Committing to the future

2011

Measuring Instruments for Humidity

%RH

°C

°C td

hPa

rpm

aW

CO_2

CO

mA

V

Information

Different measuring methods

Requirements

Gas or air humidity measurements are becoming more and more important. Constant improvements to the technical processes, higher demands on quality and energy saving require an accurate, stable and affordable measuring procedure to measure air humidity.

Different measuring methods

Hair hygrometer	Psychrometer	Dew point mirror	Capacitive humidity sensor
The hair hygrometer is one of the oldest methods used to measure humidity. The length of the hairs changes in accordance with the ambient humidity. This change is mechanically indicated as relative humidity.	A temperature probe covered usually with a damp cotton sleeve cools down as a result of evaporation. A second temperature probe measures the ambient temperature. The ambient humidity can be determined from the difference in temperature.	A mirror is cooled until it shows condensation after having reached the dew point temperature. The condensation on the mirror is monitored and the dew point is then measured.	A condensator changes its capacity in accordance with the ambient humidity.
Advantages	**Advantages**	**Advantages**	**Advantages**
– Simple to use measuring engineering with low installation costs – Low cost applications	– If used with care a very accurate measurement of 2 to 3 %RH is possible	– Wide measuring range – Highly accurate	– Affordable, quick-action and accurate measurement (up to ±1%RH) – Wide measuring range (0 to 100 %RH, -40 to +180°C) – Long-term stability – Small, portable measuring instruments
Disadvantages	**Disadvantages**	**Disadvantages**	**Disadvantages**
– High maintenance costs – Frequent regeneration of the hairs – Can be used only from 15 % to 85 %RH and up to max. 50 °C – Highly inaccurate, not definable – Slow measurements	– Cannot be used for multipoint measurements – Time-consuming handling (must be moistened with distilled water before nearly every measurement) – Before every important measurement, the temperature must be adapted to the ambient temperature and the sleeve should be changed	– Time-consuming, expensive method – Not battery-operated – Heavy (non-portable measuring instrument) – Highly accurate temperature measurement required – Slow adaptation time – Large bench-top instruments	**In the past...** capacitive sensors were regarded as unreliable and unstable. **Today...** Testo`s capacitive sensor has been tested worldwide and has established itself in industrial measurement engineering.

Testo humidity sensor

Testo has succeeded in increasing the range of applications for capacitive sensors with the humidity sensor developed here:

– Application temperatures to +180 °C

– Dew point measurement from -50 to +100 °C

– Long-term measurement under extreme conditions

– Highly accurate in the high humidity range (>95%RH)

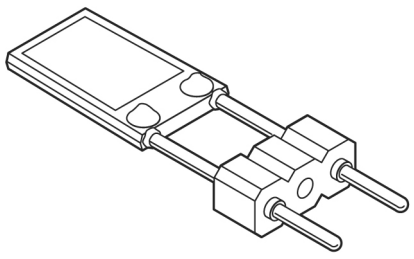
The outstanding characteristics of the Testo humidity sensor are as follows:

– Precision

– Long-term stability

– Temperature resistance

– Robustness



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testo 622

Monitoring indoor climate – quickly, accurately and reliably

In addition to temperature and humidity, the testo 622 also measures pressure.

In the large, clear display, it shows the current measurement values as well as the date and time. It thus provides all important values at a glance.

- Precise measurement of temperature, humidity and pressure
- All important values at a glance: current measurement values as well as date and time
- Calibration and adjustment of the measuring instrument possible on site with the optional calibration and adjustment software
- Large, optimally legible display
- Adjustable calibration reminder function

testo 622 hygrometer with pressure display, incl. calibration protocol, batteries and attachment material

Part no.
0560 6220

Technical data	
Meas. range	-10 to +60 °C / 0 to 100 %RH / 300 to 1200 hPa
Resolution	0.1 °C / 0.1 %RH / 0.1 hPa
Accuracy ±1 digit	±0.4 °C / ±2 %RH at +25 °C (10 to 90 %RH) ±3 %RH (remaining range)/ ±3 hPa

Oper. temp.	-10 to +60 °C
Measuring rate	10 s
Battery life	12 months
Storage temp.	-20 to +60 °C
Dimensions	185 x 105 x 36 mm
Weight	240 g (without batteries)

Accessories	Part no.
Calibration and adjustment software with USB cable for testo 622/623	0554 6230
ISO calibration certificate humidity	0520 0006
DAkkS calibration certificate/humidity*	0520 0206

*Successor organization of the DKD

testo 623

Monitoring indoor climate – with history function

The new temperature and humidity measuring instrument testo 623 shows current and past temperature and humidity values in a large clear display.

This makes an analysis of the current and past ambient conditions possible, directly on site and without time-consuming analysis on a PC.

- Analysis of past temperature and humidity values directly on site without evaluation on a PC
- Histogram shows current and past temperature or humidity values.
- All important values at a glance: current and past temperature and humidity values as well as date and time
- Large, optimally legible display
- Curve display of the last 90 days

testo 623 hygrometer with history function of the measurement values, incl. calibration protocol, batteries and attachment material

Part no.
0560 6230

Technical data	
Meas. range	-10 to +60 °C / 0 to 100 %RH
Resolution	0.1 °C / 0.1 %RH
Accuracy ±1 digit	±0.4 °C / ±2 %RH at +25 °C (10 to 90 %RH) ±3 %RH (remaining range)

Oper. temp.	-10 to +60 °C
Measuring rate	20 s
Battery life	12 months
Storage temp.	-20 to +60 °C
Dimensions	185 x 105 x 36 mm
Weight	240 g

Accessories	Part no.
Calibration and adjustment software with USB cable for testo 622/623	0554 6230
ISO calibration certificate humidity	0520 0006
DAkkS calibration certificate/humidity	0520 0206

*Successor organization of the DKD

testo 608-H1 / testo 608-H2

Thermohygrometers for uninterrupted measurement

The affordable standard testo 608-H1 hygrometer measures humidity, temperature and dewpoint non-stop.

The efficient testo 608-H2 alarm hygrometer with LED alarm function for accurate signals when limits are exceeded.

- With dew point calculation td and max/min display
- Humidity sensor is not affected by condensation
- Battery monitoring
- testo 608-H2, with LED alarm, warns if limits are exceeded
- High accuracy ±2 %RH (testo 608-H2)

testo 608-H2, with LED alarm, warns if limits are exceeded

1	testo 608-H1 hygrometer, humidity/dew point/temperature measuring instrument with battery
Part no.	0560 6081

2	Humidity/dewpoint/temp. meas. instr., incl. LED alarm, battery and calibration protocol
Part no.	0560 6082

Accessories

ISO calibration certificate humidity, Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006

Technical data

		1	2
Meas. range		+10 to +95 %RH 0 to +50 °C -20 to +50 °C td	+2 to +98 %RH -10 to +70 °C -40 to +70 °C td
Accuracy	±1 digit	±3 %RH (+10 to +95 %RH)	±2 %RH (+2 to +98 %RH)
Resolution		0.1 %RH	0.1 %RH
Probe type		NTC	NTC
Accuracy	±1 digit	±0.5 °C (at +25 °C)	±0.5 °C (at +25 °C)
Resolution		0.1 °C	0.1 °C
Oper. temp.		0 to +50 °C	-10 to +70 °C
Common data			
Storage temp.		-40 to +70 °C	
Battery type		9V block battery	
Battery life		8736 h	
Measuring rate		18 s	
Weight		168 g	
Dimensions		120 x 89 x 40 mm	
Warranty		2 years	
Display		LCD, 2 lines	
Material/Housing		ABS	

testo 605-H1

Thermohygrometer

The thermohygrmeter you can bend. Small, compact and accurate. The long-term stable sensor guarantees correct measurement results even after years.

- Dewpoint calculation from -20 to +50 °Ctd
- Long-term stable Testo humidity sensor
- Ideal for measurements in ducts
- Display can be angled for easy readout ot measurement values

testo 605-H1: thermohygrometer with duct holder, incl. attachment clip and battery
Part no. 0560 6053

Accessories

ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/humidity Calibration point 75.3%RH at +25°C	0520 0096

Technical data

Meas. range	+5 to +95 %RH 0 to +50 °C -20 to +50 °C td
Accuracy ±1 digit	±3 %RH ±0.5 °C
Resolution	0.1 %RH 0.1 °C

Oper. temp.	0 to +50 °C
Storage temp.	-20 to +70 °C
Battery type	3 batteries Type AAA
Battery life	Approx. 1000 h
Weight	75 g (with batteries, without packaging)

testo 610

Pocket size air moisture and air temperature measuring instrument

testo 610 measures relative air moisture and temperature simultaneously.

Dew point calculation and wet bulb as well as Hold function and max./min. display are possible with this instrument.

- Air moisture and air temperature
- Dewpoint calculation and wet bulb included
- Hold function and max./min. values
- Backlit display
- Long-term stable Testo humidity sensor
- Protective cap for safe storage
- Belt case, wrist strap and calibration protocol included

testo 610; humidity and temperature measuring instrument incl. protective cap, batteries and calibration protocol

Part no.
0560 0610

Technical data			
Meas. range	0 to 100 %RH -10 to +50 °C	Oper. temp.	-10 to +50 °C
Accuracy ±1 digit	±2.5 %RH (5 to 95 %RH) ±0.5 °C	Storage temp.	-40 to +70 °C
Resolution	0.1 %RH 0.1 °C	Battery type	2 batteries Type AAA
Measuring rate	1 s	Battery life	200 h (average, without display illumination)
Weight	90 g (batteries and protective cap included)	Dimensions	119 x 46 x 25 mm (incl. protective cap)
		Protection class	IP20

Accessories	Part no.
ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/temperature temp. data logger; calibration points -8°C; 0°C; +40°C per channel/instrument	0520 0171

testo 606-1/-2

Pocket size material moisture/air moisture/temperature measuring instrument

testo 606-1 measures material moisture. Material moisture is displayed in percent by weight using stored material characteristic curves for wood and building materials.

In addition to material moisture, testo 606-2 also measures air moisture and temperature. In this way, drying conditions can be reliably assessed directly on-site

- Accurate wood moisture measurement with stored characteristic curves for beech, spruce, larch, oak, pine, maple
- Additional characteristic curves to locate wet points in building materials for cement screed, concrete, plaster, anhydrite screed, cement mortar, lime mortar, brick
- Hold function for easy readout of readings
- Display illumination
- Protective cap for safe storage
- Belt case, wrist strap and calibration protocol included

Additional advantages of testo 606-2

- Measurement of temperature and humidity in ambient air
- Incl. dewpoint calculation and wet bulb

testo 606-1; wood and material moisture meter, incl. protective cap, batteries and calibration protocol	
Part no. 0560 6060	

testo 606-2; wood and material moisture meter with built-in moisture measurement and NTC air thermometer, incl. protective cap, batteries and calibration protocol	
Part no. 0560 6062	

Technical data

	606-1/-2	606-2	
Probe type	**Material moisture (based on conductivity)**	**NTC**	**Testo humid. sensor, cap.**
Meas. range	0 to 50 %	-10 to +50 °C	0 to 100 %RH
Accuracy ±1 digit	±1 %	±0.5 °C	±2.5 %RH (5 to 95 %RH)
Resolution	0.1	0.1 °C	0.1 %RH
Battery life	**606-1:** 200 h (average, without display illumination)		
	606-2: 130 h (average, without display illumination)		

Common data testo 606-1/-2

Oper. temp.	-10 to +50 °C	Storage temp.	-40 to +70 °C
Dimensions	119 x 46 x 25 mm (incl. protective cap)	Weight	90 g (protective cap and batteries included)
Battery type	2 batteries Type AAA	Protection class	IP20
Measuring rate	1 s		

Accessories	Part no.
For testo 606-1:	
Spare electrodes (1 pair)	On request
For testo 606-2:	
Spare electrodes (1 pair)	On request
ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/temperature temp. data logger; calibration points -8°C; 0°C; +40°C per channel/instrument	0520 0171

testo 616

Fast and non-destructive measurement of material moisture

The testo 616 allows fast and non-destructive observation of the material moisture of woods and building materials. This allows the ideal time and place for any destructive measurement which may be necessary to be determined. The display is in percent by weight in comparison to the dry mass of the material.

The testo 616 makes work easier for all those who need to observe the development of drying in floors, walls and surfaces.

