testostor 171

Instruction manual

en

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According to the conformity certificate, the instruments fulfill 2004 / 108 / EEC guidelines.

- The testostor 171-1, 171-2, 1722, 171-3, 171-4 and 171-6 logger housings come under protection class IP 65, the testostor 171-0 logger housing comes under protection class IP 68, the testostor 171-8 logger housing is subject to protection class IP 42.

General information

- The plug-on display module for monitoring data, as an alternative to the PC, is described in a separate Instruction Manual.

- Please refer to the licence agreement and the software warranty in the Comfort software Instruction Manuals.

171-0

171-1

171-2

1722

171-3

171-4

The data loggers from the testostor 171 series measure and save up to 55,000 readings with a battery life (depending on version) of up to 4 years (see also page 21).

These loggers are designed for mobile use in the food industry, for quality control and monitoring during the transport of sensitive products or to monitor ambient conditions following installation (or for the service) of air conditioning systems.

The series includes the following versions:

Data logger with …	…internal temp. sensor	…internal humidity/ temperature sensor	…external temp. sensor	…external humidity on temperature sensor	… alarm output
testostor 171-0	x				
testostor 171-1	x		x (1)	x (1)	
testostor 171-2		x			
testostor 1722		x			x
testostor 171-3		x			
testostor 171-4			x (4)		
testostor 171-6			x (2)	x (2)	
testostor 171-8			x (4)		

171-6

171-8

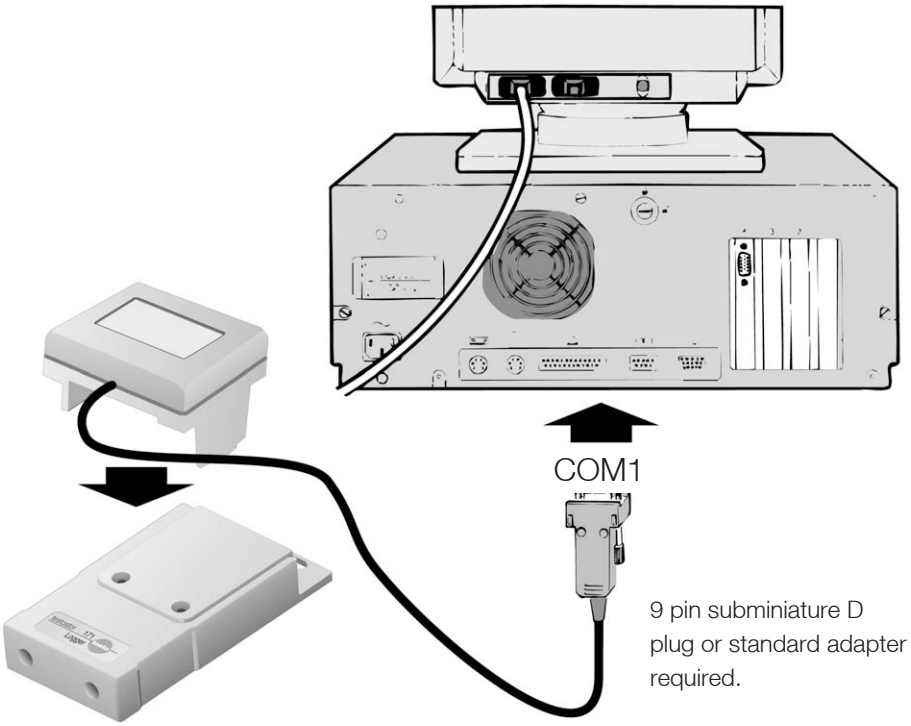
Description

The Testo Comfort Software provides user-friendly and uncomplicated measured data analysis and processing in Windows®. It is a modular system, which can be adapted to the user's requirements. The data logger software is an ideal basis having all of the necessary functions of a graphic or table analysis software for measurement data at its disposal.

The testostor 171 software module can only be operated together with Testo Comfort software. The enclosed instrument driver sets up communication between the testostor 171 series and your PC.

Optimum use of all the functions is only possible with the mouse i.e. your PC must have two free interfaces (COM1 and COM2) in order to operate. The standard configuration is interface at COM1, mouse at COM 2.

Testo Comfort software is constantly brought up to date based on the feedback we receive from our customers. Please discuss your requirements with your Testo sales partner and ask for the latest update.



To program or read your data logger, the interface connected to the computer is plugged into the data logger.

A separate available display module can be plugged onto the logger to read the measured values on location.
You will find a detailed description in the Instruction manual for the display module. Please contact Testo or one of its agencies if interested.

