

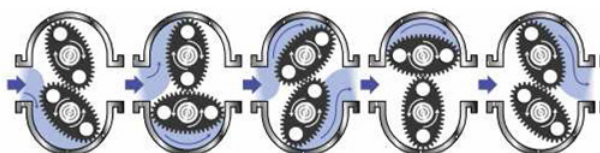
Industrial Oval Gear

Inline and Flanged Meters, 1/4", 1/2", 3/4", 1", 1" HF, 1-1/2", 2", 3"

DESCRIPTION

The Badger Meter Industrial Oval Gear Meter, Model IOG is a modular flow meter design, economical yet highly accurate and rugged. The model IOG is designed for a variety of chemical applications including petroleum based fluids, water solutions and any other liquid compatible with the materials of construction.

OPERATING PRINCIPLE



Fluid enters the inlet port and then passes through the metering chamber. Inside the chamber, fluid forces the internal gears to rotate before exiting through the outlet port. Each rotation of the gears displaces a specific volume of fluid. As the gears rotate, a magnet on each end of the gear passes a reed switch in the top-mounted register's circuit board. The reed switches send pulses to the microprocessor in the register to change the LED display segments. The oval gear meter can be used in conjunction with a variety of industrial registers. See the online documentation for Oval Gear Meter Registers, ER-420 Flow Rate/Totalizer, and the ER-500 Flow Monitor for more information on the available register options.

APPLICATIONS

Due to the rugged nature of this particular flow measurement technology, the Industrial Oval Gear Meter can be used in a number of applications where conventional meters are not acceptable. Whether the liquid being measured is very viscous or highly corrosive, the oval gear meter can handle it. The Industrial Oval Gear Meter is designed for a variety of applications including petroleum based fluids, water solutions, and any other liquid compatible with the materials of construction.

FEATURES

- Compact size
- High accuracy and repeatability
- Factory calibrated (stated in pulses per liter)
- Flow range of 0.067...185 gpm
- Flexibility of installation options (vertical installation or horizontal installation)
- Low pressure drop
- Minimum number of wearable parts for long product life and easy field servicing
- Wide range of instrumentation available for control system interfacing



MAXIMUM VISCOSITY

- 1000 cP
- Consult the factory for higher viscosity applications.

OPERATING FLUID TEMPERATURES

Rotor Material	Operating Temperature Range
Stainless Steel	-22...240° F (-30...120° C)
LCP	-22...176° F (-30...80° C)

