

Single Rotor Turbine Flowmeter



Description

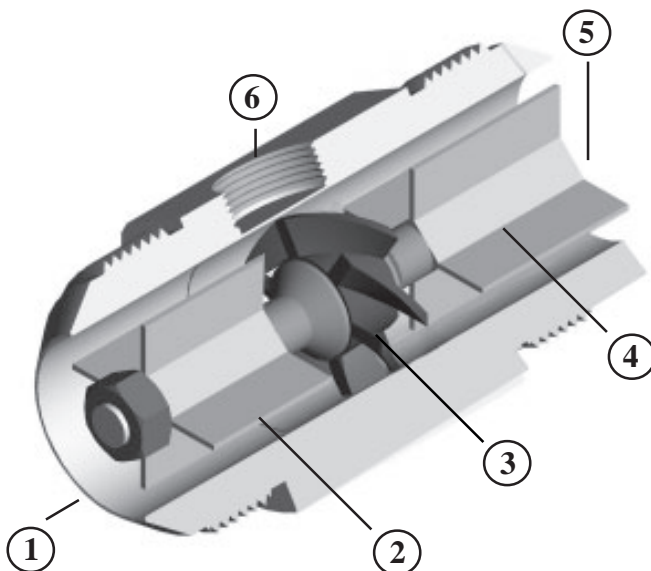
Exact Flow's Single Rotor Turbine Flowmeter represents the most advanced turbine flowmeter technology available today. The Single Rotor Series complements the Dual Rotor Series by offering the same rugged construction, quality, and repeatability. It is ideally suited for process applications where a high degree of accuracy in flow measurement is required over a wide operating range. The single rotor design is optimized for high accuracy in clean liquids up to 100 centistokes.

Features

- ∞ Superior Absolute Accuracy of $\pm 0.12\%$
- ∞ Up To 150:1 Turndown
- ∞ Bi-Directional Flow Optional
- ∞ 3,000 PSIG Standard
Up to 10,000 PSIG Optional
- ∞ Non-Intrusive Pick-Up
- ∞ N.I.S.T. Traceable Flow Calibrations
- ∞ Wide Range of Liquid Applications
- ∞ Only One Moving Parts



Principle of Operation



- 1 Unconditioned flow enters flowmeter.
- 2 Internal straightening vane smooths the flow as it enters the rotor.
- 3 Flow transfers momentum to the rotor making it spin counterclockwise. Flow then exits rotor with a clockwise spin.
- 4 Straightening vanes smooth the flow as it exits the rotor.
- 5 Flow exits the flowmeter.
- 6 A pick-up transmits the rotor frequency signal to remote instrumentation.

Specifications

Process Temperature:

-40°F [-40°C] to 450°F [232°C] standard

Operating Pressure:

3,000 PSIG Standard

Up to 10,000 PSIG Available

(Dependent on Size and Connection)

***Performance:**

Repeatability: ± 0.02% standard

Turndown Ratio:

(Model max. rated flow ÷ min. flow rate)

Up to 150:1

Calibrated Accuracy: ± 0.12% of rate

* **Linearity:** ±0.15 to 0.20% of rate or better

Output

Pick-Ups:

† **Carrier Pick-Up:** 0 to 10 VDC square wave pulse depending on supply, 2-wire, 4,000 Hz max. (Optional 4-wire for thermistor available)

Magnetic Pick-Up: Analog Frequency Out, 3,000 Hz max., 50 mVpp min.

Preamplifiers and Transmitters:

Refer to the individual product sheets.

Standard Materials:

Body: 316 stainless steel

Shaft: 440C stainless steel

Rotor: 416 stainless steel

Bearings: 440C stainless steel

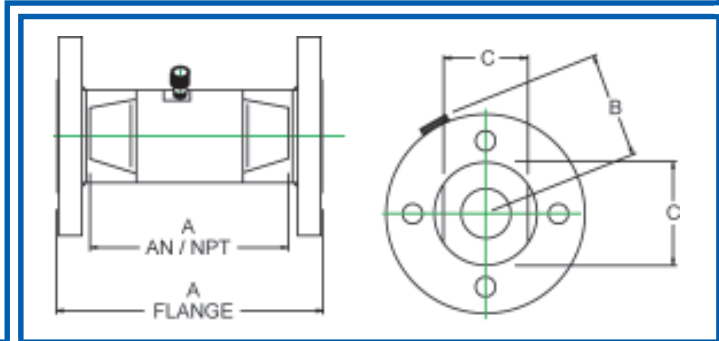
Nut: 416 stainless steel

Spacers: 416 stainless steel

Specifications and dimensions are subject to change without notice.

