Badger Meter

Recordall® Combo Meter

Lead-Free Bronze Alloy, Size 8"
NSF/ANSI Standards 61 and 372 Certified

DESCRIPTION

The Badger Meter Recordall Combo meters meet or exceed the most recent revision of AWWA Standard C700 and are available in a lead-free bronze alloy. The Combo meters comply with the lead-free provisions of the Safe Drinking Water Act, are certified to NSF/ANSI Standards 61 and 372 (Trade Designation: Combo-01) and carry the NSF-61 mark on the housing. All components of the lead-free bronze alloy meter (housing, measuring element, seals, and so on) comprise the certified system.

The Combo meter combines two metering technologies in one innovative package. A positive displacement chamber measures low flow, while a turbine chamber records high flow.

The 8-inch Combo meter features:

- Spring-loaded check valve to facilitate one-way water flow through appropriate measurement chambers, in line with demand.
- Permanently sealed, tamper-resistant register or encoder.
- Meters and encoders that are compatible with Badger Meter AMR/AMI systems and other approved reading technologies

Badger Meter ORION® and GALAXY® AMR/AMI meter reading systems are available for all Combo meters. Itron® ERT reading systems are also available. An optional summator can be provided as an integral part of the register assembly. All register options are removable from the meter without disrupting water service.

TAMPER-PROOF FEATURES

Unauthorized removal of the register or encoder is inhibited by the use of an optional tamper detection seal wire screw, TORX® tamper-resistant seal screw or the proprietary tamper-resistant keyed seal screw. Each can be installed at the meter site or at the factory.

APPLICATIONS

Use the Recordall Combo meter for measuring potable cold water in commercial and industrial applications where flow is in one direction only. The meter is an ideal choice for facilities that experience rapid and wide fluctuations in water demand, such as hospitals, universities, residential complexes and manufacturing or processing facilities.

OPERATION

As water enters the meter at low flow rates, a spring-loaded check valve on the downstream side holds the clapper assembly in a closed position. Water is diverted through a bypass to the disc measuring chamber. As the flow rate increases, a pressure differential is created that opens the check valve and allows water to flow through the turbine chamber. A small amount of water will continue to flow through the bypass when the clapper assembly is fully open.

Rotor and disc movements are transmitted by magnetic drive couplings to individual register odometers. The direct magnetic drive provides a positive, reliable and dependable register coupling for straight-reading or remote reading options. The self-lubricating thermoplastic register gearing is designed to minimize friction and provide long life.

OPERATING PERFORMANCE

The Recordall Combo meter meets or exceeds registration accuracy for low, normal operating, maximum continuous operation, and changeover flow rates as specified in AWWA Standard C702.

CONSTRUCTION

The Recordall Combo meter's construction complies with ANSI and AWWA C702 standards. It consists of a stainless steel spool with bypass port, turbine measuring chamber, a check valve with bypass piping, a disc measuring chamber, valve assembly, and sealed direct reading registers. To simplify maintenance, the registers and measuring elements can be removed without removing the meter housing from the line.

METER INSTALLATION

The meter is designed for installations where flow is in one direction only. A separate strainer is required to ensure optimum flow conditioning and protection of the measuring element. Companion flanges for installation of meters on various pipe types and sizes are available in cast iron or NL bronze as an option.

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Product Data Sheet

REGISTERS / ENCODERS

Standard—Sweep-Hand Registration

The standard register is a straight-reading, permanently sealed magnetic drive register. Dirt, moisture, tampering and lens fogging problems are eliminated. The register has a six-odometer wheel totalization display, 360° test circle with center sweep hand, and flow finder to detect leaks. Register gearing is made of self-lubricating engineered polymer, which minimizes friction and provides long life. The multi-position register simplifies meter installation and reading. The register capacity is 100,000,000 gallons (10,000,000 ft^3, 1,000,000 m^3).

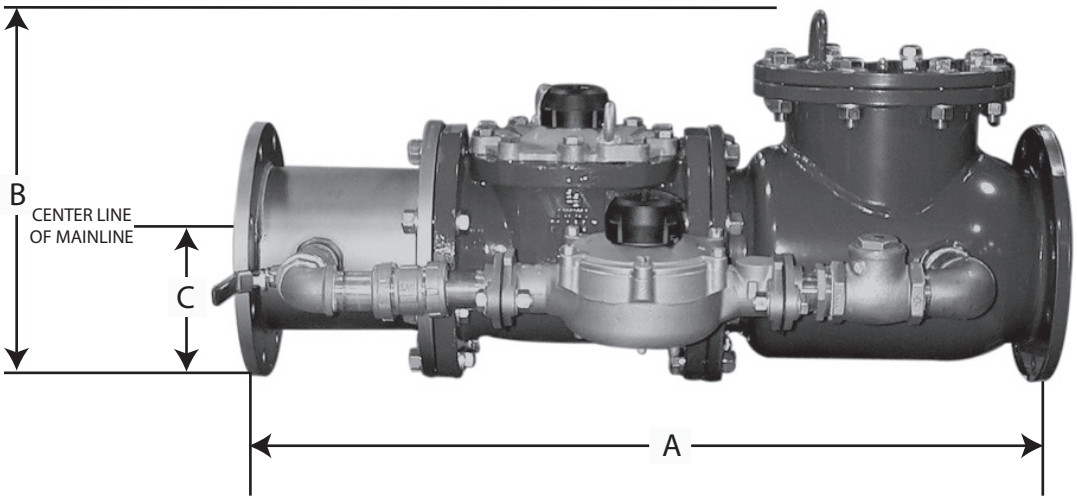
Optional—Encoders for AMR/AMI Reading Solutions

