Table of Contents

User's Manual for Ultrasonic Meter FT43

Overview

Purpose

This document describes how to operate the XYZ ultrasonic meter FT43 after it is installed, including performing the following activities:

- operating the meter
- understanding the following pertaining to the meter:
  - safety requirements
  - functional and technical details
  - troubleshooting

Scope

This document applies to the end users of the XYZ ultrasonic meter FT43.

***Note**: The term meter refers to all of the following, unless otherwise differentiated:*

- heat meter
- cold meter
- flow meter

Abbreviations

The table below provides a list of abbreviations used in this document:

Term	Expanded Form
AGFW	**[XYZ SME: Please provide English full form.]**
CET	Central European Time
EC	European Union
LCD	Liquid Crystal Display

Definitions

The table below provides definitions of the terms used in this document:

Term	Definition
Loop	The several levels in which the display of the meter is arranged
User loop	• Loop in which the meter is located • Indicated by LOOP 0

Section A. General Information

Overview

In this section

This section contains the following topics:

- Introduction to the FT43 Meter
- Current Meter Values
- Support and Guarantee

Introduction to the FT43 Meter

Use

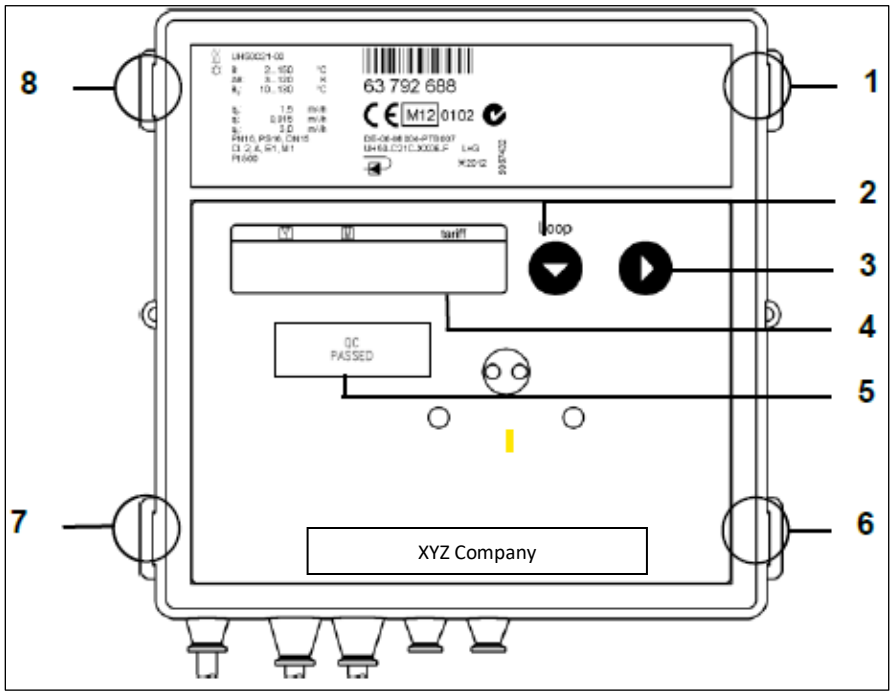
The FT43 meter is used to measure the heating or cooling consumption in systems with water. **[XYZ SME: Please confirm change.]**

Working

The meter consists of two temperature sensors and an electronic unit that calculates the energy consumption from the volume and temperature difference.

Diagram: FT43 meter

The diagram below shows the FT43 meter**[XYZ SME: No description for labels 6, 7, and 8.]**:

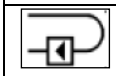
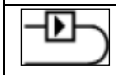


Introduction to the FT43 Meter, *contd.*

Part description: FT43 meter

The table below describes the operating elements present on the FT43 meter:

***Note**: The display range and the data displayed can differ from the description depending on the appliance parameterisation. You can also block certain button functions.*

Operating Element	Description
Numbers	
1	Cover panel
2	Lug 1
3	Lug 2
4	LCD
5	Security seal
Symbols	
	Previous year's value (set day value)
	Previous month's value
	Heat meter
	Cold meter
	Installation site: return-flow
	Installation site: flow

Support and Guarantee

Additional technical support

The meter left the factory in a faultless condition. The manufacturer provides additional technical support only on request.