testostor 171 data logger series

testostor **type:**	171-0	171-1	171-2	1722	171-3	171-4	171-6	171-8
Temperature:								
Measuring sensor:								
Measuring range								
NTC	X	X	X	X	X	X	X	
-35 to +70 °C	X							
-35 to +70 °C		X	X	X				
		(internal)						
-10 to +50 °C					X			
-50 to +120 °C		X				X	X	
		(external)						
Type K (TE plug-in connection) -200 to +1100 °C							X	
Type T (TE plug-in connection) -50 to +350 °C							X	
Resolution:								
0.1 °C	X	X	X	X	X	X	X	X
1 °C from +250 °C							X	
Accuracy: in permissible ambient temperature range*								
Instruments								
± 0.4 °C (in the range < -35 °C)		X			X	X		
± 0.2 °C (in the range -35 to +60 °C)		X			X	X		
± 0.4 °C (in the range > +60 °C)		X			X	X		
± 0.4 °C, ±0.2% of reading							X	
System accuracy with internal sensors								
± 0.5 °C (in the range < +40 °C)	X	X	X	X	X	X		
± 0.6 °C (in the range > +40 °C)	X	X	X	X	X	X		
Humidity:								
Measurement sensor:								
Capacitive humidity sensor		X	X	X	X		X	
Measuring range								
0 to 100 %RH		X	X	X	X		X	
Resolution:								
0.1 %RH		X	X	X	X		X	
Accuracy:*								
± 2 %RH (in the range 2 to 98 %RH)		**	X	X			**	
± 3 %rF (in the range 2 to 98 %RH)					X			
Temperature drift								
at rated temperature +22 °C otherwise plus ± 0.03 %RH/°C		X	X	X	X		X	

testostor 171 data logger series

testostor, **type:**	171-0	171-1	171-2	1722	171-3	171-4	171-6	171-8
Measuring rate:								
2 s to 24 h (freely selectable)	X	X	X	X	X	X	X	X
Memory capacity:								
20,000 readings				X				
55,000 readings	X	X	X	X		X	X	X
Alarm output:								
Relay contact 1 A/42 V DC max. 30 W/30 VA max.			X					
Protection class:								
IP 65		X	X	X				
IP 68	X							
IP 42							X	
Power supply:								
Lithium battery	X	X	X	X	X	X	X	X
Housing:								
Aluminium, anodized	X	X	X	X	X	X	X	X
Dimensions:								
131 x 68 x 26 mm	X	X				X	X	X
131 x 68 x 72 mm			X	X	X			
Max. ambient temperature:								
-20 to +70 °C, no condensation		X	X	X	X	X	X	X
-35 to +70 °C	X							
Max. storage temperature:								
-40 to +85 °C	X	X	X	X	X	X	X	X
Software:								
Testo Comfort Software	X	X	X	X	X	X	X	X
Warranty:								
Instruments: 2 years Probes: 1 year	X	X	X	X	X	X	X	X

** All accuracy data plus ± 1 digit*

*** See probes data on pages 10 and 11*

Immersion/air probe 0610.1720

Sensor:	NTC
Cable length:	6 m
Measuring range:	-50 to +80 °C
t99:	5 s in water

Air probe 0610.1722

Sensor:	NTC
Measuring range:	-20 to +70 °C (with direct connection without cable)
t90:	180 s In air at 2 m/s

Frozen food probe 0610.3217

Sensor:	NTC
Measuring range:	-50 to +120 °C
Cable length:	2 m
t99:	8 s in water

Humidity/temperature probe 0636.9717

Sensor:	NTC/cap. sensor
Measuring range:	-20 to +70 °C 0 to 100 %RH
Cable length:	3 m
Accuracy %rF	± 2% (at 22 °C, 2 to 98 %RH)
Ansprechzeit t90:	<15 s (with plastic cap) at 2 m/s air velocity
Temperature dependency:	±0.03 %RH/°C
Accuracy ° C:	±0.2 °C

Immersion/air probe 0610.1721

Sensor:	NTC
Cable length:	12 m
Measuring range:	-50 to +80 °C
t99:	5 s in water

Food probe 0610.2217

Sensor:	NTC
Cable length:	2 m
Measuring range:	-50 to +120 °C
t99:	10 s in water

Pipe probe 0610.4617

Sensor:	NTC
Measuring range:	-50 to +80 °C
Cable length:	3 m

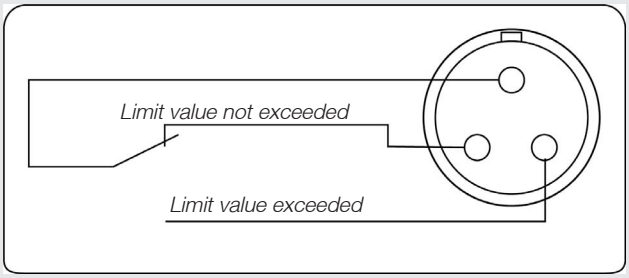
Accuracy of external temp. probe:

-50 ° C to -25.1 °C:	±0.4 °C
-25 to +80 °C	±0.2 °C
> +80 °C	±0.5 °C

The standard maximum permissible cable temperature for long-term use is 80 °C. Ask for special versions if required.

