

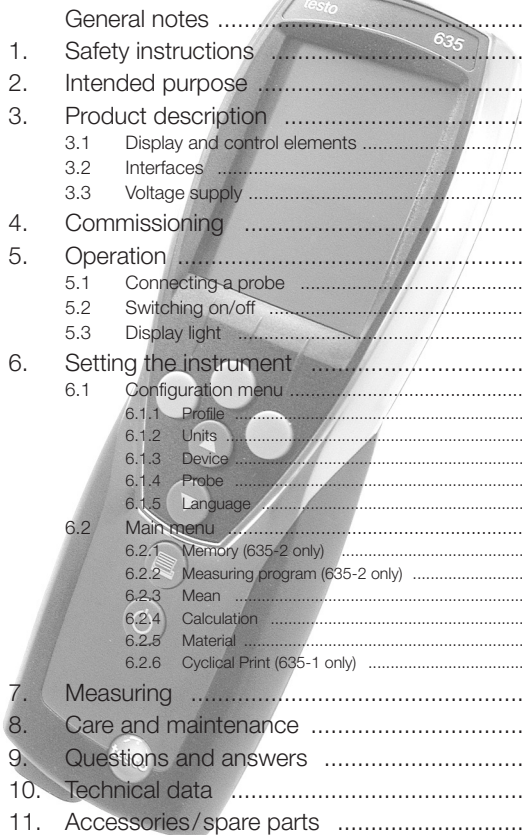


testo 635
Humidity/temperature/pressure dew point measuring instrument

Instruction manual

en

Contents

A photograph of the testo 635 instrument, a handheld device with a screen and buttons, positioned diagonally behind the table of contents.

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



General notes

This chapter provides important advice on using this documentation.

The documentation contains information that must be applied if the product is to be used safely and efficiently.

Please read this documentation through carefully and familiarise yourself with the operation of the product before putting it to use. Keep this document to hand so that you can refer to it when necessary.

Identification

Representation	Meaning	Comments
	Warning advice: Warning!	Read warning advice carefully and take the precautionary measures indicated! Serious physical injury could occur if you do not take the precautionary measures indicated.
	Warning advice: Caution!	Read warning advice carefully and take the precautionary measures indicated! Slight physical injury or damage to equipment could occur if you do not take the precautionary measures indicated.
	Note	Offers helpful tips and information.
	, 1, 2	Objective
	Condition	Denotes the objective that is to be achieved via the steps described. Where steps are numbered, you must always follow the order given!
	Condition	A condition that must be met if an action is to be carried out as described.
	Step	Carry out steps. Where steps are numbered, you must always follow the order given!
Text	Display text	Text appears on the instrument display.
	Control button	Press the button.
	Function button	Press the button.
-	Result	Denotes the result of a previous step.
	Cross-reference	Refers to more extensive or detailed information.

Short form

This document uses a short form for describing operating steps (e.g. calling up a function).

Example: Calling up the “Instrument data” function

Short form: **Device** → → **Inst.data** → .

(1) (2) (3) (4)

Steps required:

- 1 Press / to select the **Device** function.
- 2 Confirm selection with .
- 3 Press / to select the **Inst.data** function.
- 4 Confirm selection with .

1. Safety instructions

This chapter gives general rules which must be followed and observed if the product is to be handled safely.

Avoid personal injury/damage to equipment

Do not use the measuring instrument and probes to measure on or near live parts.

Never store the measuring instrument/measuring cells together with solvents and do not use any desiccants.

Product safety/preserving warranty claims

Operate the measuring instrument only within the parameters specified in the Technical data.

Always use the measuring instrument properly and for its intended purpose. Do not use force.

Do not expose handles and feed lines to temperatures in excess of 70 °C unless they are expressly permitted for higher temperatures. Temperatures given on probes relate only to the measuring range of the sensors.

Open the instrument only when this is expressly described in the documentation for maintenance or repair purposes.

Carry out only the maintenance and repair work that is described in the documentation. Follow the prescribed steps when doing so. For safety reasons, use only original spare parts from Testo.

Ensure correct disposal

Take faulty rechargeable batteries/spent batteries to the collection points provided for them.

Send the product back to Testo at the end of its useful life. We will ensure that it is disposed of in an environmentally friendly manner.

Instruments with radio module 915.00MHz FSK

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

2. Intended purpose

This chapter gives the areas of application for which the product is intended.

