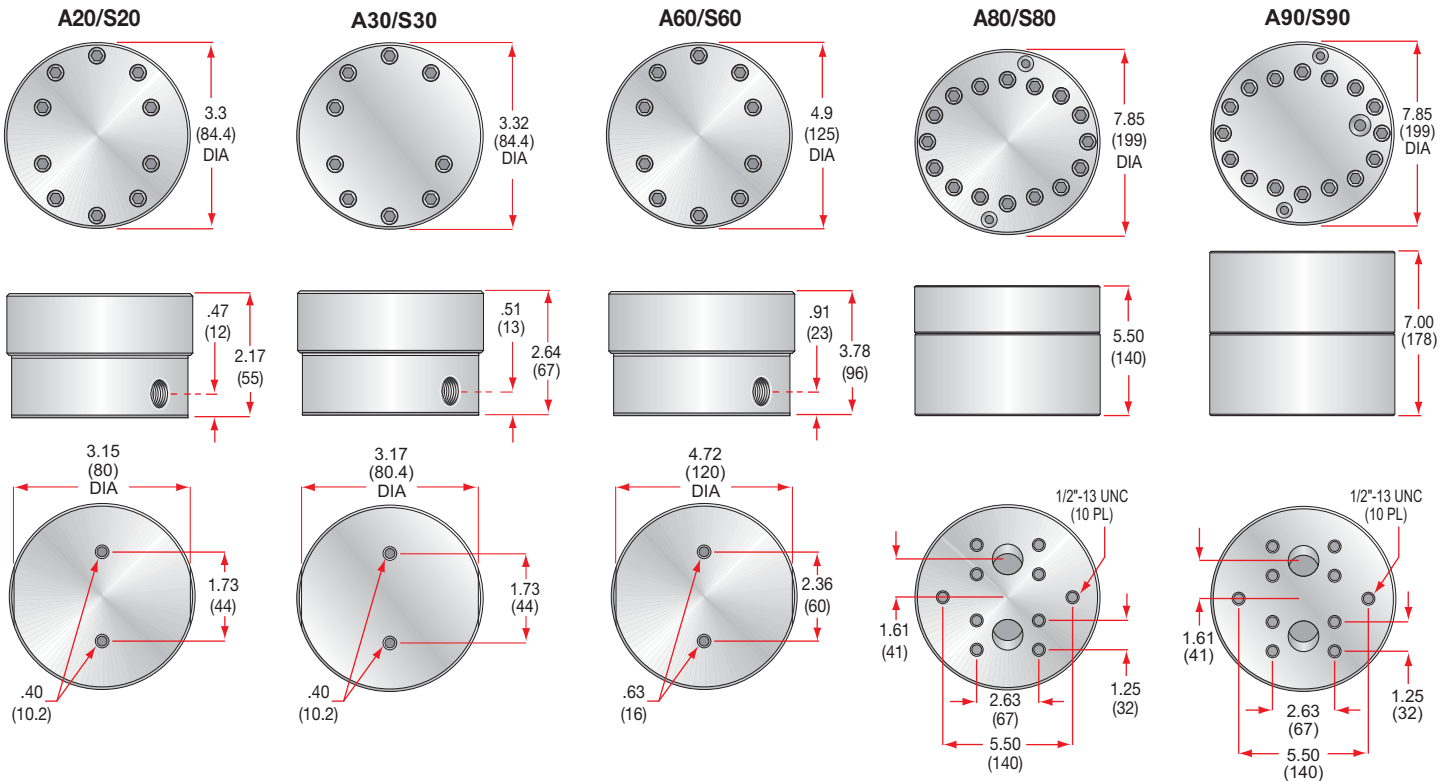
¹ Does NOT include pickup - To order, see Optional Magnetic Pick-up, page 4

² All K-factors are approximate

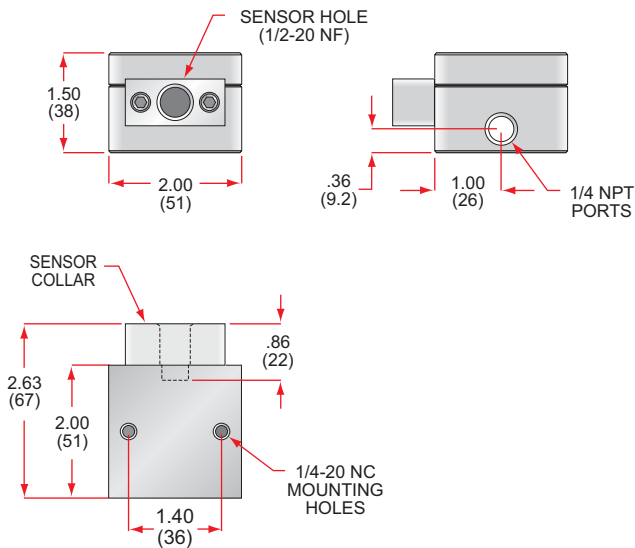
³ Accuracy: ±0.5% over the published flow range with fluids >100 cP; over a 10:1 turndown (from maximum flow) with fluids <30 cP

⁴ 90° Flange fittings required for installation, see page 24 of the Blancett Price List
~ Configured for Quad-4 sensor output (B170180)

B1750 Dimensions - Inches (mm)



A12/S12



Optional Magnetic Pickup

Used with 12, 20, 30 and 60 series only

This variable reluctance magnetic pickup coil (B170109) is designed to exceed the performance and application criteria of any standard or modified pickups. Its modular design allows it to be used with the B1750 positive displacement meter, and interface with all Blancett electronics. If using another manufacturer's electronics with this meter, a Blancett B170210 pre-amplifier may be needed to correctly interface the devices.

Output:

- 30 mV – 3 VAC Sine Wave (B170109)
- 0-10 V – Square Wave (B170210)
- 4-20 mA - 3 wire 4-20 mA output (B175420)

Connector:

- 2-pin gold plated type to mate with MS3106-10SL-4S or equivalent (B170109)
- 3-pin gold plated type to mate with MS3106A-10SL-3S or equivalent (B170210)

Temperature:

- 100 °F to +325 °F (-73 °C to +162 °C) (B170109)
- 20 °F to +160 °F (-29 °C to +71 °C) (B170210)
- 0 °F to +185 °F (-18 °C to +85 °C) (B175420)

Materials of Construction:

303/304 stainless steel shell and bottom, solid epoxy encapsulation, standard commercial finish

Note: 80/90 Series utilize Quad-4 Sensor (B170180)

Blancett®

Flow Meters

Division of Racine Federated Inc.

■ 8635 Washington Avenue, Racine, WI 53406-3738 U.S.A.

■ Toll Free: 800-235-1638

Tel: 262-639-6770 Fax: 262-417-1155

■ E-mail: info@blancett.com

© 2009 Blancett Printed in USA 10/09 Form No. 1750

Blancett is a registered trademark of Racine Federated Inc.

Teflon and Viton are registered trademarks of E.I. duPont de Nemours and Company