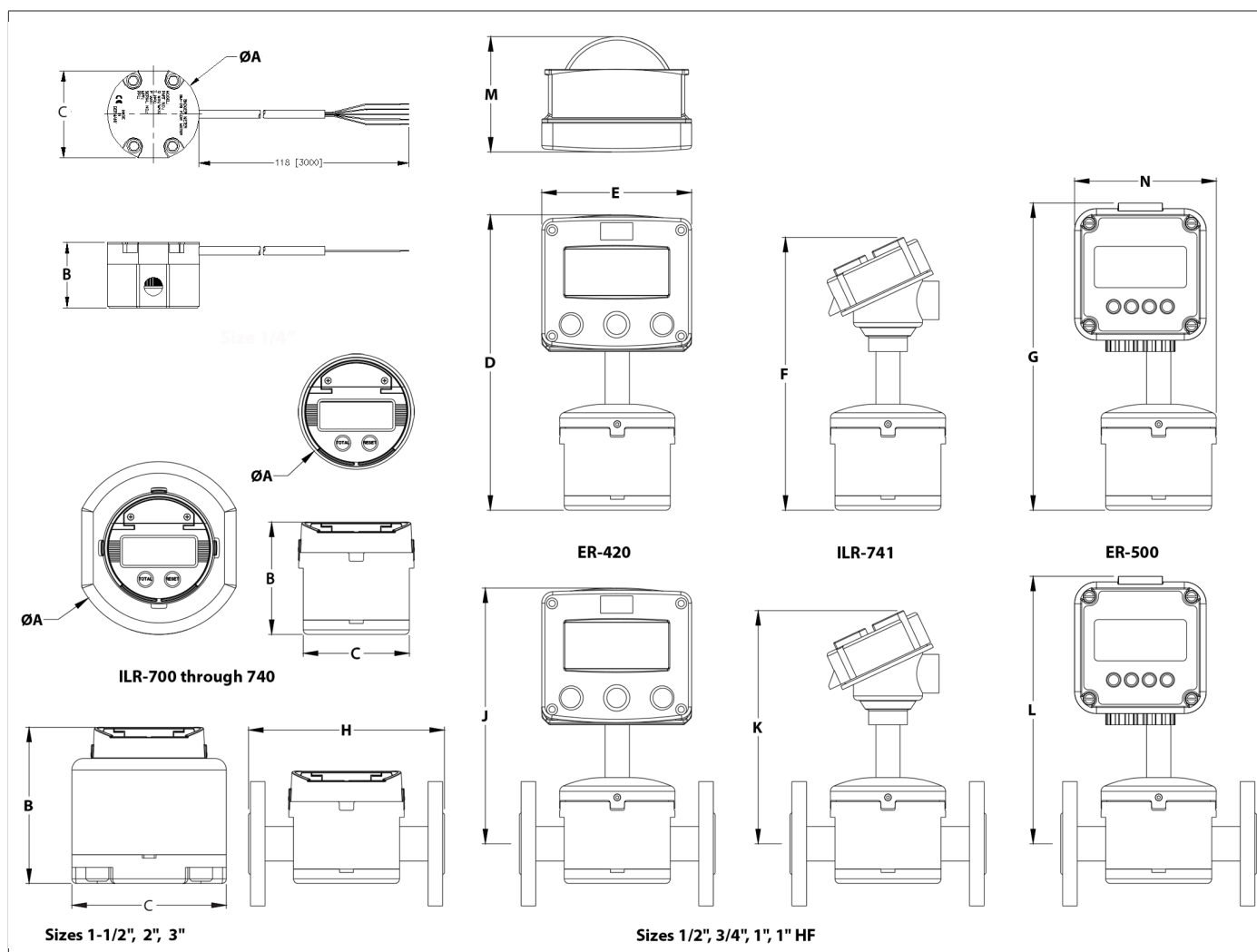
METER STORAGE TEMPERATURES

The meter storage temperature range is -67...248° F (-55...125° C).