- Equipped with 10 characteristics curves for soft wood, hard wood, chipboard, anhydrite screed, cement screed, lime sand brick, aerated concrete, concrete, vertical hole brick and solid brick
- Measurement depth up to 5 cm
- Handy shape for optimum contact pressure
- Hold, max., min. function
- Illuminated digital display
- Characteristics curves were developed in cooperation with the LPI institut

testo 616, wood and material moisture measuring instrument, incl. battery and calibration protocol	
Part no. 0560 6160	

Accessories	Part no.
Case for measuring instrument and probes	0516 0210

Technical data

Measuring range wood:	‹50 %
Measuring range building materials:	‹20 %
Measurement principle	capacitive measurement
Unit:	Water content in percent by weight based on dry mass (%)
Resolution	0.1
Measurement depth:	up to 5 cm
Measuring rate	0,5 s
Display refresh	0,5 s

Protection class	IP30
Oper. temp.	+5 to +40 °C/10 to 80 %RH
Storage temp.	-20 to +70 °C
Battery type	9V block battery, 6F22
Battery life	60 h
Weight	260 g
Material/Housing	ABS/TPE/Metal
Dimensions	70 x 58 x 234 mm

testo 625

Long-Term Drift-Free Thermohygrometer

The compact instrument with built-in humidity probe head for measuring air moisture and temperature. The large 2 line display shows humidity, wet bulb temperature or dewpoint as well as temperature.

When measuring at hard-to-access points, the humidity probe head can be easily removed and attached to the handle via the probe cable (accessory).

Alternatively, the readings can be transmitted wirelessly over wide distances from the probe to the measuring instrument. To do this, the humidity probe head is attached to the radio handle (accessory) and the radio module (accessory) is added to testo 625.

- Displays temperature and relative humidity / wet bulb temperature / dewpoint
- Max./min. values
- Hold button to freeze readings
- Display light
- Auto Off function
- Patented humidity sensor
- 2 year guaranteed long-term stability
- TopSafe, instrument protection against dirt and knocks (optional)

Probe head on handle with probe wire (optional)Auto Off function

testo 625, humidity/temperature measuring instrument, incl. plug-in humidity probe head, battery and calibration protocol	
Part no. **0563 6251**	

Accessories	Part no.
Handle for plug-in humidity probe head for connection to testo 625, probe cable included (length 120 cm)	0430 9725
Case for measuring instrument and probes	0516 0210
TopSafe, protects from impact and dirt	0516 0221
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe	0554 0660
Lithium battery, button cell, type CR 2032	0515 0028
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
9V rech. battery for instrument, instead of battery	0515 0025
Calibration Certificates	
ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
DAkkS calibration certificate/humidity* electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 11.3%RH	0520 0213
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 75.3%RH	0520 0283

* Successor organization of the DKD

Technical data			
Probe type	**NTC**	**Testo humid. sensor, cap.**	
Meas. range	-10 to +60 °C	0 to +100 %RH	
Accuracy ±1 digit	±0.5 °C	±2.5 %RH (+5 to +95 %RH)	
Resolution	0.1 °C	0.1 %RH	

Oper. temp.	-20 to +50 °C	Dimensions	182 x 64 x 40 mm
Storage temp.	-40 to +85 °C	Weight	195 g
Battery type	9V block battery, 6F22	Material/Housing	ABS
Battery life	70 h (without radio operation)	Warranty	2 years

Radio module for upgrading measuring instrument with radio option

Country versions	Radio freq.	Part no.
Radio module for measuring instrument, 869.85 MHz, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO	869.85 MHz FSK	0554 0188
Radio module for measuring instrument, 915.00 MHz FSK, approval for USA, CA, CL	915.00 MHz FSK	0554 0190

Radio handles, separate

Radio handles for humidity probe head

Radio handle for attachable humidity probe head (humidity probe head included in delivery of testo 625)

Country versions	Radio freq.	Part no.
Radio handle for plug-in probe heads, incl. T/C adapter, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO	869.85 MHz FSK	0554 0189
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL	915.00 MHz FSK	0554 0191

Radio probes: General technical data							
	Radio handle		Measuring rate	0.5 s or 10 s, adjustable on handle	Radio transmission	Unidirectional
Battery type	2 AAA micro batteries				Oper. temp.	-20 to +50 °C
Battery life	215 h (meas. rate 0.5 s) 6 months (meas. rate 10 s)		Radio coverage	Up to 20 m (without obstructions)	Storage temp.	-40 to +70 °C

testo 635-1/-2

Long-term drift-free and reliable humidity measurement

The new testo 635 provides the possibility of monitoring and analysing air humidity, material moisture (based on equilibrium humidity), U-value and the pressure dewpoint in compressed air systems.

Versatility with wireless probes

In addition to classical probes with wires, wireless measurement up to a distance of 20 m distance is possible. Damage to the wire or hindrances in usage are thus eliminated. A maximum of three wireless probes can be recorded and displayed by testo 635. The wireless probes are available for the measurement parameters temperature and humidity. The optional easily plugged-in radio module can be retro-fitted at any time.

More user comfort

The testo 635 excels through its logical usage and easy-to-follow menus. When making measurements at different locations, the testo 635-2 offers the advantage that the readings are allocated to the respective measurement location.

For long-term measurements and material moisture measurements, it is possible to switch between different user profiles.

testo 635-2 with store and software

The testo 635-2 has a memory for 10,000 readings. With the testo 635-2, characteristic curves for different materials can be laid down using the PC software included in delivery, and carried over into the instrument. Moisture courses can be recorded, analysed and displayed as a graph or table.

The new measurement technology for humidity measurement

Common advantages testo 635-1/-2

- Connection of 3 wireless probes
- Measurement of air humidity, equilibrium humidity and pressure dewpoint in compressed air systems
- Display of dewpoint distance, min., max. and mean values
- Backlit display

Additional advantages testo 635-1

- Cyclical printing of readings once a minute, for example

Additional advantages testo 635-2

- Instrument memory for up to 10,000 readings
- PC software for analysis, filing and documentation of measurement data
- Direct display of material moisture due to freely settable characteristics curves (based on equilibrium humidity)
- U-value probe connection option
- Storage of single measurements or measurement series by measurement location
- Fast access to the most important functions via user profiles

testo 635-1	
testo 635-1, humidity/temperature measuring instrument, with battery and calibration protocol	
Part no. **0560 6351**	

testo 635-2	
testo 635-2, humidity/temperature measuring instrument with readings memory, PC software and USB data transmission cable, with battery and calibration protocol	
Part no. **0563 6352**	

Accessories	Part no.
Transport and Protection	
Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm	0516 0035
Service case for measuring instrument, probe and accessories, dimensions 520 x 380 x 120 mm	0516 0435
Service case for measuring instrument, probes and accessories, dimensions 520 x 380 x 120 mm	0516 0735
Additional Accessories and Spare Parts	
Handle for attachable humidity probe head for connection to testo 635, incl. probe wire, for measurement / calibration of humidity probe head	0430 9735
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe	0554 0660
Sintered PTFE filter, Ø 12 mm, for corrosive media High humidity range (long-term measurements), high flow velocities.	0554 0756
Stainless steel sintered cap, Ø 12 mm, is screwed onto humidity probe for measurements at higher flow velocities or in contaminated air	0554 0647
PTFE cap, Ø 5 mm, attachable, PTFE material, (5 off) PTFE, Dust protection, high humidity measurements, high velocities	0554 1031
Adapter for surface humidity measurement, for humidity probes Ø 12 mm locates damp spots on walls, for example	0628 0012
Cap for bore holes, for humidity probe Ø 12 mm, Measures equilibrium moisture in bore holes	0554 2140
Plug-in mains adapter, 5 VDC 500 mA with European adapter, 100-250 VAC, 50-60 Hz	0554 0447
Lithium battery, button cell, type CR 2032, Spare Li cell to save RAM data, when changing battery and rech. battery	0515 0028
Adhesive material for fixing and sealing	0554 0761

Accessories	Part no.
Printers and Accessories	
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Spare thermal paper for printer (6 rolls) measurement data documentation legible for up to 10 years	0554 0568
External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz	0554 0610
Calibration Certificates	
ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/temperature meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
ISO calibration certificate dewpoint two adjustment points -10/-40 °Ctd at 6 bar	0520 0136
ISO calibration certificate/absolute pressure, 3 meas. points distributed over meas. range; Absolute pressure; accuracy 0.1 to 0.6; 3 points distributed over meas. range (0 to 70 bar)	0520 0185
ISO calibration certificate/humidity cal. points freely selectable from 5 to 95%RH at +15 to +35°C or at -18 to +80°C	0520 0106
ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
DAkkS calibration certificate/humidity* electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 11.3%RH	0520 0213
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 75.3%RH	0520 0283
ISO calibration certificate/U-value probe	0520 0481
DAkkS calibration certificate/U-value probe*	0520 0981

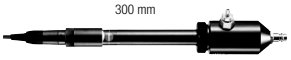
* Successor organization of the DKD

Technical data

Probe type	Type K (NiCr-Ni)	NTC (Humidity probe)	Testo humid. sensor, cap.	Absolute pressure probe	
Meas. range	-200 to +1370 °C	-40 to +150 °C	0 to +100 %RH	0 to 2000 hPa	
Accuracy ±1 digit	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-40 to -25.1 °C) ±0.4 °C (+75 to +99.9 °C) ±0.5% of mv (remaining range)			
Resolution	0.1 °C	0.1 °C	0.1 %RH	0.1 hPa	

Oper. temp.	-20 to +50 °C
Storage temp.	-30 to +70 °C
Battery type	Alkali manganese, mignon, Type AA
Battery life	200 h
Dimensions	220 x 74 x 46 mm
Weight	428 g
Material/Housing	ABS/TPE/Metal
Warranty	2 years

Humidity probes	Illustration	Meas. range	Accuracy	Part no.
Humidity/temperature probe	 Ø 12 mm	-20 to +70 °C 0 to +100 %RH	±0.3 °C ±2 %RH (+2 to +98 %RH)	0636 9735
Robust humidity probe for meas. up to +125 °C, short-term up to +140 °C, Ø 12 mm, e.g. exhaust ducts, and for meas. of material equilibrium moisture, e.g. bulk goods	 300 mm Ø 12 mm	0 to +100 %RH -20 to +125 °C	±2 %RH (+2 to +98 %RH) ±0.2 °C	0636 2161
Thin humidity probe with built-in electronics, incl. 4 attachable PTFE protection caps for material moisture equilibrium measurement	 60 mm Ø 4 mm	0 to +100 %RH 0 to +40 °C	±2 %RH (+2 to +98 %RH) ±0.2 °C	0636 2135
Scatter field probe for fast and damage-free material moisture measurement, with probe cable 1.2 m.		Woods: ‹50 % Building materials: ‹20 %		0636 6160

Pressure dewpoint probes	Illustration	Meas. range	Accuracy	t99	Part no.
Pressure dewpoint probe for measurements in compressed air systems	 300 mm Fixed cable	-30 ... +50 °C tpd 0 to +100 %RH	±0.9 °C tpd (+0.1 to +50 °C tpd) ±1 °C tpd (-4.9 to 0 °C tpd) ±2 °C tpd (-9.9 to -5 °C tpd) ±3 °C tpd (-19.9 to -10 °C tpd) ±4 °C tpd (-30 to -20 °C tpd)	300 s	0636 9835
Precision pressure dewpoint probe for measurements in compressed air systems, including certificate with test point -40°C tpd	 300 mm Fixed cable	-60 to +50 °C tpd 0 to +100 %RH	±0.8 °C tpd (-4.9 to +50 °C tpd) ±1 °C tpd (-9.9 to -5 °C tpd) ±2 °C tpd (-19.9 to -10 °C tpd) ±3 °C tpd (-29.9 to -20 °C tpd) ±4 °C tpd (-40 to -30 °C tpd)	300 s	0636 9836

Absolute pressure probes	Illustration	Meas. range	Accuracy	Part no.
Absolute pressure probe 2000 hPa		0 to +2000 hPa	±5 hPa	0638 1835

Air probes	Illustration	Meas. range	Accuracy	t99	Part no.
Robust air probe, T/C Type K	 115 mm Ø 4 mm Fixed cable	-60 to +400 °C	Class 2*	25 s	0602 1793

Surface probes	Illustration	Meas. range	Accuracy	t99	Part no.
Fast-action surface probe with sprung thermocouple strip, also for uneven surfaces, measurement range short-term to +500°C, TC Type K	 115 mm Ø 12 mm Ø 5 mm Fixed cable	-60 to +300 °C	Class 2*	3 s	0602 0393
Temperature probe to determine U-value, triple sensor system for measuring wall temperature, modelling clay included Note: Only the measuring instrument testo 635-2 is suitable for U-value measurement!	 Information: This probe connects to testo 635-2 only	-20 to +70 °C	Class 1; U-value: ±0.1 ±2% of fsv In order to determine the U-value, an additional probe for determining the outside temperatiure is required: 0613 1001 or 0613 1002 (recommended) or 0602 1793.		0614 1635

*According to standard EN 60584-2, the accuracy of Class 2 refers to -40 to +1200 °C.