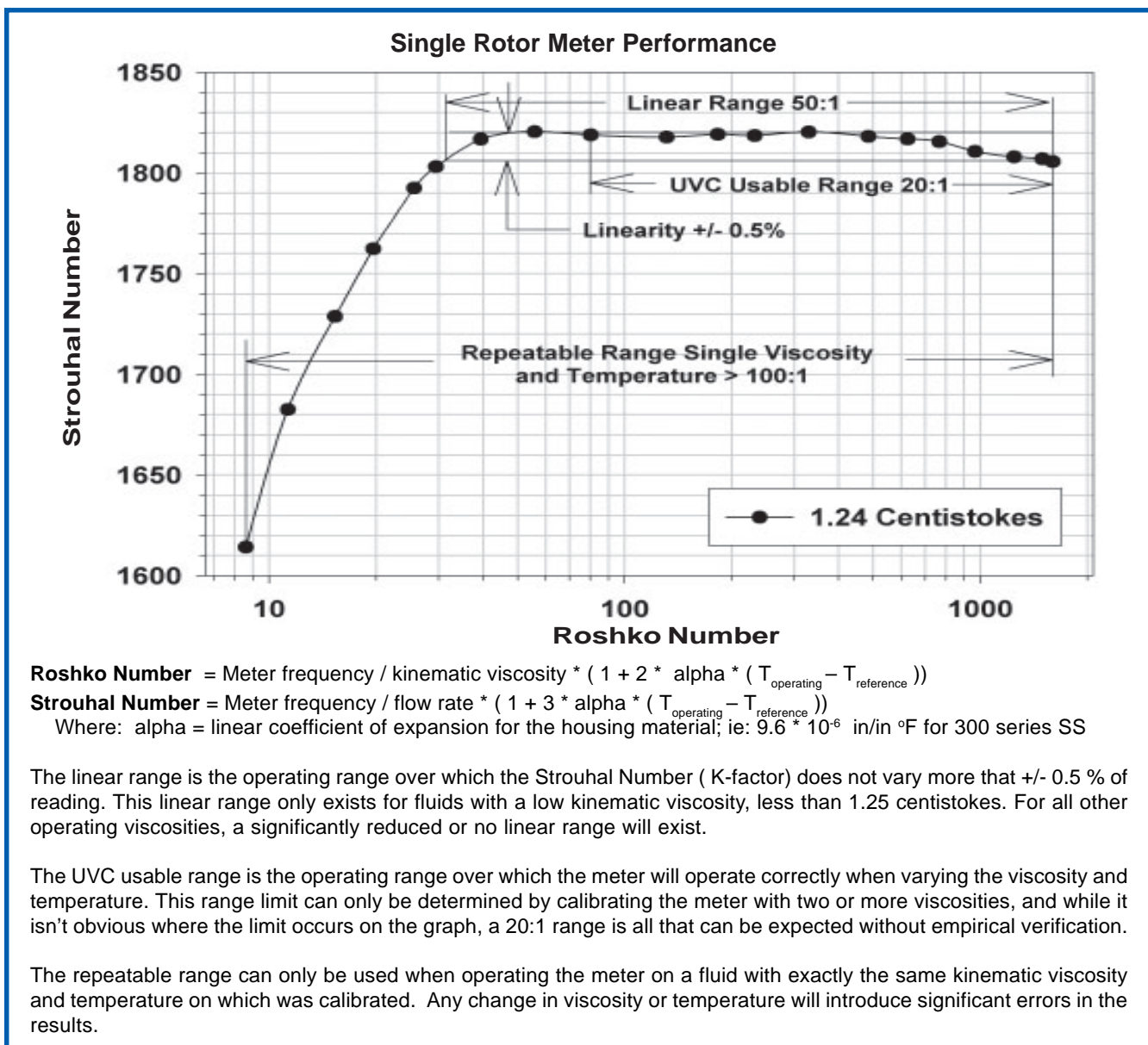
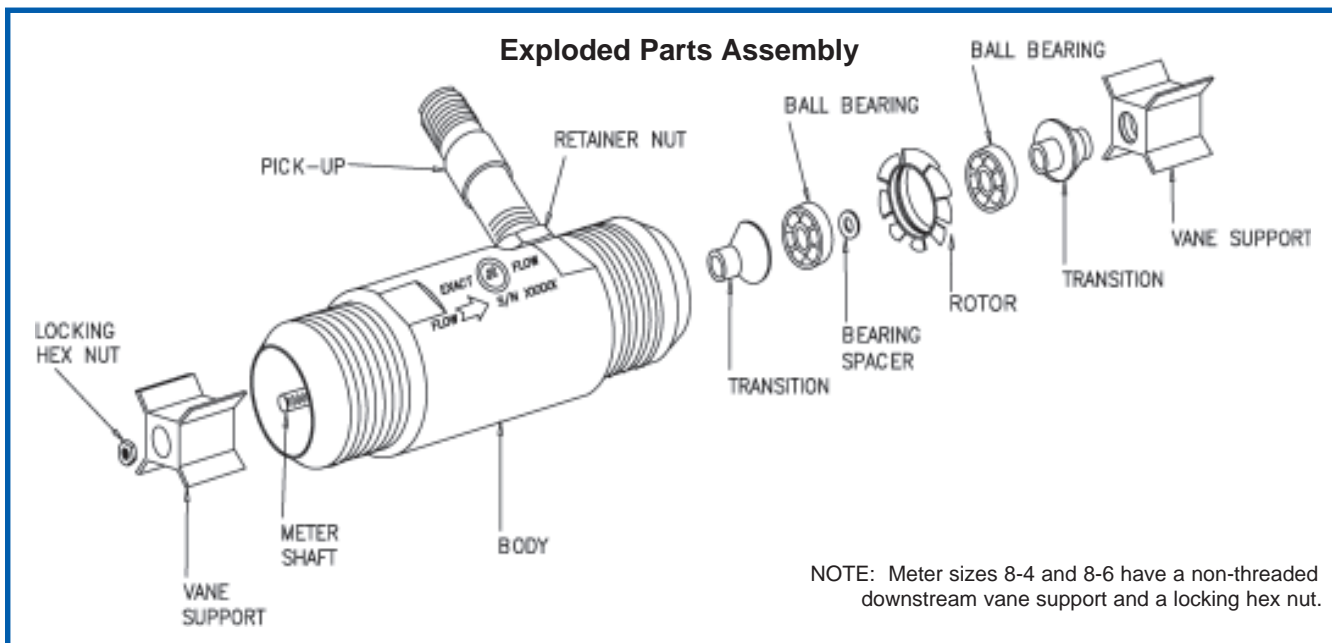
* Through Strouhal / Roshko calibration in electronics

