testo 174
Data loggers

0572 1740 01

0572 1741 01

User manual

Contents

1 About this document

- The instruction manual is an integral part of the instrument.
- Keep this documentation to hand so that you can refer to it when necessary.
- Always use the complete original instruction manual.
- Please read this instruction manual through carefully and familiarize yourself with the product before putting it to use.
- Hand this instruction manual on to any subsequent users of the product.
- Pay particular attention to the safety instructions and warning advice in order to prevent injury and damage to the product.

2 Safety and disposal

2.1 Security

General safety instructions

- Only operate the product properly, for its intended purpose, and within the parameters specified in the technical data.
- Do not apply any force.
- Do not operate the instrument if there are signs of damage to the housing or connected cables.
- Dangers may also arise from objects to be measured or the measuring environment. Always comply with the locally valid safety regulations when carrying out measurements.
- Do not store the product together with solvents.
- Do not use any desiccants.
- Only perform maintenance and repair work on this instrument that is described in this documentation. Follow the prescribed steps exactly when doing the work.
- Use only original spare parts from Testo.

Batteries

- Improper use of batteries may cause the batteries to be destroyed, or lead to injury due to current surges, fire or escaping chemicals.
- Only use the batteries supplied in accordance with the instructions in the instruction manual.
- Do not short-circuit the batteries.
- Do not take the batteries apart and do not modify them.
- Do not expose the batteries to heavy impacts, water, fire or temperatures in excess of 70 °C.
- Do not store the batteries in the proximity of metal objects.
- In the event of contact with battery acid: rinse affected areas thoroughly with water, and if necessary consult a doctor.
- Do not use any leaky or damaged batteries.

Warnings

Always pay attention to any information denoted by the following warnings. Implement the precautionary measures specified!

⚠ DANGER

Risk of death!

⚠ WARNING

Indicates possible serious injury.

⚠ CAUTION

Indicates possible minor injury.

ATTENTION

Indicates possible damage to equipment.

2.2 Disposal

- Dispose of faulty rechargeable batteries and spent batteries in accordance with the valid legal specifications.
- The button cell used in the instrument contains 1,2-Dimethoxyethane (CAS 110-71-4). See EC Regulation No. 1907/2006 (REACH) Art. 33.
- At the end of its useful life, deliver the product to the separate collection point for electric and electronic devices (observe local regulations) or return the product to Testo for disposal.

WEEE Reg. No. DE 75334352

3 Intended use

The testo 174 data loggers are used for storing and reading out individual readings and series of measurements.

Readings are measured and stored with testo 174 and transmitted to the PC via the interface, where they can be read out and evaluated using the testo ComSoft software. The data logger can also be programmed individually via the software.

Examples of applications

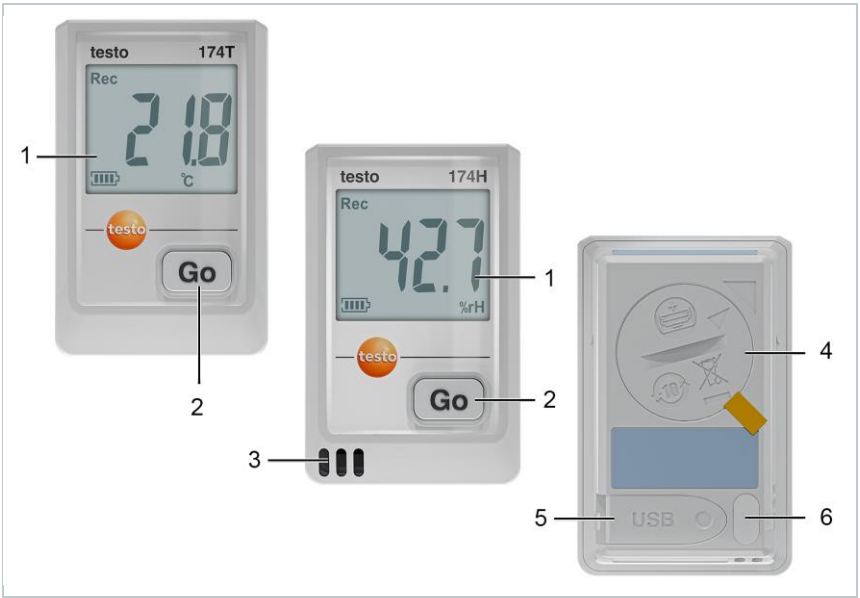
- testo 174T is ideally suited for temperature measurement in in refrigerators, freezers, cold rooms and cold shelves.
- testo 174H monitors the climatic conditions, e.g. in warehouses, offices and in the manufacturing sector.

