



**Recordall**<sup>®</sup>  
RCDL | Mechanical Flow Meters

Recordall<sup>®</sup> Series



**Badger Meter**

RDM-UM-03477-EN-01 (November 2014)

# Installation & operation instruction



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## 1. BASIC SAFETY RECOMMENDATIONS

Before installing or using this product, please read this instruction manual thoroughly.  
Only qualified personnel should install and/or repair this product. If a fault appears, contact your distributor.

### INSTALLATION

Do not place any unit on an unstable surface that may allow it to fall.  
Never place the units above a radiator or heating unit.  
Route all cabling away from potential hazards.  
Isolate from the mains before removing any covers.

### POWER CONNECTION

Use only the type of power source suitable for electronic equipment. If in doubt, contact your distributor. Ensure that any power cables are of a sufficiently high current rating.  
All units must be earthed to eliminate risk of electric shock.  
Failure to properly earth a unit may cause damage to that unit or data stored within it.

### SETUP & OPERATION

Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage, incorrect operation or loss of data.

### CLEANING

Switch off all units and isolate from mains before cleaning.  
Clean using a damp cloth. Do not use liquid or aerosol cleaners.

### REPAIR OF FAULTS

Disconnect all units from power supply and have it repaired by a qualified service person if any of the following occurs:  
If any power cord or plug is damaged or frayed.  
If a unit does not operate normally when operating instructions are followed.  
If a unit exposed to rain/water or if any liquid has been spilled into it.  
If a unit has been dropped or damaged.  
If a unit shows a change in performance, indicating a need for service.



### ROHS

Our products are RoHs compliant.

### BATTERY DISPOSAL

The batteries contained in our products need to be disposed of as per your local legislation acc. to EU directive 2006/66/EG.



## 2. BEFORE THE FIRST INSTALLATION



Please flush the meter with fresh water or the medium to measure before the first installation.

## 3. INSTALLATION

Before installing a meter in a new or modified pipework, the complete pipe system should be cleaned to remove any impurity like solder, sealing material, welding beads, etc. Inlet and outlet straight pipe runs are not necessary. All mounting positions are possible.

To avoid misalignment and possible damage of the meter housing and/or threads, it is recommended to mount the meter using watermeter brackets or Badger Meter flexible watermeter connections, which can offset a pipe misalignment of max. 16°. Install the meter in such a way that no stress nor strain does effect the meter housing in order to avoid any damage of threads and/or meter housing. Make sure that the arrow on the meter housing shows in flow direction.

In case a solenoid valve is used in connection with very frequent switching cycles, the valve should be mounted on the inlet side of the meter in order to avoid pressure shocks. To maintain fullpipe conditions, a non-return valve may be mounted at the outlet. To ensure an exact measurement, please make sure that the measuring chamber is always fully filled.

## 4. PUTTING INTO OPERATION

As with any fine instrument, care must be taken in the installation. Your particular meter may be of special design and may require special information, however, these tips cover several points of concern with all models.

**Please verify the following prior to installation and operation.**

	Yes	No
— Has the piping system been cleaned and is free of any dirt and particles?	<input type="checkbox"/>	<input type="checkbox"/>
— Has a strainer been installed at the inlet of the meter? (only for P series)	<input type="checkbox"/>	<input type="checkbox"/>
— Is mounting position as per requirement?	<input type="checkbox"/>	<input type="checkbox"/>
— Is flow direction in accordance with the arrow marking?	<input type="checkbox"/>	<input type="checkbox"/>
— Is flow direction in accordance with the arrow marking?	<input type="checkbox"/>	<input type="checkbox"/>
— Is operating flow within specifications? (The maximum specified flow rate is an instrument maximum design flow rate and is not recommended for continuous operation. For optimum performance a continuous flow rate should not exceed 65% of design maximum)	<input type="checkbox"/>	<input type="checkbox"/>
— Is material compatibility verified and confirmed by Badger Meter?	<input type="checkbox"/>	<input type="checkbox"/>
— Is operating pressure within limits?	<input type="checkbox"/>	<input type="checkbox"/>
— Have measures been taken, in case of low viscous fluids, that the pressure drop across the meter does not exceed 1.0 bar?	<input type="checkbox"/>	<input type="checkbox"/>
— Is operating temperature within limits?	<input type="checkbox"/>	<input type="checkbox"/>
— Have measures been taken to avoid pressure shocks? In case a solenoid valve is used in connection with very frequent switching cycles, the valve should be mounted on the inlet of the meter. To maintain full pipe conditions a non-return valve may be mounted at the outlet.	<input type="checkbox"/>	<input type="checkbox"/>
— Does wiring comply with attached wiring diagram?	<input type="checkbox"/>	<input type="checkbox"/>
— Have you carefully read the operating manual?	<input type="checkbox"/>	<input type="checkbox"/>

**ATTENTION: BEGIN START-UP ONLY ONCE YOU HAVE ANSWERED ALL QUESTIONS WITH YES.**

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When putting into operation, always open the upstream valve slowly to apply with the fluid pressure of the meter and avoid any pressure shocks.

Please make sure that the following parameters are always observed:

- a) Maximum operating pressure is 16 bar for the M-series and 10 bar for the P-series.
- b) Maximum operating temperature is 50 °C for plastic meters and 120 °C for bronze meters with Vectra chamber.
- c) Meters must always be operated within the specified flow range.
- d) Maximum pressure drop across the meter is 1 bar for low viscous fluids and 3,4 bar for liquids up to maximum 800 mPas.

## 5. METER CLEANING

Clean parts in isopropyl alcohol, methanol (wood alcohol) or ethanol (grain alcohol). If necessary, use a nylon bristle brush, but never a wire brush! Lime deposits may be removed with a five minute soak in regular household vinegar followed by scrubbing with a nylon bristle brush. Then soak parts in a 1% solution of water and detergent prior to rinsing them with clear warm water.

## 6. WHEN USED IN EX-ZONES

Reedswitch: Connection to intrinsically safe electric circuit (simple electrical equipments must be operated intrinsically safe with a suitable barrier according to EN 50020).

Equipotential compensation has to be ensured upon the pipe system.

Meters with plastic housing (PPO): Please do not clean the meters with a dry cloth as this would cause electrostatic charge.

The fluid conductivity must be better than 1000 pico/Siemens/meter to avoid electrostatic charge.

Ambient temperature must be between -20 °C and +40 °C (T4).

## 7. RETURN OF GOODS FOR REPAIR / HARMLESSNESS DECLARATION

Please refer to our claims return form/harmlessness declaration under

<https://www.badgermeter.de/en/service/return-of-goods.html>

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**Control. Manage. Optimize.**

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