

DESCRIPTION

The electronic Badger Meter E-Series[®] meter utilizes ultrasonic and solid-state technology in a compact, totally encapsulated, weatherproof, and UV-resistant housing for residential and commercial applications. Electronic metering provides information and data not typically available through traditional, mechanical meters and registers, such as rate of flow and reverse flow indication, and eliminates measurement errors due to sand, suspended particles and pressure fluctuations.

The E-Series[®] meter is available with a wired lead, in-line connector or fully prewired to ORION[®] and GALAXY[®] AMR/AMI endpoints. It is also offered with the Itron[®] in-line connector, in-line connector with pit endpoint, or prewired to an Itron remote endpoint.

APPLICATIONS

The E-Series[®] meter can be used for measuring potable, cold water in residential, commercial and industrial services. It is ideal for non-potable, reclaimed, irrigation water applications or less than optimum water conditions where small particles exist.

FEATURES

- Four sizes and lay lengths
- Completely submersible IP68
- Minimum extended low-flow rate lower than typical positive displacement meters.
- Simplified one-piece electronic meter and register that are integral to the meter body and virtually maintenance free.
- Sealed, non-removable, tamper-protected meter and register.
- Easy-to-read 9-digit LCD display – presents consumption, rate of flow, reverse-flow indication, and alarms.
- Digital or industry standard encoder protocol.

MEASURING PRINCIPLE

As water flows into the measuring tube, ultrasonic signals are sent consecutively in forward and reverse directions of flow. Velocity is then determined by measuring the time difference between the measurement in the forward and reverse directions. Total volume is calculated from the measured flow velocity using water temperature and pipe diameter. The LCD display shows total volume and alarm conditions and can toggle to display rate of flow.



CONSTRUCTION

E-Series[®] meters feature a stainless steel, lead-free meter housing, an engineered plastic and stainless steel metering insert, a meter-control circuit board with associated wiring, LCD and battery. Wetted elements are limited to the pressure vessel, plastic/stainless steel metering insert and the transducers. The electronic components are housed and fully potted within a molded, engineered plastic enclosure, which is permanently attached to the meter housing. The transducers extend through the stainless steel housing and are sealed by O-rings. The metering insert holds the stainless steel ultrasonic reflectors in the center of the flow area, enabling turbulence-free water flow through the tube and around the ultrasonic signal reflectors. The metering insert's patented design virtually eliminates chemical buildup on the reflectors, ensuring longterm metering accuracy.

TECHNICAL DATA

	DN15 (1/2")	DN15 (5/8" x 3/4")	DN20 (3/4")	DN25 (1")
	Model E-25	Model E-25	Model E-35	Model E-55
	Flow rates (m3/h)			
Q1	0,00625	0,01	0,01	0,025
Q2	0,010	0,016	0,016	0,04
Q3	2,5	4	4	10
Q4	3,125	5	5	12,5
Ratio Q3 / Q1	400	400	400	400
Accuracy at normal temperature range	±1,5 % over the normal flow range +3,0 % from the extended low-flow range to the minimum flow value			
Storage temperature	-40 °C to +60 °C (-40 °F to 140 °F)			
Maximum ambient storage (storage for one hour)	72°C (150° F)			
Measured fluid temperature range	1 °C to 60 °C (34 °F to 140 °F)			
Humidity	0-100 % condensing; meter is capable of operating in fully submerged environments			
Maximum operating pressure of meter housing	12 bar (175 PSI)			
Register type	Straight reading, permanently sealed electronic LCD; digits are 7 mm (0.28") high			
Register display	<ul style="list-style-type: none"> • Consumption (up to nine digits) • Rate of flow • Alarms • Unit of measure factory programmed for gallons, cubic feet and cubic meters 			
Register capacity	40,000,000 liters 1,000,000 cubic feet 100,000 cubic meters			
Totalization display resolution	Gallons: 0.01 Cubic feet: 0.001 Cubic meters: 0.0001			
Battery	3.6-volt lithium thionyl chloride; battery is fully encapsulated within the register housing and is not replaceable; 20 year battery life			
Meter weight (without AMR)	1 kg (2.2 lbs)	1 kg (2.2 lbs)	1 kg (2.2 lbs)	1,3 kg (3.1 lbs)