The testo 174 data loggers must not come into contact with unpackaged food.

The humidity sensor testo 174H may not be used in dust environment as the sensor could be polluted.

4 Product description

4.1 Device overview



1	LCD display	**2**	Operating button
3	Only testo 174H: Opening for humidity sensor	**4**	Battery compartment with battery protection strip
5	Cover of USB-C interface	**6**	Only testo 174H: Cover of maintenance opening of humidity sensor – may only be opened by the service department

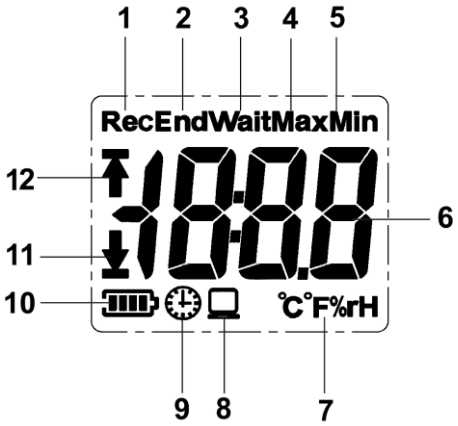
Symbol explanation

	Observe instruction manual
	Do not dispose of old appliances with household waste.
	Chinese RoHS (Restriction of Hazardous Substances) symbol
	polarity of the button cells

CE	Declaration of conformity: Products marked with this symbol comply with all applicable Community regulations of the European Economic Area.
FC	Test symbol of the FCC in the USA
UK CA	Declaration of conformity: Products marked with this symbol comply with all applicable Community regulations of the United Kingdom.

4.2 Display

Depending on the operating status, various information may be shown in the display. A detailed depiction of the information that can be called up can be found in the chapter “Operation”.



1	Measurement program running	**2**	Measurement program ended
3	Wait for start of measurement program	**4**	Highest saved reading
5	Lowest saved reading	**6**	Reading
7	Units	**8**	USB connection to computer
9	Start criterion Date/time programmed	**10**	Battery capacity - 75 – 100 % - 50 – 75 % - 25 – 50 % - 10 – 25 % - < 10 %

			- Battery icon off: Battery empty (measurement program was stopped). Read out data and change battery.
11	Lower alarm value: - Flashes: programmed alarm value is shown - Lights up: programmed alarm value was undershot	**12**	Upper alarm value - Flashes: programmed alarm value is shown - Lights up: programmed alarm value was exceeded

The display speed of liquid crystal displays slows down at temperatures below 0 °C (approx. 2 seconds at -10 °C, approx. 6 seconds at -20 °C) for technical reasons. This does not influence the measuring accuracy.

4.3 Button functions

Operating status Wait and start criterion Button start programmed:

1 Press and hold **GO** button approx. 3 seconds to start the measurement program.

▸ The measurement program starts and **Rec** appears in the display.

Operating status Wait:

1 Press **GO** button in order to change between displays of the upper alarm value, lower alarm value, battery life and last reading.

▸ These are shown in the specified sequence in the display.

Operating status Rec or End:

1 Press **GO** button in order to change between displays of the highest saved reading, lowest saved reading, upper alarm value, lower alarm value, battery life and last reading.

▸ These are shown in the specified sequence in the display.

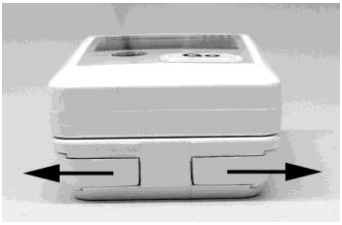
5 First steps

5.1 Releasing/securing data logger

The data logger is delivered secured.

