elster
Instromet

Ultrasonic Flow Meter

Series 6

Manual
Shipping and Storage

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Contents

1 General Information

1.1 About these Instructions

This document provides general instructions for packing, handling, and storage of an Elster Series 6 Ultrasonic Flow Meter (UFM).

If you have any questions, or need further details of specific matters concerning this product, please do not hesitate to contact one of our staff members, email: **aftersales@elster-instromet.com**. (Or see more address information on page 2).

This document is based on the latest information. It is provided subject to alterations. We reserve the right to change the construction and/or configuration of our products at any time without being obliged to update earlier supplies.

This document only contains shipping and storage information regarding a Series 6 UFM from Elster. For general information, please refer to the Operation and Maintenance Manual for your particular flow meter (latest valid revision). Before performing any activity on the ultrasonic flow meter, please familiarize yourself with the UFM Series 6 Safety Instructions (⇨ refer to Appendix I – References). Both of these documents are also available online at **http://www.docuthek.com/**.

1.2 Limitation of Liability

This manual is based on the latest information. It is provided subject to alterations. We reserve the right to change the construction and/or configuration of our products at any time without obligation to update previously shipped equipment.

The warranty provisions stipulated in the manufacturer's Terms of Delivery are applicable to the product. The manufacturer shall have no obligation in the event that:

- Repair or replacement of equipment or parts has been required through normal wear and tear, or by necessity in whole or part by catastrophe, or the fault or negligence of the purchaser;
- The equipment, or parts, have been maintained or repaired by other than an authorized representative of the manufacturer, or have been modified in any manner without prior express written permission of the manufacturer;
- Non-original parts are used;
- Equipment is used improperly, incorrectly, carelessly or not in line with its nature and/or purpose;
- Use of this product with unauthorized equipment or peripherals, including, but not necessarily limited to, cables, testing equipment, computers, voltage, etc.

The manufacturer is not responsible for the incidental or consequential damages resulting from the breach of any express or implied warranties, including damage to property, and to the extent permitted by law, damage for personal injury.

Read through these Shipping and Storage instructions carefully before beginning any work.

The manufacturer assumes no liability for loss and malfunctions that result from non-compliance with these instructions.

We reserve the right to make technical changes within the scope of improving performance characteristics and continuous development of the device.

Current warranty conditions in the General Terms and Conditions are available on our website:

http://www.elster-instromet.com/en/general-terms-of-business

1.3 Text Labelling

This manual employs consistent visual cues and standard text formats to help you easily locate and interpret information. This information will help you quickly identify relevant content.

1.3.1 Presentation of Safety and Risk Instructions

Hazard Warnings

Hazard warnings indicate hazardous situations which may result in material damage and bodily harm or even death if disregarded.

Hazard warnings are described below:

DANGER WORD!

Type of danger

Consequences in case of non-compliance

Avoiding danger

Safety Instructions

Safety instructions include notes and information which if disregarded may lead to functions not working correctly or not working at all.

Safety instructions are described below:

Safety instruction (optional)

Safety instruction text

Tips and Recommendations

Tips include notes and information that make it easier for the user. Tips are described below:

Heading (optional)

Hint text

1.3.2 Paragraph Formats

► This triangle prompts you for an action.
✓ This character will show you the immediate result of your action.

Example

Multi-row examples are marked by two continuous blue lines and the keyword “Example”.

1.3.3 Character Formats

Example	Use
⇨ See Chapter 4 Shipping & Storage (p.12)	References to additional information are marked with an arrow. If the arrow refers to information within the document, these references are formatted as hyperlinks in blue font. You can go directly to the corresponding section by clicking on the blue text.
www.docuthek.com	links (Hyperlink)

Table 1: Character formats

2 Preservation

The preservation of an ultrasonic gas flow meter is meant to guarantee a proper and safe condition of the device during packing, transport, installation and operating lifetime. Preservation includes quality control of coating as described by painting procedure, quality control of packing and packing material and visual inspection of the product before and after transport.

2.1 Application

This procedure applies to the required inspections, treatment, and handling of an Elster Series 6 UFM before shipment of the equipment to a calibration site or to the delivery address as specified by the contractor.

