

DESCRIPTION

The BiRotor Plus™ meter is a volumetric flow measuring device designed for the accurate measurement of petroleum liquids in a variety of applications. This double case meter combines the rugged durability and long service life of the traditional BiRotor meter with the improved accuracy and pulse output associated with today's most sophisticated devices.

Utilizing single or dual outputs, with two non-wetted pick-offs mounted 90° electrically out of phase, the BiRotor Plus complies with API Level B pulse output standards. Output signals are amplified and shaped by a preamplifier mounted directly on the meter for transmission to accessories such as totalizing counters, digital readout devices, provers and other control equipment and instrumentation.

Typical applications includes loading/unloading, batching, blending and inventory control of petroleum products where accuracy and repeatability are the deciding factors in meter selection. It is recommended for loading and unloading tankers, railcars or trucks, pipelines, aircraft refueling, and general purpose flow measurement.

DESIGN FEATURES

- Double case construction avoids loss of calibration due to changes in pressure or temperature
- New rotor profile provides high resistance to air slugs and entrained solids
- No metal-to-metal contact
- Dual pulse output meets Level B pulse security described in API manual, Chapter 5.5.4.4.
- Explosion proof amplifier housing
- Single or dual pulse output - non-wetted pickoffs
- Reduced number of parts reduces maintenance requirements.
- Variety of readout instrumentation available
- Horizontal or vertical mounting
- Class I, Division 1, Group C & D, NEMA 4X, UL, cUL, ATEX, Eexd IIBT6, NTEP, CRN (Canada) and Industry Canada (Canada), OMIL
- Bi-Directional flow capability (Consult Factory)
- Capable of operating @ 400 cst. max viscosity

SUPERIOR PERFORMANCE

Linearity:

±0.10% over 13:1 flow range (3")

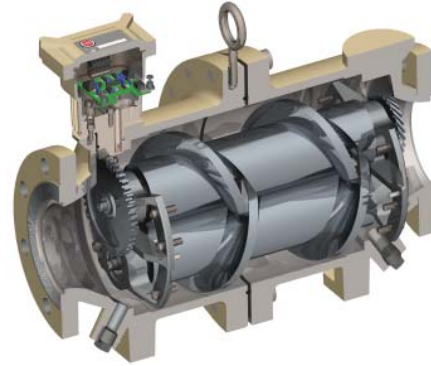
±0.075% or better over 30:1 flow range (4")

Repeatability: ±0.01%

Premium Linearity of less than 0.075% available (4" only) (Consult Factory)

Pick-off Temperature

Standard: -20 to 180°F (-29 to 82°C)



MATERIALS OF CONSTRUCTION

Housing: Carbon Steel

Measuring Unit

End Plates: Cast Aluminum

Rotors: Cast Aluminum, Hard Anodized

Rotor Shafts: 17-4 ph Stainless Steel

Rotor Bearings: Stainless Steel Ball Bearings

O-Rings: Viton Standard (Other elastomers available)

SPECIFICATIONS - Electrical

Dual channel preamplifier

Single or dual, non-wetted, reluctance pick-offs

Preamplifier Performance

Inputs

Supply Voltage: 10 to 30 Vdc

Sensor Type: Reluctance

Type: Sine Wave

Amplitude: 40 mV peak to peak minimum

Outputs

Powered Pulse Output

Type: Square Wave

Frequency Range: 0 to 5 kHz

Amplitude : 0 to 5 V

1 kOhm interval pull-ups, 20 mA max.

Variable Voltage Output

Type: Square Wave

Frequency Range: 0 to 5 kHz.

Amplitude: 0 to Supply Voltage

1 kOhm internal pull-ups, 70 mA max.

Open Collector Output (Per Channel)

Type: Square Wave

Frequency Range: 0 to 5 kHz.