PRESSURE RATING

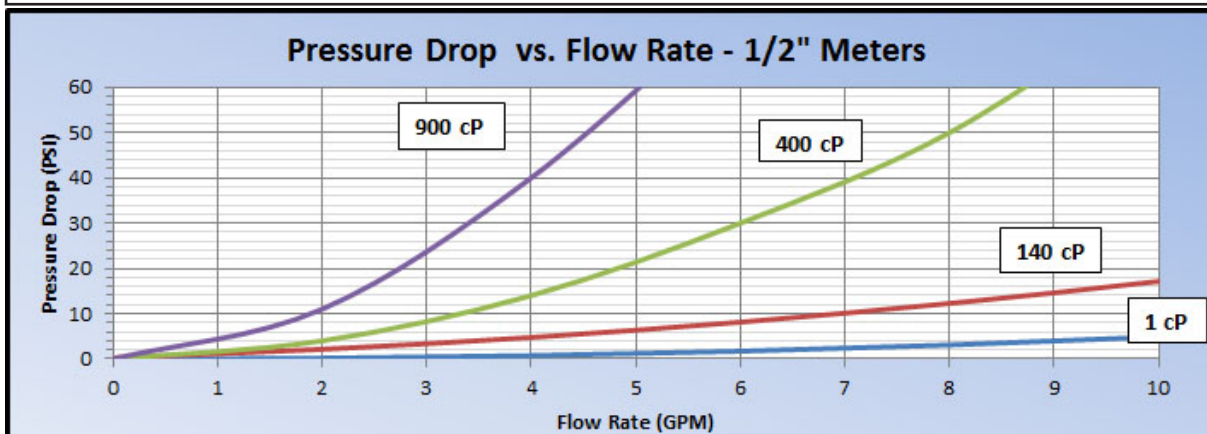
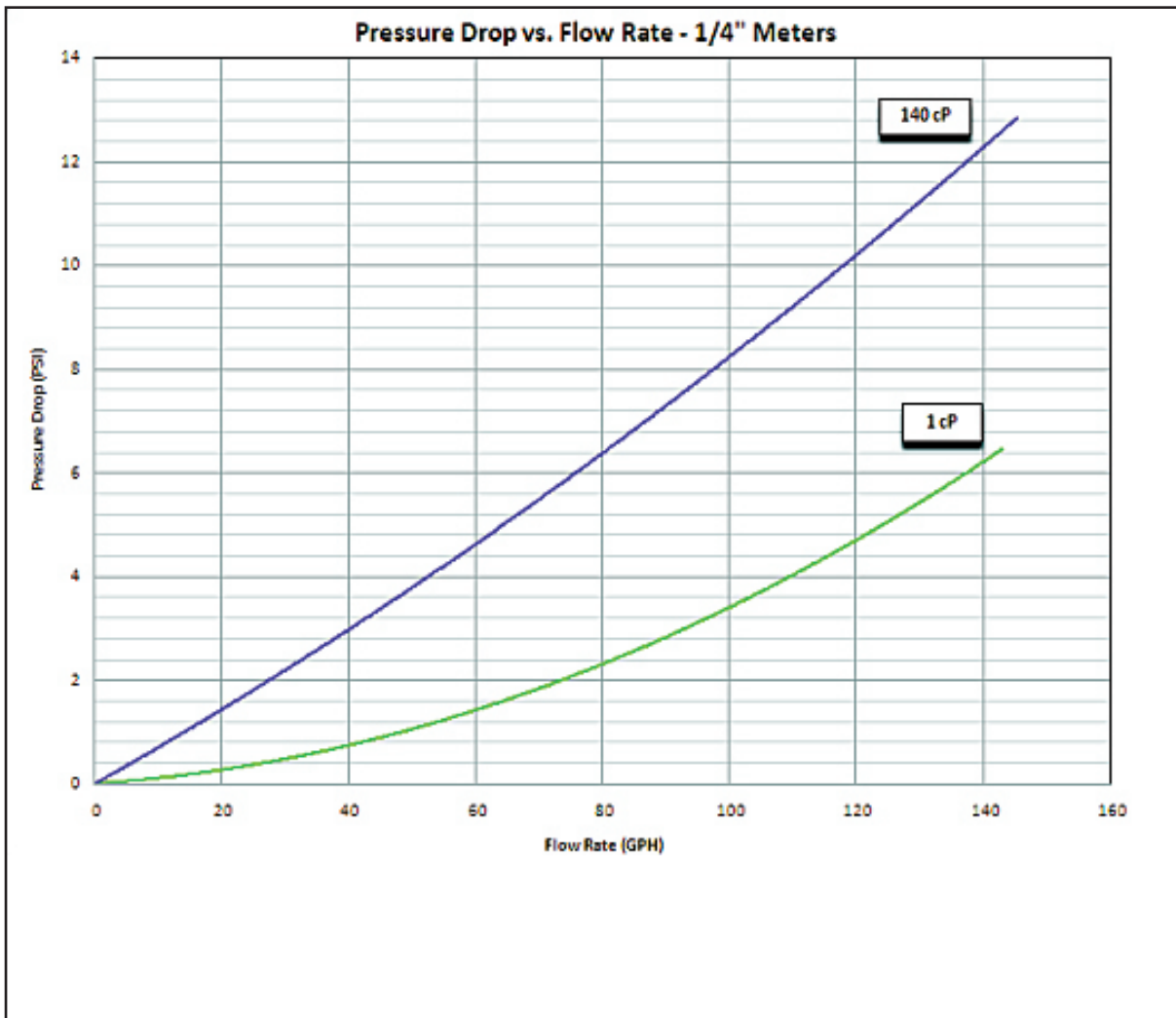
Port Size	Housing Material	Pressure Rating (psi)		
		NPT/BSP	ANSI 150#	ANSI 300#
1/4"	Stainless	1000	—	—
	Aluminum	1500		
1/2"	Stainless	3000	285	—
	Aluminum	2000		
3/4"	Stainless	3000	285	740
	Aluminum	2000		—
1"	Stainless	3000	285	740
	Aluminum	2000		—
1" HF	Stainless	3000	285	740
	Aluminum	2000		—
1-1/2"	Stainless	2000	285	740
	Aluminum	1500		—
2"	Stainless	1500	285	740
	Aluminum	1000		—
3"	Stainless	1000	285	740
	Aluminum	750		—