2.2 Conditions of Preservation

In order to start the preservation procedure the following conditions must be met:

- A successful hydrostatic pressure test of the ultrasonic gas flow meter body, confirmed with a hydrostatic test certificate, wet stamped and duly signed by an inspecting and certifying authority.

- A fully completed painting and/or finishing procedure of the spoolpiece(s) according to the contractor's specification or otherwise to the Elster company protocol. A supporting painting report has to be available.

- A successfully completed assembly and Factory Acceptance Test (FAT) of the ultrasonic gas flow meter confirmed by a Factory Acceptance Test Report by Elster.

The above mentioned conditions are parts of the Inspection Test Plan (ITP) of Elster and are inspected correspondingly.

2.3 Specification of Preservation

After completion of the Factory Acceptance Test the ultrasonic gas flow meter will be ready for shipment. The following precautions shall be taken in order to prevent any damage to the meter:

- The spoolpiece(s) to be transported shall be visually inspected before packing. Dirty, damaged or corroded surfaces are not allowed. Defects shall be reported and repaired before continuing the packing and shipping of the ultrasonic gas flow meter.

- The pipe ends and uncovered flange faces of the ultrasonic gas flow meter shall be covered with caps. This is to prevent the spoolpiece from getting dirty or damaged during transport and/or storage.

- A suitable packaging, for instance a cardboard or wooden box made according to company specification (for an example ⇨ see Chapter 5 - Packing Example [p.14]), has to be available which is able to carry the ultrasonic flow meter and guarantees protection of the ultrasonic flow meter against damage during transport.

- A set of documents shall be shipped together with the equipment:
  - A correctly addressed packing list, one enclosed in the box and one or more on the outside of the box.
  - Safety prescriptions for the ultrasonic flow meter.
  - Additional export documents (when applicable).

3 Packing

3.1 Packing Preparations for Re-Transportation of an UFM from a Site

Before packing the UFM:

- Depressurize the measuring line and make sure the dismounting of the UFM can take place in a safe environment. Unwire the UFM from the Flow Computer according to your user manual.
- Make sure that all entries are properly closed. Close open glands with e.g. piece of cable to prevent dust or water entering the SPU.

Transducer Cables – Do not remove!

Do not remove transducer cables or disassemble any transducers. Some transducer models do not contain serviceable parts and may not be disassembled, tightened or loosened at all!

- If a Flow Computer is shipped along as well, this must be packed in a separate box. Take necessary precautions when putting that package in the box together with the UFM.
- A flow conditioner can be transported in the same box with the UFM.
- The UFM should be transported in a suitable box, ensuring the UFM cannot roll over and with extra support of the SPU (this can be either cardboard, wood, or ….). For re-transportation, it is easiest to use the same box the meter has arrived in. However, check if this box is still suitable and in perfect condition!

After these preparations are made, continue with the packing instructions listed below.

3.2 Packing Instructions

The following packing instructions ensure a safe and secure transport for an UFM:

- Protect the flowcell from corrosion during long term storage by applying a long term coating (e.g. Tectyl, ENSIS DW 2462 or VCI [Vapor Corrosion Inhibitor] impregnated foam) on unpainted surfaces (inner wall, flange faces). Do not coat the transducer and sensor faces.
    - In case of short term coating, it's sufficient to moisten the inside of the spoolpiece with an oil coating. Do not coat the transducer and sensor faces.
    - On the attached safety prescriptions it should be clear which corrosion protective method is used.
- Use a suitable crane or fork-truck to lift the spoolpiece and place it on the spool supporting parts of the box. While the spoolpiece is lifted in the air, remove the supporting legs from the ultrasonic flow meter. Place them in a secure place in the box.
- When packed by Elster, a document with Safety prescriptions for the UFM is clearly attached to the explosion proof box in a visible location.
- Depending on the type of transportation box being used, extra care needs to be taken to ensure the meter is in a stable and fixed position.
- If applicable, the flow conditioner can be packed in the box as well. Ensure it is properly fixed.
- Before closing the box, take pictures of the gas flow meter fixed in the box (and the flow conditioner, if applicable).
- Put the shipping documents on the outside of the box in a fixed and secure position.

