



Ultrasonic Flow Meter Series 6

Retraction Tool UT NG

Manual
Exchanging UT-NG at
atmospheric conditions

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Contents

1	Preface	4
1.1	About these instructions	4
1.2	Relevant user documentation	5
1.3	Limitation of liability	6
2	Preparation	8
3	Removing UT-NG transducer	9
4	Inserting UT-NG transducer	11
5	Finalizing replacement	13

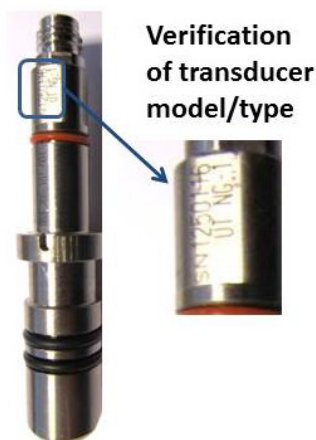
1 Preface

1.1 About these instructions

This document describes how to replace an ultrasonic transducer model UT-NG on an Ultrasonic Flow Meter Series 6. The Ultrasonic Flow Meter Series 6 is also referred to as USM Series 6, UFM Series 6 or Q.Sonic Series 6.

UT-NG transducer may exist in different types: UT-NG-n (where n stands for differences in size, material, etc.). The transducer may only be replaced with the exact same model and type. Only with explicit authorization from Elster a different model/type can be exchanged.

You find the model/type on the transducer.



**WARNING!**

Installation may only take place at atmospheric conditions and no explosive gas atmosphere may be present.

Maintenance and replacement may only be carried out by qualified personnel under safe conditions and in compliance with all applicable regulations.

⇒ [1.2 Relevant user documentation](#) (p. 5)

Items required for the UT-NG transducer exchange:

Pos	Item
1	Spare UT-NG transducer (with or without transducer housing) ¹
2	UT-NG torque wrench socket ¹
3	Torque wrench capable of 12 Nm (with 20 mm key)
4	Flat screwdriver
5	Adjustable wrench
6	Gas detector

1.2 Relevant user documentation

Elster Gas Metering business provides the user documentations such as manuals, certificates, technical information for your UFM Series 6 meter in a ZIP file. The download information for this ZIP file is supplied with your device. Manuals referenced by this manual are included in this ZIP, such as UFM Series 6 “Safety Instructions”.

Single documents are published in the Docuthek. The documents are updated regularly.

¹ Should be obtained via Elster

www.docuthek.com/

Use the device series or the device type as search term:

UFM Series 6 or **Q.Sonic-max**

1.3 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 conditions specified in the manufacturer's terms of delivery apply to the product. Warranty claims are excluded in the following cases:

- The repair or replacement of the equipment or parts thereof has been required by natural wear and tear, in whole or in part due to a catastrophe, or because of a defect or fault on the part of the purchaser.
- Maintenance or repair of the device or device parts has not been carried out by an authorized representative of the manufacturer, or modifications have been made to the device or device parts without prior express written consent of the manufacturer.
- No original parts are used.
- The device has been used incorrectly, carelessly, improperly, or not in accordance with its nature and/or intended use.
- The product has been used with unauthorized components or peripherals such as cables, test equipment, computers, or with unauthorized voltages.

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

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

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

process.honeywell.com/us/en/site/elster-instromet/about-us

2 Preparation

1. Shut down the power supply of the flowmeter.
2. Ensure the meter is depressurized.
3. Enable gas detector for safe use. Do not continue when gas is detected.
4. The Ultrasonic Flowmeter Series 6 has a front- and a back-cover behind which the transducers are located. The covers are mounted with hexagon flange bolts. The bolt specification and the amount of bolts fitted depend on the flow meter size and the application. Remove these bolts and the covers to expose the transducers



CAUTION!

In some cases, the covers may be sealed. Please verify upfront if it is allowed to break the seals. If necessary, consult Elster or our local agent.

NEVER break any seal without explicit approval!



5. Use the ⇒ "Operation and Maintenance" manual to locate the transducer on the meter body.
⇒ Please contact Elster or its local agent if there are any doubts. It's preferred that this has been done in advance.

3 Removing UT-NG transducer

1. Disconnect the cable. Turn the metal knurl counterclockwise to release the connector and pull it straight from the transducer. Be careful to not unscrew the plastic knurl. Verify if the connector and connected cable are not damaged.

If necessary, also other cables of transducers can be disconnected, if they obstruct easy and safe handling. To ensure the cables will be re-connected correctly at the end of the procedure, make a note where which cable has been removed.



CAUTION!

Each transducer is mounted in a particular position that shall not be changed. Therefore, before removing the transducer, write down (or take pictures of) the position of:

- the alignment disk (position of holes A and B)
- the position of the pins in the connector of the mounted transducer

This information is required to position the new transducer.



- a. Alignment disk
- b. Three connectors in transducer

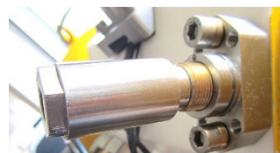
2. Remove the screw and the Alignment disk (together with its o-ring). Hold on to these items as they need to be re-assembled at the end of the replacement.



Alignment disk with o-ring



3. Use the UT-NG torque wrench socket to remove the inner nut.

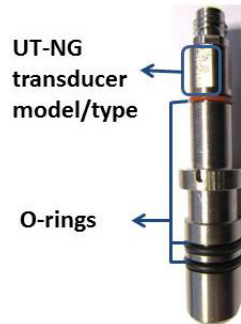


4. With the inner nut removed the UT-NG transducer proper can be pulled out of the transducer housing.



4 Inserting UT-NG transducer

1. Verify the new transducer:
 - Ensure the new transducer is the correct model/type.
 - Verify if the o-rings are not damaged.
 - Place a small amount of grease on the o-rings.



2. Place the new transducer in the transducer housing.



3. Take the inner nut and screw it in the transducer housing, using the UT-NG torque wrench socket. Tighten it with a **torque of 12 Nm!**

Turn the UT-NG torque wrench socket and align the transducer already more or less correct. The exact position of the transducer connection should have been documented in the beginning, use this as references (picture is just an example)

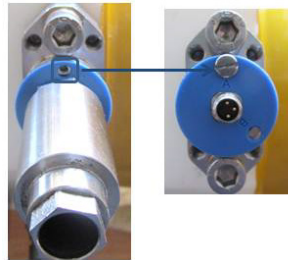


4. Verify the o-ring on the alignment disk is in good condition. If not, it should be replaced. Use a small amount of grease on the o-ring.

Place the alignment disk over the transducer; the o-ring side goes first. The exact position of the alignment disk should have been documented in the beginning, use this as references (picture is just an example).



5. Use the UT-NG torque wrench socket for exact alignment of the transducer. When alignment is correct fasten the alignment disk with the screw. Hand-tight is enough.



6. Connect the cable on the transducer. Turn the metal knurl on the connector clockwise for proper connection.

If other cabling has been disconnected, reconnect those as well. Verify connectors and cables are not damaged.



5 Finalizing replacement

1. Replace other transducers (if this is required): proceed again from ⇒ sections 3 to 4.
2. Pressurize the pipeline.
3. Verify if there are no leaks at the re-assembled transducers (other parts like Pm and other transducers can be checked as well).
4. Enabled the power supply.
5. Verify if everything is working correctly, by connecting with Sonic-Explorer (meter firmware up to V 3.02 only) or enSuite and checking the measurement of each path. Preferably a logfile and Multiple Pulse Collection is taken and sent to Elster for verification.
6. When everything is found to be correct, place the covers back on the meter. The protective caps can be re-sealed, if required.