

Technical Data

BiRotor Plus Positive Displacement Meter



E1 Series Custody Transfer Pipeline Meter
Available with 10" and 12" connections

General

The Brodie E1 Series BiRotor Plus positive displacement flow meter, with dual helical rotors, offers unsurpassed performance in custody transfer applications.

BiRotor Plus meters are the pre-eminent choice in liquid hydrocarbon service, from low viscosity liquids to heavy crude oil applications in pipeline, marine, blending, batching and leak detection with flow rates up to 5000 BPH (795 M3/HR).

The double-case design combines the rugged durability and long service life of traditional BiRotor meters with the enhanced accuracy and consistent pulse output demanded by today's industry requirements.

The best-in-class BiRotor Plus meter is proven in demanding applications such as paraffin-rich crude oil extraction and refined product pipelines where DRA (Drag Reducing Agents) are present, providing excellent performance while solving end-user challenges where other measurement technologies have failed to produce long-term success.

Linearity	+/- 0.15%
Repeatability	0.02%
Viscosity Range	0.2 - 1000 cP*
*Contact factory for higher viscosities	
Operating Temperature	STD: -20°F to 167°F [-29°C to 75°C] Low: -40°F to 167°F [-40°C to 75°C] High: 14°F to 230°F [-10°C to 110°C]
Ambient Temperature	-40°F to 140°F [-40°C to 60°C]

Approvals

OIML R117-1 / MID [Class 0.3]
 CE Mark
 ATEX & IECEx
 CSA [United States and Canada]
 NEMA 4X / IP65

Maximum Flow

E1 B33x (10" connections)
 5000 BPH [795 M3/HR]
 E1 B34x (12" connections)
 5000 BPH [795 M3/HR]

Maximum Working Pressures @ 100°F / 38°C

ANSI 150#: 285 PSIG [1965 kPa]
 ANSI 300#: 740 PSIG [5102 kPa]
 ANSI 600#: 1480 PSIG [10204 kPa]

Nominal K-Factor

+/- 10%
 1150 PUL/BBL [7233 PUL/M3]

Materials Housing

Meter Housing: ASTM A352 LCB
 Connection Flanges: ASTM A 105 Carbon Steel or ASTM A 350 LF2
 Sensor Housing: ASTM A 479
 304 Stainless Steel

Materials Measuring Unit

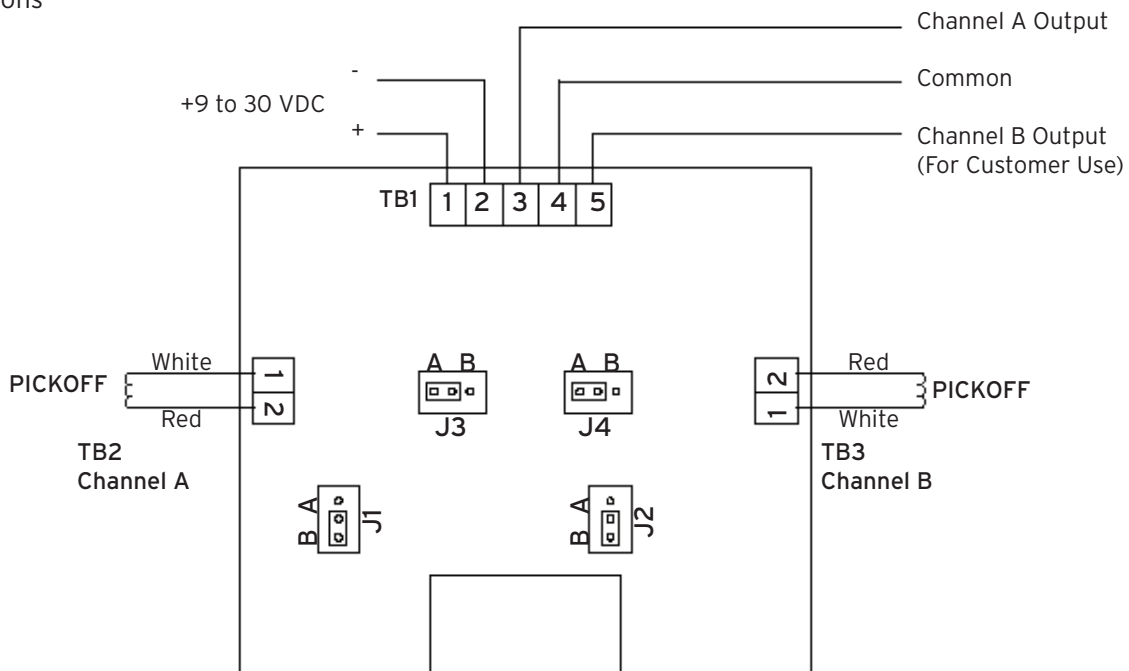
End Plates and Body: A 356 T6 Cast Aluminium
 Rotors: ALCO 319 Cast Aluminium Hard Coat anodized
 Rotor Shafts: 17-4 PH Stainless Steel
 Timing Gears: 17-4 PH Stainless Steel (Heat Treated)
 Bearings: Ceramic
 Elastomers: Low Swell Nitrile, Viton®, or Fluorosilicon are standard
 UMB Housing: A356 T6 Cast Aluminium [non wetted component]