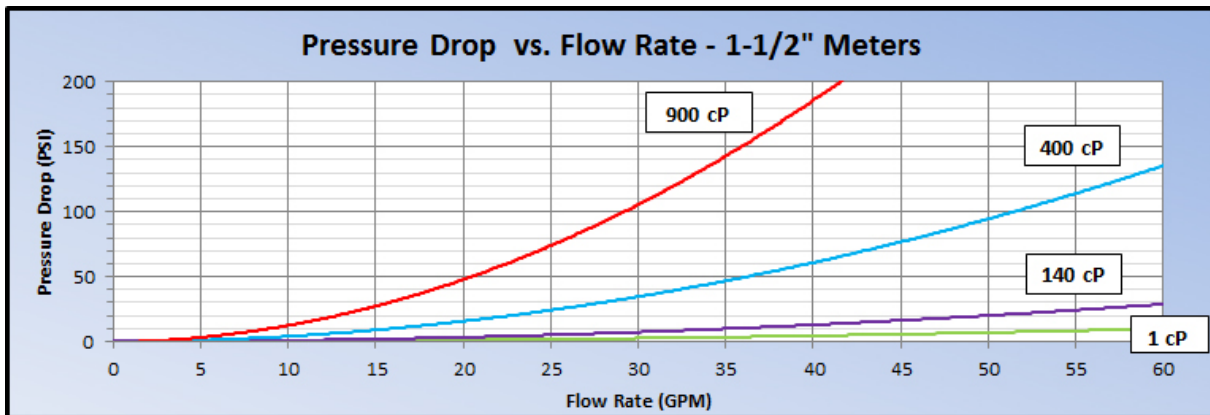
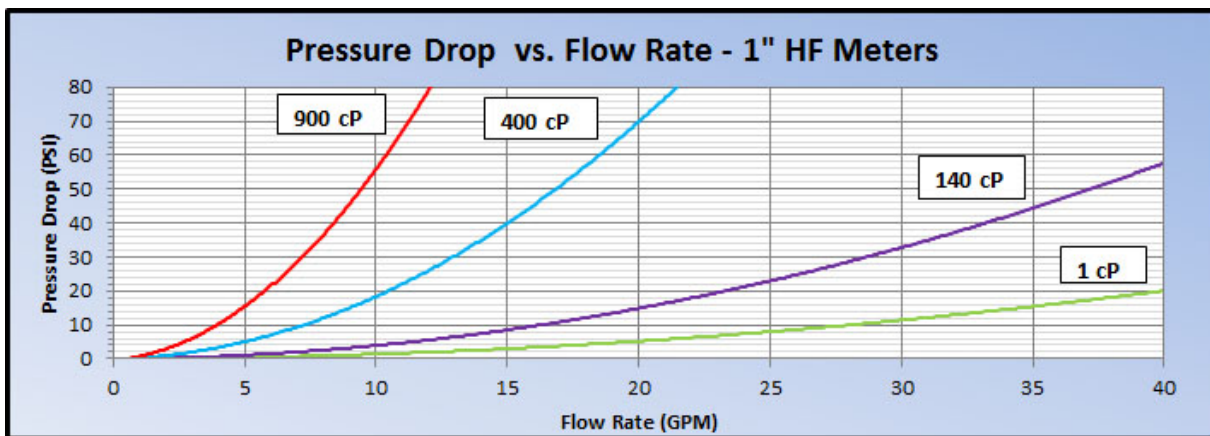
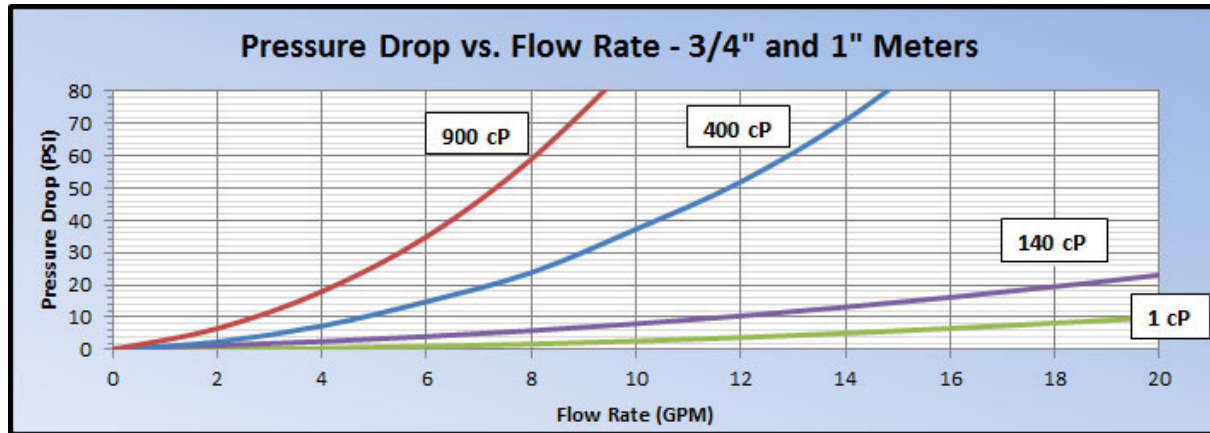
DIMENSIONS

