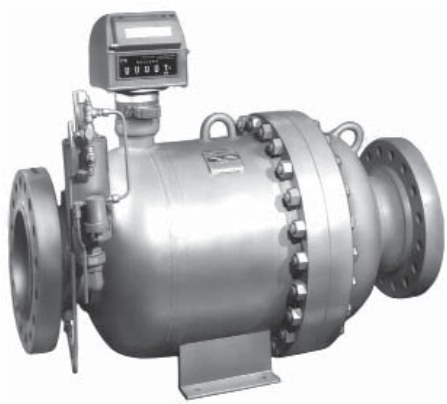
Technical Data

8" BiRotor, APL

Model B201	[8"]
Model B203	[8"]
Model B204	[8"]
Model B205	[8"]



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 confi guration features a sealed measuring chamber with one reluctance type electronic sensor. The sealed electronic sensor transmits amplifi ed 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 Mechanical BiRotor's 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).

Principle of Operation
The 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 verifi cation 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.

Dependability
There is no metal to metal contact between the rotors and the measurement chamber. The meter is therefore extremely durable. The rotors, bearings and timing gears are the only moving parts. Maintenance requirements are the lowest in the industry. In addition, materials incorporated within the meter assembly are selected specifically for a wide range of petroleum and industrial liquid applications.

Affordability
In spite of its superior performance, Brodie can offer the Mechanical BiRotor at a very competitive price.

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.

Design Features
- Extremely long service life
- Economical low maintenance
- Two simple rotors with no metal-to-metal contact are the only moving parts in the measuring chamber.
- No oscillating, reciprocating or sliding parts or cranks to wear or disturb the balanced rotary.
- Conforms with International standards of flowmeter accuracy.

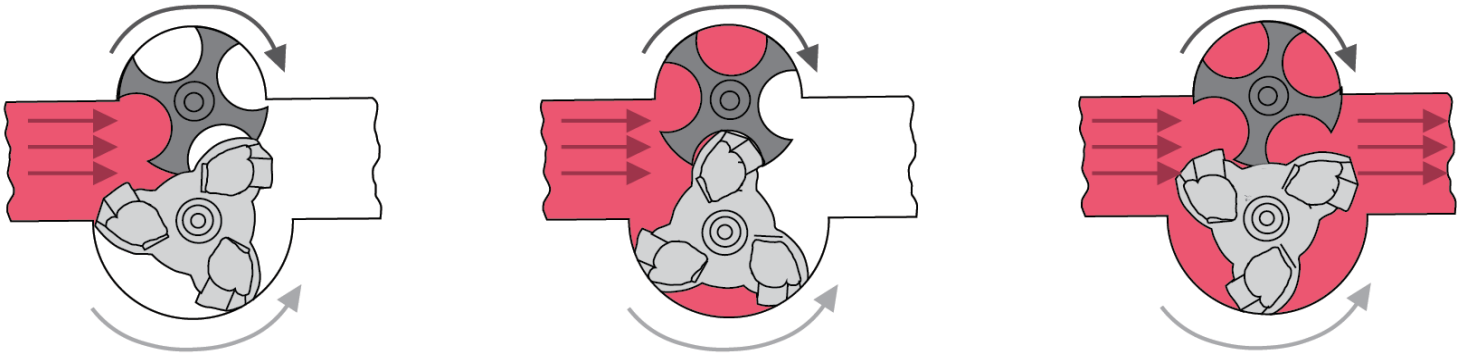


Figure 1 - BiRotor Meter Principle of Operation Diagram

Accessories

Mechanical:

- Preset Counters
- Control Valves
- Large Numerical Registers
- Pulse Transmitters
- Ticket Printers
- Strainers

P-Style:

- Electronic Register
- Dual Pickoffs for "B" Level Pulse Security
- Preamp

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.