**when used with an NTC or wireless humidity probe for measuring outside temperature and 20 K difference between the air inside and outside

Radio module for upgrading measuring instrument with radio option

Country versions	Radio freq.	Part no.
Radio module for measuring instrument, 869.85 MHz, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO	869.85 MHz FSK	0554 0188
Radio module for measuring instrument, 915.00 MHz FSK, approval for USA, CA, CL	915.00 MHz FSK	0554 0190

Assembled for you: Radio handles with probe head

Radio handles with probe head for surface measurement		Meas. range	Accuracy	Resolution	t_{99}
Radio handle for attachable probe heads with T/C probe head for surface measurement		-50 to +350 °C Short-term to +500 °C	Radio handle: ±(0.5 °C +0.3% of mv) (-40 to +500 °C) ±(0.7 °C +0.5% of mv) (remaining range) T/C probe head: Class 2	0.1 °C (-50 to +199.9 °C) 1.0 °C (remaining range)	5 s

Country versions	Radio freq.	Part no.
Radio handle for plug-in probe heads, incl. T/C adapter, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO	869.85 MHz FSK	0554 0189
T/C probe head for surface measurement, attachable to radio handle, T/C Type K		0602 0394
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL	915.00 MHz FSK	0554 0191
T/C probe head for surface measurement, attachable to radio handle, T/C Type K		0602 0394

Radio probes incl. humidity probe head		Meas. range	Accuracy	Resolution
Radio handle for attachable probe heads with humidity probe head		0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.3 °C	0.1 %RH 0.1 °C

Country versions	Radio freq.	Part no.
Radio handle for plug-in probe heads, incl. T/C adapter, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO	869.85 MHz FSK	0554 0189
Humidity probe head, attachable to radio handle		0636 9736
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL	915.00 MHz FSK	0554 0191
Humidity probe head, attachable to radio handle		0636 9736

Radio handles, separate

Radio handles for attachable T/C probes		Meas. range	Accuracy	Resolution
Radio handle for attachable probe heads incl. adapter for attaching T/C probes (Type K)		-50 to +1000 °C	±(0.7 °C +0.3% of mv) (-40 to +900 °C) ±(0.9 °C +0.5% of mv) (remaining range)	0.1 °C (-50 to +199.9 °C) 1.0 °C (remaining range)

Country versions	Radio freq.	Part no.
Radio handle for plug-in probe heads, incl. T/C adapter, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO	869.85 MHz FSK	0554 0189
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL	915.00 MHz FSK	0554 0191

Radio probes: General technical data

	Radio immersion/penetration probe, NTC	Radio handle
Battery type	2 x 3V button cell (CR 2032)	2 AAA micro batteries
Battery life	150 h (meas. rate 0.5 s) 2 months (meas. rate 10 s)	215 h (meas. rate 0.5 s) 6 months (meas. rate 10 s)

Measuring rate	0.5 s or 10 s, adjustable on handle
Radio coverage	Up to 20 m (without obstructions)

Radio transmission	Unidirectional
Oper. temp.	-20 to +50 °C
Storage temp.	-40 to +70 °C

testo 845 with integrated humidity module

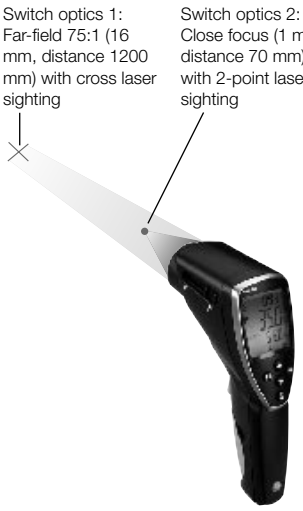
For the first time, surface temperatures with smallest diameters can be measured accurately at short and long distances. The switchable optics for far-field and close focus measurement make this possible.

Far-field measurements are carried out at an optical resolution of 75:1. In this way, surface temperatures can be measured accurately even at great distances from the object to be measured. At a distance of 1.2 metres from the object to be measured, the measuring spot diameter is only 16 mm. A cross laser marks the measuring spot exactly during measurement.

During measurements at a short distance from the object being measured, the close focus optics has a spot diameter of only 1 mm at a distance of 70 mm. Two laser points mark the spot exactly.

Infrared Thermometer with Switchable Optics (far-field/close focus)

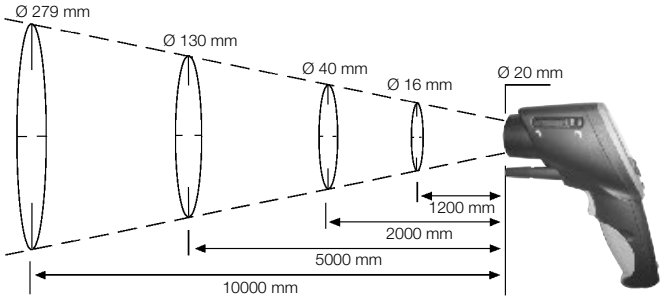
- Switchable optics for far-field measurements (75:1) and close focus (1 mm, distance 70 mm)
- Especially bright cross laser sighting for indicating the actual measurement point
- Integrated humidity module for measuring indoor air humidity and for determining dewpoint distance
- Reference accuracy ± 0.75 °C with super-fast measurement technology (scanning 100 ms)
- Backlit display (3-line), shows °C, %RH, °C td, min./max. values, alarm limit values and degree of emission
- Optical and audible alarm when limit values are exceeded
- Probe socket for TC probe for determining emissivity
- Instrument memory for 90 measurement protocols
- PC software for archiving and documenting measurement data (included in delivery)
- Tripod fitting for online measurement via USB cable (included in delivery)
- Measurement data documentation on site with Testo printer



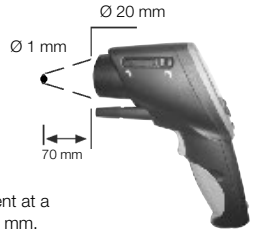
testo 845, infrared temperature measuring instrument with cross laser sighting incl. humidity module, switchable optics for far-field and close focus measurement, contact temperature probe attachable, optical/audible alarm, reading memory, PC software incl. USB data transfer cable, aluminium case, battery and calibration protocol

Part no.
0563 8451

Far-field measurement



Close focus measurement



Switch to far-field measurement at a measurement distance > 250 mm.

Technical data

Probe type	Infrared	Type K (NiCr-Ni)	Humidity module
Meas. range	-35 to +950 °C	-35 to +950 °C	0 to +100 %RH 0 to +50 °C -20 to +50 °C td
Accuracy ±1 digit	±2.5 °C (-35 to -20.1 °C) ±1.5 °C (-20 to +19.9 °C) ±0.75 °C (+20 to +99.9 °C) ±0.75% of mv (+100 to +950 °C)	±0.75 °C (-35 to +75 °C) ±1% of mv (+75.1 to +950 °C)	±2 %RH (2 to 98 %RH) ±0.5 °C (+10 to +40 °C) ±1 °C (remaining range)
Resolution	0.1 °C	0.1 °C	0.1 °C td

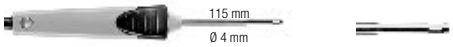
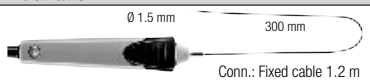
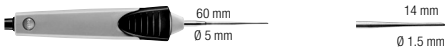
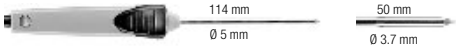
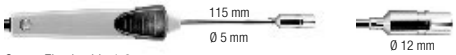
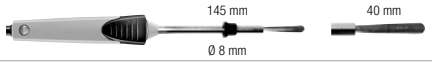
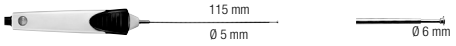
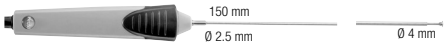
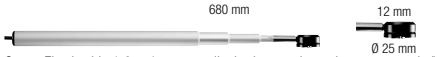
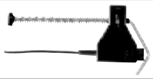
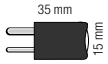
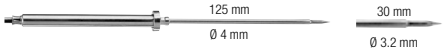
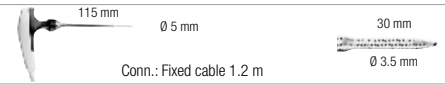
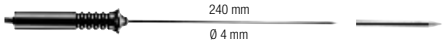
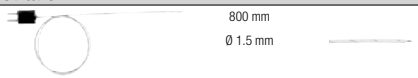
Oper. temp.	-20 to +50 °C
Storage temp.	-40 to +70 °C
Battery type	2 AA batteries
Battery life	25 h (without laser, 10 h (with laser without backlight), 5 h (with laser and 50 % illumination)
Measuring rate	t95: 150ms; Scanning Max/Min/Alarm: 100 ms

Emission factor	Adjustable 0.1 to 1.0
Material/Housing	t95: 250 ms; Scanning Max/Min/Alarm: 100 ms
Optical resolution	Far-field: (75:1) Ø 16 mm at a distance of 1200 mm (90%) Close focus: Ø 1 mm, at a distance of 70 mm (90%)
Dimensions	155 x 58 x 195 mm
Weight	465 g
Warranty	2 years

Accessories

	Part no.
Plug-in mains adapter, 5 VDC 500 mA with European adapter, 100-250 VAC, 50-60 Hz	0554 0447
External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz	0554 0610
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries, for printing out measurements on site	0554 0549
Spare thermal paper for printer (6 rolls), measurement data documentation legible for up to 10 years	0554 0568
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe, quick checks or calibration of humidity probe	0554 0660
Adhesive tape, e.g. for bare surfaces (roll, L.: 10 m, W.: 25 mm), E = 0.95, temperature resistant to +250 °C	0554 0051
Silicone heat paste (14g), Tmax = +260°C, improves heat transfer in surface probes	0554 0004
ISO calibration certificate/temperature, infrared thermometer; calibration points +60°C; +120°C; +180°C	0520 0002
ISO calibration certificate/temperature, Infrared thermometers, calibration points -18°C, 0°C, +60°C	0520 0401
ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 11.3%RH	0520 0213
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 75.3%RH	0520 0283