Use the product only for those applications for which it was designed. Ask Testo if you are in any doubt.

testo 635 is a compact measuring instrument for measuring temperature, humidity and the pressure dew point.

The product was designed for the following tasks/applications:

- Measuring room climate
- Regulating and inspecting ventilation and air-conditioning installations
- Measuring the pressure dew point in compressed air systems
- Material moisture observation

The product should **not** be used in the following areas:

- Areas at risk of explosion.
- Diagnostic measurements for medical purposes.

3. Product description

This chapter provides an overview of the components of the product and their functions.

3.1 Display and control elements

Overview



- ① Infrared, USB interface
- ② Display (light can be activated)
- ③ Control buttons
- ④ Rear: Battery and radio module compartment, holding magnets



Magnetic field

May be harmful to those with pacemakers!

Keep a minimum distance of 15 cm between pacemaker and instrument.



Magnetic field

Damage to other instruments!


Keep a safe distance from products which could be damaged by magnetism (e.g. monitors, computers, credit cards).

- ⑤ Probe socket(s)






Button functions

Button	Functions
	Function button (3x): The function depends on the button assignment at the time
	Change display of the 1 st reading line In configuration mode: Increase value, select option
	Change display of the 2 nd reading line In configuration mode: Decrease value, select option
	Print data 635-1 only: If the Cyclical Printing function is activated, the programmed measuring program is started.
	Switch instrument on, switch display light on/off; switch instrument off (press and hold)

Function buttons (Function dependant on profile and setting)

Button	Functions
	Open (main) menu
OK	Enter confirmation
ESC	Cancel
Hold / ACT	Hold value/display current measurement value
Reset	Reset max./min. values to current measurement value
Mean	Open menu item "Multi-point mean calculation"
Measp	Open menu item "Measuring program" (635-2only)
Start	Start test series (635-2 only)
End	End test series (635-2 only), End Cyclical Print (635-1 only)
Save	Save values (635-2 only)
Mat	Open menu item "Material"
Radio	Open menu item "Radio"

Important displays

Display	Meaning
	Battery capacity (only for operation by battery/rechargeable battery): <ul style="list-style-type: none"> · 4 segments in the battery symbol are lit: Instrument battery is fully charged · No segments in the battery symbol are lit: Instrument battery is almost spent
 (flashing)	Print function: Data are sent to the printer
 , 	Measurement channel no.: Channel 1, channel 2.
	If a measurement channel is a radio channel, the radio symbol lights up as well as the measurement channel no.

3.2 Interfaces

Infrared interface

Measurement data can be sent to a Testo printer via the infrared interface on the head of the instrument.

USB interface

The mains unit (accessory part) can be connected to the head of the instrument via the USB interface to power the instrument.

Instruments with a memory: Measurement/instrument data can be exchanged with a PC via the USB interface.

Probe socket(s)

Plug-in measuring probes can be connected via the probe socket(s) on the base of the instrument. The instrument is a HighPower device, possibly an additional USB-Hub is required!

Radio module (accessory part)

i Radio probes may only be used in countries in which they have been Type Approved (see application information of the radio probe).

Up to three radio probes can be connected via the radio module.

3.3 Voltage supply

Voltage is supplied via three mignon batteries (included in delivery) or rechargeable batteries or through a mains unit (accessory part). It is not possible to charge rechargeable batteries in the instrument.

i When operating the instrument with the mains unit, insert batteries in order to avoid switching off the instrument in case of a power interruption.

4. Commissioning

This chapter describes the steps required to commission the product.

➤ **Inserting batteries/rechargeable batteries and a radio module (accessory part):**

- 1** Undo the two screws on the rear of the instrument and lift off the battery compartment cover.
- 2** Insert batteries/rechargeable batteries (3x mignon) into the battery compartment. Observe the polarity!
- 3** Push the radio module (accessory part) into the radio module compartment until it engages in place. Note the guide groove.
- 4** Replace the battery compartment cover, press down and secure by tightening the two screws.

5. Operation

This chapter describes the steps that are executed frequently when using the product.

5.1 Connecting a probe

Plug-in probes

Plug-in probes must be connected before the measuring instrument is switched on so that they are recognised by the instrument.

Insert the connector of the probe into the probe socket of the measuring instrument.

Radio probes

i Radio probes may only be used in countries in which they have been Type Approved (see application information of the radio probe).