Alarm output in testostor 1722

The relay switches if the programmed limit values are exceeded or not reached. Pin assignment in the Lemo socket:



Surface probe 0602.4592

Sensor:	Thermocouple
Cable length:	1.2 m
Measuring range:	-60 to +130 °C Short-term to +280 °C
t99:	5 s

Exchange measuring head 0602.0092

Sensor:	Thermocouple
Measuring range:	-60 to +130 °C Short-term to +280 °C
t99:	5 s

Clamp probe 0602.4692

Sensor:	Thermocouple
Measuring range:	-50 to +100 °C
Cable length:	1.2 m
t99:	5 s

Magnetic probe 0602.4792

Sensor:	Thermocouple
Measuring range:	-50 to +170 °C
Probe tip:	ø 20 mm
Adhesive force:	Approx. 20 N

Magnetic probe 0602.4892

Sensor:	Thermocouple
Measuring range:	-50 to +400 °C
Probe tip:	ø 21 mm
Adhesive force:	Approx. 10 N

Immersion measuring tip 0602.5792

Sensor:	Thermocouple
Measuring range:	-60 to +1000 °C
Length:	500 mm
Measuring tip:	ø 1.5 mm
t99:	5 s

Thermocouple, flexible 0602.0644

Sensor:	Thermocouple
Measuring range:	-50 to +400 °C
Insulation:	Fibre glass
Cable length:	800 mm
Cable diameter:	1.5mm
t99:	5 s

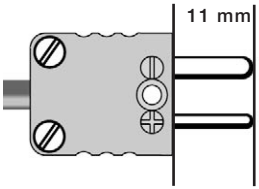
Thermocouple, flexible 0602.0645

Sensor:	TE
Measuring range:	-50 to +400 °C
Insulation:	Fibre glass
Cable length:	1500 mm
Cable diameter:	1.5mm
t99:	5 s

Thermocouple, flexible 0602.0646

Sensor:	Thermocouple
Measuring range:	-50 to +250 °C
Insulation:	PTFE
Cable length:	1500 mm
Cable diameter:	1.5mm
t99:	5 s

The following applies if you use a non-Testo plug:



The instructions in this manual presume you are familiar with WINDOWS®. If you are not, please read your WINDOWS® manuals to get acquainted with the system and its workings.

Minimum system requirements

- PC with operating system
  - Microsoft Windows 95 or newer (if compatible)
  - Microsoft Windows NT 4, Service pack 4, or newer (if compatible).
  - Windows 2000 or newer (if compatible).
- CD Rom drive
- Pentium 100 MHz
- 32 MB RAM
- 15 MB hard disk
- Free serial interface (COM) or corresponding adapter.

Installation

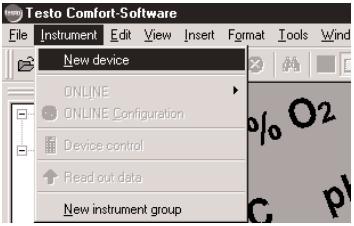
1. Place CD ROM in drive
2. The installation menu starts automatically. If it fails to appear, please click twice on “Setup.EXE” on the CD-ROM.
3. You are asked to enter licence number (see sticker on CD-ROM).
   It may be necessary to reboot when installing for the first time.
   Note: If the number entered is not accepted, check
   - if the caps key is activated?
   - if “Num” in the separate digit block is activated?
   - if l was entered instead of 1?
   - if o was entered instead of 0?
4. Installation is carried out following confirmation and you are asked to enter your name and company name.
5. The procedure continues driven by the menu. Please note the information and explanations beside the buttons.

Note:
If you activate ☑ *“Protected” during installation, the “Range of functions” register will be be unavailable to the user and will not be available in the future.*

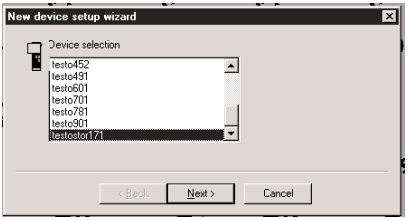
General information on using and installing software

The software environment (how it looks, operation philosophy) is defined in accordance with Microsoft® Office Standard. Symbols and menu items are selected in accordance with this standard. You will very quickly get used to working with this environment, if you are already familiar with Office programs (Word®, Excel®, PowerPoint® ...).

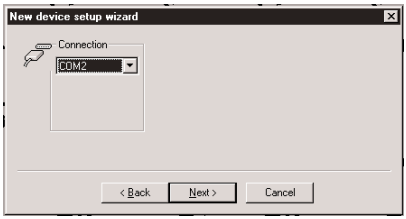
Connect the PC to the data logger via interface and start the “Comsoft.exe” program.



Activate the instrument driver for the testostor 171 data logger series in **INSTRUMENT /** “NEW DEVICE” and click on the “Next” button.

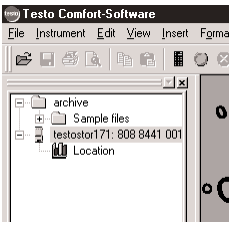


Once you have selected the correct interface, click on “Next”.



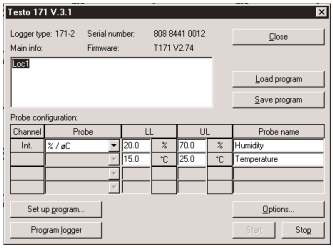
Enter name and click on “Finish” button

If no other name is entered in Diagram 4, Diagram 5 appears, if communication has been successful, with a newly setup testostor 171 instrument symbol + serial number.

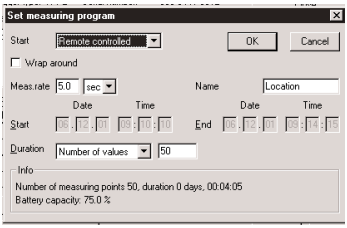


Application information: Programming the logger

Connect your PC to data logger via interface and start the program.
Activate the instrument driver by clicking with the right mouse button on the testostor 171 icon and select INSTRUMENT SELECTION.



