



Badger Meter Europa

MN series with standard LCD display

Types MN4 to MN50

General

The MN series large oval gear meter with electronic display is a rugged and reliable meter that can be used on a large variety of industrial applications. It has the ability to handle a wide range of fluid viscosities with exceptional levels of repeatability and durability. The standard LC display has a resettable totalizer, a non-resettable totalizer and a flow rate indicator. Various meter body and rotor materials allow application specific customization of the meter.



Standard LC display

Operation

As fluid passes through the metering chamber by entering through the inlet port, it forces the internal gears to rotate and then exits through the outlet port. Each rotation of the gears displaces a given volume of fluid. A magnet on the gears activates a reedswitch input, which is then translated into displayed units.

Applications

The MN series flow meter is designed for a wide range of applications, including petroleum based fluids, water solutions and any other industrial fluid. It is also ideally suited for non-conductive, semi-viscous fluids of any application, as long as they are compatible with the materials of construction of the meter.

Features

- Compact size.
- Flexibility of installation options (e.g. can be mounted horizontally or vertically; no flow conditioning required).
- Low pressure drop allows for economical pump selection of gravity flow applications.
- Meter construction enables fast and easy on-site servicing without removing the meter from the line.
- Meter design minimizes the number of wearable and replaceable parts and extends product life.
- Meter accuracy is verified by a factory calibration check after which an individual calibration certificate is issued.
- Will handle particle sizes to 0.011"/0.28mm.
- Display meets European CE directive.
- Standard display version has IP65/NEMA 4 protection.

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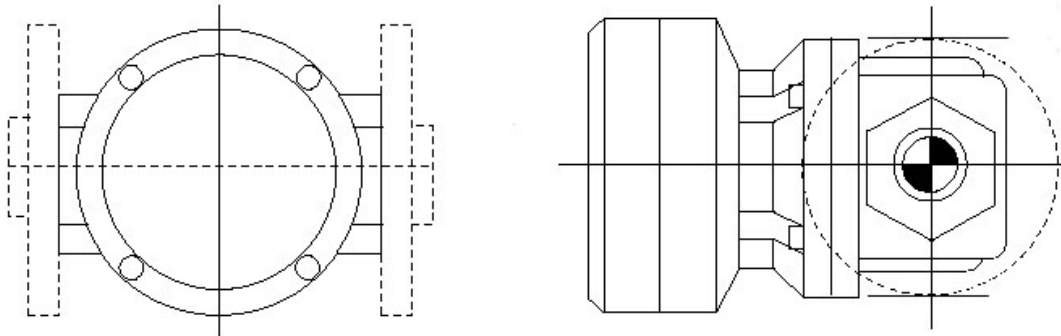
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Standard LC display

- Display: Seven 17 mm (0.67") and eleven 8 mm (0.31") digits.
- Display can be rotated in 90° steps.
- Selectable flow rate display in l, m³, Gal, USGAL, UG, KG, Lb, bbl, no unit.
- 2 totalizer displays.
- Up to 7 digits for resettable total.
- Up to 11 digits for non-resettable total.
- Factory set calibration constant (K-factor).
- K-factor also field programmable (0.000010 – 9.999999).
- Standard 8-30 VDC power supply.
- Long life 3 Volt Lithium battery as option.
- EMC compliant ref.: EN 50081 and EN 50082.



Standard LCD display

Technical specification

Display	High intensity reflective alphanumeric LCD, UV-resistant.
Digits	Seven 17 mm (0.67") and eleven 8 mm (0.31"). Various symbols and measuring units.
Refresh rate	Selectable via menu: 10 times/sec – 30 secs.
Casing	ABS – IP65 / NEMA 4.
Mounting	Round meter mount (HR) & remote wall mount (HD) versions.
Dimensions	HR 140 mm dia. x 50 mm D – HD 130 L x 114 H x 50 mm D.
Window	Polycarbonate window.
Sealing	EPDM and PE.
Control keys	Three industrial micro-switch keys. UV-resistant polyester keypad.
Pulse inputs	Type P: Coil/sine wave (minimum 20 mVpp or 80 mVpp – sensitivity selectable), NPN/PNP, open collector, reed switch, NAMUR.
Frequency	Minimum 0 Hz – maximum 10 KHZ for total and flow rate. Max. frequency depends on signal type and internal low-pass filter. Reed switch with low-pass filter: Max. 200 Hz.
K-Factor	0.000010 – 9,999,999 with variable decimal position.
Low-pass filter	Available for all pulse signals.
Remark	NAMUR type and some other signal pick-ups require external power; option PF-PM.
Further features	
Operating temperature	-30°C to +80°C (-22°F to +178°F).
Power requirements	8-30 VDC supply can be connected to power the unit – unit comes standard with the PB lithium battery point. Option PB: Internal lithium battery with an average lifetime of seven years dependent upon settings and sensor type.
Sensor excitation	Supply voltage: 3.2 VDC. Remark: Reed switch, hall effect & some signal pick-ups require external power.
Terminal connections	Removable plug strip. Wire diameter 1.5 mm ² .
Data protection	EEPROM backup of all settings. Backup accumulated total every minute
Hazardous area (optional)	Intrinsically safe (when fitted): Cenelec approval ref: EEx ia IIB T4. FM/CSA certification is pending. Maximum ambient 70°C (158°F). Option XI.
Environment	CE: EMC compliant ref: EN50081 and EN50082.
Display	Rate, total (non reset) & reset total.
Setup	Programmable from front keypad.