



## testo 174 · Data loggers

Instruction manual



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## 2 Safety and the environment

### 2.1 About this document

#### Use

- > Please read this documentation through carefully and familiarize yourself with the product before putting it to use. Pay particular attention to the safety instructions and warning advice in order to prevent injuries and damage to the products.
- > Keep this document to hand so that you can refer to it when necessary.
- > Hand this documentation on to any subsequent users of the product.

#### Symbols and writing standards

| Representation                                                                     | Explanation                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Warning advice, risk level according to the signal word:<br><b>Warning!</b> Serious physical injury may occur.<br><b>Caution!</b> Slight physical injury or damage to the equipment may occur.<br>> Implement the specified precautionary measures. |
| <b>i</b>                                                                           | Note: Basic or further information.                                                                                                                                                                                                                 |
| 1. ...                                                                             | Action: more steps, the sequence must be followed.                                                                                                                                                                                                  |
| 2. ...                                                                             |                                                                                                                                                                                                                                                     |
| > ...                                                                              | Action: a step or an optional step.                                                                                                                                                                                                                 |
| - ...                                                                              | Result of an action.                                                                                                                                                                                                                                |
| <b>Menu</b>                                                                        | Elements of the instrument, the instrument display or the program interface.                                                                                                                                                                        |
| <b>[OK]</b>                                                                        | Control keys of the instrument or buttons of the program interface.                                                                                                                                                                                 |
| ...   ...                                                                          | Functions/paths within a menu.                                                                                                                                                                                                                      |
| " ... "                                                                            | Example entries                                                                                                                                                                                                                                     |

## 2.2 Ensure safety

- > Only operate the product properly, for its intended purpose and within the parameters specified in the technical data. Do not use any force.
- > Never use the instrument to measure on or near live parts.
- > Keep the read-out contacts on the rear of the data logger in particular away from live parts!
- > Carry out only the maintenance and repair work on this instrument that is described in the documentation. Follow the prescribed steps exactly. Use only original spare parts from Testo.

## 2.3 Protecting the environment

- > Dispose of faulty rechargeable batteries/spent batteries in accordance with the valid legal specifications.
- > At the end of its useful life, send the product to the separate collection for electric and electronic devices (observe local regulations) or return the product to Testo for disposal.

# 3 Specifications

## 3.1 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 the 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 refrigerators, freezers, cold rooms and cold shelves.

testo 174H monitors the climatic conditions, e.g. in warehouses, offices and in the manufacturing sector.

## 3.2 Technical data

### testo 174T

| Characteristic        | Values                                                                                                         |
|-----------------------|----------------------------------------------------------------------------------------------------------------|
| Probe type            | Internal NTC temperature sensor                                                                                |
| Measuring range       | -30 to +70 °C                                                                                                  |
| Accuracy              | ± 0.5 °C (-30 to +70 °C)                                                                                       |
| Resolution            | 0.1 °C                                                                                                         |
| Operating temperature | -30 to +70 °C                                                                                                  |
| Storage temperature   | -40 to +70 °C                                                                                                  |
| Battery type          | 2 x 3 V button cell (2 x CR 2032 lithium)                                                                      |
| Life                  | 500 days (15 min measuring cycle, +25 °C)                                                                      |
| Protection class      | IP65                                                                                                           |
| Meas. cycle           | 1 min - 24 h (can be selected)                                                                                 |
| Memory                | 16,000 readings                                                                                                |
| Software              | can be used with Windows XP, Vista, Win7                                                                       |
| Standards             | 2004/108/EC, complies with the directives in accordance with the standard EN 12830 <sup>2</sup>                |
| Warranty              | 24 months, warranty conditions: see website <a href="http://www.testo.com/warranty">www.testo.com/warranty</a> |

<sup>2</sup> 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.

**testo 174H**

| <b>Characteristic</b> | <b>Values</b>                                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------------------------------------|
| Probe type            | NTC temperature sensor and internal capacitive humidity sensor                                                    |
| Measuring range       | 0 to 100 % RH (non-dewing atmosphere),<br>-20 to +70 °C                                                           |
| Humidity accuracy     | ± 3 % RH (2 % RH to 98 % RH)<br>± 1 digit +0.03 % RH/K                                                            |
| Temperature accuracy  | ± 0.5 °C (-20 to +70 °C)                                                                                          |
| Resolution            | 0.1 % RH, 0.1 °C                                                                                                  |
| Operating temperature | -20 to +70 °C                                                                                                     |
| Storage temperature   | -40 to +70 °C                                                                                                     |
| Battery type          | 2 x 3 V button cell (2 x CR 2032 lithium)                                                                         |
| Life                  | 1 year (15 min measuring cycle, +25 °C)                                                                           |
| Protection class      | IP20                                                                                                              |
| Meas. cycle           | 1 min - 24 h (can be selected)                                                                                    |
| Memory                | 2 x 8000 readings                                                                                                 |
| Software              | can be used with Windows XP, Vista, Win7                                                                          |
| Warranty              | 24 months, warranty conditions: see website<br><a href="http://www.testo.com/warranty">www.testo.com/warranty</a> |
| EC Directive          | 2004/108/EC                                                                                                       |

## 4 First steps

### 4.1 Releasing/securing data logger

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The data logger is delivered secured.