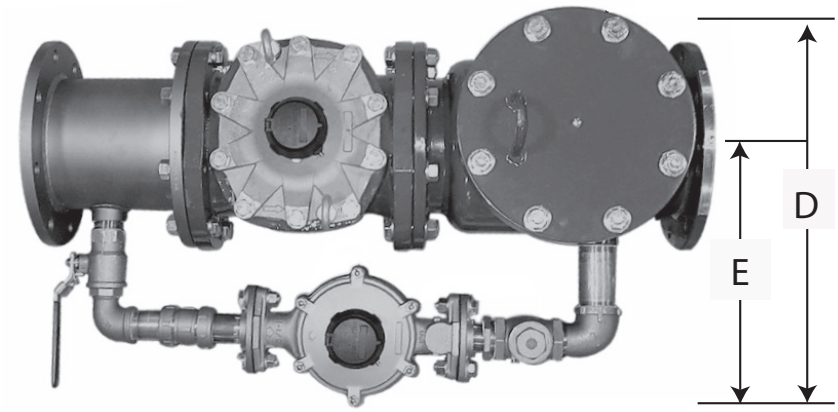
AMR/AMI solutions are available for all Recordall Combo meters. All reading options can be removed from the meter without disrupting water service. Badger Meter encoders provide years of reliable, accurate readings for a variety of applications and are also available pre-wired to Badger Meter approved AMR/AMI solutions. See details at **www.badgermeter.com**.

SPECIFICATIONS

Combo Meter Model	8" Model (200 mm)
Meter Flange, AWWA Class D (C-207)	8" (200 mm)
Typical Operating Range (100% ± 1.5%)	2.5…4500 gpm (0.56…1022 m^3/h)
Low Flow Registration (95% minimum)	1.25 gpm (0.28 m^3/h)
Maximum Continuous Flow	3500 gpm (795 m^3/h)
Pressure Loss at Maximum Continuous Flow	6.3 psi at 3500 gpm (0.43 bar at 795 m^3/h)
Pressure Loss at Crossover	2 psi (0.138 bar)
Minimum Crossover Accuracy	90%
Maximum Operating Pressure	150 psi (10 bar)
Maximum Operating Temperature	105° F (40° C)
Check Valve	Conforms to UL 312 and FM 1045
Bypass Line	Specify right-facing (standard, as shown) or left-facing assembly
Materials	
Meter Housing	Fusion-bonded epoxy coated ductile cast iron
Bypass Meter Housing	Lead-free bronze alloy
Bypass Measuring Chamber	Injection-molded thermoplastic
Bypass	Brass piping conforming to AWWA C800, NSF 61 & 372 compliant
Spool Body	Stainless steel, with stainless steel bypass port. Standard steel flange connections with zinc chromate plating.
Nose Cone & Straightening Vanes	Thermoplastic
Rotor	Thermoplastic
Rotor Radial Bearings	Lubricated thermoplastic
Rotor Thrust Bearing	Sapphire jewels
Rotor Bearing Pivots	Passivated 316 stainless steel
Calibration Mechanism	Stainless steel & thermoplastic
Magnet	Ceramic
Clapper Assembly (clapper, spring, hinge & pins)	Stainless steel
Clapper Seal	Elastomeric, EPDM
Valve Seat	Stainless steel
Valve Body & Cover Plate	Fusion-bonded epoxy coated steel
Valve Cover Plate Gasket	Elastomeric sheet
Register Housing & Cover	Thermoplastic or bronze
Trim	Zinc-plated stainless steel or (optional) all stainless steel.
Test Plug, 2"	Stainless steel or lead-free bronze