A radio module (accessory part) is required for the use of radio probes. The radio module must be connected before the measuring instrument is switched on so that it is recognised by the measuring instrument.

Each radio probe has a probe ID (identification number) which must be set in configuration mode.

⇒ See chapter PROBE, p. 45.

5.2 Switching on/off

> Switching the instrument on:

Press .

- Measurement view is opened: The current reading is displayed, or ---- lights up if no reading is available.

Instruments with a memory: The activated location is displayed (topmost line).

-or-

The instrument is switched on for the first time, a reset was carried out or the power supply was interrupted for a lengthy period of time:

- The **Language** function is opened.
- ⇒ See the chapter LANGUAGE, p. 46.

> **Switching the instrument off:**

Press and hold  (for approx. 2s) until the display goes out.

5.3 Display light

> **Switching the display light on/off:**

- ✓ The instrument is switched on.

Press .

6. Setting the instrument

This chapter describes the steps that are required in order to adapt the measuring instrument for specific measuring tasks.



6.1 Configuration menu

The basic settings for the measuring instrument are performed in the configuration menu.

> Opening the configuration menu:

- ✓ The instrument is in measurement view.

Press and hold  (approx. 2s) until **config.** is displayed.

- i** Press  to go one menu level back. To leave the configuration menu, press  several times until the instrument changes to measurement view.

6.1.1 Profile

The instrument has predefined measurement profiles that are tailored to specific areas of application.


The profile setting influences the following points in measurement mode:

- Assignment of the function buttons
- Number of predefined functions
- Structure of the main menu

All functions are available in the standard profile. In the application-specific measurement profiles, the available functions are reduced to only those that are needed to ensure speedier access.

> Setting a profile:

- ✓ The configuration menu is open, **config.** is displayed.

1 Profile → .

2 Select the desired profile with  /  and confirm with .

6.1.2 Units

Predefined systems and individual setting options:

Parameter	ISO system	US system	Individual setting options
Temperature	°C	°F	°C, °F
Pressure	hPa	inchH2O	mbar, Pa, hPa, kPa, inchH2O

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> Setting units:

✓ The configuration menu is open, **config.** is displayed.

1 Units → .

2 Press / ISO/US (to set the system) or a parameter (to set individually) and confirm with .

3 Set the system of units or the desired unit with / and confirm with .

6.1.3 Device

Instrument data

> Displaying instrument data:

✓ The configuration menu is open, **config.** is displayed.

1 Device → → Inst.data → .

- The firmware version and the serial number of the instrument are displayed.

Date/Time

> Setting the date/time:

✓ The configuration menu is open, **config.** is displayed.

1 Device → → date/time → .

2 Use / to set the value for year and confirm with .

3 Set the other values as described in step 2.

Battery type

To ensure that the battery capacity is displayed correctly, the battery type used must be set.

> Setting the battery type:

✓ The configuration menu is open, **config.** is displayed.

1 Device → → Bat-type → .

2 Press / Battery or ReBa and confirm with .

Auto OFF

If Auto OFF is switched on, the instrument switches itself off automatically after 10min if no button is pressed. Exception: Cyclical printing (instruments without a memory) or a measuring program (instruments with a memory) is active.

> Switching Auto OFF on/off:

✓ The configuration menu is open, **config.** is displayed.

1 Device → → Auto OFF → .

2 Press / to select On or Off and confirm with .

Reset

When a reset is carried out, the instrument is reset to the default settings, all settings/data are deleted. Exception: Language, Date/Time.

> Resetting:

✓ The configuration menu is open, **config.** is displayed.

1 Device → → reset → .

2 Reset with or cancel the reset with .

Setting min. / max. printing function

If pr MinMaxAuto is activated, minimum and maximum values are also printed with the measurement readings.

> Switching off pr MinMax:

✓ The configuration menu is open, **Config.** is displayed.

1 Device → → pr MinMax → .

2 Choose On or Off with / and confirm with .

6.1.4 Probe

RadioC

i Radio probes may only be used in countries in which they have been Type Approved (see application information of the radio probe).

A radio module (accessory part) is required for the use of radio probes. The instrument can establish a connection with a maximum of three radio probes.

Each radio probe has a probe ID (RF ID). This consists of the last 3 digits of the serial no. and the position of the slide switch (H or L) in the radio probe.