Max. Voltage: 30 Vdc

Max. Current: 125 mA

Max. Power: 0.5 watts

Temperature: -20 to 180°F (-29 to 82°C)

METER SPECIFICATIONS

Model	Size		Standard Flow range				Extended flow range				Nominal K factor Nominal	
			Min		Max		Min		Max			
	inch	mm	USGPM	L/MIN	USGPM	L/MIN	USGPM	L/MIN	USGPM	L/MIN	Per USG	Per Liter
B27X	3	80	43	163	425	1610	30	114	550	2080	160	43
B28X	4	100	70	245	700	3030	33	125	1000	3785	92	24

Note: Extended max flow is for intermittent usage of 5 hours or less per 24 hour period

K-Factor - Nominal

3" Model B271 & B274; 159 pulses/gallon (42 pulses/liter)

4" Model B281 & B284; 96 pulses/gallon (25 pulses/liter)

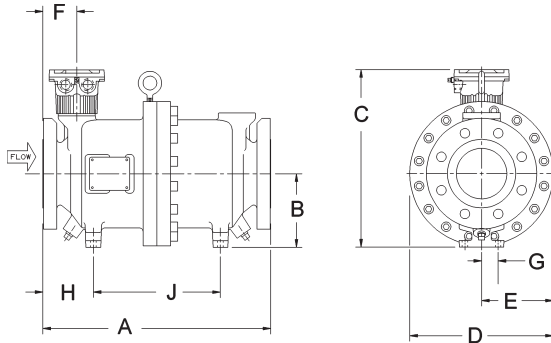
Note: K-Factor will vary for each meter

ACCESSORIES

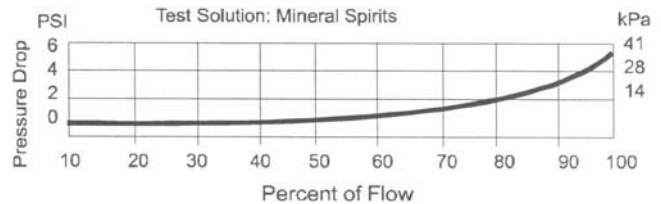
Electronic Register

The BiRotor Plus is compatible with most electronic monitoring and measurement systems.

DIMENSIONS - (For Certified Dimension Prints - Consult Factory)



TYPICAL PRESSURE DROP CURVE



ORDERING INFORMATION

When ordering, please specify product to be metered, product viscosity, product temperature range, rate of flow, operating

SHIPPING WEIGHT AND VOLUME (APPROX.)

Model	Size	Unit	Weight
B27X	3" ANSI 150# DN80 PN16	LB	193
		KG	88
	3" ANSI 300# DN80 PN 40	LB	200
		KG	91
B28X	4" ANSI 150# DN100 PN16	LB	293
		KG	133
	4" ANSI 300# DN100 PN40	LB	300
		KG	136

Model	Size	Unit	A	B	C	D	E	F	G	H	J
B27X	3" ANSI 150#	inch	16-3/4	6	14-5/8	11-1/2	5-3/4	2-5/8	1-3/8	3-5/8	9-19/32
		mm	425	152	372	292	146	67	35	92	242
	DN80 PN16	inch	16-3/4	6	14-5/8	11-1/2	5-3/4	2-5/8	1-3/8	3-5/8	9-19/32
		mm	425	152	372	292	146	67	35	92	242
	3" ANSI 300#	inch	17-1/8	6	14-5/8	11-1/2	5-3/4	2-13/16	1-3/8	3-13/16	9-19/32
		mm	435	152	372	292	146	72	35	97	242
DN80 PN 40	inch	17-1/8	6	14-5/8	11-1/2	5-3/4	2-13/16	1-3/8	3-13/16	9-19/32	
	mm	435	152	372	292	149	72	35	97	242	
B28X	4" ANSI 150#	inch	20	6-5/8	16	13	6-1/2	2-3/4	1-1/2	4-1/4	11-1/2
		mm	508	168	406	330	165	70	38	108	292
	DN100 PN16	inch	20	6-5/8	16	13	6-1/2	2-3/4	1-1/2	4-1/4	11-1/2
		mm	508	168	406	330	165	70	38	108	292
	4" ANSI 300#	inch	20-5/8	6-5/8	16	13	6-1/2	3-1/16	1-1/2	4-9/16	11-1/2
		mm	524	168	406	330	165	78	38	116	292
	DN100 PN40	inch	20-5/8	6-5/8	16	13	6-1/2	3-1/16	1-1/2	4-9/16	11-1/2
		mm	524	168	406	330	165	78	38	116	292

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