* Successor organization of the DKD

Air probes	Illustration	Meas. range	Accuracy	t99	Part no.
Robust air probe, T/C Type K	 Conn.: Fixed cable 1.2 m	-60 to +400 °C	Class 2*	25 s	0602 1793
Immers./penetr. probes	**Illustration**	**Meas. range**	**Accuracy**	**t99**	**Part no.**
Efficient and fast-action immersion probe, waterproof, TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +1000 °C	Class 1*	2 s	0602 0593
Fast-action, waterproof immersion/penetration probe, TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +800 °C	Class 1*	3 s	0602 2693
Immersion tip, flexible, TC Type K		-200 to +1000 °C	Class 1*	5 s	0602 5792
Waterproof immersion/penetration probe, TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +400 °C	Class 2*	7 s	0602 1293
Surface probes	**Illustration**	**Meas. range**	**Accuracy**	**t99**	**Part no.**
Fast-action surface probe with sprung thermocouple strip, also for uneven surfaces, measurement range short-term to +500°C, TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +300 °C	Class 2*	3 s	0602 0393
Fast-reaction paddle surface probe, for measurements in inaccessible places, e.g. narrow apertures and slots, TC Type K		0 to +300 °C	Class 2*	5 s Conn.: Fixed cable	0602 0193
Waterproof surface probe with widened measurement tip for flat surfaces, T/C Type K	 Conn.: Fixed cable 1.2 m	-60 to +400 °C	Class 2*	30 s	0602 1993
Fast-action surface probe with sprung thermocouple strip, bent, also for uneven surfaces, measurement range short-term to +500°C, TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +300 °C	Class 2*	3 s	0602 0993
Efficient, waterproof surface probe with small measurement head for flat surfaces, TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +1000 °C	Class 1*	20 s	0602 0693
Flat head surface probe with telescopic handle max. 680 mm for measurements at hard-to-access points, TC Type K	 Conn.: Fixed cable 1.6 m (correspondingly shorter when telescope extended)	-50 to +250 °C	Class 2*	3 s	0602 2394
Magnetic probe, adhesive force approx. 20 N, with magnets, for measurements on metal surfaces, TC Type K	 Conn.: Fixed cable 1.6 m	-50 to +170 °C	Class 2*		0602 4792
Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temp., for measurements on metal surfaces, TC Type K	 Conn.: Fixed cable 1.6 m	-50 to +400 °C	Class 2*		0602 4892
Surface probes	**Illustration**	**Meas. range**	**Accuracy**	**t99**	**Part no.**
Pipe wrap probe with Velcro strip, for temperature measurement on pipes with diameter up to max. 120 mm, Tmax +120°C, TC Type K	 Conn.: Fixed cable 1.5 m	-50 to +120 °C	Class 1*	90 s	0628 0020
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +130 °C	Class 2*	5 s	0602 4592
Spare meas. head for pipe wrap probe, TC Type K		-60 to +130 °C	Class 2*	5 s	0602 0092
Clamp probe for measurements on pipes, pipe diameter 15 to 25 mm (max. 1"), meas. range short-term up to +130°C, TC Type K	 Conn.: Fixed cable 1.2 m	-50 to +100 °C	Class 2*	5 s	0602 4692
Food probes	**Illustration**	**Meas. range**	**Accuracy**	**t99**	**Part no.**
Waterproof food probe made of stainless steel (IP65), TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +400 °C	Class 2*	7 s	0602 2292
Robust food probe with special handle, IP 65, reinforced cable (PUR), T/C Type K	 Conn.: Fixed cable 1.2 m	-60 to +400 °C	Class 1*	6 s	0602 2492
Waterproof robust immersion/penetration probe with metal protection hose Tmax +230°C, e.g. for monitoring temp. in cooking oil, T/C Type K	 Conn.: Fixed cable 1 m	-50 to +230 °C	Class 1*	15 s	0628 1292
Thermocouples	**Illustration**	**Meas. range**	**Accuracy**	**t99**	**Part no.**
Thermocouple with TC adapter, flexible, 800mm long, fibre glass, TC Type K		-50 to +400 °C	Class 2*	5 s	0602 0644

*According to standard EN 60751, the accuracy of Classes 1/2 refers to -40 to +1000/+1200 °C.

Notes

testo Saveris base

The base is the heart of testo Saveris and can save 40,000 readings per measurement channel independent of the PC. This corresponds to around one year of memory capacity at a measuring rate of 15 minutes. An emergency battery ensures that an alarm is transmitted and that no existing data is lost in the event of a power failure.

The system data and alarms are visible via the display of the Saveris base. Even without the PC running, the base issues an alarm by means of an LED if the limit value is exceeded, or optionally via SMS and via a relay output to which an alarm transmitter can be connected.

In total, a base can incorporate 150 radio and Ethernet probes or 254 measurement channels. The Saveris base is connected to the PC either via USB or Ethernet cable. The Saveris base thereby offers flexibility with the highest data security.

testo Saveris wireless probe

The testo Saveris radio probes measure temperature and humidity. In the measuring cycle, the probes save the recorded measurement data and send it to the central base at regular intervals. If a limit value is exceeded, a radio link is established immediately. Through bidirectional transmission, the radio probe and the base are in mutual contact. This therefore ensures that the measurement data is only recorded by the base and is not interfered with by other radio systems.

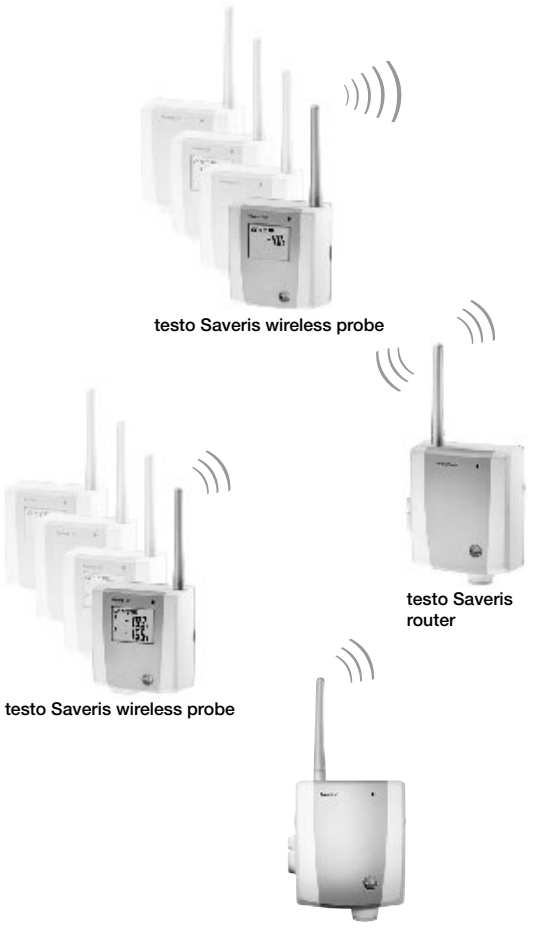
An alarm sounds in the event that the radio link is interrupted by obstacles. The memory in the probe ensures that the measurement data is not lost in the event of an interference in the radio link. An optimized battery design ensures a long running life of the probe memory.

In free field, the transmission path is approx. 300 m at a frequency of 868 MHz and approx. 100 m at a frequency of 2.4 GHz. In buildings, the transmission path is strongly influenced by structural conditions such as walls, refrigerator doors or metal doors. The radio link can be improved or lengthened under poor structural conditions by using a router. Because the radio probe and the router show the quality of their radio link, the probe can personally be positioned optimally by the user.

Probe versions with internal and external sensors allow the adaptation to every application. The radio probes are available with or without a display as an option. Current measurement data, the battery status and the quality of the radio link are shown on the display.

testo Saveris analog coupler

The two versions of the analog coupler (wireless/Ethernet) allow the inclusion of further measurement parameters into the testo Saveris monitoring system, by integrating all transmitters with standardized current/voltage interfaces, e. g. 4 to 20 mA or 0 to 10 V.



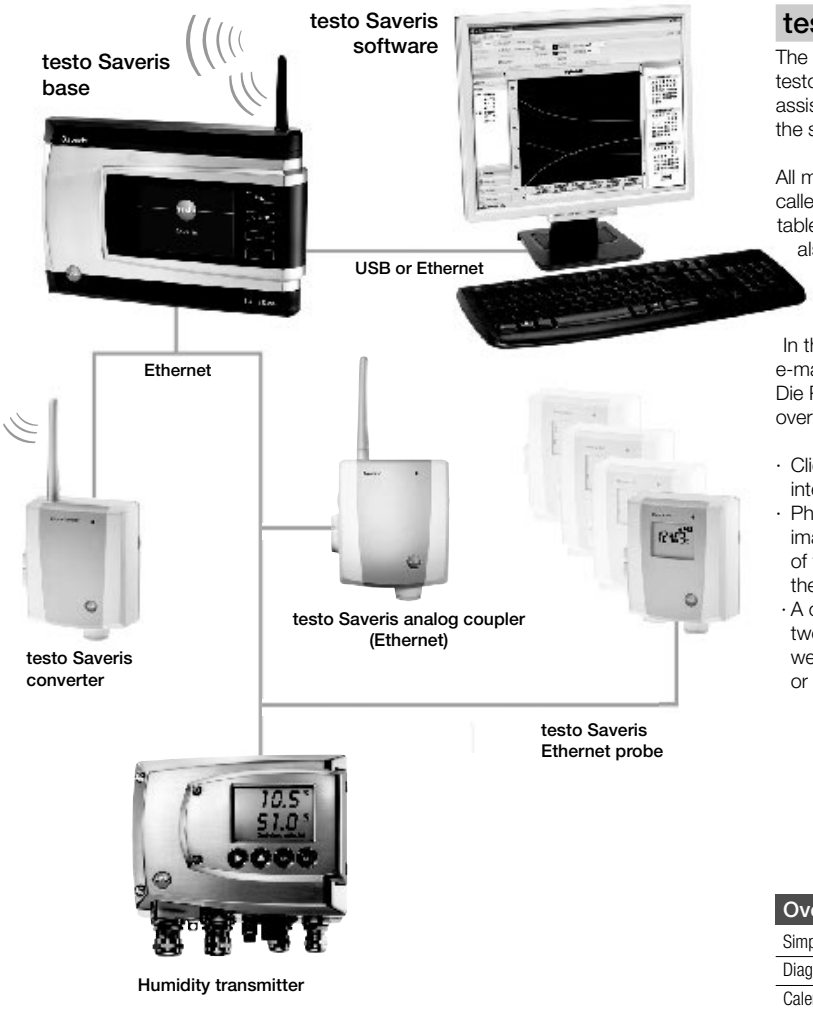
testo Saveris wireless probe

Saveris set

Set 868 MHz
Set 1: 868 MHz, consisting of base 0572 0120, 3 NTC radio probes without display 0572 1110, mains unit for base 0554 1096 and SBE software 0572 0180 incl. USB cable
Part no. **0572 0110**

Set 2.4 GHz
Set 1: 2.4 GHz, consisting of base 0572 0160, 3 NTC radio probes without display 0572 1150, mains unit for base 0554 1096 and SBE software 0572 0180 incl. USB cable
Part no. **0572 0150**

testo Saveris™



testo Saveris Ethernet probe

testo Saveris Ethernet probe

In addition to the radio probes, probes can be used that are directly connected to the Ethernet. The existing LAN infrastructure can be used through this. This allows the data transfer from the probe to the base, even over long distances.

Ethernet probes can be used over any long periods since they are connected to the mains and therefore work independently of batteries. The internal memory guarantees that the existing measurement data is not lost, even with failure of the mains or the LAN connection.

A display informs about the current measurement data as well as the probe status. Different probe versions (probe partially plug-in) adapt to the conditions of the application.

Through the connection of a converter to an Ethernet jack, the signal of a radio probe can be converted into an Ethernet signal. This combines the flexible connection of the radio probe with the use of the existing Ethernet even over long transmission paths.

Humidity/differential pressure transmitters testo 6651/6681/6351/6381

Thanks to the integration of the humidity transmitter, measurement data monitoring is possible parallel to the control. This provides the solution for highest accuracy as well as for special applications (high humidity, trace humidity etc.) in compressed air, drying and air conditioning technology.

Find out more at www.testo.com/transmitter

testo Saveris software

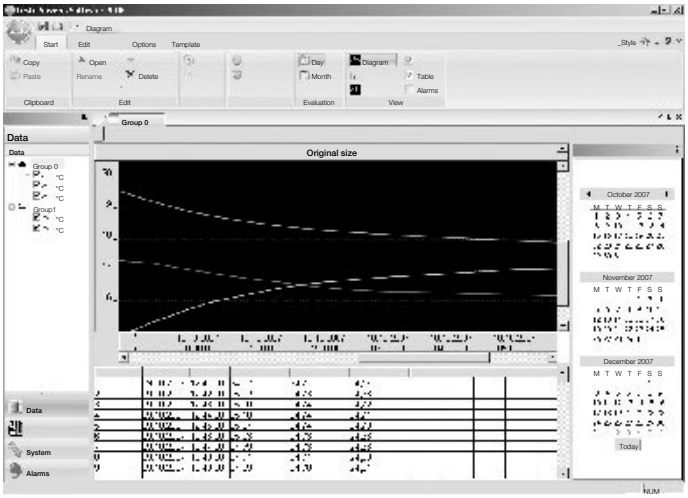
The measurement data is transmitted from the base to a PC on which the testo Saveris software is installed within just a few minutes using an installation assistant. The initial system and probe configuration is also performed using the software.

All measurement are saved centrally in the software's database and can be called up any time as a table or a graph. All alarms that occur are listed in a table as a history. The automatic creation of PDF reports in defined intervals also simplifies the documentation. Using the calendar function and the consolidation of probes into groups, the operation of the software is simple and intuitive.