Requirements: documentation and training

You must

- read the documentation, made available or acquired along with the products (for example appliances, applications, tools, and so on), carefully and completely before use, and
- be appropriately authorized and trained, and
- have appropriate specialist knowledge to use the products correctly.

***IMPORTANT**: The manufacturer is not legally liable for any damage, which results from non-adherence to or inappropriate adherence to the points mentioned in this topic.*

References: For more information, refer to the following:

- nearest XYZ location on http://www.XYZ .com/bt/download
- system supplier

Section B. Standards and Requirements

Overview

In this section

This section contains the following topics:

- Requirements: General
- Requirements: Safety

Requirements: General

Requirements to follow

Follow the general requirements below:

- Lay all cables at a minimum distance of 500 mm to high-voltage and high-frequency cables.
- Ensure a relative humidity of <93% at 25°C (without condensation).
- Avoid cavitation in the whole system due to overpressure, that is
  – at least 1 bar at qp, and
  – approximately 3 bar at qs (applies for approximately 80°C).
- For heat meter or combined heat/ cold meter, ensure that the mounting place of the flow sensor
  – cold side is equivalent to return  , and
  – hot side is equivalent to flow  .
- For cold meter , ensure that the mounting place of the flow sensor
  – hot side is equivalent to the return  , and
  – cold side is equivalent to flow  .

Requirements: Safety

Scope of use

Use the meter only

- in building service engineering systems, and
- for
  – circulating water in heating systems, and
  – the applications described.

Note**: The meter is not suitable for drinking water.**

Handling

Follow the requirements below regarding handling the meter:

- Adhere to the operating conditions according to the dial plate during use.
  CAUTION*: Non-adherence can cause hazards and a lapse of guarantee.*
- Do not lift the meter by the electronic unit.
- Beware of sharp points on the
  – edges
  – flange, and
  – measuring tube.

Electrical

Follow the electrical requirements below:

- Ensure only an electrician must make the 110 V/ 230 V connections.
- Power up the meter only once the installation is complete.
  CAUTION*: Danger of electronic shock on the terminals.*
- Do the following for a defective or obviously-damaged appliance:
  – Disconnect from the power supply immediately.
  – Replace the appliance.
  – Fit only one compartment for the power supply. Do not remove the red locking hatch.

Section C. Operating the Meter

Overview

In this section

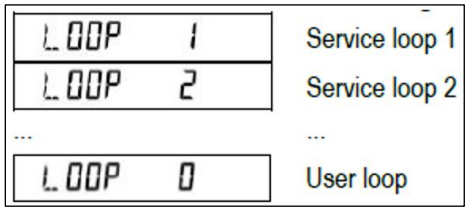
This section contains the following topics:

- Displaying Current Meter Values
- Saving and Reading Values

Displaying Current Meter Values

Switching between loops

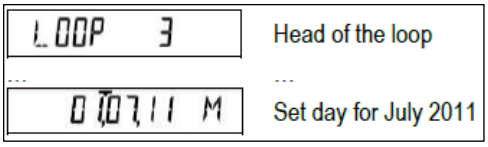
Press button 1 to switch the LCDs between the loops.
***Result**: The LCD displays the following values one after the other on the LCD:*



Note: After the last loop is displayed, the user loop, LOOP 0, is displayed again.

Displaying monthly values: service loop 3

Follow the steps in the table below to display monthly values:

Step	Action
1	Press button 2. ***Result**: The set day of the current month is displayed.* 
2	Press button 1 to select the desired month.
3	Press button 2 to request the associated values. ***Result**: The LCD displays the following values one after the other:* ***Note**: After the last display, the previously selected set day is displayed once again.*
4	Press button 1 to select the next set day.

Saving and Reading Values

Saving previous year's values

The meter saves the following values on the yearly set day:

- energy (meter status)
- volume (meter status)
- tariff register (meter status)
- missing time (meter status)
- flow measurement time (meter status)

Saving monthly values

The meter stores the following values for 60 months on the monthly set day:

- energy (meter status)
- volume (meter status)
- tariff register (meter status)
- missing time (meter status)
- flow measurement time (meter status)

Section D. Troubleshooting and Maintenance

Overview

In this section

This section contains the following topics:

- Handling Errors

Handling Errors

Self-diagnosis of the meter

The meter

- continuously runs a self-diagnosis, and
- recognizes and displays various installation or meter error messages.

