

## Non-Ferrous BiRotor Plus Models B295

### DESCRIPTION

The Non-Ferrous BiRotor Plus meter is a volumetric flow measuring device designed for the accurate measurement of petroleum liquids in aircraft refueling. 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° out of phase, the Non-Ferrous 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.

The typical application is for aviation fuel measurement the meter must be of non-ferrous material. This includes fueling and defueling where the meter comes in direct contact with the airplane or helicopter. The meter is designed for use on refueling trucks and hydrant trucks/carts. With a maximum operating pressure of 200 psig, the meter meets the SAE specifications for hydrant refuelers.

### DESIGN FEATURES

- Total Quality, High Performance, Completely Non-Ferrous
- Highest accuracy of any positive displacement meter
- +/-0.10% accuracy meeting ATA-103 specification
- Electronic output eliminates high maintenance mechanical registers
- Double case construction improves meter factor stability
- No metal-to-metal contact
- Light weight - small footprint.
- 4" Victaulic couplings
- Normal flow is 80-800 gpm, 303-3032 lpm
- Class I, Division 1, Group C & D approvals
- Capable of Operating @ 400 cst. maximum viscosity
- Capable of Bi-Directional Flow (Consult Factory)

### MATERIALS OF CONSTRUCTION

**Housing:** Cast Aluminum

#### 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)



### PERFORMANCE

Linearity:  $\pm 0.10\%$  over 20:1 flow range

Repeatability:  $\pm 0.01\%$

*Premium Linearity of Less than 0.10% Available  
(Consult Factory)*

### 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)

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

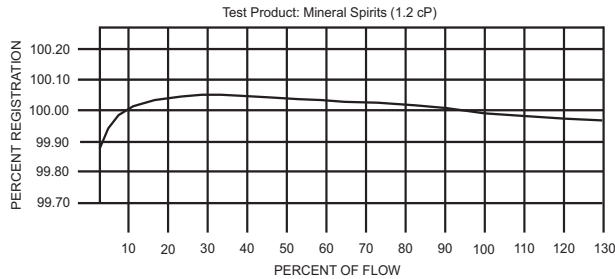
## SPECIFICATIONS - METER

Model Number	Flange Connections	Maximum Safe Working Pressure	Maximum Safe Working Temperature	Standard Flow	Extended Flow Range	
					Minimum (1)	Intermittent Maximum (2)
B295	4" Victaulic	200 PSI	-20 to 180°F	40 - 800 GPM	40 GPM	1000 GPM
B295	101.6 mm Victualic	1378 Kpa	-29 to 82°C	303 - 3032 LPM	190 LPM	3411 LPM

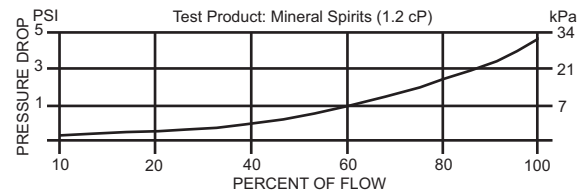
(1) Linearity  $\pm 0.15\%$  for conditions between extended minimum flow and standard minimum flow. (2) Intermittent usage equals 5 hours or less in a 24 hour period.

\* Classified as "Sound Engineering Practice" Under Pressure Equipment Directive

### TYPICAL ACCURACY CURVE



### TYPICAL PRESSURE DROP CURVE



## ACCESSORIES

Electronic Register, Presets, and Batchers  
Digital Control Valve and other additional specific valves

The Non-Ferrous BiRotor Plus is compatible with most electronic monitoring and measurement systems of other manufacturers.

## ORDERING INFORMATION

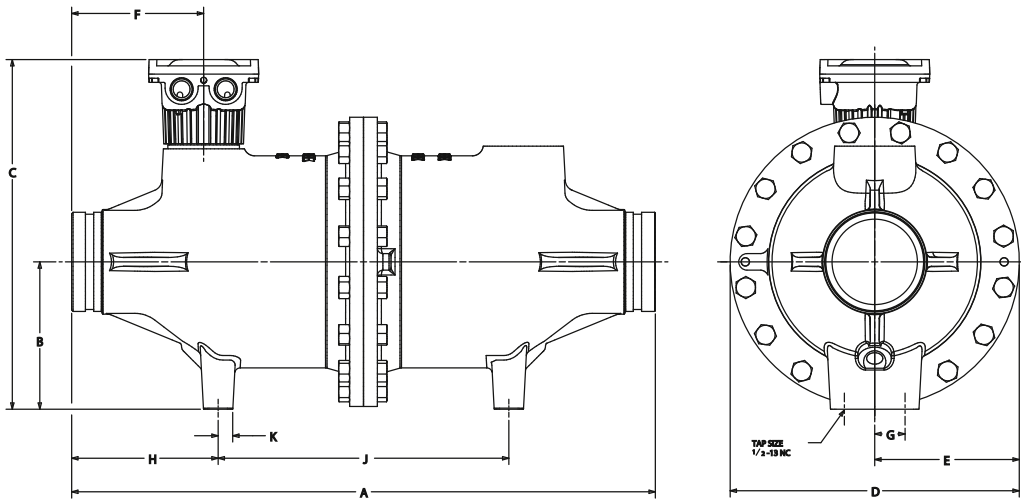
When ordering, please specify product to be metered, product viscosity, product temperature range, rate of flow, operating pressure and accessories.

## K-Factor - Nominal

96 pulses/gallon (25 pulses/liter)  
Note: K-Factor will vary for each meter

## SHIPPING WEIGHT AND VOLUME (APPROX.)

Model B295: 138 lb. (60 kg.); 12.6 ft<sup>3</sup> (0.26 M<sup>3</sup>)



**DIMENSIONS** - (For Certified Dimension Prints - Consult Factory)

MODEL	SIZE	A	B	C	D	E	F	G	H	J
B295	4" Victaulic	26 1/2"	6 5/8"	15 7/8"	13 1/4"	6 5/8"	6 1/4"	1 3/8"	6 11/16"	13 1/8"
B295	101.6 mm Victualic	673mm	168mm	403mm	337mm	168mm	159mm	35mm	170mm	333mm

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