If communication between the PC and the data logger has been successful, the window opposite appears with the status information of the data logger which is to be read out...



Write a new **MEASURING PROGRAM** (→ Page 24, **MEASURING PROGRAM**) or open one which is already available (→ Page 29, **OPEN PROGRAM**). The program saved in the logger is the first to appear in the selection window.

Do you wish measurements or limit deviations to be indicated audibly during a measurement series?
Is it required that DEW POINT and ABSOLUTE HUMIDITY are also measured (→ Page 27, **OPTIONS)**?

Does the (humidity) data logger have to be calibrated (→ Page 17, **ON THE JOB...**)?

Do you wish to change the temperature unit to °F (° C) (→ Page 28, **UNITS**)?

Is the given *Date* and *Time* correct (→ Page 28, **SYNCHRONIZE**)?

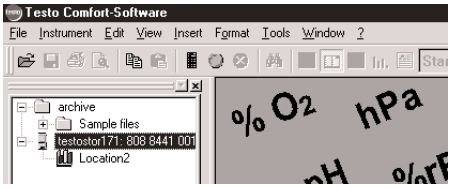
Pass on the programming to the data logger via **PROGRAM LOGGER** (→ Page 26).

Save the programming for later e.g. on your hard disk (→ Page 29, **SAVE PROGRAM**).

Application information: Reading the memory

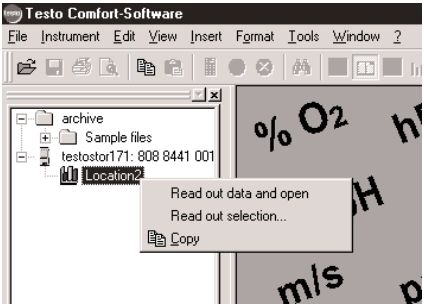
Connect your PC to the data logger via interface and start the program.

Activate the instrument driver by clicking with the right mouse key on the testostor 171 icon and select OPEN.

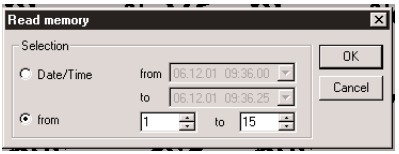


The logger appears with its serial number and the saved protocol.

Select the protocol and drag it to the main memory by keeping the right mouse button pressed or click with the right mouse button on the protocol symbol to read out a section.



You can get information about the data of your measurement protocol (→ Page 26, **MEMORY CONTENT**).



Error message	Cause	Remedy
• The last command was not processed	Communication fault	Check connection cable and try again.
• Incorrect date/time received	Technical problem	Please contact our Service Department.
• Starting time in the past	The starting time which is to be transmitted is behind the current time in the logger.	Reset the clock in the logger (→ **Options,** Page 28).
• Error in the data memory • Error in EEPROM • Error in EPROM	Technical problem- Contact Service Dept.	Please contact our Service Department.
• Your probe configuration is not set up for a calibration.	An external humidity probe is not configured on channel 1.	Change the configuration and program the logger.
• Instrument type and programming data do not correspond.	A program file not suitable for the connected type was opened.	Open a program file corresponding to the logger or connect the correct logger type.

Humidity calibration

The humidity sensors in the testostor 171 series (Type 171-2/1722/171-3 with integrated Testo humidity sensor or Type 171-1/171-6 with humidity/temperature probe which can be connected separately) must be checked in accordance with application conditions and recalibrated if there are large deviations.

The recommended control cycles range from yearly intervals when the loggers are used for room climate measurements to monthly controls under extreme conditions when harmful gases or dusty air are present. Find out which protective cage is suitable for your sensor, in accordance with your application.

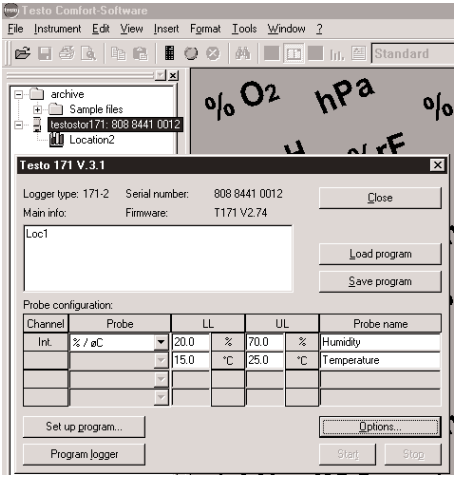
To control and calibrate the humidity sensors, a control and adjustment set (Item no. 0554.0660) is available as an accessory. The set consists of two small containers with saturated salt solutions which permanently produce humidity values of 11.3 and 75.3 %RH.

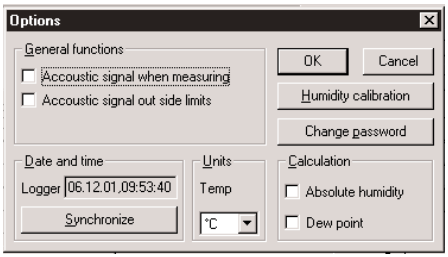
Remove the protective or the sintered cap and ensure that the temperature and humidity sensor look to be in order.