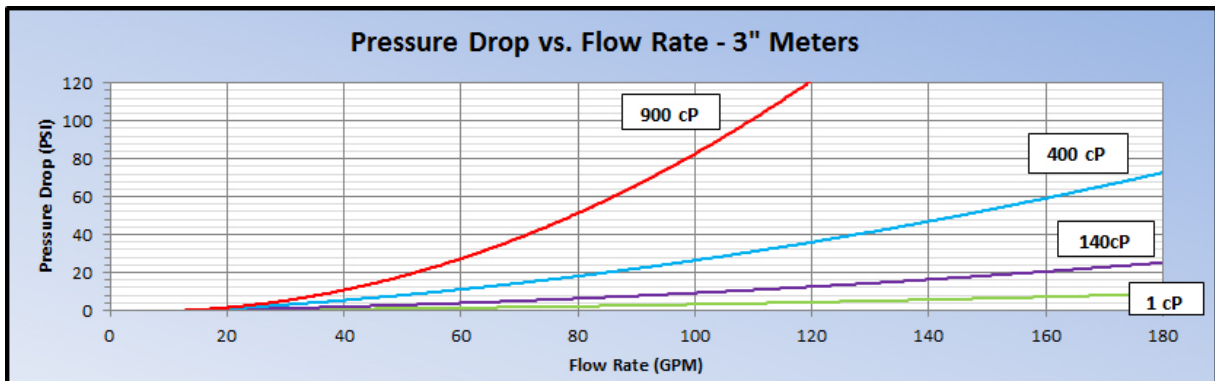
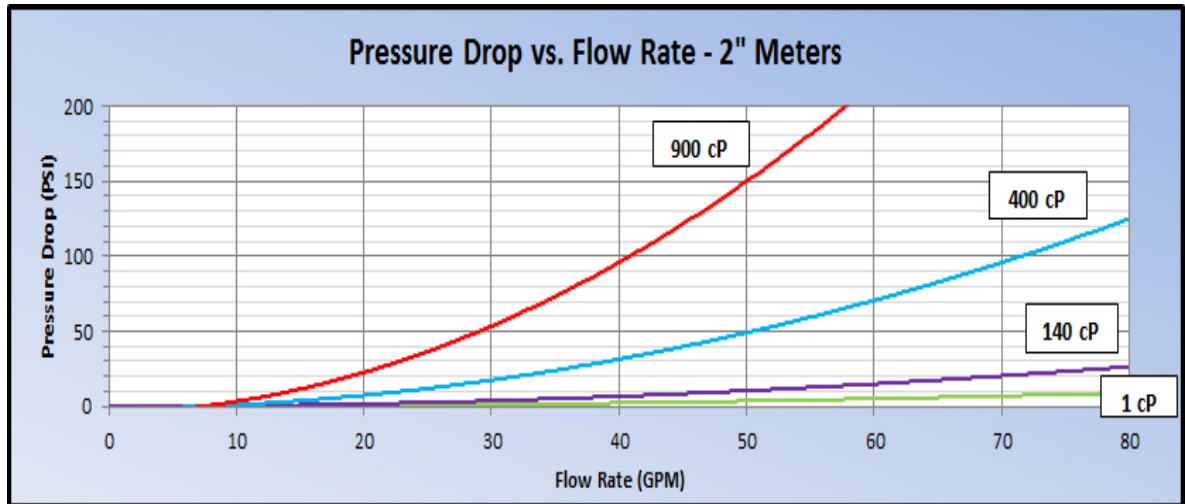