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#### Releasing data logger



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

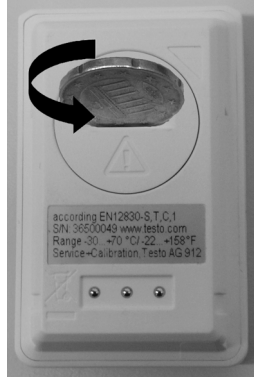
#### Securing data logger



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

## 4.2 Inserting batteries

1. Place the data logger on its front.



2. Open battery compartment cover on the rear of the data logger by turning to the left and remove it.



Use a coin for this.



3. Insert supplied batteries (3 V button cell, CR 2032 lithium) so that the + pole is always visible.
4. Place battery compartment cover on the data logger and close by turning to the right.



Use a coin for this.

- The current temperature is shown on the display screen.

### 4.3 Connecting data logger to PC

1. Install testo ComSoft software.

The software is available in the Internet as a free download requiring registration.

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**i** 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.

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**i** The software can be ordered on CD (article no. 0572 0580) if the download from the Internet is not desired.

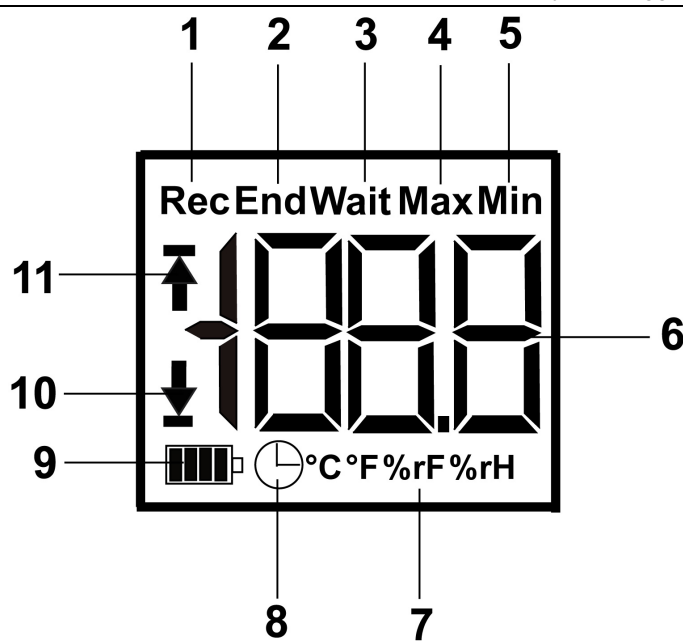
---

2. Connect the connecting cable of the interface to a free USB interface on the PC.
3. Slide the data logger into the bracket of the interface.
4. Configure data logger, see separate testo ComSoft instruction manual.

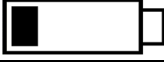
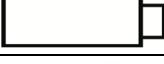
## 5 Display and control elements

### 5.1 Display

**i** 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 quick instruction manual that is included with every data logger.



- 1 Measurement program running
- 2 Measurement program over
- 3 Wait for start of measurement program
- 4 Highest saved reading
- 5 Lowest saved reading
- 6 Reading
- 7 Units
- 8 Start criterion Date/time programmed
- 9 Battery capacity

| Icon                                                                              | Capacity                                                                                                                      |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
|  | 75-100%                                                                                                                       |
|  | 50-75%                                                                                                                        |
|  | 25-50%                                                                                                                        |
|  | 10-25%                                                                                                                        |
|  | <10%                                                                                                                          |
|  | Battery empty (measurement program was stopped).<br>> Read out data and change battery (see Changing the batteries page 30 ). |

## 10 Lower alarm value:

- Flashes: programmed alarm value is shown
- Lights up: programmed alarm value was undershot

## 11 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.

## 5.2 Key functions

- ✓ Operating status **Wait** and start criterion Button start programmed.
- > 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**:

- > 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**:
- > 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.

## 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.



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.

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### 6.2 Mounting wall bracket



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

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- ✓ Data logger is removed from the wall bracket (see Releasing data logger page 24).
- 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 the batteries

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

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1. Read out stored data, see testo ComSoft software instruction manual.
- ✓ 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.
2. Place the data logger on its front.
3. Open battery cover on the rear of the data logger by turning to the left. Use a coin for this.



4. Remove empty batteries from the battery compartment.
5. Insert two new batteries (3 V button cells, CR 2032 lithium) into the instrument so that the + pole is always visible.



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

6. Place battery compartment cover on the battery compartment and close by turning to the right. Use a coin for this.

- The current reading is shown on the display.

**i** 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 page 26).

7. Slide the data logger into the bracket of the interface.

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 once again ready for use.

## 7.2 Cleaning the instrument

### CAUTION

#### Damage to the sensor!

> Ensure that no liquid enters the inside of the housing.

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

Do not use any aggressive cleaning agents or solvents! Weak household cleaning agents or soap suds can be used.

## 8 Tips and assistance

### 8.1 Questions and answers

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.

### 8.2 Accessories and spare parts

| Description                                                                                                                       | Article no. |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------|
| testo 174H mini data logger, 2-channel, incl. wall bracket, battery (2 x CR 2032 lithium) and calibration protocol                | 0572 6560   |
| testo 174T mini data logger, 1-channel, incl. wall bracket, battery (2 x CR 2032 lithium) and calibration protocol                | 0572 1560   |
| USB interface for programming and reading out testo 174T and testo 174H loggers                                                   | 0572 0500   |
| testo ComSoft CD (if free download requiring registration from website is not desired)                                            | 0572 0580   |
| Battery, 3 V button cell (CR 2032 lithium), please order 2 batteries per logger                                                   | 0515 0028   |
| 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   |