† Requires Secondary Signal Conditioning



Single Rotor Housing Dimensions Inches [mm]						
Model #	A (AN / NPT)	A (RFF)	B (AN)	B (RFF)	C (Flats)	D
EFM8-4	2.45 [62]	-	2.16 [55]	-	1.00 [25]	1.12 [28]
EFM8-6	2.45 [62]	-	2.18 [55]	-	1.00 [25]	1.12 [28]
EFM8	2.45 [62]	-	2.20 [56]	-	1.00 [25]	1.12 [28]
EFM10	2.72 [69]	-	2.25 [57]	-	1.13 [29]	1.25 [32]
EFM12	3.25 [83]	-	2.30 [58]	-	1.38 [35]	1.50 [38]
EFM16	3.56 [91]	5.50 [140]	2.42 [61]	2.70 [69]	1.50 [38]	1.63 [41]
EFM20	4.06 [103]	6.00 [152]	2.54 [64]	2.81 [71]	1.72 [44]	1.88 [48]
EFM24	4.59 [117]	6.00 [152]	2.66 [67]	2.93 [74]	2.00 [51]	2.25 [57]
EFM32	6.06 [154]	6.50 [165]	2.89 [73]	3.17 [81]	2.50 [63]	2.75 [70]
EFM40	-	7.00 [178]	-	3.55 [90]	-	2.88 [73]
EFM48	-	10.0 [254]	-	3.81 [98]	-	3.50 [89]
EFM64	-	12.0 [305]	-	4.31 [109]	-	4.50 [114]