Port Size	A	B	C	D	E	F	G	H	J	K	L	M	N
1/4"	2.17" (55 mm)	1.54" (39 mm)	2.05" (52 mm)	—	—	—	—	—	—	—	—	—	—
1/2"	3.94" (100 mm)	3.44" (87.5 mm)	3.62" (92 mm)	9.70" (246.4 mm)	5.12" (130 mm)	8.93" (226.8 mm)	10.10" (256.5 mm)	6.69" (170 mm)	8.45" (214.6 mm)	7.68" (195.1 mm)	8.89" (225.8 mm)	3.94" (100.2 mm)	4.84" (122.9 mm)
3/4"	3.94" (100 mm)	3.84" (97.5 mm)	3.62" (92 mm)	10.10" (256.5 mm)	5.12" (130 mm)	9.33" (236.9 mm)	10.50" (266.7 mm)	6.69" (170 mm)	8.70" (220.9 mm)	7.93" (201.4 mm)	9.14" (232.2 mm)	3.94" (100.2 mm)	4.84" (122.9 mm)
1"	3.94" (100 mm)	3.84" (97.5 mm)	3.62" (92 mm)	10.10" (256.5 mm)	5.12" (130 mm)	9.33" (236.9 mm)	10.50" (266.7 mm)	6.69" (170 mm)	8.70" (220.9 mm)	7.93" (201.4 mm)	9.14" (232.2 mm)	3.94" (100.2 mm)	4.84" (122.9 mm)
1" HF	3.94" (100 mm)	3.89" (98.9 mm)	3.62" (92 mm)	10.15" (257.8 mm)	5.12" (130 mm)	9.38" (238.3 mm)	10.55" (268.0 mm)	6.69" (170 mm)	8.60" (218.4 mm)	7.83" (198.8 mm)	9.04" (229.6 mm)	3.94" (100.2 mm)	4.84" (122.9 mm)
1-1/2"	5.51" (140 mm)	4.93" (125.3 mm)	4.92" (125 mm)	11.15" (283.2 mm)	5.12" (130 mm)	10.38" (263.7 mm)	11.51" (292.4 mm)	8.35" (212 mm)	8.90" (226.1 mm)	8.13" (206.5 mm)	9.31" (236.5 mm)	—	—
2"	5.91" (150 mm)	5.34" (135.6 mm)	5.28" (134 mm)	11.60" (294.6 mm)	5.12" (130 mm)	10.83" (275.1 mm)	11.96" (303.8 mm)	10.39" (264 mm)	9.16" (232.7 mm)	8.39" (213.1 mm)	9.57" (243.1 mm)	—	—
3"	8.27" (210 mm)	6.35" (161.4 mm)	7.09" (180 mm)	12.57" (319.3 mm)	5.12" (130 mm)	11.80" (299.7 mm)	12.93" (328.4 mm)	13.54" (344 mm)	9.58" (243.3 mm)	8.81" (223.8 mm)	9.99" (253.8 mm)	—	—

PRESSURE DROP VS FLOW RATE NOTE: Flow rate for 1/4" meter is in gallons per *hour*, not gallons per *minute*.