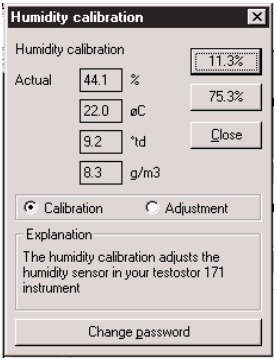
In the case of Type 171-2/1722/171-3 (with integrated sensor) the humidity containers are screwed on directly. An adapter for the separate humidity probe is included with the calibration set which you can attach to the 12 mm probe. Screw the probe together with the adapter into the container (the standard protective cap should remain on the probe, the sintered cap should be removed).

Screw on the 11.3 %RH container and wait until the required thermal and humidity balance is reached (recommendation: 30 min, 60 min is preferable). A stable temperature between +20 to +25 °C is important in this case.

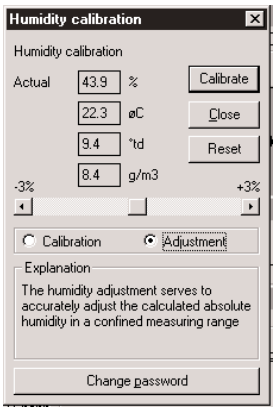
External humidity probes (connected to socket 1) should be configured in the PROBE CONFIGURATION mask prior to calibration







Connect the logger to the PC and open the main instrument window. Select the HUMIDITY CALIBRATION window in **OPTIONS**. The measured *Actual values* are shown in the additional window which appears. When the *Actual value* is stable, confirm with the *11.3 %* button so that the calibration is saved directly in the probe/instrument, the old calibration data is discarded and the actual value shows 11.3%. Repeat the process with the 75.3 %RH container (adaption time is also 30 min to 1 h).



The second window (activate by setting the button to Adjustment) in **HUMIDITY CALIBRATION** is not an alternative for adjustment. However, it provides the option of moving the characteristic curve parallel in a small working range, if the data is correct at the calibration points (11.3 or 75.3 %RH ± 2 %RH) to, for example, superimpose the calculated values (dew point and absolute humidity) with a reference instrument.

Example: Drying, dew point range approximately -20 °C td. A standard humidity adjustment is often insufficient since deviations of less than 0.1 %RH can lead to integral modifications in the dew point display. Move the point in the bar so far until the calculated values correspond to the exact values or enter the %RH values directly. It must be guaranteed that the logger sensor system and the reference instrument have the same climatic conditions (the same temperature is particularly important).

The humidity containers are not needed for this fine adjustment in the 0.1 %RH humidity range.

You can revise the humidity adjustment via the reset button. The software then brings the factory values again.

To protect the lithium battery, the maximum permissible storage and transport temperature in the instruments is + 85 °C.

If your measurement program exceeds the remaining calculated battery life or if the logger interrupts the measurement series due to insufficient battery capacity (warning appears) the battery must be changed. The logger usually stops the data measurement independently just before the end of the battery life so that the logger can be read with the remaining battery capacity.

When a battery is changed, the saved measured data is lost (the calibration data is saved). In case of emergency, please contact an authorised service point.

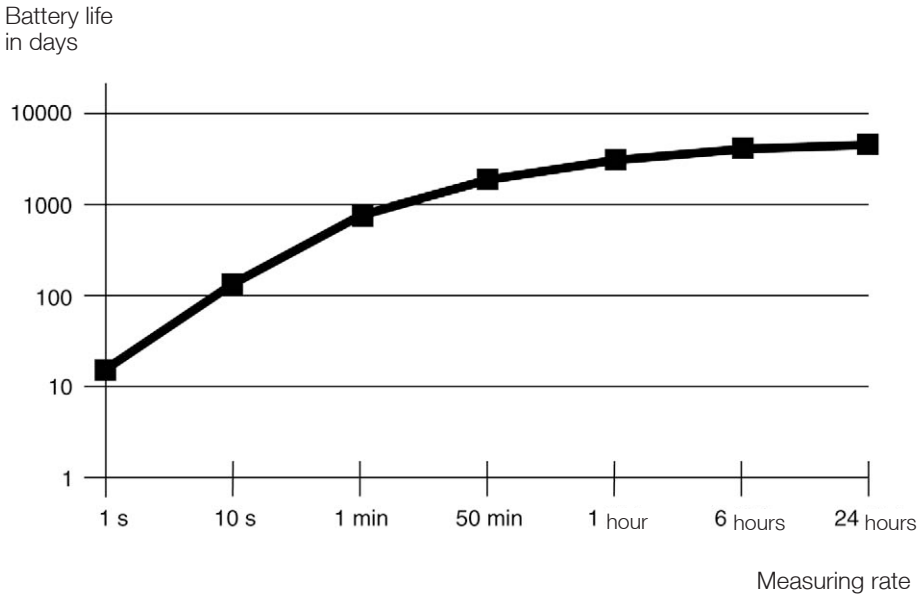
You can change the battery yourself using the battery set which is available as an accessory (Item no. 0515.0018). Please proceed as follows:

The guaranteed protection class of IP65/68 applies only if handled with care.

