

6" BiRotor Models B090, B091, B093, B094, B095, B098

Description

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

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.

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

Flow Capacity

1,000 GPM
227 M³H
1,428 BPH

*Intermittent Flow Capacity

1,200 GPM
272 M³H
1,714 BPH

**5 hours or less in a 24 hour period*



WARNING

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.

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

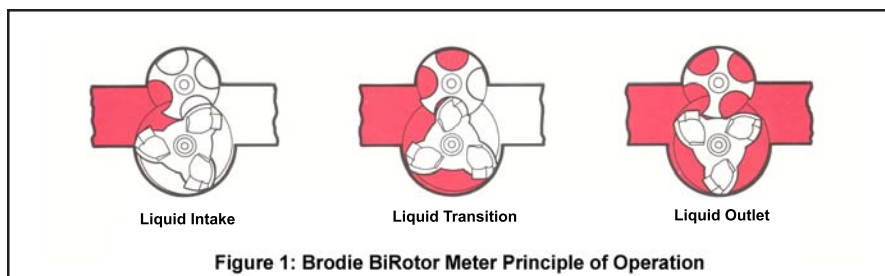
- Extremely long service life
- Economical low maintenance
- Two simple rotors with no metal-to-metal contact are the only moving parts in the measuring chamber.
- No oscillating, reciprocating or sliding parts or cranks to wear or disturb the balanced rotary action.
- Conforms with International standards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



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, Drive Gears, and Ball Bearings: Stainless Steel

Accuracy:

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

Flange Connections

| Model | Connections | Max Working Pressure @100F | DIN Connections | Max Working Pressure |
|-------|-----------------|----------------------------|-----------------|----------------------|
| B090 | 6" 150 lb. ANSI | 150 PSI | DN 80 PN 16 | 10.3 Bar |
| B091 | 6" 150 lb. ANSI | 285 PSI | DN 80 PN 16 | 16 Bar |
| | | | DN 80 PN 40 | 19.6 Bar |
| B093 | 6" 300 lb. ANSI | 300 PSI | DN 80 PN 40 | 20.7 Bar |
| B094 | 6" 300 lb. ANSI | 740 PSI | DN 80 PN 40 | 40 Bar |
| | | | DN 80 PN 64 | 51 Bar |
| B095 | 6" 600 lb. ANSI | 1480 PSI | DN 80 PN 64 | 64 Bar |
| | | | DN 80 PN 100 | 100 Bar |
| B098 | 6" 150 lb. ANSI | 10 Bar | DN 80 PN 16 | 10 Bar |

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

*150# meters Classified as Sound Engineering Practice under Pressure Equipment Directive

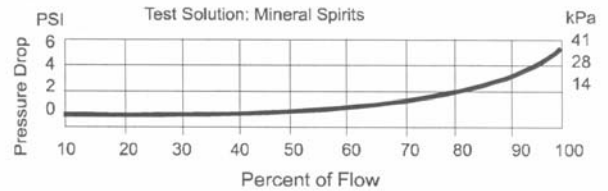
Flow Capacity

| Meter Models B191, B193, B194, B195 | | |
|--|--------------|--------------|
| | Maximum Flow | Minimum Flow |
| GPM | 1000 | 100 |
| M³H | 227 | 23 |
| BPH | 1428 | 142 |

For Certified Dimensional Prints - Consult Factory

| Shipping Weight and Volume (Approximate) | |
|--|---------------------------|
| B090, B091, | 650 lbs. @ 20.2 Cu. Feet |
| B098 | 295 kgs. @ .57 Cu. Meters |
| B093 | 758 lbs. @ 21.4 Cu. Feet |
| | 344 kgs. @ .78 Cu. Meters |
| B094 | 1393 lbs. @ 27.7 Cu. Feet |
| | 632 kgs. @ .78 Cu. Meters |
| B095 | 1495 lbs. @ 30 Cu. Feet |
| | 678 kgs. @ .85 Cu. Meters |

Typical Pressure Drop Curve



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.

K-Factor/Pulses (P-Style)

| Electronic Pulses (K-Factor) | Gallons | Liters | BBL |
|------------------------------|---------|--------|-------|
| | 29 | 7656 | 1,218 |

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