In the event of an alarm the user can choose between receiving a message via e-mail, SMS or an alarm directly on the screen.
Die PROF (Professional) software version has interesting additional functions over and above the attractive basic functions of the SBE Basic version, e.g.:

- Client server concept: Measurement data can be monitored by different PCs integrated into the network.
- Photographs of machines or rooms can be saved as an image. In these images, the respective measurement values are shown directly at the position of the probe in the room or at the machine. The link between the location and the measurement value is thus very easily visualized (s. picture).
- A comprehensive alarm management offers the option of alarming more than two people at the same time or in succession. Depending on the day of the week and the time, you can freely choose whether an alarm is sent via e-mail or SMS.

Overview of software versions	SBE	PROF	CFR
Simple installation and configuration	•	•	•
Diagrams / tables / alarm overview / PDF reports	•	•	•
Calendar management	•	•	•
Representation of probe groups	•	•	•
Transmission of alarms (e-mail, SMS, relay)	•	•	•
Comprehensive alarm management		•	•
Automatic refresh of measurement data ("Online mode")		•	•
Measurement data on background photo of locations		•	•
Integration into network (client server)		•	•
Allocation of access rights to probe groups		•	•
Conform to 21CFR11 (validatable)			•
Electronic signature			•
Audit trail			•
Allocation of access rights on 3 user levels			•



Probe versions with internal and external temperature sensors and with humidity sensors allow the adaptation to every application. The radio probes are available with or without a display as an option. Current measurement data, the battery status and the quality of the radio link are shown in the display.

		°C / °F			
		NTC internal	NTC internal / NTC externa	TC externa	Pt 100 externa
					
Radio		**Saveris T1** Radio probe with internal NTC	**Saveris T2** Radio probe with external probe connection and internal NTC, door contact	**Saveris T3** 2-channel radio probe with 2 external TC probe connections (Choice of TC characteristics)	**Saveris Pt** Radio probe with 1 external Pt100 probe connection
Internal sensor	Probe type	NTC	NTC		
	Meas. range	-35 to +50 °C	-35 to +50 °C		
	Accuracy	±0.4 °C (-25 to +50 °C) ±0.8 °C (remaining range)	±0.4 °C (-25 to +50 °C) ±0.8 °C (remaining range)		
	Resolution	0.1 °C	0.1 °C		
External probe	Probe type		NTC	TC type K / TC type J	Pt100
	Meas. range (Instrument)		-50 to +150 °C	-195 to +1350 °C / -100 to +750 °C TC type T / TC type S -200 to +400 °C / 0 to +1760 °C	-200 to +600 °C
	Accuracy (Instrument)		±0.2 °C (-25 to +70 °C) ±0.4 °C (remaining range)	±0.5 °C or 0.5% of mv	at 25 °C ±0.1 °C (0 to +60 °C) ±0.2 °C (-100 to +200 °C) ±0.5 °C (remaining range)
	Resolution (Instrument)		0.1 °C	0.1 °C / TC type S 1 °C	0.01 °C
Conn.			NTC via mini-DIN socket, door contact connection cable included in delivery (1.80 m)	2 TCs via TC socket, max. difference in potential 2 V	1 Pt100 via mini-DIN socket
Dimensions (housing):		80 x 85 x 38 mm			
Weight		Approx. 240 g			
Battery life (Type: 4 AA batteries)		Battery life at +25 °C, 3 years; for freezer applications, 3 years with L91 Photo lithium Energizer batteries			
Material/Housing		Plastic			
Protection class		IP68		IP54	IP68
Radio frequency		868 MHz / 2.4 GHz			
Measuring rate		Standard 15 min, 1 min to 24 h can be set			
Conformity with standards		DIN EN 12830			
Oper. temp.		-35 to +50 °C		-20 to +50 °C	
Storage temp.		-40 to +55 °C			
Display (optional)		LCD, 2 lines; 7-segment with symbols			
Transmission distance		approx. 300 m free field at a frequency of 868 MHz, approx. 100 m free field at a frequency of 2.4 GHz			
Wall bracket		included			

Ordering data Wireless probes	Part no.	Part no.	Part no.	Part no.
	Version without display		Version with display	
	868 MHz	2.4 GHz	868 MHz	2.4 GHz
Saveris T1 Radio probe with internal NTC	0572 1110	0572 1150	0572 1120	0572 1160
Saveris T2 Radio probe with external probe connection and internal NTC, door contact	0572 1111	0572 1151	0572 1121	0572 1161
Saveris T3 2-channel radio probe with 2 external TC probe connections (Choice of TC characteristics)	0572 9112	0572 9152	0572 9122	0572 9162
Saveris Pt Radio probe with 1 external Pt100 probe connection	0572 7111	0572 7151	0572 7121	0572 7161

The alkali manganese batteries AA (0515 0414) are included in these ordering data (analog coupler excluded). Saveris probes are delivered with a calibration protocol of the factory adjustment data. Calibration certificates must be ordered separately.

testo Saveris™ Components: Radio probes

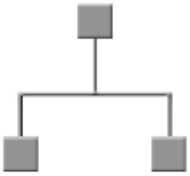
	°C / °F and %RH						mA and V
	%RH NTC external		%RH NTC internal		%RH NTC external		mA V intern
							
Radio	**Saveris H2D** Wireless humidity probe		**Saveris H3** Humidity radio probe		**Saveris H4D** Wireless probe with 1 external humidity probe connection		**Saveris U1** Wirelss probe with current/ voltage output
Internal sensor – Probe type			NTC	Humidity sensor			1 channel: current/voltage input
Internal sensor – Meas. range			-20 to +50 °C	0 to 100 %RH			2-wire: 4 to 20 mA, 4-wire: 0/4 to 20 mA, 0 to 1/5/10 V, load: max. 160 Ω at 24 V DC
Internal sensor – Accuracy			±0.5 °C	±3 %RH			Current ±0.03 mA / 0.75 µA Voltage 0 to 1 V ±1.5 mV/39 µV Voltage 0 to 5 V ±7.5 mV / 0.17 mV Voltage 0 to 10 V ±15 mV / 0.34 mV ±0.02% of. m.v./K deviating from nominal temperature 22 °C
Internal sensor – Resolution			0.1 °C	0.1 °C / 0.1 °C td			
External probe – Probe type	NTC	Humidity sensor			NTC	Humidity sensor	
External probe – Meas. range (Instrument)	-20 to +50 °C	0 to +100 %RH*			-20 to +70 °C	0 to +100 %RH*	
External probe – Accuracy (Instrument)	±0.5 °C	to 90 %RH: ±2 %RH > 90 %RH: ±3 %RH			±0.2 °C	see probes	
External probe – Resolution (Instrument)	0.1 °C	0.1% / 0.1 °C td			0.1 °C	0.1% / 0.1 °C td	
Conn.	non-exchangeable stump probe				1 x external humidity probe mini DIN socket		2 or 4-wire current/ voltage output Service interface mini DIN for adjustment
Dimensions (housing):	85 x 100 x 38 mm		80 x 85 x 38 mm				Approx. 85 x 100 x 38 mm
Weight	Approx. 256 g		Approx. 245 g				Approx. 240 g
Battery life (Type: 4 AA batteries)	Battery life at +25 °C, 3 years; for freezer applications, 3 years with L91 Photo lithium Energizer batteries						Supply: Mains unit 6.3 V DC, 2 to 30 V DC max. 25 V AC
Material/Housing	Plastic						
Protection class	IP54		IP42		IP54		
Radio frequency	868 MHz / 2.4 GHz						
Measuring rate	Standard 15 min, 1 min to 24 h can be set						
Oper. temp.	-20 to +50 °C						
Storage temp.	-40 to +55 °C						
Display (optional)	LCD, 2 lines; 7-segment with symbols						(no display)
Transmission distance	approx. 300 m free field at a frequency of 868 MHz, approx. 100 m free field at a frequency of 2.4 GHz						
Wall bracket	included						

*not for continuous high-humidity applications

Ordering data Wireless probes	Part no.	Part no.	Part no.	Part no.
	Version without display		Version with display	
	868 MHz	2.4 GHz	868 MHz	2.4 GHz
Saveris H3 Wireless probe with internal humidity sensor	0572 6110	0572 6150	0572 6120	0572 6160
Saveris H2D Wireless probe with external humidity sensor 2%RH, radio frequency 868 MHz (with display)			0572 6122	0572 6162
Saveris H4D Wireless humidity probe with external probe connection, radio frequency 868 MHz (with display)			0572 6124	0572 6164
Saveris U1 Analog coupler with 1 current/voltage output (order mains unit separately)	0572 3110	0572 3150		

The alkali manganese batteries AA (0515 0414) are included in these ordering data (analog coupler excluded). Saveris probes are delivered with a calibration protocol of the factory adjustment data. Calibration certificates must be ordered separately.

The existing LAN infrastructure can be used through the Ethernet probe. This allows the data transfer from the probe to the base, even over long distances. Ethernet probes have a display.



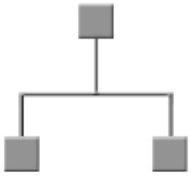
Ethernet

		°C		
		NTC external	TC external	Pt 100 external
				
		Saveris T1E Ethernet probe with 1 external probe connection NTC	**Saveris T4 E** 4-channel Ethernet probe with 4 external TC probe connections	**Saveris Pt E** Ethernet probe with external Pt100 probe connection
Internal sensor				
External probe	Probe type	NTC	TC type K / TC type J	Pt100
	Meas. range (Instrument)	-50 to +150 °C	-195 to +1350 °C / -100 to +750 °C TC type T / TC type S -200 to +400 °C / 0 to +1760 °C	-200 to +600 °C
	Accuracy (Instrument)	±0.2 °C (-25 to +70 °C) ±0.4 °C (remaining range)	±0.5 °C or 0.5% of mv	at 25 °C ±0.1 °C (0 to +60 °C) ±0.2 °C (-100 to +200 °C) ±0.5 °C (remaining range)
	Resolution (Instrument)	0.1 °C	0.1 °C / TC type S 1 °C	0.01 °C
Conn.		1 x NTC via mini DIN socket	4 TCs via TC socket, max. difference in potential 50 V	1 Pt100 via mini-DIN socket
		Mini-DIN service interface for adjustment is accessible externally		
Dimensions (housing):		Approx. 85 x 100 x 38 mm		
Weight		Approx. 220 g		
Power		6.3 V DC mains unit; alternatively via 24 V AC/DC plug-in/screw terminals, PoE		
Buffer battery		Li-ion		
Material/Housing		Plastic		
Protection class		IP54		
Measuring rate		2 s to 24 h		
Oper. temp.		-20 to +60 °C		
Storage temp.		-40 to +60 °C		
Power consumption		PoE Class 0 (typical ≤ 3 W)		
Display (optional)		LCD, 2 lines; 7-segment with symbols		
Wall bracket		included		

Ordering data Ethernet probes	Part no.
Saveris T1E Ethernet probe with 1 external probe connection NTC	0572 1191
Saveris T4 E 4-channel Ethernet probe with 4 external TC probe connections (With display)	0572 9194
Saveris Pt E Ethernet probe with external Pt100 probe connection (With display)	0572 7191
Saveris H1 E Humidity Ethernet probe 1% (With display)	0572 6191
Saveris H2 E Humidity Ethernet probe 2 % (With display)	0572 6192
Saveris H4E Ethernet humidity probe with external probe connection (with display)	0572 6194
Saveris U1E Etheret analog coupler with 1 curent/voltage output	0572 3190

Saveris probes are delivered with a calibration protocol of the factory adjustment data. Calibration certificates must be ordered separately. Mains units are not included in delivery.