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:	E.T.D 150
Rotor Bearings:	Stainless Steel
Body and End Covers:	Cast Iron
Counter Base Plate:	
Body:	Steel
O-Ring:	Viton (Standard)
Drive Shafts:	Stainless Steel
Drive Gears:	Stainless Steel
Ball Bearings:	Stainless Steel

Flow Ranges

Meter Models: B201, B203, B204, B205	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	900	3,000	757	3,000	300	3,000	240	2,400
M^3H	143	476	120	476	47	476	37	380

Max Working Pressure [at 100 F, 38 C]

Model	Connections	Max PSI	DIN Connections	Max Bar
B201	8" 150 lb. ANSI	285	DN 200 PN 16	16
			DN 200 PN 40	19.6
B203	8" 300 lb. ANSI	300	DN 200 PN 40	20.7
B204	8" 300 lb. ASI	740	DN 200 PN 40	40
			DN 200 PN 64	51
B205	8" 600 lb. ANSI	1480	DN 200 PN 64	64
			DN 200 PN 100	100

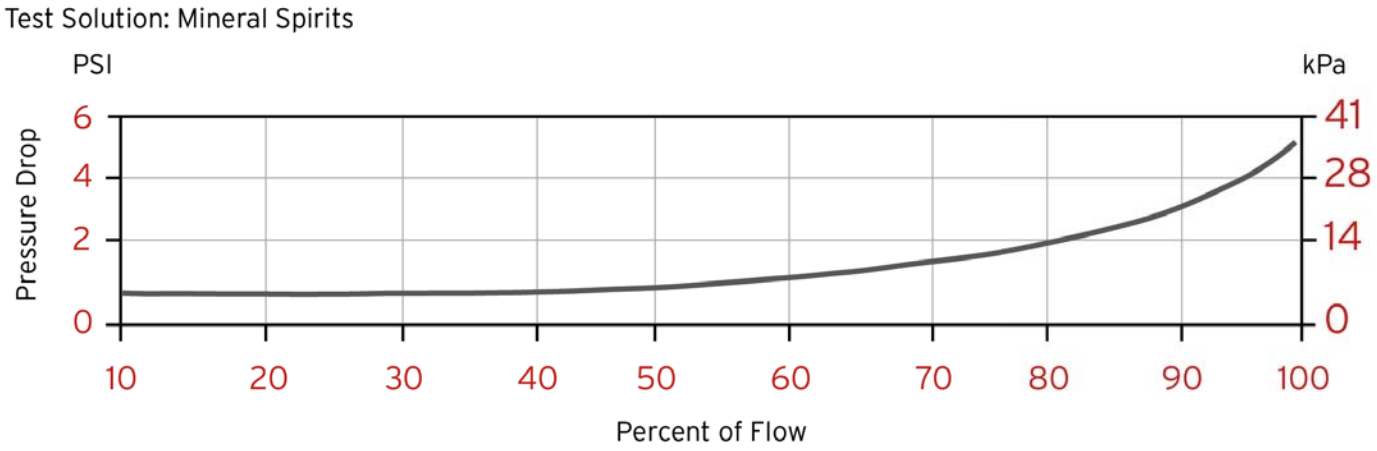
Temperature Range: -20F to 150F (-29C to 66C) Optional 325F (163C)

To convert pressure drop value to the actual process fluid, use the following equation:

Delta PA = $(cPA)^{0.25} * (SGA)^{0.75} *$ Delta Pm

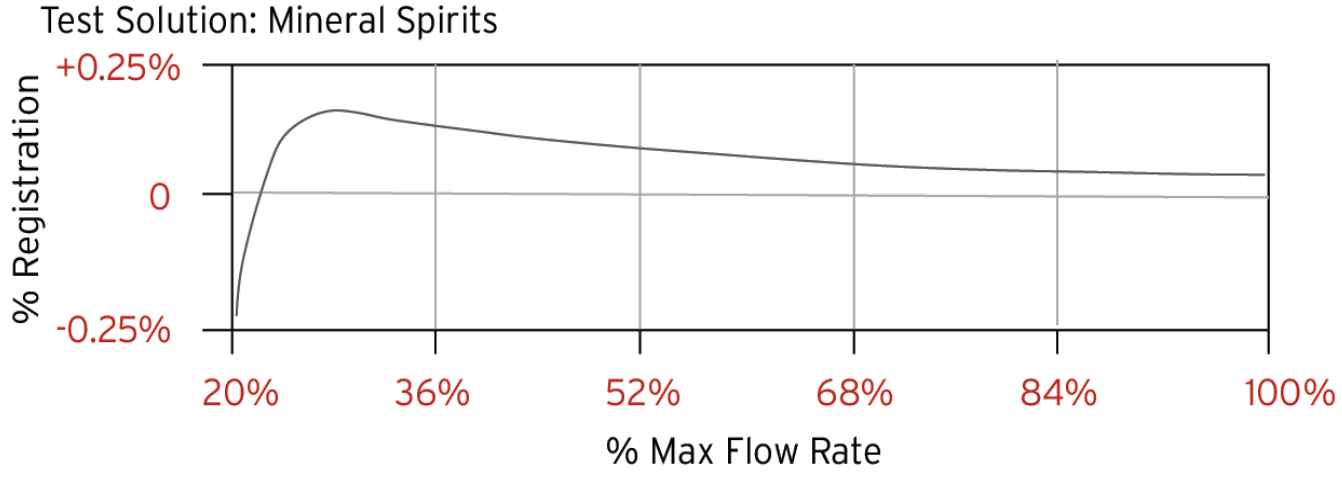
Delta PA = Pressure Drop on Actual Fluid in PSI
cPA = Viscosity of Actual Fluid in cP
SGA = Density of Actual Fluid in SG
Delta Pm = Pressure Drop on Mineral Spirits
(See Graphs below for Reference)

Pressure Drop



Accuracy

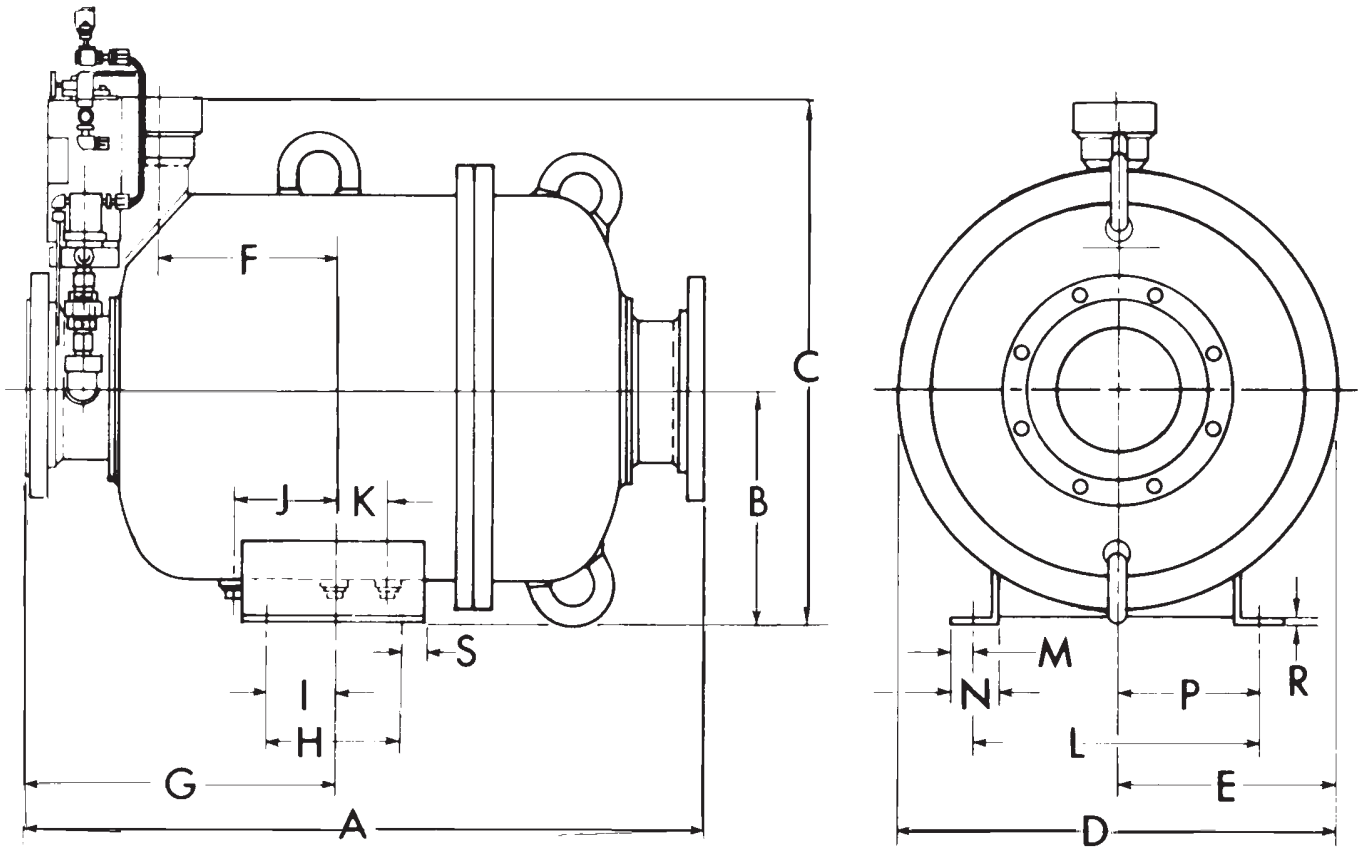
Capable of +/- 0.15%; Contact Factory for viscosity corrections.