FLOW RANGE

Port Size	American (gpm)		SI (lpm)		Fluid Viscosity	Accuracy (%)	Repeatability (%)
	Low	High	Low	High			
1/4"	.067	2.2	0.25	8.3	> 5.0 cP	± 1.0	± 0.03
	0.11	2.2	0.44	8.3	< 5.0 cP	± 2.5	
1/2"	0.25	8.0	1.0	30	> 5.0 cP	± 0.5	± 0.03
	0.50	6.6	2.0	25	< 5.0 cP	± 2.0	
3/4"	0.50	16	2.0	60	> 5.0 cP	± 0.5	± 0.03
	1.20	14	4.5	53	< 5.0 cP	± 2.0	
1"	0.6	18	2.3	68	> 5.0 cP	± 0.5	± 0.03
	1.4	16	5.3	60	< 5.0 cP	± 2.0	
1" HF	1.5	45	5.7	170	> 5.0 cP	± 0.5	± 0.03
	2.5	40	9.5	151	< 5.0 cP	± 2.0	
1-1/2"	2.5	65	9.5	246	> 5.0 cP	± 0.5	± 0.03
	4.0	60	15	227	< 5.0 cP	± 1.0	
2"	4.0	100	15	379	> 5.0 cP	± 0.5	± 0.03
	6.0	100	23	379	< 5.0 cP	± 1.0	
3"	5.0	185	19	700	> 5.0 cP	± 0.5	± 0.03
	10	185	38	700	< 5.0 cP	± 1.0	

MATERIALS OF CONSTRUCTION

	Wetted Parts							
Port Size	Housing	Cover	Spindle	Gears	Bearings	Magnet	O-Ring	Bolts
1/4"	316 SS	316 SS	316 SS	316 SS	Fluorosint 500	Neodymium Au Plated	Aflas	316 SS
	6061 Al	6061 Al					Viton	
1/2"	316 SS	316 SS	316 SS	316 SS	Graphalloy	Alnico	Aflas	316 SS
	6061 Al	6061 Al		LCP			Viton	
3/4"	316 SS	316 SS	316 SS	316 SS	Graphalloy	Alnico	Aflas	316 SS
	6061 Al	6061 Al		LCP			Viton	
1"	316 SS	316 SS	316 SS	316 SS	Graphalloy	Alnico	Aflas	316 SS
	6061 Al	6061 Al		LCP			Viton	
1" HF	316 SS	316 SS	316 SS	316 SS	Fluorosint	Neodymium Ni Plated	Aflas	316 SS
	6061 Al	6061 Al					Viton	
1-1/2"	316 SS	316 SS	316 SS	316 SS	Fluorosint	Neodymium Ni Plated	Aflas	316 SS
	6061 Al	6061 Al					Viton	
2"	316 SS	316 SS	316 SS	316 SS	Fluorosint	Neodymium Ni Plated	Aflas	316 SS
	6061 Al	6061 Al					Viton	
3"	316 SS	316 SS	316 SS	316 SS	Fluorosint	Neodymium Ni Plated	Aflas	316 SS
	6061 Al	6061 Al					Viton	

NOTE: Upon request, additional O-Ring options are Buna-N and EPDM.

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www.badgermeter.com

The Americas | Badger Meter | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400

México | Badger Meter de las Americas, S.A. de C.V. | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882

Europe, Middle East and Africa | Badger Meter Europa GmbH | Nurtlinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0

Czech Republic | Badger Meter Czech Republic s.r.o. | Maříkova 2082/26 | 621 00 Brno, Czech Republic | +420-5-41420411

Slovakia | Badger Meter Slovakia s.r.o. | Raciarska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01

Asia Pacific | Badger Meter | 80 Marine Parade Rd | 21-04 Parkway Parade | Singapore 449269 | +65-63464836

China | Badger Meter | 7-1202 | 99 Hangzhong Road | Minhang District | Shanghai | China 201101 | +86-21-5763 5412

Legacy Document Number: ITB-197 and ITB-191