MATERIALS

Meter housing	316 stainless steel
Measuring element	Pair of ultrasonic sensors located in the flow tube
Register housing and lid	Engineered thermoplastic
Metering insert	Engineered thermoplastic and stainless steel
Transducers	Piezo-ceramic device with wetted surface of stainless CrNiMo

DIMENSIONS

Model	E-25	E-25	E-35	E-55
Size designation x ley length	5/8" x 71/2"	5/8"x 3/4" x 71/2"	3/4" x 71/2" or 3/4" x 9"	1" x 103/4"
Bore size	5/8"	3/4"	3/4"	1"
Coupling nut & spud thread	3/4" x 14 NPSM	1" x 111/2 NPSM	1" x 111/2 NPSM	1 1/4" x 111/2 NPSM
Tailpiece pipe thread (NPT)	1/2"	3/4"	3/4"	1"
Service pipe thread (NPT)	3/4"	3/4"	3/4"	1"

METER INSTALLATION

The meter is completely submersible and can be installed using horizontal or vertical piping, with water flow in the up direction. The meter will not measure flow when an "empty pipe" condition is experienced. An empty pipe is defined as a condition when the flow sensors are not fully submerged.

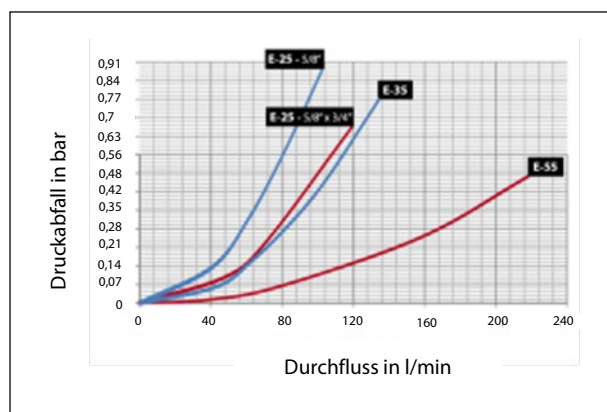
E-SERIES®-ANZEIGE



1. Billing units indicator
2. Nine-digit display with decimal
3. Consumption units of measure
4. Meter operating normally
5. Meter alarm or error
6. Reverse flow
7. Suspected leak
8. No flow over 30 days
9. Low-battery alert
10. Rate of flow units of measure

PRESSURE LOSS CHART

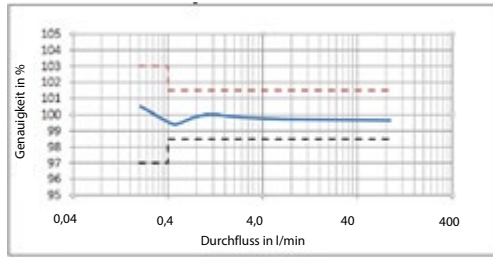
Rate of flow in liters per minute



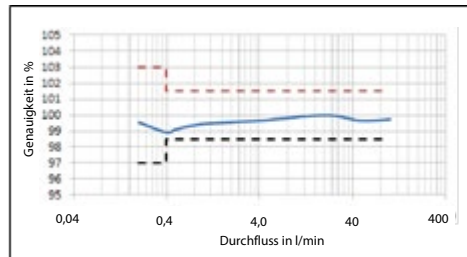
ACCURACY CHARTS

Rate of flow in liters per minute

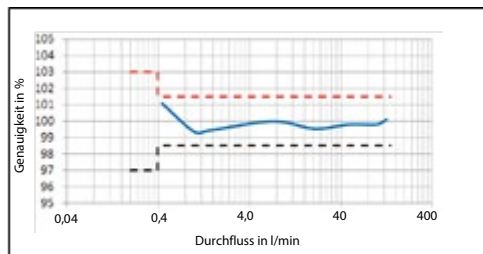
Modell E-25, 5/8" (DN15)



