Model RTR®	Transmitter/Register	Technical Brief

GENERAL

The Model RTR is a simple and economical Totalizer / Pulse Transmitter designed to be used with Badger Meter RCDL disc and RCDL Turbo Series meters. The unit consists of a six-digit, non-resettable, straight-reading odometer/totalizer, a 360° test circle sweep hand, and a flow finder to detect leaks. The register gearing is self-lubricating thermoplastic to minimize friction and provide long, reliable life. The transmitter portion is based on Badger's patented piezoelectric solid state switch. This output has the characteristics of an open drain Field Effect Transistor (FET) and has no electrical contacts to stick, wear or corrode.

OPERATION

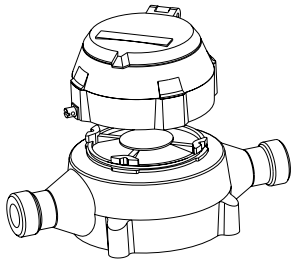
The flow of liquid through the meter causes the measuring element to nutate (disc) or rotate (Turbo) a number of times per unit of fluid volume. As the element nutates/turns, a coupled magnet rotates proportionately. This rotation is transferred magnetically to a follower magnet in the RTR causing both the totalizer and the pulse transmitter to operate. As the magnet moves, a cam activates the piezoelectric switch, which in turn energizes a FET and a pulse is generated. Each pulse represents a unit of measure (1 gallon, 10 gallons, etc.) depending on the model and size of the flow meter.

APPLICATION

The RTR is ideally suited for flow applications where a local totalization and a remote pulse output is required. Typical applications include pulse input to a controller for batching, dispensing, conditioning or simply a pulse output to a remote totalizer.

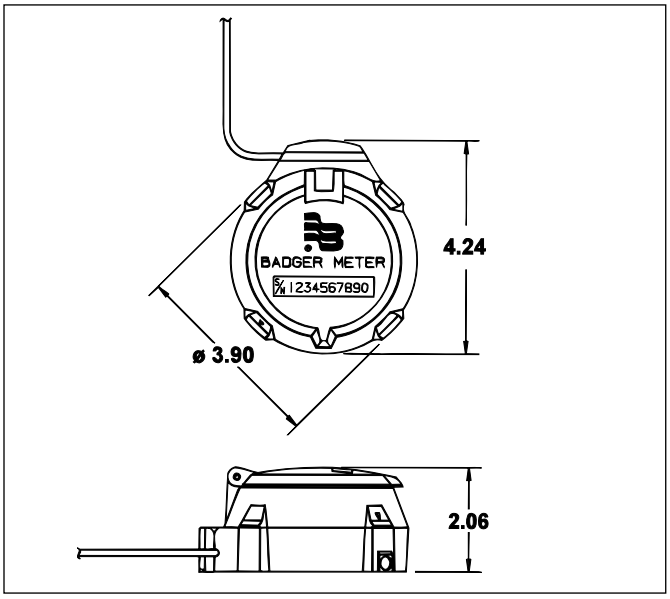
FEATURE

- **No electrical contacts to stick, wear or corrode**
- **Accurate at very low flows**
- **Installs up to 1000 feet away from controller**
- **6-digit non-resettable mechanical totalizer**
- **In-line service**

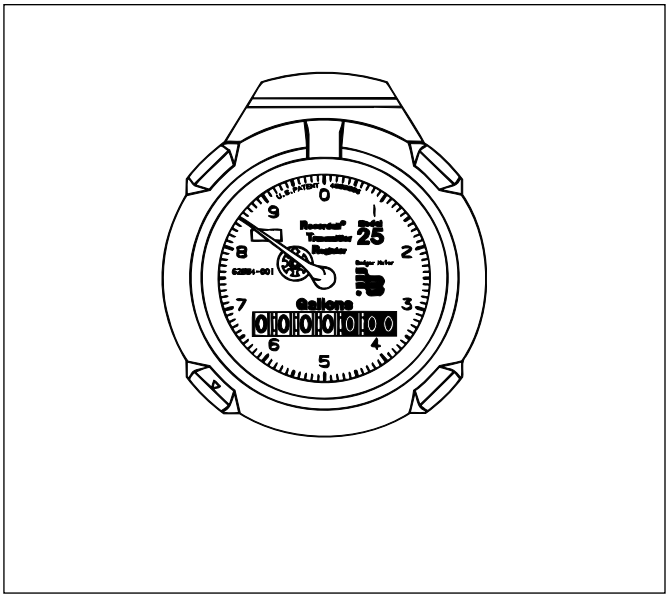


To mount RTR register to meter

- **Line up RTR bayonets on meter**
- **Turn clockwise 1/4 turn to lock in place**
- **Secure with screw**



Dimensional Drawing



RTR Register

MEASUREMENT RESOLUTION: The pulse rate of the RTR is as noted below.

RCDL Disc Model	Size	(1) Pulse Equals	Cubic
M25	5/8"	1	0.01
M25	3/4"	1	0.01
M35	3/4"	1	0.01
M40	1"	1	0.01
M70	1"	1	0.01
M120	1 1/2"	10	0.1
M170	2"	10	0.1

RCDL Turbo Series Model	Line Size	(1) Pulse Equals	Cubic
160	1 1/2"	100	0.1
200	2"	100	0.1
450	3"	100	0.1
1000	4"	100	0.1
2000	6"	100	1
3500	8"	100	1
5500	10"	1000	NA
6200	12"	1000	NA
6600	16"	1000	NA
10000	20"	1000	NA

NA = Not Available

TECHNICAL SPECIFICATIONS

Transmitter/Register	Straight reading, permanently sealed, magnetic drive
Weight	9 Ounces
Humidity	0% to 100% Condensing
Temperature	-40°F to 120°F (-40°C to 49°C)
Signal Characteristics	Open Drain (FET)
Typical Signal Duration	15 ms to 75 ms @ 25°C (77°F) 8 ms to 75 ms over operating temperature range at 67 µA
On State Resistance	7.5 Ohms @ 25°C (77°F)
Power Source	External
Maximum Switching	30 VDC @ 1 mA @ 25°C (77°F)
Shroud Assembly	Polycarbonate
Electrical	The electronic circuitry is designed to provide immunity to electrical surges and transients per IEC801-2, IEC801-4 Severity Level 4 MML.
Wire Length Provided	25 feet

Polarity MUST be observed when connecting the RTR to the remote module. Badger Meter wiring standards use the black conductor as the negative (-) conductor, and the red as the positive (+) conductor.

ISO 9001

Please see our website at
www.badgermeter.com
for specific contacts.

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.

BadgerMeter, Inc.
P.O. Box 245036, Milwaukee, WI 53224-9536
Telephone: (414) 355-0400 / (800) 456-5023
Fax: (414) 355-7499 / (866) 613-9305
www.badgermeter.com