> Setting up a radio probe:

- ✓ A radio module (accessory part) is inserted in the instrument.
⇒ See chapter COMMISSIONING, p. 39.
- ✓ The configuration menu is open, **config.** is displayed.
- ✓ The radio probe is switched on and the transfer rate is set to 2 readings per second (see the advice on using the radio probe).

1 Probe → → RadioC → .

2 Press / to select the desired channel no. for the radio probe (P.1, P.2 or P.3) and confirm with .

- The instrument searches for switched-on radio probes in the receiving range.
- The probe IDs of the radio probes found are displayed.

If no radio probes were found, this may be because of the following:

- The radio probe is not switched on or the battery of the radio probe is spent.
- The radio probe is outside the range of the measuring instrument.
- Sources of interference are influencing the radio transmission (e.g. reinforced concrete, metal objects, walls or other barriers between transmitter and receiver, other transmitters of the same frequency, strong electromagnetic fields).

If necessary, rectify the possible causes of the fault in radio transmission.

Alternatively, the probe ID can also be entered manually.

→ Press / to enter the probe ID.

- 3 Press / to select the probe that is to be assigned to the chosen channel no.
- 4 Assign the radio probe to the chosen channel no. with or exit the function with , without changing the probe configuration. .

Humidity probe calibration

This function is only available if a humidity probe is plugged in.

The calibration values can be reset to the default settings (Reset). A 2-point calibration can be performed.

> Resetting the calibration values:

- ✓ The configuration menu is open, **config.** is displayed.
- 1 Probe → → Calibr. → .
- 2 Press / to select **Reset** and confirm by pressing twice.
 - The calibration values are reset to the default settings.

> Calibrating:

- ✓ The configuration menu is open, **config.** is displayed.
- 1 Probe → → Calibr. → .
- 2 Press / to select calibration point P1 or P2 and confirm by pressing twice.
- 3 Put the humidity probe into the reference medium and wait for the equalisation period to elapse.
 - The current humidity reading and the calibration point (nominal value) are displayed.
- 4 Start the calibration menu with .
- 5 Save calibration with or cancel calibration with .

Te-Type

The probe characteristic curves stored in the instrument can be set for the probe type used.

> Setting probe type:

- ✓ The configuration menu is open, **Config.** is displayed.
- 1 Probe → → Te-Type → .
- 2 Select the desired probe type with / and confirm with .

6.1.5 Language

> Setting the language:

✓ The configuration menu is open, **config.** is displayed.

1 Language → .

2 Select the desired language with / and confirm with .

6.2 Main menu

Settings by which the measuring instrument can be adapted to the particular measuring task are performed in the main menu.

i The instrument has predefined measurement profiles that are tailored to specific areas of application.

⇒ See the chapter **PROFILE**, p. 42.

The profile setting influences the number of available functions and the structure of the main menu.

The method described in this chapter for calling up the functions in the main menu relates to the **Standard** profile setting. If a different profile is set, the method for calling up individual functions may change or the function may not be available in that particular profile. Some functions are only available when a probe is connected or a wireless probe is switched on and registered.

Menu overview testo 635-1

Profile	menu items	Function
Standard	Calc.	Calculate water content , dew point, psychrometric temperature, De/activate differential temperature, set "Alpha" parameter
	Material	Activate material characteristic curves
	cyc. Print	De/activate cycle printing
Material	Mean	Time/point mean calculation
	Calc.	Calculate water content , dew point, psychrometric temperature, De/activate differential temperature, set "Alpha" parameter
	cyc. Print	De/activate cycle printing
RadioC	Calc.	Calculate water content , dew point, psychrometric temperature, De/activate differential temperature, set "Alpha" parameter
	Material	Activate material characteristic curves
	cyc. Print	De/activate cycle printing

Menu overview testo 635-2



Profile	menu items	Function
Standard	Memory	Activate/set measurement locality, print report, delete store
	Meas Prog.	Set/ de/activate measurement program
	Mean	Time/point mean calculation
	Calc.	Calculate water content , dew point, psychrometric temperature, De/activate differential temperature, set "Alpha" parameter
Material	Material	Activate material characteristic curves
	Memory	Messort aktivieren/anlegen, Protokolle drucken, Speicher löschen
	Meas Prog.	Set/ de/activate measurement program
	Mean	Time/point mean calculation
RadioC	Calc.	Calculate water content , dew point, psychrometric temperature, De/activate differential temperature, set "Alpha" parameter
	Memory	Activate/set measurement locality, print report, delete store
	Meas Prog.	Set/ de/activate measurement program
	Mean	Time/point mean calculation
	Calc.	Calculate water content , dew point, psychrometric temperature, De/activate differential temperature, set "Alpha" parameter
	Material	Activate material characteristic curves

> Opening the main menu:

- ✓ The instrument is in measurement view.