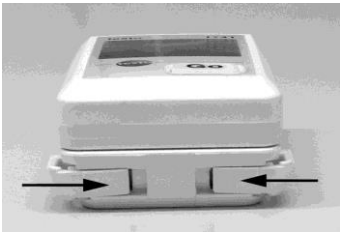
Releasing data logger

1. Push both locks on the bottom of the wall bracket outwards.
2. Slide data logger out of the wall bracket.



Securing data logger

1. Slide data logger into the wall bracket.
2. Push both locks on the bottom of the wall bracket inwards.



5.2 Activating batteries

The data logger is supplied with batteries inserted.

1 To make the data logger ready for operation, pull the battery protection strip out.

Symbol explanation

	Do not allow children under 6 years of age to play with batteries.
	Do not throw batteries in the trash.
	Do not charge batteries.
	Do not place batteries near fire.
	Batteries are recyclable.

5.3 Connecting data logger to PC

1 Install testo ComSoft software.

▸ The software is available in the Internet as a free download requiring registration: **www.testo.com/download-center**

The instructions for the installation and operation of the software can be found in the testo ComSoft instruction manual that is downloaded together with the software.

2 Connect the connection cable to the USB-C interface of the data logger.

3 Connect the connection cable to a free USB-A port on the PC.

4 Configure data logger, see separate testo ComSoft instruction manual (0970 0468).

6 Using the product

6.1 Programming data logger

In order to adapt the programming of your data logger to your individual requirements, you require the testo ComSoft software.

It is available in the Internet as a free download requiring registration **www.testo.com/download-center**.

The instructions for the installation and operation of the software can be found in the testo ComSoft instruction manual (0970 0468) that is downloaded together with the software.

6.2 Mounting wall bracket

Mounting materials (e.g. screws, anchor plugs) are not included in the delivery.

✓ Data logger is removed from the wall bracket (see Releasing/securing data logger).

1. Position wall bracket at the desired location.
2. Using a pen or similar, mark the location for the fastening screw.
3. Prepare the fastening location for the attachment in accordance with the material (e.g. drill hole, insert anchor plug).
4. Fasten wall bracket using an appropriate screw.

6.3 Reading out data

The data logger is read out and the read-out data are processed further by means of the testo ComSoft software, see separate instruction manual.

7 Maintaining the product

7.1 Changing batteries

The running measurement program is stopped when the battery is changed. The stored data are preserved, however.

1. Remove the data logger from the wall bracket.
2. Read out stored data, see testo ComSoft software instruction manual (0970 0468).

▸ If it is no longer possible to read out the stored data because the battery capacity is too low:

Change batteries and then read out the stored data.

3. Place the data logger on its front.
4. Open battery compartment cover on the rear of the data logger by turning to the left and remove it.

   Use a coin for this.

5. Remove empty batteries and dispose of them in accordance with the valid legal specifications.

▸ If LCD display is still active after removing the old batteries, press the operating button to reset the battery display of the logger.

6 Insert two new batteries (3 V button cell of manufacturer EVE, CR 2032 lithium) so that the + pole is always visible.

Only use new branded batteries. If a partially used battery is inserted, the calculation of the battery capacity is not performed correctly.

7 Place battery compartment cover on the data logger and close it by turning it to the right.

Use a coin for this.

▸ The current reading is shown on the display screen.

The data logger must be reconfigured. To do so, the testo ComSoft software must be installed on the computer and a connection to the data logger must be set up (see Connecting data logger to PC).

8 Start testo ComSoft software and create a connection to the data logger.

9 Reconfigure data logger or install the old stored configuration, see separate testo ComSoft instruction manual.

▸ The data logger is again ready for use.

7.2 Cleaning the instrument

1 If the housing of the instrument is dirty, clean it with a damp cloth.

Do not use any aggressive cleaning agents or solvents! Mild household cleaning agents and soap suds may be used.

