



Operating manual

Flow Meter

Z 400

Item-No.: 253010100, 253010101, 253010102, 253010104, 253010105,
253010122, 253010140, 253010141, 253010142, 253010143

Important!

The operating manual is always to be read before commissioning the equipment. No warranty claim will be granted for faults and damage to the equipment arising from insufficient knowledge of the operating manual.

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Document-No.: 44 0260 004GB-A
As of: 22.01.2015

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1. Safety instructions

The device is a state of the art piece of equipment and has been constructed according to recognised safety specifications. It is nevertheless possible that use of the device will present hazards to the operator or to third parties, or may damage the device or other property. It is therefore essential to act in accordance with these safety instructions, and in particular with those sections identified as warnings.

Warning notices and symbols

In the operating manual, the following signs are used for highlighting important information.



Special information for economical use of the equipment.



Special information or "dos and don'ts" for damage prevention.



Information or "dos and don'ts" for the prevention of damage to persons or equipment.

Appropriate use



The device may only be used if it is in perfect condition, and then only for its intended purpose, in compliance with all safety regulations, with an awareness of the potential risks, and according to the operating manual. Any faults that may impair the safety must be rectified immediately.



The device and its components are only to be used for handling the liquids listed and the purpose described. Using the machine for any other purpose would constitute inappropriate use. The manufacturer is not responsible for any loss arising as a result of this, the risk for this is borne only by the operating company.

Organisational measures



This operating manual should always be kept readily available at the site of operation! Each person concerned with the assembly, commissioning, maintenance and operation of the equipment must have read and understood the entire operating manual. It is essential that the type plate and the warning notices attached to the device are observed, and are maintained in a fully readable condition.

Qualified personnel

- ! The operating, maintenance and assembly personnel must be appropriately qualified for their work. The areas of responsibility, competences and supervision of the personnel must be precisely regulated by the operating company. If the personnel do not have the required knowledge, they must be trained and instructed. The operating company must also ensure that the contents of the operating manual are properly understood by the personnel.

Waters protection



The device has been designed to handle water hazardous substances. The regulations on the operating place (e.g. Water Resources Act WHG, = ordinance on installations for handling of substances hazardous to water VAWS) must be adhered to.

Hydraulics



Only persons with special knowledge and experience with hydraulic systems may carry out work on hydraulic parts and equipment. All lines, hoses and screw joints should regularly be checked for leaks and visible external damage. Any damage must be rectified immediately. Any oil spurting out can cause injuries and fire.

The relevant safety regulations for the product must be followed when handling oils, greases or other chemical substances!

Maintenance and Service



According to the regulations of the water resources law only authorized services may work on devices for flammable and/or water endangering substances. During such works, appropriate tools are to be used (avoid sparking). Before any kind of work on the device, all fuel lines are to be completely emptied and aerated.

Do not make any changes. Modifications or additions to the device which may affect the safety cannot be carried out without consent of the manufacturer. Exclusively genuine spare parts made by the manufacturer may be used.

Electric power



Work on the electrical equipment may only be carried out by a qualified electrician or by trained persons under the guidance and supervision of a qualified electrician according to electro-technical guidelines. Machine or system components, on which inspection, maintenance or repair work is to be carried out must be de-energised. Product description

2. Technical Description

2.1 Description

The meter Z 400 is a mechanical meter with nutating disc. The nutating discs moved by the delivered medium and transmit the turning motion – in proportion to the liquid flow via a gear mechanism to the visual indicator mechanism.



The Z 400 must not be operated with combustible and explosive liquids from hazard material classes AI, AII and B. Liquids of hazardous material class A III must not be used, if they are heated above their flash point.

2.2 Technical Data

principle of measurement	nutating disc meter
range of measurement	20 l/min up to 120 l/min
operating pressure	3,5 bar
bursting pressure	28 bar
operating temperature	-20°C up to +80°C
accuracy	+/- 3 %
repetition	+/- 1%
indication of partial quantity meter	4 digits 18 mm high
indication of summation meter	8 digits 6 mm high
connection	G 1" internal thread
weight	1,8 kg

3. Assembly

The meter Z 400 can be mounted in each position according to the marked (see arrow) flow direction. By turning the meter and the cover of 90° other configuration are possible.