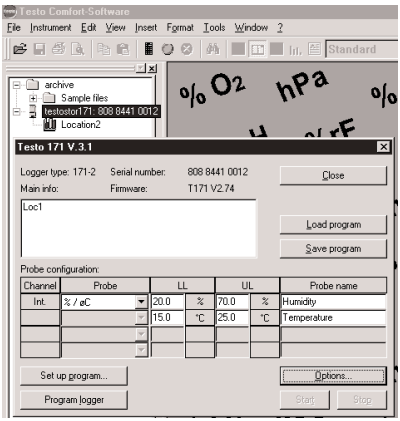
1. Remove the black cover plugs at the back of the instrument. Unscrew the 4 screws crosswise and remove the screws.
2. Attach the enclosed jumper to the two pins on the circuit board (near the battery minus connection).
3. Unscrew the screws on the battery terminals, take out the old battery and dispose of it responsibly.
4. Put in the new battery. Select the correct polarity in accordance with the length of the connections pins. Insert the battery so that it is located on the foamed material between the circuit board and the edge of the housing.
5. Tighten the terminals.
6. Now remove the jumper.
7. Change the O ring on the cover.

Battery life

The testostor 171 series is equipped with long-life Li batteries which guarantee operation for several years. Battery life is reduced by above-average PC communication e.g. by longer online measurements. The calculated remaining capacity is given in percent. The diagram below provides information on the battery life possible with testostor 171-0.



Once the data logger has been set up in INSTRUMENT, NEW DEVICE, open the menu for the instrument icon via the right mouse button. INSTRUMENT CONTROL leads to the main window in which all of the status information is clearly shown.



Here is the example of a programmed logger.

Logger type and Serial number

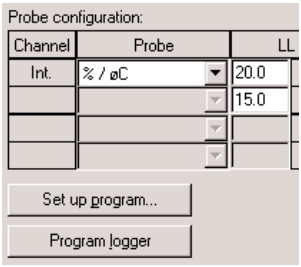
You are informed about the connected logger type and its serial number. If you are using several data loggers simultaneously you can differentiate between the various logger using this information.

Main information

Here you have the possibility of inputting freely selectable information needed for programming. This can include data on the sender or recipient, data on transported goods etc. The input box has space for 250 characters.

PROBE CONFIGURATION

Carry out the probe configuration shown in the table. The probe configuration determines the following ...



CHANNELS

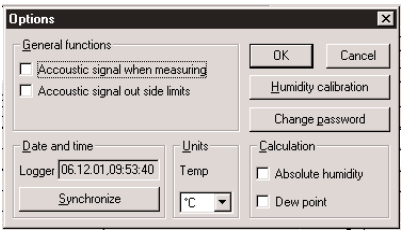
The channels/sockets of the connected data logger type are available for selection.

PROBES

Select the probes from the list with which you wish to work. The name “INTERNAL” in front of the probe name indicates that it is an internal channel (while “EXTERNAL” stands for external channels).

UPPER/LOWER LIMIT VALUE

An upper and lower limit can be assigned to each measurement channel. These limit values are monitored in the logger. If the limits have been exceeded, a limit counter allocated to the channel calculates the number of measured values outside the limit. This information is included in the measurement protocol.



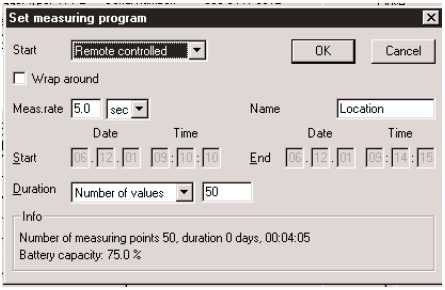
The exceeding of the limit can be indicated acoustically (See **OPTIONS**). In testostor 1722, the connected signal device gives off an alarm if the programmed limit values are exceeded or are not reached (acoustically and optically).

You can call up a table summarizing the number of times the limits have been exceeded by clicking twice in the limit value on the limit value column.

The limit values, the number of values outside the limits, the measurement duration and the amount of measurement time outside the limits are shown.

NAME

If a piece of information is given a name specific to the user, it is then possible, for example, to identify the measurement location. 24 characters are available.



MEASURING PROGRAM...

A measurement program is the information required by the logger to save measured data in the required form. An additional window is opened for this purpose using the button.

START

The following is available as starting criteria:

a) *Time plan (*Date/Time)
The required starting or end time is input directly in the marked boxes.
The suggested end time is calculated from the rate of measurement and the memory available. You can of course write over these values.

b) *Remote-control*
Start PC via **START/STOP** button in the main window.

c) *Magnet start*

Once programmed, the logger goes into standby mode. The saving function is activated by placing a magnet on the housing (where the Testo label is). A successful start is confirmed audibly by a buzzer sound. The start can be monitored via display if a display module is attached.

WRAP-AROUND MEMORY

If the WRAP-AROUND MEMORY mode is activated, the first readings are overwritten should there be no room for additional readings in the logger during subsequent measurements. Therefore the *last* 55,000 or 20,000 readings (total of all channels) are always available in the Type 171-3 logger.