****Special components available to meet NACE standard MR0175/ISO 15156 for wetted pressure containing components**

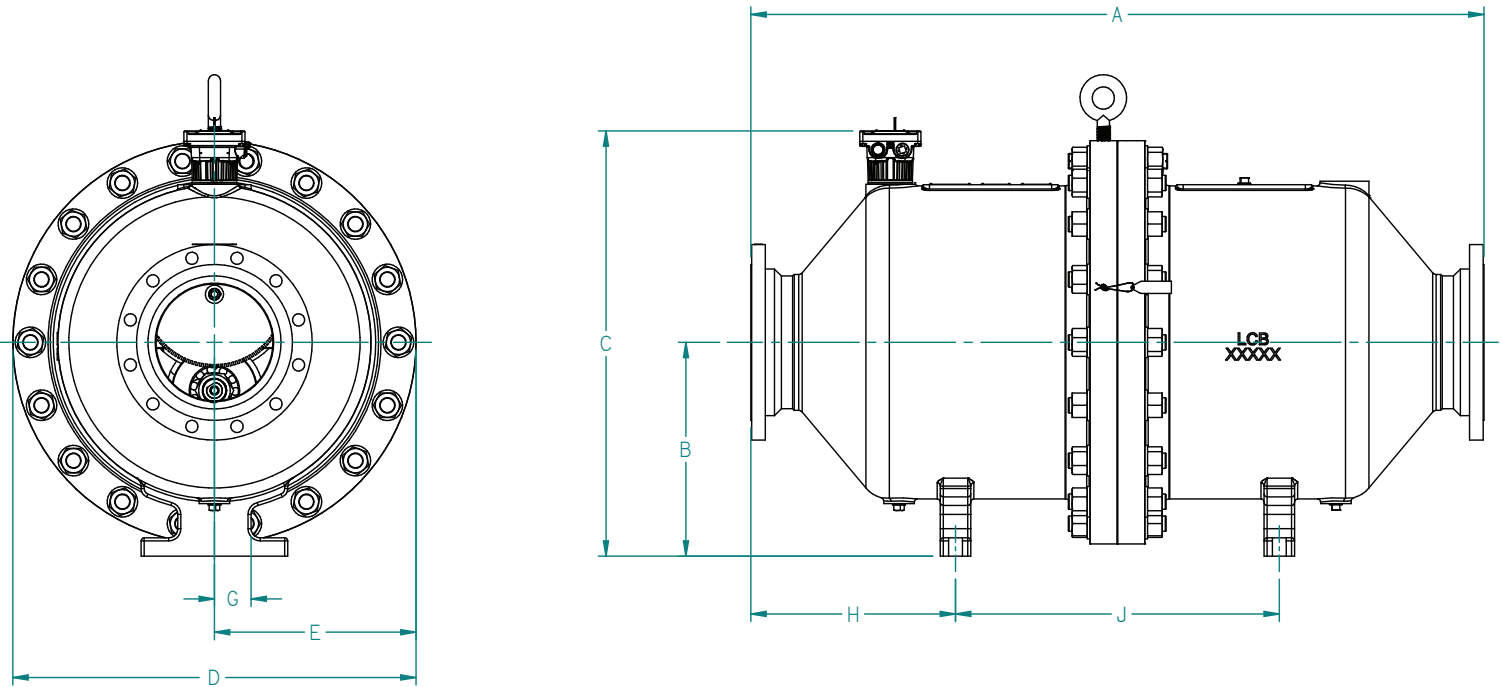
Preamplifier

Supply voltage: 9 to 30 VDC
 Outputs (jumper selectable): square wave 0 to 5 KHz
 5 V powered pulse: 0 - 5 VDC, 20 mA max
 Variable voltage pulses: 0 to supply voltage less 5%
 70 mA max

Wiring Connections



Dimensions



ANSI	Flange Size	Unit	A	B	C	D	E	G	H	J	Meter Weight
150	10"	inch	48	15	29 15/16	28 3/4	14 3/8	1 1/2	13 13/16	20 3/8	1175 lb
		mm	1219	381	760	730	365	38	351	518	805 kg
300	10"	inch	48	15	29 15/16	28 3/4	14 3/8	1 1/2	13 13/16	20 3/8	1822 lb
		mm	1219	381	760	730	365	38	351	518	826 kg
600	10"	inch	53	16	30 15/16	30 1/2	15 1/4	1 1/2	16 5/16	27 1/2	2211 lb
		mm	1346	406	786	775	387	38	414	699	1003 kg
150	12"	inch	48	15	29 15/16	28 3/4	14 3/8	1 1/2	13 13/16	20 3/8	1811 lb
		mm	1219	381	760	730	365	38	351	518	821 kg
300	12"	inch	48	15	29 15/16	28 3/4	14 3/8	1 1/2	13 13/16	20 3/8	1916 lb
		mm	1219	381	760	730	365	38	351	518	869 kg
600	12"	inch	53	16	30 15/16	30 1/2	15 1/4	1 1/2	16 5/16	27 1/2	2818 lb
		mm	1346	406	786	775	387	38	414	699	1278 kg

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