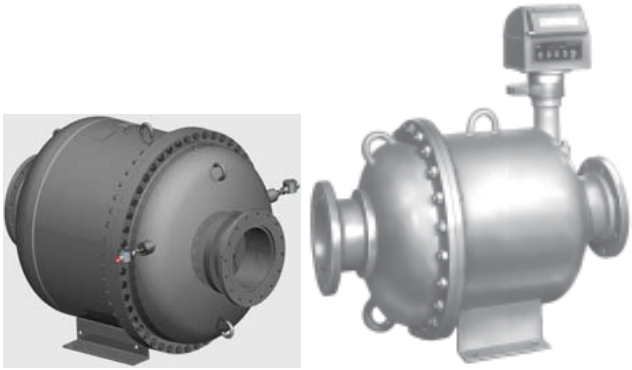
Technical Data

BRODIE INTERNATIONAL

BiRotor

Model B131	[16"]
Model B133	[16"]
Model B134	[16"]
Model B135	[16"]



General
The BiRotor Meter is a positive displacement meter utilized in the most demanding applications requiring accuracy, long life and ruggedness. The electronic "P" Series meter configuration features a sealed measuring chamber with one reluctance type electronic sensor. The sealed electronic sensor transmits amplified signals to local or remote instruments. A second optional sensor is available to allow dual channel pulses that are 90 degrees electrically out of phase.

Accuracy
The accuracy is attained by the unique BiRotor design which features two finely balanced rotors. An adjustor, incorporated on the meter, is used to assure maximum accuracy within the meter's flow range (Mechanical Only).

Long Life
Long life is assured because the meter does not contain any oscillating, reciprocating, sliding parts or cranks to wear or disturb the balanced rotary action. In addition, the materials incorporated within the meter assembly are selected specifically for a wide range of petroleum and industrial liquid applications.

Electrical Classification (P-Style)
Class 1, Groups C & D, Division 1, Explosion proof; Recommended connecting cables Belden 8770, 3 Conductor Shielded, 18 gauge stranded. Maximum recommended cable length 3000 feet (914 meters). Input power: 6-28 Vdc at 20 mA, Output Signal: TTL (0-5V) or voltage dependent. Input power: 6-28 Vdc at 20 mA, Output Signal: TTL (0-5V) or voltage dependent.

Principle of Operation
Two spiral fluted rotors within the measuring unit are dynamically balanced to minimize bearing wear. (Refer to Figure 1). As the product enters the intake of the measuring unit, the two rotors divide the product into precise segments of volume momentarily and then return these segments to the outlet of the measuring unit. During this "liquid transition", the rotation of the two rotors is directly proportional to the flow rate of the liquid thruput. A gear train located outside the measuring unit chamber conveys mechanical rotation of the rotors to a mechanical or electronic register for totalization of liquid thruput. For P-Style units, a pulse verification gear located outside the measuring unit chamber conveys mechanical rotation of the rotors to the sensor and to the electronic register for totalization of liquid thruput.

Design Features
- Double case design
- Extremely long service life
- Economical Low maintenance
- Two simple rotors with no metal-to-metal contact
- No oscillating, reciprocating or sliding parts or cranks to wear or disturb the balanced rotary action
- Sustained Measurement Accuracy
- Conforms with International standards of flowmeter accuracy

Accessories (Mechanical)
- Preset Counters
- Control Valves
- Large Numerical Registers
- Pulse Transmitters
- Ticket Printers
- Strainers

Accessories (P-Style)
- Electronic Register
- Preamp
- Dual Pickoffs for "B" Level Pulse Security

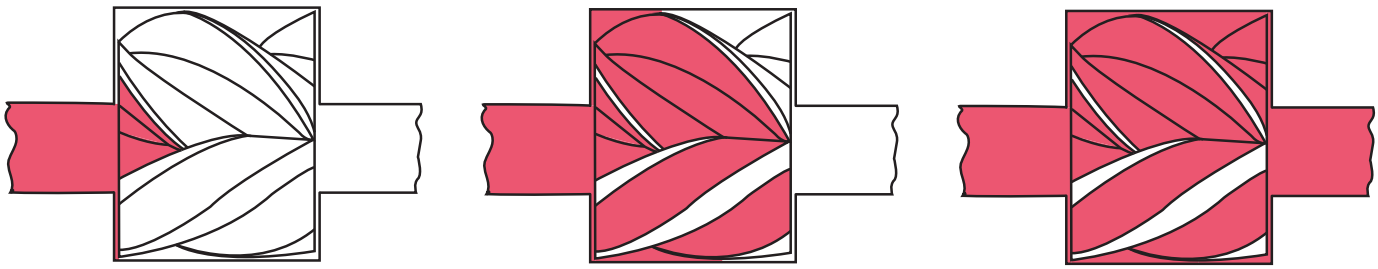


Figure 1- Brodie BiRotor Meter Principle of Operation

Materials of Construction

Housing: Welded Steel Construction Combining Steel Castings and Drawn Steel Plate
Measuring Unit:
Rotors: Three Lobe Rotor - Cast Iron
Four Fluted Rotor - Aluminum
Rotor Shafts: Cast Iron
Rotor Bearings: Carbon Steel
Body and End Covers: Cast Iron
Counter Base Plate:
Body: Steel
O-Ring: Viton (Standard)
Drive Gears:
Stainless Steel
Accuracy:
Capable of +/- 0.10%; Contact Factory for viscosity corrections.