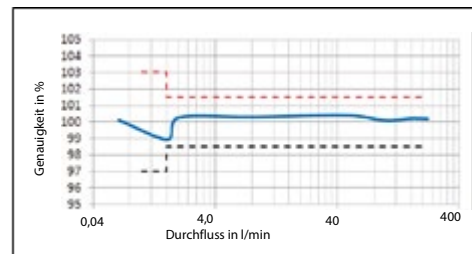
Modell E-25, 3/4" (DN20)



Modell E-35, 1" (DN20)



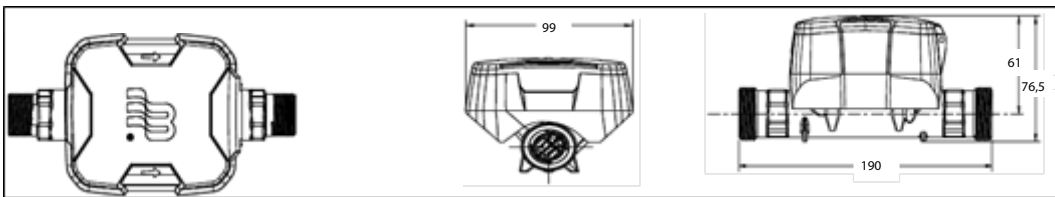
Modell E-55, 1" (DN25)



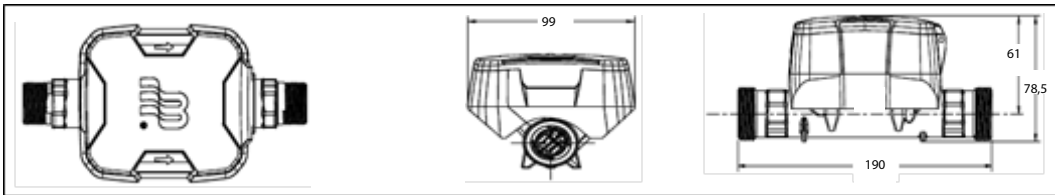
METER SPUD AND CONNECTION SIZES

Model	E-25	E-25	E-35	E-55
Size designation x lay length	5/8" x 71/2"	5/8"x 3/4" x 71/2"	3/4" x 71/2" or 3/4" x 9"	1" x 103/4"
Length (A)	190 mm (7.5")	190 mm (7.5")	190 mm (7.5") or	273 mm (10.745")
Height (B)	61 mm (2.404")	61 mm (2.404")	228 mm (8.98")	64.2 mm (2.529")
Height (C)	76.5 mm (3.014")	78.5 mm (3.014")	61 mm (2.404")	85.3 mm (3.359")
Width (D)	99 mm (3.898")	99 mm (3.898")	78 mm (3.094")	99 mm (3.898")

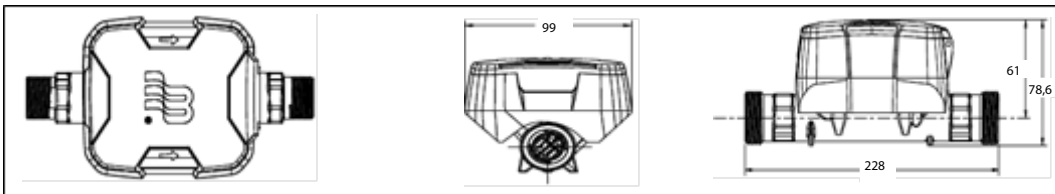
DIMENSIONS (IN MM)



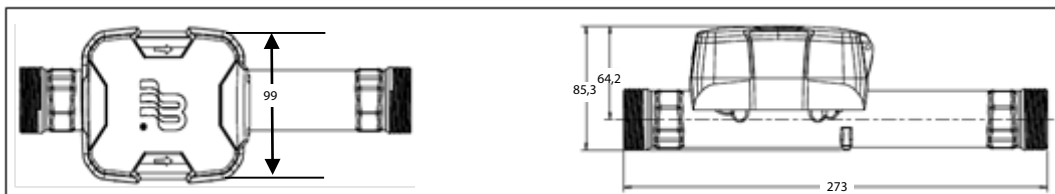
Modell E-25



Modell E-35



Modell E-35



Modell E-55