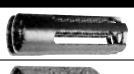
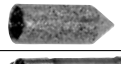
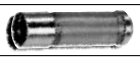
testo Saveris™ — Components: Ethernet probes



Ethernet

	°C / °F and %rF				mA and V
	%RH NTC external	%RH NTC external	%RH NTC external	mA V internal	
					
	Saveris H1E	**Saveris H2 E**	**Saveris H4E**	**Saveris U1E**	
	Humidity Ethernet probe 1%	Humidity Ethernet probe 2 %	Ethernet probe with external humidity probe connection	Ethernet probe with current/voltage	
Internal sensor					
Probe type				1 channel: current/voltage	
Meas. range				2-wire: 4 to 20 mA, 4-wire: 0/4 to 20 mA, 0 to 1/5/10V, load: max. 160 Ω at 24 V DC	
Accuracy				Current ±0,03 mA / 0.75 µA Voltage 0 to 1 V ±1.5 mV / 39 µV Voltage 0 to 5 V ±7.5 mV / 0.17 mV Voltage 0 to 10 V ±15 mV / 0.34 mV ±0.02% of. m.v./K deviating from nominal temperature 22 °C	
Resolution					
External probe					
Probe type	NTC	Humidity sensor	NTC	Humidity sensor	NTC	Humidity sensor	
Meas. range (Instrument)	-20 to +70 °C	0 to 100 %RH*	-20 to +70 °C	0 to 100 %RH*	-20 ... +70 °C	0 to 100 %RH*	
Accuracy (Instrument)	±0.2 °C (0 to +30 °C) ±0.5 °C (remaining range)	to 90 %RH: ±(1 %RH +0.7 % of mv) at +25 °C > 90 %RH: ±(1.4 %RH +0.7 % of mv) at +25 °C	±0.2 °C (0 to +30 °C) ±0.5 °C (remaining range)	to 90 %RH: ±(1 %RH +0.7 % of mv) at +25 °C > 90 %RH: ±(1.4 %RH +0.7 % of mv) at +25 °C	±0.2 °C (-20 to +70 °C)	see external probes	
Resolution (Instrument)	0.1 °C	0.1% / 0.1 °C td	0.1 °C	0.1% / 0.1 °C td	0.1 °C	0.1% / 0.1 °C td	
Conn.					1 x external Ethernet humidity probe mini DIN socket		1 x 2- or 4-wire current/voltage
	Mini-DIN service interface is accessible externally						
Dimensions (housing):	Approx. 85 x 100 x 38 mm						
Weight	Approx. 230 g				Approx. 254 g		Approx. 240 g
Power	6.3 V DC mains unit; alternatively via 24 V AC/DC plug-in/screw terminals, PoE						
Buffer battery	Li-ion						
Material/Housing	Plastic						
Protection class	IP54						
Measuring rate	2 s to 24 h						
Oper. temp.	-20 to +60 °C						
Storage temp.	-40 to +60 °C						
Power consumption	PoE Class 0 (typical ≤ 3 W)						
Display (optional)	LCD, 2 lines; 7-segment with symbols						no display
Wall bracket	included						

*not for continuous high-humidity applications

Sintered caps for Saveris H1 E, H2 E and H2 D Ethernet probes	Illustration	Part no.
Metal protection cage, Ø 12 mm for humidity probes, for measurement in flow velocities of less than 10 m/s		0554 0755
Stainless steel sintered cap, Ø 12 mm, is screwed onto humidity probe, for measurements at higher flow velocities or in contaminated air		0554 0647
Cap with wire mesh filter, Ø 12 mm		0554 0757
Sintered PTFE filter, Ø 12 mm, for corrosive media, High humidity range (long-term measurements), high flow velocities.		0554 0756
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe, quick checks or calibration of humidity probe		0554 0660

testo Saveris™ Base	Part no.
Saveris base, radio frequency 868 MHz	0572 0120
Saveris base, radio frequency 868 MHz, GSM module integrated (for SMS alarm)	0572 0121
Saveris base, radio frequency 2.4 GHz	0572 0160
Saveris base, radio frequency 2.4 GHz, GSM module integrated (for SMS alarm)	0572 0161

No mains units or aerials with magnetic base are contained in this ordering data.

Technical data Base	
Memory	40,000 values per channel (total max. 10,160,000 values)
Dimensions	225 x 150 x 49 mm
Weight	Approx. 1510 g
Protection class	IP42
Material/Housing	Diecast zinc / plastic
Radio frequency	868 MHz / 2.4 GHz
Power supply (absolutely necessary)	6.3 V DC mains unit; alternatively via 24 V AC/DC plug-in/screw terminals, power consumption < 4 W
Rech. batt.	Li-ion battery (for data back-up and for emergency SMS if power supply fails)
Oper. temp.	-10 to +50 °C
Storage temp.	-40 to +60 °C
Display	graphical display, 4 control keys
Interfaces	USB, radio, Ethernet
Connectable radio probe	max. 15 probes can be directly connected via radio interface, max. 150 total via radio / router / converter / Ethernet, max. 254 channels
Alarm relay	max. 1 A, max. 30 W, max. 60/25 V DC/AC, NC or NO contact
GSM module	850 / 900 / 1800 / 1900 MHz not valid for Japan and South Korea
Set up	Table base and wall bracket included

Power supply	Part no.
Battery for radio probe (4 AA alkali manganese mignon batteries)	0515 0414
Battery for radio probe for use below -10 °C (4 Energizer L91 Photo lithium)	0515 0572
100-240 V AC / 6.3 V DC international mains unit; for mains operation or battery charging in instrument	0554 1096
Mains unit (top-hat rail mounting) 90 to 264 VAC/24 VDC (2.5 A)	0554 1749
Mains unit (desk-top) 110 to 240 VAC/24 VDC (350mA)	0554 1748

Other features	Part no.
Magnetic foot aerial (dualband) with 3 m cable, for base with GSM module (not suitable for USA, Canada, Chile, Argentina, Mexico)	0554 0524
Magnetic foot aerial (quadband) for base with GSM module	0554 0525
Alarm module (visual + acoustic), can be connected to base alarm relay, Ø 70 x 164 mm, 24 V AC/DC / 320 mA, perm. light: red, perm. tone: buzzer approx. 2.4 kHz (Mains unit 0554 1749 required)	0572 9999 ID-Nr. 0699 6111/1
Progamming adapter (from mini-DIN to USB) for Ethernet probe and converter (necessary if no DHCP server available)	0440 6723

Software	Part no.
SBE software, incl. USB connecting cable base-PC	0572 0180
PROF software, incl. USB connecting cable base-PC	0572 0181
CFR software, incl. Ethernet connection cable PC to Base	0572 0182
Saveris adjustment software incl. connection cable for wireless and Ethernet probes	0572 0183

testo Saveris™ Router	Part no.
Saveris router, 868 MHz, radio transmission medium	0572 0119
Saveris router, 2.4 GHz, radio transmission medium	0572 0159

testo Saveris™ Converter	Part no.
Saveris converter, 868 MHz, converts the radio transmission medium to Ethernet	0572 0118
Saveris converter, 2.4 GHz, converts the radio transmission medium to Ethernet	0572 0158

No mains units are contained in this ordering data.

Technical data	Router	Converter
Dimensions	Approx. 85 x 100 x 38 mm	Approx. 85 x 100 x 35 mm
Weight	Approx. 180 g	Approx. 190 g
Power supply	6.3 V DC mains unit; alternatively via 24 V AC/DC plug-in/screw terminals, power consumption < 0.5 W	6.3 V DC mains unit; alternatively via 24 V AC/DC plug-in/screw terminals,PoE, power consumption < 2 W
Oper. temp.	-20 to +50 °C	-20 to +50 °C
Storage temp.	-40 to +60 °C	-40 to +60 °C
Material/Housing	Plastic	Plastic
Protection class	IP54	IP54
Interfaces	Radio	Radio, Ethernet
Connectable radio probe	max. 5	max. 15
Wall bracket	included	included

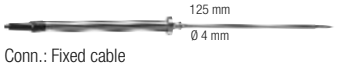
Note on the radio frequencies

868 MHz: EU countries and certain other countries (e.g. CH, NOR)

2.4 GHz: non-EU countries (country list can be called up under **www.testo.com/saveris**)

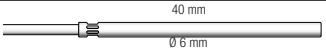
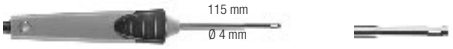
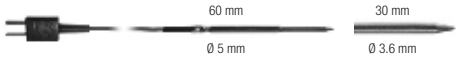
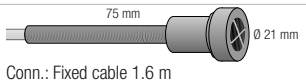
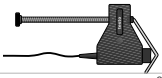
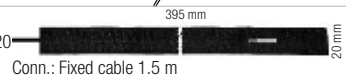
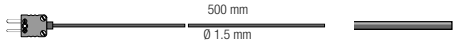
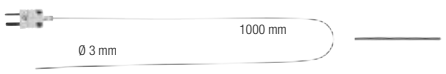
Calibration Certificates	Part no.
ISO calibration certificate/temperature; Temperature probes; calibration points -8 °C; 0 °C; +40 °C per channel/instrument (suitable for Saveris T1/T2)	0520 0171
ISO calibration certificate/temperature; Temperature probes; calibration points -18 °C; 0 °C; +60 °C; per channel/instrument (not suitable for Saveris T1/T2)	0520 0151
DAkkS calibration certificate/Temperature*; Temperature probes; calibration points -20 °C; 0 °C; +60 °C; per channel/instrument (not suitable for Saveris T1/T2)	0520 0261
ISO calibration certificate humidity ; calibration points 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0076
ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
DAkkS calibration certificate humidity*; humidity data logger; cal. points 11.3%RH and 75.3%RH at +25°C; per channel/instrument	0520 0246
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 11.3%RH	0520 0213
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 75.3%RH	0520 0283

*Successor organization of the DKD

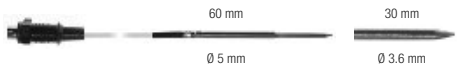
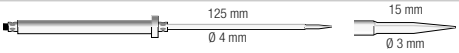
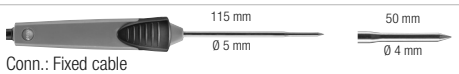
Pt100 Plug-in probes	Illustration	Meas. range	Accuracy	t99	Part no.
Robust, Pt100 stainless steel food probe (IP65)	 Conn.: Fixed cable	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	10 s	0609 2272
Penetration probe Pt100 with ribbon cable, cable length 2 m, IP 54		-50 to +180 °C	Class A	10 s	0572 7001
Robust, waterproof Pt100 immersion/penetration probe	 Fixed cable	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	12 s	0609 1273
Connection cable for unlimited Pt100 stationary probes with screw terminals (4-wire technology), max. cable length: 20 m					0554 0213

The specified accuracy class of the Saveris radio and Ethernet probe is achieved using these external probes.

testo Saveris™ — Accessories: External temperature probes

TC Plug-in probes	Illustration	Meas. range	Accuracy	t99	Part no.
Stationary probe with stainless steel sleeve, TC Type K	 Conn.: Fixed cable 1.9 m	-50 to +205 °C	Class 2*	20 s	0628 7533
Robust air probe, T/C Type K	 Conn.: Fixed cable 1.2 m	-60 to +400 °C	Class 2*	25 s	0602 1793
Penetration probe TC with ribbon cable, Type K, cable length 2 m, IP 54		-40 to + 220 °C	Class 1	7 s	0572 9001
Magnetic probe, adhesive force approx. 20 N, with magnets, for measurements on metal surfaces, TC Type K	 Fixed cable	-50 to +170 °C	Class 2*	150 s	0602 4792
Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temp., for measurements on metal surfaces, TC Type K	 Conn.: Fixed cable 1.6 m	-50 to +400 °C	Class 2*		0602 4892
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K	 Conn.: Fixed cable 1.2 m	-60 to +130 °C	Class 2*	5 s	0602 4592
Pipe wrap probe with Velcro strip, for temperature measurement on pipes with diameter up to max. 120 mm, Tmax +120°C, TC Type K	 Conn.: Fixed cable 1.5 m	-50 to +120 °C	Class 1*	90 s	0628 0020
Thermocouple with TC adapter, flexible, 800mm long, fibre glass, TC Type K		-50 to +400 °C	Class 2	5 s	0602 0644
Thermocouple with TC adapter, flexible, 1500mm long, fibre glass, TC Type K		-50 to +400 °C	Class 2*	5 s	0602 0645
Thermocouple with TC adapter, flexible, 1500mm long, PTFE, TC Type K		-50 to +250 °C	Class 2*	5 s	0602 0646
Immersion tip, flexible, TC Type K		-200 to +1000 °C	Class 1*	5 s	0602 5792
Immersion measurement tip, flexible, for measurements in air/exhaust gases (not suitable for measurements in smelters), TC Type K		-200 to +1300 °C	Class 1*	4 s	0602 5693

*According to standard EN 60584-2, the accuracy of Class 1 refers to -40 to +1000 °C (Type K), Class 2 to -40 to +1200 °C (Type K), Class 3 to -200 to +40 °C (Type K).