Press .

- Menu is displayed.

- i** Press  to go one menu level back. To leave the main menu, press  several times until the instrument changes to measurement view.

6.2.1 Memory (635-2 only)

Info

The free memory space is displayed

Location

The active location can be changed. Up to 99 locations can be created. The numerical location designations (01-99) can be changed into any text (max. 10 characters) using the PC software.

> Changing an active location:

✓ The main menu is open, **Menu** is displayed.

- 1 **Memory** → → **Location** → .
- 2 Press / to select the location to be activated and confirm with .

Protocol

Saved measurement protocols can be printed out on a Testo printer (accessory part) via the infrared interface.

> Printing a measurement protocol:

✓ The main menu is open, **Menu** is displayed.

- 1 **Memory** → → **Protocol** → .
- 2 Press / to select the measurement protocol that is to be printed.
- 3 Press to start printing out the measurement protocol.

Delete

The entire memory with all measurement protocols can be cleared.

> Clearing the memory:

✓ The main menu is open, **Menu** is displayed.

- 1 **Memory** → → **Delete** → .
- 2 Press to clear the entire memory.

6.2.2 Measuring program (635-2 only)

A measuring program can be programmed and activated/deactivated:

Designation	Description
Off	Measuring program switched off: Readings can be stored manually
AUTO	Automatic measuring program: The measuring cycle (min. 1s) and the number of readings can be set freely.

> Deactivating a measuring program:

✓ The main menu is open, **Menu** is displayed.

- 1 **Meas.Prog** → .
- 2 Press / to select **Off** and confirm with .
 - The instrument returns to measurement view.

> **Programming and activating the AUTO measuring program:**

✓ The main menu is open, **Menu** is displayed.

1 Meas.Prog → .

2 Press / to select **AUTO** and confirm with .

The measuring cycle is set in the order: hours / minutes / seconds.

3 Press / to set the measuring cycle in hours and confirm with .

4 Perform the setting for minutes and seconds as described in step **3**.

5 Press / to set the number of readings and confirm with .

- The instrument returns to measurement view.

6.2.3 Mean

i The menu item Mean value calculation is only available in the instrument testo 635-2. In the instrument testo 635-1, the function Mean value calculation is called up with the function button .

For carrying out Mean value calculation see chapter Measuring, page 54.

6.2.4 Calculation

If calculation is switched on, additional parameters with calculated values can be displayed from the readings of **one** probe. These are then displayed as additional measurement channels in measurement view.

Particular measurement channels must be available in order to perform the calculation.

The following variables can be calculated:

- Water content (in percent by weight of the dry mass of the material)
- Dew point (below 0°Ctd/32°Ftd frost point temperatures are displayed)
- Psychrometric temperature

The heat transfer coefficient (**alpha**) required for calculating the U value can be set.

It is also possible to calculate the difference between two measurement channels (**Delta**). This is only possible if the selected measurement channels have the same unit.

➤ Activating/deactivating reading calculation:

✓ The main menu is open, **Menu** is displayed.

1 Calc. → .

2 Press / to select the variable that is to be activated/deactivated and confirm with .

3 Press / to select **On** (= activated) or **Off** (= deactivated) and confirm with .

➤ Entering the heat transfer coefficient (**alpha**):

✓ The main menu is open, **Menu** is displayed.

1 Calc. → → alpha → .

2 Press / to set the value and confirm with .

> Activating differential calculation (delta):

- ✓ The instrument is in measurement view.

Differential calculation is performed with the parameters that are shown on the display.

- 1 Press and to select the measurement channels from which the difference is to be calculated.
- 2 Press to open the main menu.
- 3 calc. → .
- 4 Press / to select **Delta** and confirm with .

6.2.5 Material

Measurement values (e.g. moisture content equilibrium) are sometimes related to certain material characteristics. These are taken into account in the measurement by means of recorded material characteristics. 10 materials with typical material characteristics are recorded in the factory settings of the instrument. The material can be reassigned and the characteristic curves adapted using the PC software (635-2 only).