Electronic Pulses (K-Factor)	Gallons	M^3	BBL
	20	5.284	840

Dimensions

Model	Flange Size	mm	Dimensions																
		inches	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	S
B201	8" 150lb	mm	1016	352	792	686	343	257	468	203	-	152	-	432	36	76	216	10	38
		Inches	40	13 7/8	31 3/16	27	13 1/2	10 1/8	18 7/16	8	-	6	-	17	1 7/16	3	8 1/2	3/8	1 1/2
B203	8" 300lb	mm	1035	352	792	686	343	257	478	203	-	152	-	432	36	76	216	10	38
		Inches	40 3/4	13 7/8	31 3/16	27	13 1/2	10 1/8	18 13/16	8	-	6	-	17	1 7/16	3	8 1/2	3/8	1 1/2
B204	8" 300lb	mm	1137	378	810	730	365	246	527	203	-	127	-	432	36	76	216	10	38
		Inches	44 3/4	14 7/8	31 7/8	28 3/4	14 3/8	9 11/16	20 3/4	8	-	5	-	17	1 7/16	3	8 1/2	3/8	1 1/2
B205	8" 600lb	mm	1194	375	806	737	368	208	521	203	-	108	-	432	36	76	216	10	38
		Inches	47	14 3/4	31 3/4	29	14 1/2	8 3/16	20 1/2	8	-	4 1/2	-	17	1 7/16	3	8 1/2	3/8	1 1/2



Shipping Weights and Volume

*For Certified Dimensional Prints - Consult Factory

Model	Weight	Volume
B201	842 lb	20.7 ft^3
	382 kg	0.58 m^3
B203	898 lb	20.7 ft^3
	407 kg	0.58 m^3
B204	1,275 lb	23.1 ft^3
	578 kg	0.65 m^3
B205	1,766 lb	24.1 ft^3
	801 kg	0.68 m^3

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.

Brodie International

P.O. Box 450 (30459-0450)
19267 Highway 301 North
Statesboro, GA 30461
USA

Phone: +1 (912) 489-0200
Fax: +1 (912) 489-0294