4 Shipping & Storage

4.1 Shipping Instructions

Always use a fork-lift or fork-truck for transportation; loading onto and unloading of the packed ultrasonic gas flow meter from a lorry. The wooden cover of the box is not suitable for the use of strap belts and a crane.

CAUTION!

A crane and strap belts are only to be used to lift the ultrasonic gas flow meter from the box by means of the lifting lugs.

The dimensions and weight of the package depend on the type and size of the ultrasonic flow meter and are to be specified on the packing list.

Tip!

For larger ultrasonic gas flow meters and complete stations the centre of gravity is roughly to be found in the centre of the bottom plane of the box and at 1/3 of the total box height.

4.2 Storage Instructions

If the ultrasonic gas flow meter equipment needs to be stored for a certain period of time before installation the following storage conditions apply:

- Do not ever pile packages (crates or boxes).
- To protect the meter from corrosion; it is recommended to use one of the following:
    - VCI (Vapor Corrosion Inhibitor) impregnated foam,
    - Tectyl coating on all non-coated areas of the spoolpiece (e.g. inside, flange surfaces, etc.). Please see the following safety information in regards to the Tectyl coating:

Be Aware!

Do not spray the optional pressure sensor opening and never use any coating on the surface of the transducers. This could permanently damage the transducers!

When the Tectyl coating has dried out, removal may take some effort. Use a cloth and a solvent for this (e.g. solvent thinner). However, do not clean the face of the transducer with solvent. If cleaning of the transducer is needed, which should not be the case, use only a dry cloth.

- Storage air temperature: -20 °C - +60 °C.
- Storage relative air humidity: 5% - 95% non-condensing.
- If a Flow Conditioner is provided with the meter, treat this as a non-coated area of the meter and apply Tectyl coating to protect it from corrosion.

Long Term Storage:

If the meter is going to be stored for a very long time or when the storage-period is unknown, please also follow these *extra* restrictions:

- Store the meter inside, in sheltered conditions.
- Keep storage temperature between 0°C and +60°C.

5 Packing Example

Cardboard Box Package:



Wooden Box Package:


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Appendix I – References

All references listed below can be obtained from Elster. Additionally, most references are available online at: **http://www.docuthek.com/**.

[1] UFM Series 6 Q.Sonic^{plus} Operation and Maintenance Manual
SAP Ref.: 73023467
Doc. No.: 10000050188 (last valid revision)

[2] UFM Series 6 CheckSonic Operation and Maintenance Manual
SAP Ref.: 73023471
Doc. No.: 10000050192 (last valid revision)

[3] UFM Series 6 Q.Sonic^{max} Operation and Maintenance Manual
SAP Ref.: 73023477
Doc. No.: 10000051506 (last valid revision)

[4] UFM Series 6 Wiring Instructions
SAP Ref.: 73023470
Doc. No.: 10000050191 (last valid revision)

[5] UFM Series 6 Shipping and Storage Manual
SAP Ref.: 73023469
Doc. No.: 10000050190 (last valid revision)

[6] UFM Series 6 Safety Instructions
SAP Ref.: 73023465
Doc. No.: 10000050186 (last valid revision)

[7] UFM Series 6 Modbus Protocol
SAP Ref.: 73023466
Doc. No.: 10000050187 (last valid revision)

[8] UFM Series 6 Transducer Exchange at Atmospheric Conditions
SAP Ref.: 73023472
Doc. No.: 03.200.001.001/02/2 (last valid revision)

[9] Retraction Tool NG Transducers
SAP Ref.: 73023473
Doc. No.: 03.203.101.001.02/2 (last valid revision)

[10] UFM Series 6 Exchanging PCB boards in TIP
SAP Ref.: 73023474
Doc. No.: 03.303.101.000.02/2 (last valid revision)

[11] UFM Series 6 Exchanging Boards at the Rear Compartment of the SPU
SAP Ref.: 73023475
Doc. No.: 03.302.101.000.02/2 (last valid revision)

[12] External VDSL Range Extender User Manual
SAP Ref.: 73023483
Doc. No.: 10000050357 (last valid revision)

[13] UFM Series 6 SonicExplorer Software Application Manual
SAP Ref.: 73023308
Doc. No.: 10000050563 (last valid revision)