MEASURING RATE

Enter the required rate frequency for the measurement. The rate frequency should not be set at an unnecessarily high level in order to protect the battery.

NAME

The character sequence input here accompanies the data set (for identification when reading out, when processing graphics or tables).

INFO

Number of readings

The total number of readings to be recorded per channel, corresponding to your input for Start and Measuring rate, are shown here.

Battery life

The testostor 171 series is equipped with long-life Li batteries which guarantee operation for up to several years. Battery life is reduced by an above-average PC communication e.g. by extended online measurements. The calculated remaining capacity is indicated in percent.

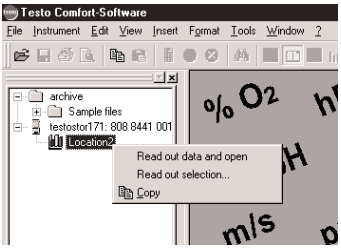
OK/CANCEL

OK confirms your inputs while Cancel discards your input. Following both commands, you will find yourself back in the original window.

PROGRAM LOGGER...

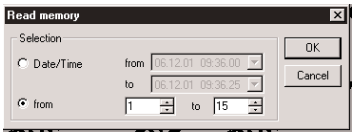
The **PROGRAM LOGGER** command transmits the program settings to the data logger. All of the contents of the memory (all readings) are automatically deleted.

Successful transmission is confirmed by a message on your screen. The data logger is activated and waits on the decisive starting criteria. The measurement can then start.



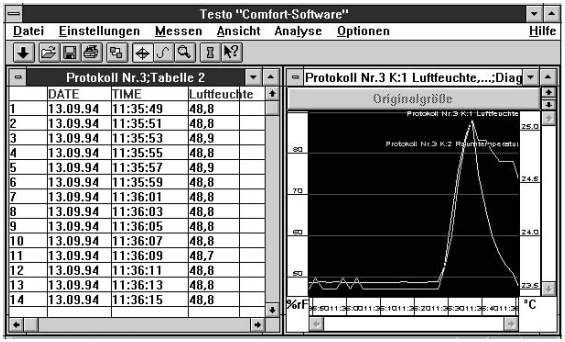
READ OUT MEMORY...

If a logger with data already saved is opened, the measurement protocol appears as a symbol under the logger symbol with the serial number. Click on this symbol with your right mouse button. Another window is opened offering you various reading out options. The following are available:



- Read out or open all of the readings.
- Read out section:
  - From ... to corresponding to *Date/Time*
  - From reading number *to* reading number
  - The last ...values

(when the wrap-around memory is switched on).



Analysis of the measured data is described in the Comfort Software Instruction manuals.

ONLINE MEASUREMENT...
You can
- install the logger with an attached display module and read off the readings from the display on site during the measurement
  or
- operate the logger like a measuring instrument using your PC

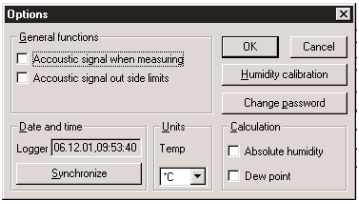
With the logger activated, click on the green symbol in the toolbar to start online measurement directly.

With this function, two situations are presumed.

a) If the logger does not save when online measurement is activated, you will get the current values as measured by the probes.

b) If the logger is activated and is already saving values when online measurement is selected, there may be delays of up to 3 seconds between the displayed online readings and the actual readings since the saving function has priority.

Therefore, it is recommended to switch off the saving mode in the logger by newly programming or switching off via the Stop switch.



OPTIONS...
The following Settings can be made in GENERAL FUNCTIONS:

Acoustic signal when measuring
Should the data logger give off an audible signal (bleep sound) during every measurement?

Acoustic signal outside limits
Should an audible signal (cricket sound) be given off when limit values are exceeded?

Note: the relay in testostor 1722 is activated once the limit values are determined in the probe configuration (See page 23). The connected signal device is then in the alarm standby mode.

PASSWORD
You can create a password, which will be saved in the logger, via this button. If a password exists, it is required before data is loaded up to the logger or readings are read out of the logger. If an incorrect password is entered, the function is not carried out.

If the function is confirmed without entering characters, the password function is deactivated.

Changes to an existing password must be entered beforehand.

If you have forgotten what your password is, please contact our Service Department.

SAVING THE PROGRAM...
Program settings can be stored on a data carrier (hard disk, disks etc.) to predefine certain standard programming for the logger. These can be opened, if required, via **OPENING THE PROGRAM...** and transmitted to the logger.

OPENING THE PROGRAM...
You can load the programming data for the logger from the disk via this button. In this way, loggers with predefined standard programs can be programmed without the need for time-consuming settings.

START/STOP
This button starts and stops measurements which were programmed in the *Remote controlled* starting criteria. *Every* measurement can be stopped via the stop button.

The DATE and TIME are adapted to the date and time of your PC via the *Synchronisation* button.

You can switch between °C and °F in UNITS.

The control box DERIVATE enables the additional calculation of the derived values *Dew point* and *Absolute humidity* (in g/m^3).

HUMIDITY CALIBRATION

Via this button, you can access a window offering you the option of calibrating the internal or external humidity sensor (provided you have connected Type 171-1,171-2, 1722, 171-3 or 171-6 data loggers).

