

Installation instructions

Ultrasonic water meter

ElecTo Bulk

Important

Before installing the meter, please read this manual carefully.

This instruction sheet is for qualified technicians and does not contain the basic installation instructions.

The design and specifications of the meter may change and may not correspond to the description contained in these instructions. In this event refer to the meter. These changes do not affect meter operation. For information contact the manufacturer.

ElecTo Bulk is a precision instrument. Before leaving the factory it undergoes strict tests and is intended to be used by qualified personnel.

If the meter fails to operate properly or requires repair, contact the manufacturer or an authorised dealer.

Do not shorten or lengthen the cable. This might affect meter performance.

The meters undergo strict tests before leaving the factory. Maintenance, replacement of components and calibration must be carried out only by qualified personnel.

Contact the manufacturer for technical support.

In the event of loss of measuring data due to malfunction or other causes, the manufacturer commits to recover the data. The manufacturer undertakes no responsibility if the loss of measuring data is caused by the user or by failure to back up data.

The meter may be provided with a built-in pressure sensor for pipe pressure monitoring (optional).

Choice of the water meter

Before installing the meter ensure that the nominal diameter, nominal flow rate, working temperature and pressure are compatible with the operating conditions.

Transport and storage

Water meters are precision instruments: handle with care and protect from shocks and vibration.

Store the meters in a frost-free place. Defrosting of the meter is a delicate operation.

Store the meters in a dry place, at a temperature between 0 °C and +50 °C. Do not expose to direct sunlight.

Recommendations for the installation

Before installing the meter check that the two pipe sections are aligned in order to avoid mechanical stress. Clean the two pipe sections carefully (especially if the system is empty) and allow water to flow in the pipe for some time using a pipe section instead of the meter.

If there is no water in the system, open the upstream valve before installing the meter. This is necessary to avoid negative pressure from building when opening the valve at the end of the installation procedure because it might damage the meter.

If the meter is installed in vertical or inclined position, the pipe must always be full of water.

Install the meter where it will be safe from frost (if necessary protect the meter with insulating material) and possibly in the lowest part of the system to prevent air from building up.

Install the meter in a place where it will be protected from tampering and impact, and where it can be read easily.

Install the meter ensuring that the flow direction arrow on the body points in the same direction as the flow.

It is advisable to install a valve upstream and downstream of the meter in order to enable maintenance and verification of the meter and monitoring of the system.

Operating conditions

Temperature class: T30/T50

Admissible pressure (MAP): 16 bar

Straight pipes and flow straighteners

For the usage of upstream and/or downstream straight pipes refer to the letters U and D marked on the dial. If the letters U and/or D are followed by the letter S, a flow straightener must be installed.

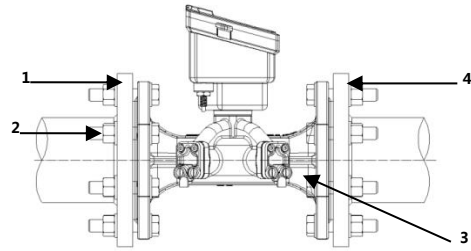
Battery

The battery has a service life of 13 years. It is recommended to replace the battery before it is completely discharged in order to avoid malfunction.

The battery must be replaced by qualified personnel.


Installation procedure

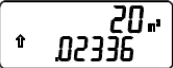
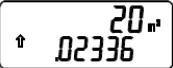
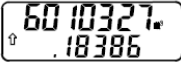
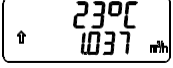
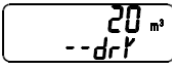

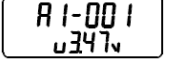
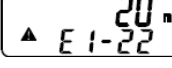
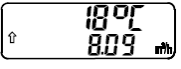

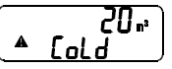
1. Counter flange
2. Bolts
3. Meter body
4. Flange

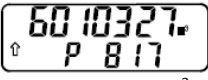
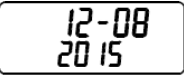
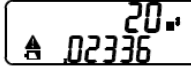

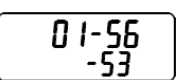
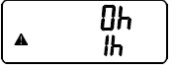
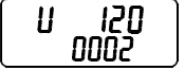
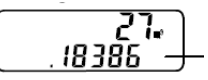

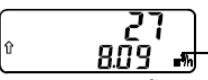

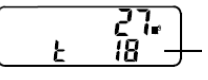

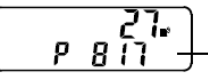


- Position a gasket on each flange.
- Connect the meter (2) to the pipe. Ensure that the flow direction is correct.
- Position the meter's flange (4) on the counter flange (1) and tighten it with the bolts provided (3). Ensure that the gasket is in the right position and in line with the flange.
- Tighten the bolts.
- Before positioning the gasket ensure that it is not damaged. Ensure that the gasket is not damaged during the installation. Ensure that the gasket is in the right position and in line with the flange.
- Ensure that the gaskets are tight to prevent leaks.
- Ensure that the gasket do not protrude from the pipe.
- Ensure that the flange surface is clean and is not damaged.
- Ensure that the bolt holes of flanges and counter flanges are aligned.