K-Factor/Pulses (P-Style)

Electronic Pulses (K-Factor)	M^3	BBL
	1,101	175

Shipping Weight And Volume (Approximate)

B131	8,500 lbs. @ 136 Cu. Feet
	3,855 kgs. @ 3.85 Cu. Meters
B133	8,550 lbs. @ 136 Cu. Feet
	3878 kgs. @ 3.85 Cu. Meters
B134	10,500 lbs. @ 136 Cu. Feet
	4,763 kgs. @ 3.85 Cu. Meters
B135	18,000 lbs. @ 136 Cu. Feet
	8165 kgs. @ 3.85 Cu. Meters

Ordering Information

In order to accurately process an order, such information as product to be metered, product viscosity, product temperature range, ambient temperature range, rate of flow, operating pressure, units of registration, accessories required, and optional features needed must be specified by the customer.

Flange Connections

Models	Connections	Max Working Pressures @100F	DIN Connections	Max working pressure
B131	16" 150 lb. ANSI	285 psi	DN 400 PN 16	16 Bar
			DN 400 PN 25	19.6 Bar
B133	16" 300 lb. ANSI	300 psi	DN 400 PN 25	20.7 Bar
B134	16" 300 lb. ANSI	740 psi	DN 400 PN 25	25 Bar
			DN 400 PN 40	40 Bar
			DN 400 PN 64	51 Bar
B135	16" 600 lb. ANSI	1480 psi	DN 400 PN 64	62 Bar
			DN 400 PN 100	102 Bar

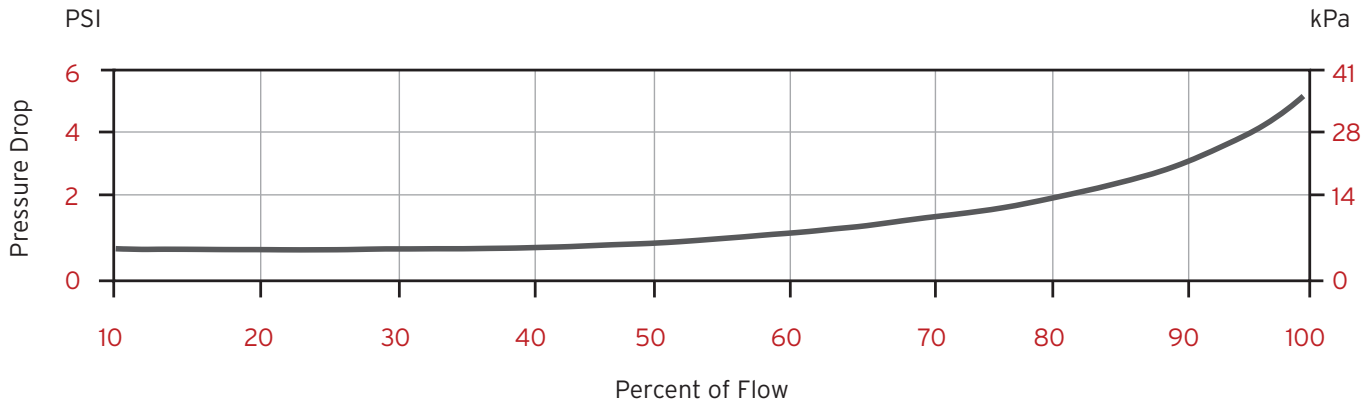
Temperature Range: -20°F to 150°F (-29°C to 66°C) Optional 450°F (232°C)

Typical Flow Rates

Meter Models B131, B133 , B134, B135	10 cP		100 cP		300 cP		500 cP	
	Accuracy		Accuracy		Accuracy		Accuracy	
	+/- 0.15%		+/- 0.10%		+/- 0.10%		+/- 0.10%	
	Min	Max	Min	Max	Min	Max	Min	Max
BPH	2,500	12,500	625	12,500	250	12,500	125	10,000
M^3H	391	1,987	100	1,987	40	1,987	20	1,590

Typical Pressure Drop Curve

Test Solution: Mineral Spirits



NOTE:
Do not operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.

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