Selects from the options:

Calibration

→ Process to conform with the technical data of the data logger i.e. the standard two point calibration with 11.3 or 75.3 %RH.

and *Adjustment*

→ Fine adjustment to optimise the calculated absolute humidity values in a limited measuring range by parallel relocation of the calibration characteristic curve (by comparing and matching with a reference instrument e.g. with reference to °C td).

Calibration is described in the “On the job...” Chapter.

Data logger incl. battery and magnet

with internal	external		
°C	-	testostor 171-0	0577.1719
°C	° C or %RH/ °C	testostor 171-1	0577.1715
-	4 x °C	testostor 171-4	0577.1714
%RH / °C	-	testostor 171-3	0577.1713
%RH/ °C, td	-	testostor 171-2	0577.1712
%RH/ °C, td	-	testostor 1722 with alarm output	0577.1722
-	%RH/ °C, td or °C	testostor 171-6	0577.1716
-	4x °C	testostor 171-8	0577.1718

Software English	Comfort Software	0554.0830
	Interface	0554.1781
Display module	Without print option	0554.0176
	With print option	0554.0175
Temperature probe	Immersion/air probe, 6 m cable	0610.1720
	Immersion/air probe, 12 m cable	0610.1721
	Air probe (can be directly attached)	0610.1722
	Food probe (stainless steel), 2 m cable	0610.2217
	Frozen food probe, 2 m cable	0610.3217
	Pipe probe with Velcro, 3 m cable	0610.4617
	Contact maker, cable length as required	0628.1787
	Immersion meas. tip, 500 mm probe pipe, ø 1.5 mm	0600.5792
	Pipe probe, for pipe diameter 5 to 65 mm	0602.4592
	Exchangeable measuring head for pipe probe	0602.0092
	Clamp probe, pipe diameter max. 1“	0602.4692
	Magnetic probe, adhesive force approx. 20 N	0602.4792
	Magnetic probe, adhesive force approx. 10 N	0602.4892
	Thermocouple, fibre-glass, 800 mm, ø 1.5 mm	0602.0644
	Thermocouple, fibre-glass, 1500 mm, ø 1.5 mm	0602.0645
	Thermocouple, PTFE, 1500 mm, ø 1.5 mm	0602.0646
Humidity/temperature probe with standard protective cap (plastic)		0636.9717

Accessoris for humidity/temperature probes

Stainless steel sintered cap for measurements in high velocities and dirt ingressed air for 0636.9717	0554.0647
Stainless steel sintered cap for measurements in high velocities and dirt ingressed air for testostor 171-2/171-3	0554.0640
PTFE sintered filter, suitable for measurements in corrosive substances (for 0636.9717)	0554.0756
PTFE sintered filter, suitable for measurements in corrosive substances (testostor 171-2/171-3)	0554.0666

Wire filter (protects from dirt) for 0636.9717	0554.0757
Wire filter for testostor 171-2/171-3	0554.0667
Metal protective cage, robust and temperature resistant, for 0636.9717	0554.0755
Metal protective cage, for testostor 171-2/171-3	0554.0665
Control and calibration set for humidity sensors	0554.0660
Extension cables	
Extension cable for interface (5 m)	0554.1785
Extension cable for probes (5 m)	0554.1786
Connection cable for alarm output, testostor 1722	On request
General accessories	
Holder with lock for data logger	0554.1782
Additional holder for attached display (theft-proof)	0554.1789
Probe holder which can be stuck on (suitable for all probes)	0554.1783
Probe holder, magnetic (suitable for all probes)	0554.1784
Spare starting magnet	0554.1780
Spare battery (Set incl. sealing ring)	0515.0018
Heat paste (14 g)	0554.0004
Signal device for testostor 1722 incl. permanently attached connection cable (10 cm) with Lemo plug and mains cable	0554.1722
Case	
Case for 5 data loggers and accessories	0516.0117
Calibration certificates - Temperature -	
Standard calibration certificate (Measuring points -20°/0° and +60.0 °C for immersion probes, or +60,0/+120 ° C for surface probes)	0520.0001
Special calibration certificate (Measuring points freely selectable in the range -40 to +120 °C) Please note the measuring ranges specified for the loggers	0520.0101
DKD calibration certificate (for testostor 171-1, 171-4, 171-6) (Measuring points, freely selectable in the range from -40 to +120 °C)	0520.0201
Calibration certificates - Humidity -	
Standard calibration certificate Measuring points 12%RH and 76 %RH (at +25 °C)	0520.0006
Special calibration certificate Measuring points freely selectable in the range from 5 to 95 %RH at temperatures in the range +10 to +100 °C (max. dew point temperature 70 °C)	0520.0106
DKD calibration certificate/Humidity Measuring points 11.3 and 75.3 %RH at a fixed temperature value of +25 °C	0520.0206
Measuring points, freely selectable from 5 to 95 %RH at a fixed temperature value of +25 °C	On request
Measuring points, freely selectable from 5 to 95 %RH at a freely selectable temperature value of +5 to +70 °C	On request

Note the application conditions for the respective probes when selecting the calibration certificates.

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