NTC Plug-in probes	Illustration	Meas. range	Accuracy	t99	Part no.
Stub probe, IP 54		-20 to +70 °C	±0.2 °C (-20 to +40 °C) ±0.4 °C (+40.1 to +70 °C)	15 s	0628 7510
Stationary probe with aluminium sleeve, IP 65	 Conn.: Fixed cable; Cable/length: 2.4 m	-30 to +90 °C	±0.2 °C (0 to +70 °C) ±0.5 °C (remaining range)	190 s	0628 7503*
Accurate imm./pen. probe, 6m cable, IP 67	 Conn.: Fixed cable; Cable/length: 6 m	-35 to +80 °C	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining range)	5 s	0610 1725*
Accurate immersion/penetration probe, cable: 1.5 m long, IP 67	 Conn.: Fixed cable; Cable/length: 1.5 m	-35 to +80 °C	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining range)	5 s	0628 0006*
Penetration probe NTC with ribbon cable, cable length 2 m, IP 54		-40 to +125 °C	±0.5 % of mv (+100 to +125 °C) ±0.2 °C (-25 to +80 °C) ±0.4 °C (remaining range)	8 s	0572 1001
Wall surface temperature probe, e.g. to prove damage in building material	 Conn.: Fixed cable; Cable/length: 3 m	-50 to +80 °C	±0.2 °C (0 to +70 °C)	20 s	0628 7507
Stainless steel NTC food probe (IP65) with PUR cable	 Conn.: Fixed cable; Cable/length: 1.6 m	-50 to +150 °C[2)]	±0.5% of mv (+100 to +150 °C) ±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining range)	8 s	0613 2211*
Waterproof NTC immersion/penetration probe	 Conn.: Fixed cable	-50 to +150 °C	±0.5% of mv (+100 to +150 °C) ±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining range)	10 s	0613 1212
Pipe wrap probe with Velcro for pipe diameter to max. 75 mm, Tmax. +75°C, NTC	 Conn.: Fixed cable; Cable/length: 1.5 m	-50 to +70 °C	±0.2 °C (-25 to +70 °C) ±0.4 °C (-50 to -25.1 °C)		0613 4611

* Probe tested to EN 12830 for suitability in the transport and storage sectors

2) Long-term measurement range +125°C, short-term +150°C or +140°C (2 minutes)

%RH Plug-in probes	Illustration	Meas. range	Accuracy	Part no.
Humidity / Temperature Probe 12mm		-20 to +70 °C, 0 to +100 %RH	±0,3 °C, ±2 %RH (2 to 98 %RH)	0572 6172
Humidity / Temperature Probe 4 mm		0 to +40 °C, 0 to +100 %RH	±0,3 °C, ±2 %RH (2 to 98 %RH)	0572 6174

The specified accuracy class of the Saveris radio and Ethernet probe is achieved using these external probes.

testo 174H

Mini humidity/temperature logger

The mini data logger testo 174H monitors building climate, continuously, securely and unobtrusively.

- Low-budget temperature and humidity monitoring for living, work, and storage rooms
- Easy readout of the data, and transfer to a PC via Testo USB interface

Actual size

testo 174H, 2-channel temperature and humidity data logger with internal sensor (NTC/capacitive humidity sensor), incl. wall holder, batteries and calibration protocol

Part no.
0572 6560

Technical data

Sensor	**NTC/ capacitive humidity sensor**
Chanels	2 x internal
Masurement units	°C, °F, %rF, %RH
Masuring range	-20 to +70 °C internal 0 to 100 %RH
Accuracy ±1 digit	±0,5 °C (-20 to +70 °C) ±3 %RH (2 to 98 %RH) +0,03 %RH/K
Resolution	0,1 °C, 0,1 %RH
Battery life (at +25 °C)	1 year at 15 meas. rate
Operating temperature	-20 to +70 °C
Storage temperature	-40 to +70 °C

Dimensions	60 x 38 x 18,5 mm
Battery type	2 x CR 2032 Lithium
Protection class	IP20
Meas. cycle	1 min - 24 h
Memory	16.000 readings
Software	ComSoft Basic 5 ComSoft Professional 4

Set	Part no.
testo 174H mini data logger set, 2-channel, incl. USB interface for programming and reading out the logger, wall bracket, battery (2 x CR 2032 lithium) and calibration protocol	0572 0566

Accessories	Part no.
testo 174D - USB interface for programming and reading out the loggers testo 174	0572 0500
Battery testo 174 - Lithium button battery CR 2032 for testo 174 (please order two batteries per logger)	0515 0028
Software	
ComSoft Basic 5 - CD ComSoft Basic 5 (if free, registration-mandatory download not wanted)	0572 0580
ComSoft Professional 4 - Pro software incl. data archiving	0554 1704
Calibration Certificates	
ISO temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +40 °C; per channel/instrument	0520 0153
ISO humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0076

testo 175 H1

Humidity/temperature logger, 2 channels

The testo 175 H1 humidity/temperature logger monitors ambient humidity and temperature fluctuations efficiently and unobtrusively.

- Professional long-term monitoring of temperature and humidity in work and storage rooms
- Fast reaction time thanks to external humidity probe

testo 175 H1, 2-channel temperature and humidity data logger with external humidity sensor (NTC/capacitive humidity sensor), incl. wall holder, lock, batteries and calibration protocol

Part no.
0572 1754

Technical data	
Sensor	**NTC/ capacitive humidity sensor**
Chanels	2 x internal (stump)
Masurement units	°C, °F, %rF, %RH, td, g/m³
Masuring range	-20 to +55 °C internal -40 to +50 °C$_{td}$ 0 to 100 %RH
Accuracy ±1 digit	±0.4 °C (-20 to +55 °C) ±2 %RH (2 to 98 %RH) ±0.03 %RH/K
Resolution	0,1 °C, 1 %RH
Battery life (at +25 °C)	3 years at 15 min. meas. rate
Operating temperature	-20 to +55 °C
Storage temperature	-20 to +55 °C
Dimensions	149 x 53 x 27 mm
Battery type	3 x AlMnb Type AAA or Energizer
Protection class	IP 54
Meas. cycle	10 sec - 24 h
Memory	1 mio. measurement values
Software	ComSoft Basic 5 ComSoft Professional 4 ComSoft CFR 21 Part 11

Accessories	Part no.
USB cable - Cable for connecting the data loggers testo 175 and testo 176 with a PC, mini USB to USB	0449 0047
SD card - SD card for collecting the measurement data from the data loggers testo 175, application range to -20 °C	0554 8803
Wall holder - Wall holder (black) with padlock for testo 175	0554 1702
Battery for testo 175 - Application range below -10 °C, alkaline manganese microcells AAA (please order 3 batteries per logger)	0515 0009
Battery for testo 175 - Application range below -10 °C, Energizer L92 microcells AAA (please order 3 batteries per logger)	0515 0042

Accessories	Part no.
Software	
ComSoft Basic 5 - CD ComSoft Basic 5 (if free, registration-mandatory download not wanted)	0572 0580
ComSoft Professional 4 - Pro software incl. data archiving	0554 1704
ComSoft CFR 21 Part 11 - Software for requirements according to CFR 21 Part 11 for Testo data loggers	0554 1705
Calibration Certificates	
ISO temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +40 °C; per channel/instrument	0520 0153
ISO humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0076
DKD humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0246
DKD temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +60 °C; per channel/instrumenta	0520 0261

testo 176 H1

Humidity/temperature logger, 4 channels

Sensitive products require the right ambient conditions during production and storage. Efficient measurement and documentation of readings over months/years is possible with the professional testo 176 H1 data logger.

- Parallel temperature and humidity measurement
- Different connectable humidity and temperature probes, e. g. for humidity monitoring in storerooms

testo 176 H1, 4-channel temperature and humidity data logger with external sensor connections (NTC/capacitive humidity sensor) incl. wall holder, lock, battery and calibration protocol

Part no.
0572 1765

Technical data	
Sensor	**NTC/ capacitive humidity sensor**
Chanels	2 probes, 4 external channels
Masurement units	°C, °F, %rF, %RH, td, g/m³, WB
Masuring range	-20 to +70 °C -40 to +70 °C$_{td}$ 0 to100 %RH
Accuracy ± 1 digit	±0,2 °C (-20 to +70 °C) ±0,4 °C (rest of measuring range)
Accuracy %RH	abhängig vom gewählten Fühler
Resolution	0.1 °C, 0.1 %RH

Battery life (at +25 °C)	8 years at 15 min. meas. rate
Operating temperature	-20 to +70 °C
Storage temperature	-40 to +85 °C
Dimensions	103 x 63 x 33 mm
Battery type	1 x Lithium (TL-5903)
Protection class	IP 65
Meas. cycle	1 sec - 24 h
Memory	2 mio. measurement values
Software	ComSoft Basic 5 ComSoft Professional 4 ComSoft CFR 21 Part 11

Accessories	Part no.
USB cable - Cable for connecting the data loggers testo 176 with a PC, mini USB to USB	0449 0047
SD card - for collecting the measurement data from the data loggers testo 176, application range to -20 °C	0554 8803
Wall holder - (black) with padlock for testo 176	0554 1703
Battery for testo 176 -1 x TL-5903 AA cell	0515 1760

Accessories	Part no.
Software	
ComSoft Basic 5 - CD ComSoft Basic 5 (if free, registration-mandatory download not wanted)	0572 0580
ComSoft Professional 4 - Pro software incl. data archiving	0554 1704
ComSoft CFR 21 Part 11 - Software for requirements according to CFR 21 Part 11 for Testo data loggers	0554 1705
Calibration Certificates	
ISO temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +40 °C; per channel/instrument	0520 0153
ISO humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0076
DKD humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0246
DKD temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +60 °C; per channel/instrumenta	0520 0261

testo 176 H2

Robust humidity/temperature logger, 4 channels

testo 176 H2 ist ein 4-Kanal Temperatur- und Feuchtedatenlogger im Vollmetallgehäuse. Dadurch ist selbst in rauer Umgebung Langlebigkeit sichergestellt.

- Parallel temperature and humidity measurement with various connectable humidiy and temperature probes for different applications
- Robust metal housing protects from mechanical influences such as impact

testo 176 H2, 4-channel temperature and humidity data logger in metal housing with external sensor connections (NTC/capacitive humidity sensor) incl. wall holder, lock, battery and calibration protocol

Part no. **0572 1766**

Technical data	
Sensor	**NTC/ capacitive humidity sensor**
Chanels	2 probes, 4 external channels
Masurement units	°C, °F, %rF, %RH, td, g/m³, WB
Masuring range	-20 to +70 °C -40 to +70 °C$_{td}$ 0 to 100 %RH
Accuracy ±1 digit	±0,2 °C (-20 to +70 °C) ±0,4 °C (remaining meas. range)
Accuracy %RH	abhängig vom gewählten Fühler
Resolution	0,1 °C, 0,1 %RH

Battery life (at +25 °C)	8 years at 15 min. meas. rate
Operating temperature	-20 to +70 °C
Storage temperature	-40 to +85 °C
Dimensions	103 x 63 x 33 mm
Battery type	1 x Lithium (TL-5903)
Protection class	IP 65
Meas. cycle	1 sec - 24 h
Memory	2 mio. measurement values
Software	ComSoft Basic 5 ComSoft Professional 4 ComSoft CFR 21 Part 11

Accessories	Part no.
USB cable - Cable for connecting the data loggers testo 176 with a PC, mini USB to USB	0449 0047
SD card - for collecting the measurement data from the data loggers testo 176, application range to -20 °C	0554 8803
Wall holder - (black) with padlock for testo 176	0554 1703
Battery for testo 176 -1 x TL-5903 AA cell	0515 1760

Accessories	Part no.
Software	
ComSoft Basic 5 - CD ComSoft Basic 5 (if free, registration-mandatory download not wanted)	0572 0580
ComSoft Professional 4 - Pro software incl. data archiving	0554 1704
ComSoft CFR 21 Part 11 - Software for requirements according to CFR 21 Part 11 for Testo data loggers	0554 1705
Calibration Certificates	
ISO temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +40 °C; per channel/instrument	0520 0153
ISO humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0076
DKD humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0246
DKD temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +60 °C; per channel/instrumenta	0520 0261

testo 176 P1

Pressure/humidity/temperature logger, 5 channels

Der vielseitige und hochgenaue 5-Kanal datenlogger mit dem zusätzlich zur Temperatur und Feuchte auch Druck gemessen werden kann.