- ❗ With an inserted stray field probe 0636 6160, the material characteristics recorded in the probe are automatically called up. These are predefined and cannot be changed via the PC software. See instruction manual for probe.

Factory default materials:

Display	Material	Display	Material
a.screed	Anhydrite screed	sol. brick	Solid brick
c.screed	Cement screed	Hwlumber	Hardwood lumber
Limestone	Limestone	Swlumber	Softwood lumber
Concrete	Concrete	Gas concr	Gas concrete
I. brick	High-insulating brick	Chipboard	Chipboard

> Activating a material characteristic curve:

- ✓ The main menu is open, Menu is displayed.

- 1 Material → .
- 2 Press / to select the desired material and confirm with .

6.2.6 Cyclical Print (635-1 only)

The Cyclical Print function can be activated/deactivated. A measuring program for cyclical printing can be programmed. This enables readings (up to 999) to be printed in a defined measuring cycle (min. 1min). The readings are sent to a Testo printer.

> Activating cyclical printing/programming a measuring program:

✓ The main menu is open, **Menu** is displayed.

1 **cyc.Print** → .

2 Press / to select **Off** (deactivated) or **On** (activated) and confirm with .

The measuring cycle is set in the order: minutes/hours.

3 Press / to set the measuring cycle in minutes and confirm with .

4 Perform the setting for hours as described in step 3.

5 Press / to set the number of readings and confirm with .

- The instrument returns to measurement view.
- The measurement series is programmed and cyclical print can be started with .

7. Measuring

This chapter describes the steps that are required to perform measurements with the product.

Particular probes must be plugged in or switched on and registered (radio probes) according to the variable that is to be measured.

Some probes require a warming-up phase until they are ready to measure.

The heat transfer coefficient (**alpha**) must be set before the U value can be calculated.

⇒ See CALCULATION, p. 51.

For calculating U value please refer to the documentation enclosed with the temperature probe for calculating U value (0614 1635).

For simultaneous measurement of the material moisture via a stray field probe and a radio humidity probe, the radio probe must first be logged on and the corresponding material selected. Then the instrument must be switched off, the stray field probe attached and, after switching on again, the material selected for the stray field probe.

> Taking a measurement:

- ✓ The instrument is in measurement view.
- ✓ The measuring program **AUTO** is not activated (635-2 only).
Put the probe in position and take the readings.

> Changing the upper measurement channel line display:

Press .


> Changing the lower measurement channel line display, showing the max./min. value of the variable in the upper measurement channel line:

Press .

- The following are displayed in consecutive order:
 - Available measurement channels
 - Maximum value of the variable in the upper display line
 - Minimum value of the variable in the upper display line
 - Lower measurement line not shown


> Resetting max./min. values:

The minimum or maximum values of all measurement channels are reset.

- 1 Press  several times until the maximum or minimum value is displayed.
- 2 Reset the max./min. values with .

> Holding readings (Profile Standard only):

Press .

Press  to change back to displaying the actual reading.







> Saving readings (635-2 only):

Press .

- A measurement protocol with the readings of all available measurement channels is created for the active location.







> Timed mean calculation:

The mean is formed as a moving mean value and individual values are not displayed.

- 1 635-1: Press , 635-2:  → Mean → .
- 2 Timed → .
- 3 Press  to start mean calculation.
Press  to stop mean calculation.



> Multi-point mean calculation:

The mean is formed as a moving mean value.



- 1 635-1: Press , 635-2:  → Mean → .
- 2 Multi-poi → .
- 3 Press  to include readings.
Press  to stop mean calculation.

> Running the AUTO measuring program (635-2 only):

- ✓ The instrument is in measurement view and the AUTO measuring program is activated.

- 1 Start the measuring program with .
 - The measuring program starts. The readings are recorded.
 - The measuring program continues to run until cancelled with  or until the end criterion is met (number of readings is reached or).
 - The readings are saved in a protocol.

> **Cyclical printing (635-1 only):**

- ✓ The instrument is in measurement view and Cyclical Print is activated. Start cyclical printing with .
- The measuring program starts. The readings are transmitted to the Testo printer.
- Measurement continues to run until cancelled with  or until the end criterion is met (number of readings is reached).


8. Care and maintenance

This chapter describes the steps that help to maintain the functionality of the product and extend its service life.