PHYSICAL DIMENSIONS

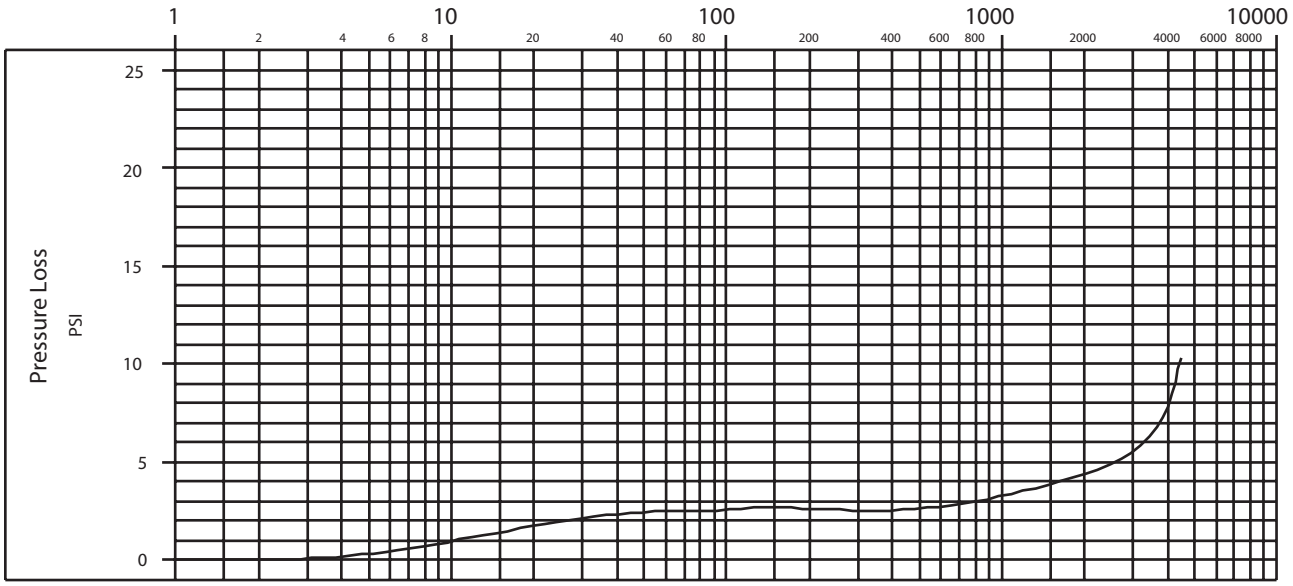




Combo Meter Model	8" Model (200 mm)
Meter & Pipe Size	8" (200 mm)
Shipping Weight (fully assembled)	357 lb (162 kg)
Length (A)	41-7/8" (1063 mm)
Height (B)	19-1/2" (495 mm)
Height (C)	6-3/4" (171 mm)
Width (D)	23-3/4" (603 mm)
Width (E)	17" (732 mm)

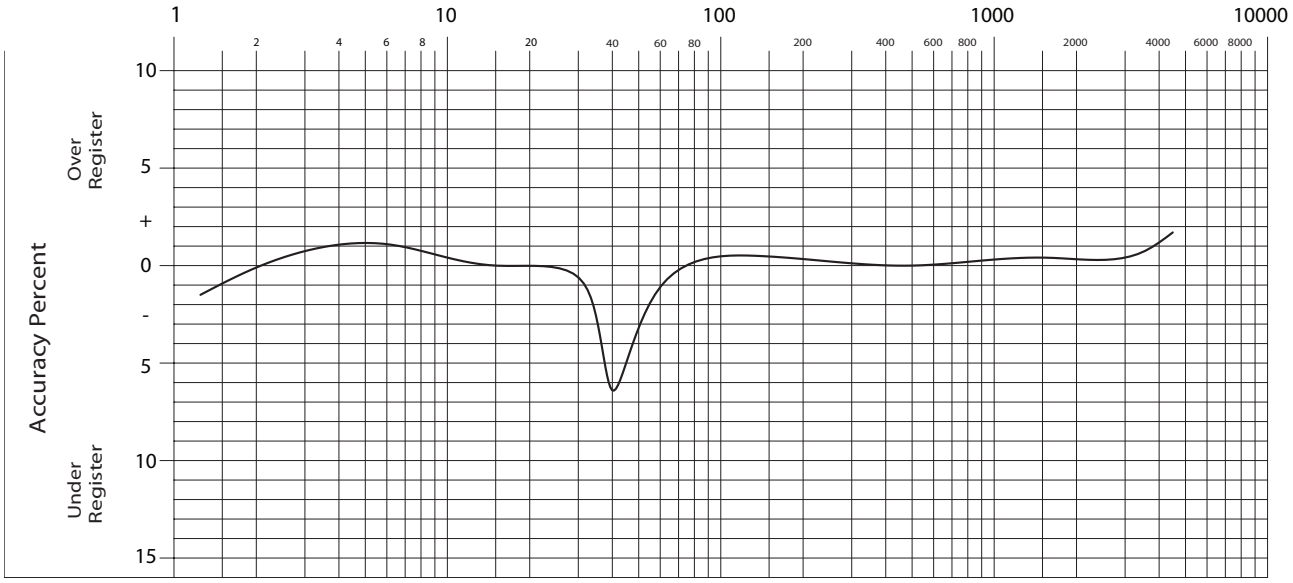
PRESSURE LOSS CHART

Rate of flow in gallons per minute (gpm)



ACCURACY CHART

Rate of flow in gallons per minute (gpm)



www.badgermeter.com

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