

Model Industrial RCDL

Nutating Disc Meter (Bronze and Thermoplastic)

Technical Brief

GENERAL

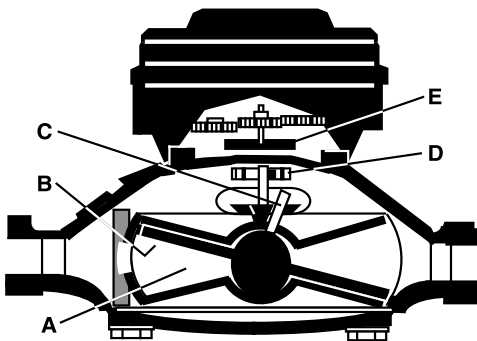
Badger's RCDL positive displacement meters are one of the most cost effective methods in metering industrial fluids. The RCDL meter's simple but efficient design assures high accuracy and repeatability over the entire meter flow range.

Available in sizes, 1/2" through 2" for flows up to 170 GPM, these meters are extremely rugged and reliable. Maintenance is seldom required, but if necessary, takes but a few minutes. All parts are designed and built of materials to meet your application, providing you with long life and a trouble-free, precision flow meter.

To complement the RCDL meter line, Badger offers a complete line of accessories that includes totalizers, electromechanical and electronic transmitters, rate of flow indicators and batch/process controllers.

OPERATION

The metering principle, known as positive displacement, is based on the continuous filling and discharging of the measuring chamber. Controlled clearances between the disc and the chamber insure minimum leakage for precise measurement of each volume cycle. As the disc nutates, the center spindle rotates a magnet, whose movement is sensed through the meter wall by a follower magnet or by electronic sensors. Each revolution of the magnet is equivalent to a fixed volume of fluid, which is converted to any engineering unit of measure for totalization, indication or process control.



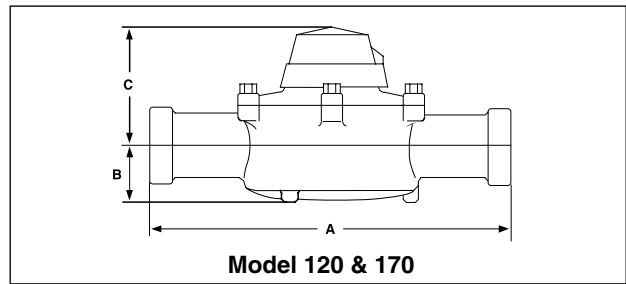
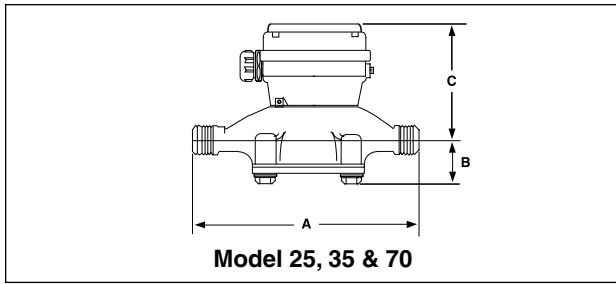
Liquid flowing through the meter chamber (A) causes a disc (B) to nutate or wobble. This motion, in turn, results in the rotation of a spindle (C) and drive magnet (D). Rotation is transmitted through the wall of the meter to a second magnet (E) which operates the transmitter.



FEATURES

- **Accuracy:** $\pm 1.5\%$ over full range
- **Repeatability:** $\pm 0.5\%$
- **Wide flow range**
- **Rugged bronze or thermoplastic housing**
- **Maximum Operating Temperature**
- **Plastic Housing:** 100° F
- **Bronze Housing:** 120° F
- **Models 25 and 70; Bronze:** 250° F Option
- **Maximum Operating Pressure:** 150 PSI
- **Easily maintained without removing from line**
- **Durable components for minimal maintenance**
- **Wide range of compatible accessories**





SPECIFICATIONS

Dimensions in inches (Without Register)

Meter Model	Meter Size Inches	Housing Material	A Meter Length	B Center Line To Base	Meter Length with Conn.	Flow Rates - Gallons		Approx. Weight Pounds
						Cold Liquids 32° F to 120° F	Hot Water Chemicals & Oils 32° F to 250° F (BZ) 32° F to 100° F (PL)	
M25	5/8	BZ or PL	7-1/2	1-3/8	12-7/16	1/2 - 25	1 - 25	5
M25	3/4	BZ or PL	7-1/2	1-3/8	12-5/8	1/2 - 30	1 - 30	5
M35	3/4	BZ	9	1-3/4	14-1/8	3/4 - 35	N/A	6
M40	1	PL	10-3/4	2-1/4	16-3/16	3/4 - 50	N/A	5
M70	1	BZ	10-3/4	2-1/4	16-5/8	1 - 70	5 - 70	12
M120	1-1/2	BZ	12-5/8	2-5/8	19-3/4	2 - 120	*See Note	20
M170	2	BZ	15-1/4	3-3/8	22-7/8	2 - 170	N/A	30

BZ = Bronze; PL = Plastic
NPT connection set assemblies available.

N/A = Not available in High Temperature / Chemical option.

HEIGHT DIMENSIONS (INCHES) (C) WITH REGISTER AND ACCESSORIES

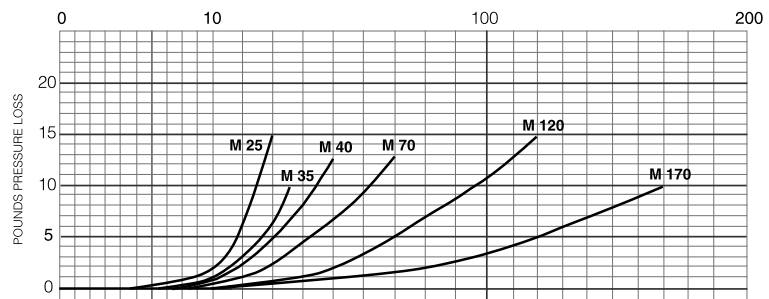
Meter Size	With Non Resetable Register	With Transmitter	With MS-ER1 Transmitter	With ECA Transmitter	With 258 Register	With Series 76 Registers
5/8 & 5/8 x 3/4	5-3/4	7-3/8	11-1/4	9-3/8	8	15-1/4
3/4	6-1/8	7-3/4	11-5/8	9-3/8	8-3/8	15-5/8
1 & 1 x 1-1/4	7-1/2	9-1/8	13	11-3/16	9-3/4	17
1-1/2	9-1/8	10-3/8	14-1/4	12-3/4	11	18-1/4
2	10-3/4	12-1/4	16-1/8	14-3/8	12-7/8	20-1/8

MATERIALS OF CONSTRUCTION

	Cold Liquid Units	High Temp. and/or Chemical Units Models 25 & 70
Housing:	BZ or PL	BZ - 250° F PL - 100° F
Chamber:	Noryl	LCP
Disc:	SAN	LCP
Crossbar:	Nylon	Ultem
Magnetic Assembly:	Nylon	Ultem
Chamber Retainer:	Polyethylene	Metal Clip
Screen:	Polypropylene	None

PRESSURE LOSS CHART

Industrial Disc Meters
Rate of Flow in Gallons Per Minute



PERFORMANCE

Accuracy: ± 1.5%

Repeatability: ± 0.5%

Max. Operating Pressure: 150 PSI

*Note: Available for chemicals or fluids not to exceed 110° F (43° C)



Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding bid obligation exists.