Handling error messages

Use the table below to understand the error messages displayed on the meter and take appropriate action:

Error Number	Error Description	Action Needed
F0	No flow measurement is possible; for example, due to air in the volume measurement unit	Vent the system carefully
F4	Battery needs replacement	Replace battery
• F1 • F2 • F5 • F6 • F8	Temperature sensors are defective	Contact the service department
• F3 • F7 • F9	Defect in the electronic	Contact the service department

Section E. Functional and Technical Details

Overview

In this section

This section contains the following topics:

- Technical Data

Technical Data

General

The table below provides the general technical data about the meter:

Parameter	Description
Measuring accuracy	Class 2 or 3 (EN 1434)
Environment class	A (EN 1434) for indoor installation
Mechanical class	M1 *) (according to 2004/22/EC Directive on Measuring Instruments)
Electromagnetic class	E1 *) (according to 2004/22/EC Directive on Measuring Instruments)
Ambient humidity	<93% relative humidity at 25°C, without condensation
Maximum height	2000 m above sea level
Storage temperature	-20°C to 60°C

Electronic unit

The table below provides data about the electronic unit:

Parameter	Description
Ambient temperature	5°C–55°C
Housing protection rating	IP 54 (according to EN 60529)
Safety class	• Line 110/ 230 V AC: II according to EN 61558 • Line 24 V ACDC: III according to EN 61558
Operation threshold f. ΔT	0.2 K
Temperature difference ΔT	3 K–120 K

Sensor

The table below provides data about the sensor:

Parameter	Description
Type	• Pt 500, or • Pt 100 (according to EN 60751)
Temperature range	• 0°C–50°C (up to 45 mm overall length) • 0°C–180°C (from 100 mm overall length)

Section F. Appendix

Overview

In this section

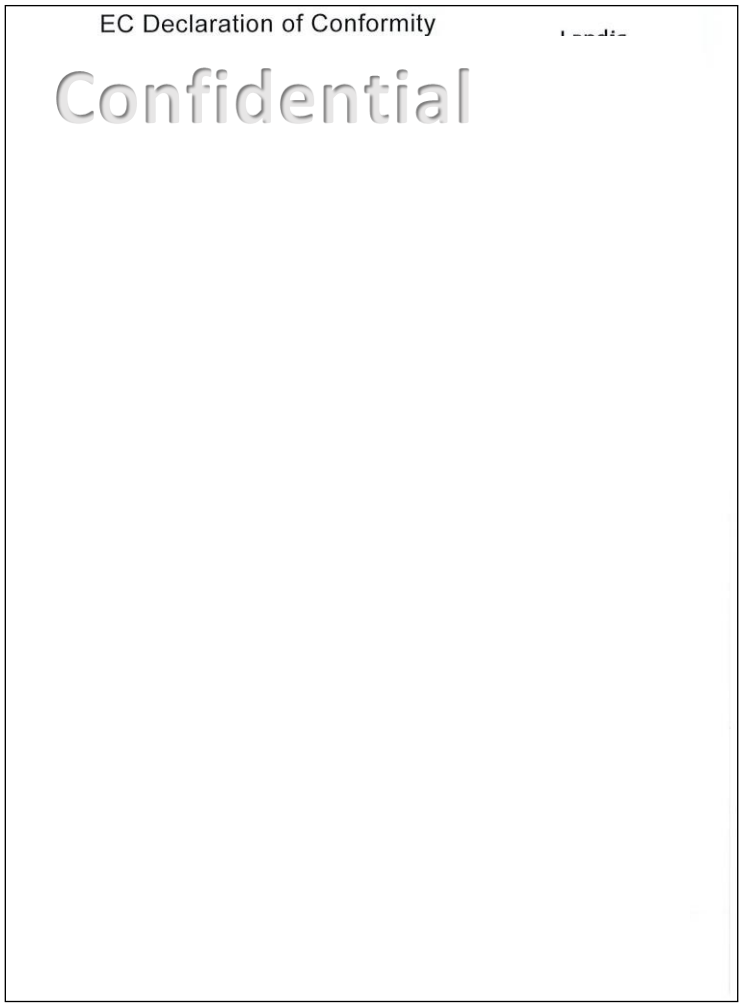
This section contains the following topics:

- Appendix A: EC Declaration of Conformity

Appendix A: EC Declaration of Conformity

The Declaration

The image below provides the EC declaration of conformity:



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