At the back side of the meter are four drillings prepared for M5-threads. By means of these threads a wall-installation at connection of hoses is possible.



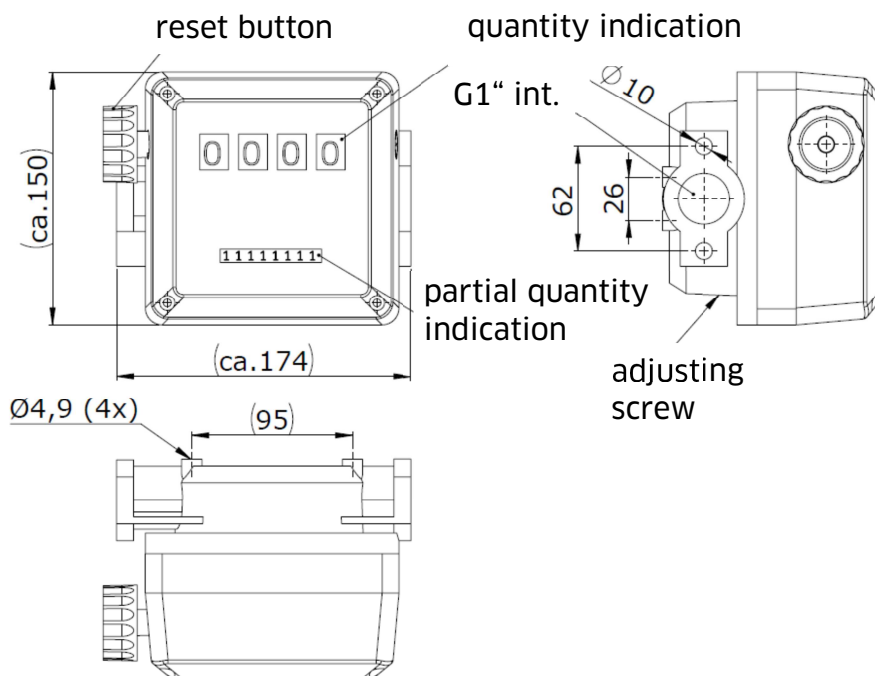
Dirt particles in the delivered medium can influence the correct operation of the measuring chamber. Therefore it is necessary to install a suitable filter in front of the meter.

4. Calibration

The Meter Z 400 is for the use of Diesel precalibrated by manufacturer. Since the operational conditions as well as the effective capacity and viscosity of the liquid can influence the accuracy of the meter, a new calibration of the meter after installation is possible.

A calibration is required if the meter has been dismantled for repairs or if another liquid instead of Diesel has to be delivered.

1. Loosen plug.
2. Vent whole unit (constant beam comes out after switch on the pump).
3. Stop flow rate by closing nozzle without switch off the pump.
4. Turn partial quantity indication with reset button to zero.
5. Fill a basin (volume of at least 20l) with the flow quantity which requires the highest accuracy. Keep the flow rate constant until the marking of the volume is reached.
6. Compare the instructions on the basin (effective value) with the instruction of the litre-counter (dispensed quantity).
 - When the indicated value crosses the effective value, turn out the adjusting screw.
 - When the indicated value falls below the effective value, turn in the adjusting screw.
7. Repeat steps 4 to 6 until satisfied result is reached.
8. Turn plug tightly.



5. Operating instruction

1. After installation and possible calibration the meter can be used immediately.
2. The partial quantity indication can be resetted by turning the reset button. The total quantity indication is not resettable.

Make sure that the operating pressure mentioned in passage 2.2 is not crossed.
Before starting operation check the meter for dirt caused by packing.

6. Disposal

The device is to be emptied completely and the liquids properly disposed of in case it is taken out of service.

The equipment is to be disposed of properly when taken permanently out of service:



- Return old metal for recycling.
- Return plastic parts for recycling.
- Return electronic waste for recycling.

 **The water legal regulations are to be followed.**

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