8 Technical data

Characteristic	Values
Operating temperature	testo 174T: -30 ... +70 °C / -22 … +158 °F testo 174H: -20 ... +70 °C / -4 … +158 °F
Storage temperature	-40 ... +70 °C / -40 … +158 °F
Operating humidity	0 … 100 %RH
Max. operating altitude	≤ 2000 m / 6561 ft above sea level
Level of contamination	PD2
EMC environment	Basic electromagnetic environment
Dimensions	60 x 38 x 19 mm / 2.4 x 1.5 x 0.7 in
Wight	35 g / 1.2 oz

8.1 testo 174T

Characteristic	Values
Probe type	Internal digital temperature sensor
Measuring range	-30 to +70 °C
Accuracy	± 0.5 °C (-30 to +70 °C)[1]
Resolution	0.1 °C
Adjustment time	t90: 16,5 min t99: 40 min
Battery type	2 x 3 V button cell (2 x CR 2032 lithium)
Battery life time	500 days (15 min measuring cycle, +25 °C)
Protection class	IP65
Meas. cycle	1 min - 24 h (can be selected)
Memory	16,000 readings
Declaration of conformity	see www.testo.com/eu-conformity
	Acc. EN 12830 -S, -T, 0.5, -30 … +70°C Ia[2]

[1] Valid for t99. When measuring with t90, measurement value may be out of tolerance.
[2] Please note that with this instrument in accordance with EN 12830 a regular inspection and calibration as per EN 13486 must be performed (recommendation: annually). Contact us for more information.

8.2 testo 174H

Characteristic	Values
Probe type	NTC temperature sensor and internal capacitive humidity sensor
Measuring range	0 to 100 % RH (not for condensing atmosphere[3]), -20 to +70 °C
Humidity accuracy	Basic accuracy at 25 °C[4]: ± 3 % RH (measuring range 2 % RH to 98 % RH)[4] Temperature impact ± 0.03 % RH/K ± 1 digit
Temperature accuracy	± 0.5 °C (-20 to +70 °C)[4]
Resolution	0.1 % RH, 0.1 °C
Adjustment time temperature	t90: 15,8 min t99: 35 min
Adjustment time humidity	t90: 3 min t99: 30 min
Battery type	2 x 3 V button cell (2 x CR 2032 lithium)
Battery life time	1 year (15 min measuring cycle, +25 °C)
Protection class	IP20
Meas. cycle	1 min - 24 h (can be selected)
Memory	2 x 16,000 readings
Declaration of conformity	see www.testo.com/eu-conformity

[3] For continuous applications in high humidity (> 80% RH at ≤ 30°C for > 12 h, > 60% RH at > 30°C for > 12 h), please contact us via www.testo.com/service-contact.
[4] Valid for t99. When measuring with t90, measurement value may be out of tolerance.

9 Tips and assistance

9.1 Questions and answers

Question	Possible causes	Possible solution
- - - - lights up in the display *	The sensor of the data logger is defective.	Contact your dealer or Testo Customer Service.
Connection problems if testo 174 and testo 175/176 loggers are connected at the same time to the computer	USB driver problem	if you want to connect testo 174 and testo 175/176 loggers at the same time to Comsoft and you have problems, only connect one logger at the same time to the USB port of your computer.

* This is also shown in the display if a new measurement program is transferred from the PC to the data logger. It changes back again after approx. 8 seconds. In this case, there is no error!

If you have any questions, please contact your dealer or Testo Customer Service. The contact details can be found on the back of this document or on the Internet at www.testo.com/service-contact.

9.2 Accessories and spare parts

Description	**Order no.**
testo 174H mini data logger, 2-channel, incl. wall bracket, battery (2 x CR 2032 lithium) and calibration protocol	0560 1741 01
testo 174T mini data logger, 1-channel, incl. wall bracket, battery (2 x CR 2032 lithium) and calibration protocol	0560 1740 01
Battery, 3 V button cell (CR 2032 lithium), please order 2 batteries per logger	0515 5174
ISO calibration certificate humidity, calibration points 11.3 % RH; 50.0 % RH; 75.3 % RH at +25 °C/+77 °F; per channel/instrument	0520 0176
ISO calibration certificate temperature, calibration points -18 °C; 0 °C; +60 °C; per channel/instrument	0520 0151

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

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