> **Cleaning the housing:**


Clean the housing with a moist cloth (soap suds) if it is dirty. Do not use aggressive cleaning agents or solvents!

> **Changing the battery/rechargeable battery:**

- i** To prevent the loss of data (deletion of data stored in the instrument) when changing the battery:
 - switch instrument off before changing the battery.
Recommendation: Supply the instrument with power via the mains unit (accessory).
 - Make sure that the  key is not pressed when changing the battery.
- ✓ Instrument is switched off.
- 1** Undo the two screws on the rear of the instrument and lift off the battery compartment cover.
- 2** Remove spent batteries/rechargeable batteries and insert new batteries/rechargeable batteries (3x mignon) into the battery compartment. Observe the polarity!
- 3** Replace the battery compartment cover and tighten the two screws.

9. Questions and answers

This chapter gives answers to frequently asked questions.

Question	Possible causes	Possible solution
 lights up	· Instrument battery is almost spent.	· Replace instrument battery.
Instrument switches off automatically.	· Auto Off function is switched on. · Residual capacity of the battery is too low.	· Switch function off. · Replace battery.
Display: -----	· Probe is not plugged in. · Radio contact with radio probe is interrupted. · Probe break.	· Switch instrument off, connect probe and switch instrument back on again. · Switch radio probe on, if necessary register radio probe again. · Please contact your dealer or Testo Customer Service.
Display: uuuuu	· Permitted measuring range was undershot.	· Keep to permitted measuring range.
Display: 00000	· Permitted measuring range was exceeded.	· Keep to permitted measuring range.
Instrument settings are no longer correct	· Power supply was interrupted for a long time.	· Re-enter instrument settings.

If we are unable to answer your question, please contact your dealer or Testo Customer Service. For contact data, see back of this document or web page www.testo.com/service-contact.

10. Technical data

Measuring ranges and accuracies

Parameter / Probe type	Measuring range	Accuracy (± 1 Digit)	Resolution
Temperature/ Type K/T	-200...+1370°C (Type K)	$\pm 0.3^\circ\text{C}$ (-60.0...+60.0 °C)	0.1°C
	-200...+400°C (Type T)	$\pm 0.2 + 0.5\%$ of reading (rest of range)	0.1°F
	-328...+2498°F (Type K)	$\pm 0.6^\circ\text{F}$ (-76.0...+140.0°F)	
	-328...+752°F (Type T)	$\pm 0.4^\circ\text{F} + 0.5\%$ of reading (rest of range)	
Relative humidity/ humidity probe	0...+100%RH	Depends on probe	0.1%RH
Pressure/absolute pressure probe	0...+2000hPa	Depends on probe	0.1hPa

Further instrument data

Characteristic	Value
Probe connections	1x Omega TC socket, 1x Mini-DIN socket, radio module (accessory)
Memory	635-2 only: max. 99 locations, up to 10000 readings (depending on number of locations, protocols, channels)
Battery life	200h
Power supply	3x mignon battery (included in delivery)/rechargeable battery or mains unit (accessory part)
Housing material	ABS/TPE/metal
Protection class	IP54
Dimensions	225 x 74 x 46mm
Operating temperature range	-20...+50°C
Storage temperature	-30...+70°C
Measuring rate	2/s
EC Directive	2004/108/EEC
Warranty	Instrument: 2 years

11. Accessories/spare parts

This chapter gives important accessory and spare parts for the product.

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Name	Part no.
Probes	
Water-proof immersion/penetration probe, TC type K	0602 1293
Water-proof surface probe with widened measurement tip for smooth surfaces, TC type K	0602 1993
Robust affordable air probe, TC type K	0602 1793
Humidity/temperature probe, 12mm diameter	0636 9735
Handle for humidity/temperature probe, for connection to the measuring instrument, including probe cable, for measures/calibrates of humidity probehead	0430 9735
Absolute pressure probe 2000hPa	0638 1835
Pressure dew point probe for measurements in compressed air systems	0636 9835
Temperature probe for calculating U value	0614 1635
Stray field probe	0636 6160
Miscellaneous	
Plug-in mains unit, 5VDC, 500mA with European plug	0554 0447
External recharger incl. 4 Ni-MH rechargeable batteries with built-in, international plug, 100-240V, 300mA, 50/60Hz, 12VA/instrument	0554 0610

For a complete list of all accessories and spare parts, please refer to the product catalogues and brochures or look up our website: www.testo.com



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