Single Rotor Model Specifications								
Model #	Connection Size	Flow Range @ 1 cstk, S.G.=1		D P @ Max Flow, 1 cstk	Typical K-Factor	Recommended Filtration		Weight AN without Pickoff
		GPM	LPM	PSI	PPG	Mesh (Microns)		Lbs
EFM8-4	1/4" NPT / 1/2" AN	0.15 - 3.0	0.57 - 11	10	30000	1250	10	0.38
EFM8-6	3/8" NPT / 1/2" AN	0.30 - 6.0	1.14 - 23	10	15000	1250	10	0.38
EFM8	1/2"	0.40 - 10	1.51 - 38	10	9480	1250	10	0.38
EFM10	1/2"	0.53 - 16	2.01 - 61	10	6000	1250	10	0.49
EFM12	3/4"	1.0 - 30	3.79 - 114	10	3640	1250	10	0.76
EFM16	1"	2.2 - 65	8.33 - 246	10	1680	1250	10	1.1
EFM20	1.25"	3.2 - 95	12.1 - 360	10	1149	1250	10	1.7
EFM24	1.5"	5.2 - 155	19.7 - 587	10	705	1250	10	2.7
EFM32	2"	10 - 310	37.9 - 1173	10	242	1250	10	5.0
EFM40	2.5" RFF	12 - 500	45.0 - 1893	10	132	1250	10	-
EFM48	3" RFF	20 - 800	76.0 - 3028	10	45	1250	10	-
EFM64	4" RFF	38 - 1500	144 - 5678	10	20	1250	10	-



Single Rotor Flowmeter Part Number

Part Number EFM - - - - - - - — **Special Option**

Nominal Bore Size

84 1/4"	32 2"
86 3/8"	48 3"
08 1/2"	64 4"
10 5/8"	80 5"
12 3/4"	96 6"
16 1"	112 8"
20 1 1/4"	128 10"
24 1 1/2"	144 12"

Meter Type
SR Single Rotor

Service Type
L Hydrocarbon
W Water
G Gas

Special Option
S Option to be specified by customer

Pickoff Options
X Haz. location with 12" Leads
2 2 Pin MS
3 3 Pin MS
4 4 Pin MS

Pickoff
A Carrier Without Temperature Sensor
B Carrier With Temperature Sensor
C Magnetic Without Temperature Sensor
D Magnetic With Temperature Sensor

End Fitting Type
AN 37° Flare F1 150# Flange
NP NPT Pipe F3 300# Flange
SP Special F6 600# Flange

Bearing Type
D Dichronite P PGM
4 440C C Ceramic
S Special

Calibration Available

NIST Traceable, Compliance with ANSI / NCSL-Z540, ISO Guide 25, ISO 9002, MIL-STD-45662A

- | | |
|-------------------------------------|-------------------------------------|
| 0 - 1,300 GPM on Hydrocarbon Fluids | 0 - 10,000 SCFM @ 3,000 PSIG on Air |
| 0 - 10,000 GPM on Water | 0 - 2,000 SCFM on Inert Gas |
| | 0 - 600 SCFM on Flammable Gas |

Exact Flow Accessories

Flow Straighteners

Tube and Flange
Special Available

Pick-Ups

Carrier and Magnetic
Thermistor option for both

Signal Amplifiers

Carrier and Pulse
Standard and Explosion Proof

Flow Computers

Multiple Viscosity Capability
Error Checking
Visual Flow Rate
Instant Flow with Totalizing

Turbine Transfer Standards

Automated and Manual Operation
Visual or System Integration

Represented by:

ThermX Southwest
7370 Opportunity Rd., Ste. S
San Diego, CA 92111

Phone: 858-573-0983
Fax: 858-573-0623

Limited Warranty

For a period of one (1) year from the original date of shipment, seller warrants that the products described in this Warranty are free from defects in workmanship and materials only. For specific Warranty periods please refer to Seller's Warranty schedule. Seller shall not be liable for any special, incidental or consequential damages. This Warranty extends to the original purchaser of the product warranted hereunder and to each transferee owner of the product during the term of the Warranty. In the event of a defect, malfunction, or failure of the product not caused by any misuse or damage to the product while in possession of the owner, the warrantor will remedy the failure or defect, within a reasonable amount of time after written notification from the owner of same. The remedy will consist of repair or replacement of the product only, at the warrantor's option. The owner must return the defective or malfunctioning component part(s) to the factory for such repair or replacement. If this product or one of its component parts is modified in any way by the owner, transferee owner, his agent or employee, this Warranty shall become null and void.