Liquid crystal display

- The meter has two menus: a primary menu (standard) and a secondary menu (with details)
- To move from the primary menu to the secondary menu use the reading software.
- The primary menu has a standard mode and a single screen view mode.
- To move from one menu item to another press the magnetically operated button using a magnetic pen.
- The magnetically operated button is indicated by this pictogram: 

Primary menu	Secondary menu	Faults
Primary menu - Standard mode  Volume flowed	 Volume flowed	If several faults occur simultaneously, the error codes are displayed in order.
 Volume flowed (default view)	 Water temperature (°C) Instantaneous flow	 Pipe empty
 Backflow (not displayed by default; the backflow can be displayed by changing the settings with the reading software and selecting the relevant mode).	 Primary address Battery voltage	 E1-11: measuring channel no 1 – circuit fault E1-22: measuring channel no 1 – transducer fault or air in the measuring channel or short width signal E2-11: measuring channel no 2 – circuit fault E2-22: measuring channel no 2 – transducer fault or air in the measuring channel or short width signal
 Water temperature Instantaneous flow	 Secondary address	 Water temperature low (the error message is displayed if the temperature is lower than 4 °C)

Primary menu	Secondary menu	Faults
 <p>Volume flowed: m³ Pipe pressure (kPa, version with pressure sensor only)</p>	 <p>Current date: month-day Current date: year</p>	 <p>Battery low</p>
 <p>Display test</p>	 <p>Current time: hours-minutes Current time: seconds</p>	
<p>Primary menu - Single screen view mode First line: always displays the volume flowed in m³. Second line: displays the volume flowing (or instantaneous flow rate) in litres. To view further data use the magnetically operated button.</p>	 <p>Total operating time Total non-operating time</p>  <p>Version of main firmware Version of metrological firmware</p>	
 <p>Default display With no flow: volume flowed in submultiples With flow: instantaneous flow</p>	 <p>Time difference between signal transmission</p>	
 <p>Instantaneous flow</p>	 <p>Calibration parameters Transducer signal voltage</p>	
 <p>Water temperature (in °C)</p>	 <p>Display test</p>	
 <p>Pipe pressure (kPa, version with pressure sensor only)</p>		

Seals

The meter is sealed. It cannot be opened without breaking the seal. Meters must be serviced only by an authorized centre.

Do not alter or remove the meter's seal. If the seal has been altered or removed the warranty is void.


Hazardous substances contained in the water meter

Component	Toxic or hazardous substances or chemicals					
	Lead Pb	Mercury Hg	Cadmium Cd	Hexavalent chromium Cr (VI)	Polybrominated biphenyl PBB	Polybrominated diphenyl PBDE
Water meter	○	○	○	○	○	○

○: Indicates that the maximum concentration of toxic or hazardous substances in all homogeneous materials does not exceed the limit established in SJ/T11363-2006.
 x: Indicates that the maximum concentration of toxic or hazardous contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.

Remarks

- The table indicates that the manufacturer's instruments may contain the above substances. However information may change with evolving technology.
- The above information is exclusive property of the manufacturer.
- Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) prescribes that the manufacturer or authorized dealer must take back waste electrical and electronic equipment (WEEE).



The water meter must not be disposed of with household waste.

Packing list

- Ultrasonic water meter model E Bulk
- Installation instructions and declaration of conformity

Declaration of conformity

This is a shorter version of the declaration of conformity. The full version is available on the website www.maddalena.it.
 Maddalena S.p.A. hereby declares that the ultrasonic water meter model ElecTo Bulk complies with Directive 2014/32/EU and Standard ISO 4064.

Sales and warranty terms

The sales and warranty terms are available at www.maddalena.it.

Manufacturer

Maddalena S.p.A.
 Via G.B. Maddalena, 2/4
 33040 Povoletto (UD), Italy
 Tel. +39 0432 634811
www.maddalena.it