- Highly accurate and secure documentation of the ambient conditions e. g. in a laboratory
- Internal absolute pressure sensor and connection possibilities for two external humidity probes

testo177 P1, 5-channel pressure, temperature and humidity data logger with internem sensor (absolute pressure) and external sensor connections (NTC/capacitive humidity sensor) incl. wall holder, lock, battery and calibration protocol

Part no.
0572 1767

Technical data

Sensor	**NTC/ capacitive humidity sensor/ absolute pressure sensor**
Chanels	1 x internal, 2 probes external, 4 external channels
Masurement units	°C , °F, %rF, %RH, td, g/m³, hPa, mbar, in Hg, in H20, psi
Masuring range	-20 to +70 °C -40 to +70 °C$_{td}$ 0 to 100 %rF / 600 mbar to 1100 mbar
Accuracy ± 1 digit	±0,2 °C (-20 to +70 °C) ±0,4 °C (remaining measuring range) ±3 mbar (0 to 50 °C)
Accuracy %RH	abhängig vom gewählten Fühler

Resolution	0.1 °C, 0.1 %RH, 1 mbar
Battery life (at +25 °C)	8 years at 15 min. meas. rate
Operating temperature	-20 to +70 °C
Storage temperature	-40 to +85 °C
Dimensions	103 x 63 x 33 mm
Battery type	1 x Lithium (TL-5903)
Protection class	IP 54
Meas. cycle	1 sec - 24 h
Memory	2 mio. measurement values
Software	ComSoft Basic 5 ComSoft Professional 4 ComSoft CFR 21 Part 11

Accessories

Accessories	Part no.
USB cable - Cable for connecting the data loggers testo 176 with a PC, mini USB to USB	0449 0047
SD card - for collecting the measurement data from the data loggers testo 176, application range to -20 °C	0554 8803
Wall holder - (black) with padlock for testo 176	0554 1703
Battery for testo 176 -1 x TL-5903 AA cell	0515 1760

Accessories	Part no.
Software	
ComSoft Basic 5 - CD ComSoft Basic 5 (if free, registration-mandatory download not wanted)	0572 0580
ComSoft Professional 4 - Pro software incl. data archiving	0554 1704
ComSoft CFR 21 Part 11 - Software for requirements according to CFR 21 Part 11 for Testo data loggers	0554 1705
Calibration Certificates	
ISO temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +40 °C; per channel/instrument	0520 0153
ISO humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0076
DKD humidity calibration certificate; humidity probe; calibration points: 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0246
DKD temperature calibration certificate; temperature probe; calibration points: -18 °C, 0 °C, +60 °C; per channel/instrumenta	0520 0261
ISO calibration certificate absolute pressure, pressure sensor, 5 calibration points over measuring range	0520 0261
DKD calibration certificate absolute pressure, pressure sensor, 11 calibration points over measuring range	0520 0261

Probes

Humidity

Probes	Illustration	Meas. range	Accuracy	t99	Part no.
Humidity / temperature probe 12 mm		-0 to +40 °C 0 to +100 %RH	±0,3 °C, ±2 %RH (2 to 98 %RH)		0572 6172
Humidity / temperature probe 4 mm		-0 to +40 °C 0 to +100 %RH	±0,3 °C, ±2 %RH (2 ... 98 %RH)		0572 6174
Thin humidity probe with built-in electronics, incl. 4 attachable PTFE protection caps for material moisture equilibrium measurement		0 to +100 %RH 0 to +40 °C	±2 %RH (+2 to +98 %RH) ±0.2 °C		0636 2135
Humidity/temperature probe		-20 to +70 °C 0 to +100 %RH	±0.3 °C ±2 %RH (+2 to +98 %RH)		0636 9735

The specified seal class of the data loggers is achieved with these probes.

Logger software

Three software versions are available for programming and reading out the data loggers, as well as for the analysis of the data. Depending on the requirement, Testo offers the right software solution. The ComSoft Basic 5 with new graphic user interface offers all the basic functions of a standard logger software. Independently of where the data loggers are used – the ComSoft Basic 5 facilitates the configuration and readout of the instruments as well as the analysis of the data. User-friendliness and intuitive operation are paramount here. Requirements over and above this, such as the correlation of measurement data which have beenrecorded at different sites, are optimally fulfilled by the ComSoft Professional 4. The pharmaceutical industry makes very special demands, whose fulfilment is guaranteed by the ComSoft CFR21 Part 11.

CD ComSoft Basic 5, if free, registration-mandatory download not wanted

Order no.:
0572 0580

ComSoft Professional 4 – for demanding users
- The ComSoft Professional 4 offers analysis and presentation possibilities over and above the basic functions
- Many measurement sites and data loggers can be organized in a clear tree structure, for example

Order no.:
0554 1704

ComSoft CFR 21 Part 11 – specially for the requirements of the pharmaceutical industry
- The ComSoft CFR 21 Part 11 is a validation-capable software, and fulfils all the stipulations of the FDA (Food and Drug Administration) in the framework of a closed system
- Conformity with the CFR guidelines is confirmed by an independent institute

Order no.:
0572 6560

The right logger software for every application

testo ComSoft Basic 5 – for easy operation and convenient analysis

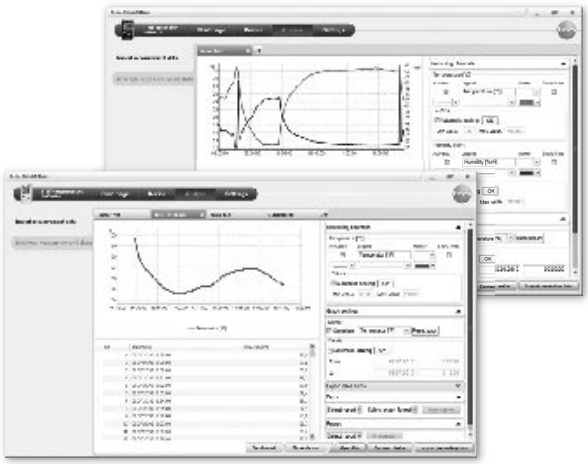
- The ComSoft Basic 5 offers all the basic functions of a logger software
- Free download of the ComSoft Basic 5 with mandatory registration
- Graphic user interface guides the user step by step through the individual processes
- Convenient export functions, e. g. for further processing of the data in Microsoft Excel, or the generation of a PDF which can be made available to other users

ComSoft Professional 4 – for demanding users

- The ComSoft Professional 4 offers analysis and presentation possibilities over and above the basic functions
- Many measurement sites and data loggers can be organized in a clear tree structure, for example

ComSoft CFR 21 Part 11 – specially for the requirements of the pharmaceutical industry

- The ComSoft CFR 21 Part 11 is a validation-capable software, and fulfils all the stipulations of the FDA (Food and Drug Administration) in the framework of a closed system
- Conformity with the CFR guidelines is confirmed by an independent institute



Notes

testo 645

Industrial thermohygrometer

The testo 645 humidity measuring instrument automatically displays the parameters relative humidity, absolute humidity, dew point, degree of humidity, enthalpy and temperature.

Convenient data analysis on your PC with location name.

A wide range of humidity and temperature probes suitable for high temperature measurement to monitoring humidity in compressed air systems are available.

- Highly accurate humidity meas. to ±1%RH
- Internal data memory
- Convenient data analysis
- TopSafe for tough applications

testo 645, humidity/temperature measuring instrument, with TopSafe, battery and calibration protocol

Part no. **0563 6450**

Probes	Illustration	Meas. range	Accuracy		t90	Part no.
Standard ambient air probe up to +70°C	Ø 12 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9740
Duct humidity/temperature probe	180 mm Ø 12 mm Fixed cable 3 m	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9715
Thin humidity probe incl. 4 attachable protection caps for ambient air measurements, measurements in exhaust air ducts and equilibrium moisture measurements	250 mm Ø 4 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	15 s	0636 2130
Highly accurate reference humidity/temp. probe	Ø 21 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±1 %RH (+10 to +90 %RH)* ±2 %RH (remaining range)	±0.2 °C (+10 to +40 °C) ±0.4 °C (remaining range)	12 s	0636 9741
Flexible humidity probe with mini module for meas. e.g. on material testing rigs, module cable length 1500mm, probe tip 50x19x7mm	Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +125 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	20 s	0628 0013
Sword probe for measuring humidity and temperature in stacked material	320 mm 18 mm x 5 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	12 s	0636 0340
High humidity level probe w/ heated sensor element, no humidity on sensor	300 mm Ø 12 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +85 °C	±2.5 %RH (0 to +100 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +100 °C)	30 s	0636 2142
Robust high temperature/humidity probe up to +180°C	300 mm Ø 12 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (+0.1 to +50 °C) ±0.5 °C (remaining range)	30 s	0628 0021
Flexible humidity probe (does not retain shape) for measurements in inaccessible places	1500 mm Ø 12 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (+0.1 to +50 °C) ±0.5 °C (-20 to 0 °C) ±0.5 °C (+50.1 to +180 °C)	30 s	0628 0022
Standard pressure dew point probe for measurements in compressed air systems	300 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -30 to +50 °C tpd		±0.9 °C tpd (+0.1 to +50 °C tpd) ±1 °C tpd (-4.9 to 0 °C tpd) ±2 °C tpd (-9.9 to -5 °C tpd) ±3 °C tpd (-19.9 to -10 °C tpd) ±4 °C tpd (-30 to -20 °C tpd)	300 s	0636 9840
Precision pressure dew point probe for measurements in compressed air systems incl. cert. with test point -40°C tpd	300 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -60 to +50 °C tpd		±0.8 °C tpd (-4.9 to +50 °C tpd) ±1 °C tpd (-9.9 to -5 °C tpd) ±2 °C tpd (-19.9 to -10 °C tpd) ±3 °C tpd (-29.9 to -20 °C tpd) ±4 °C tpd (-40 to -30 °C tpd)	300 s	0636 9841
Flexible humidity probe (retains shape) for measurements at inaccessible points	450 mm Ø 14 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +125 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +125 °C)	30 s	0628 0014

Caps for humidity probes, see Ordering data for Accessories

The measuring instrument inside TopSafe is waterproof with this probe.

* in the temperature range from +10°C to +30°C

See testo 650 for more probes

testo 645 — Sets, practical accessories and technical data

Accessories	Part no.
Transport and Protection	
Transport case (plastic) for measuring instrument, probes and accessories now larger for safe and orderly storage	0516 0445
Additional Accessories and Spare Parts	
Desk-top power supply with international connection options	0554 1143
9V rech. battery for instrument instead of battery	0515 0025
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material	0430 0143
Extension cable, 5 m long, between plug-in head cable and instrument PUR coating material	0409 0063
Adapter for surface humidity measurement, for humidity probes Ø 12 mm locates damp spots on walls, for example	0628 0012
Cap for bore holes, for humidity probe Ø 12 mm Measures equilibrium moisture in bore holes	0554 2140
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe	0554 0660
Sintered PTFE filter, Ø 12 mm, for corrosive media High humidity range (long-term measurements), high flow velocities.	0554 0756
Stainless steel sintered cap, Ø 12 mm, is screwed onto humidity probe for measurements at higher flow velocities or in contaminated air	0554 0647
Printers and Accessories	
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries infrared thermal line printer with graphics function	0554 1775
External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz	0554 0610
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls) measurement data documentation legible for up to 10 years	0554 0568
Label thermal paper (Testo patent) for testo 575 printer (6 rolls), can be applied directly	0554 0561
Software and Accessories	
ComSoft 3 - Professional with data management incl. database, analysis and graphics function, data analysis, trend curve	0554 0830
RS232 cable connects instrument to PC (1.8 m) for data transfer	0409 0178
Calibration Certificates	
ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
DAkkS calibration certificate/humidity* electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 11.3%RH	0520 0213
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 75.3%RH	0520 0283

* Successor organization of the DKD

Technical data

Probe type		Pt100	Type K (NiCr-Ni)
Meas. range	0 to +100 %RH	-200 to +800 °C	-200 to +1370 °C
Accuracy ±1 digit	See probe data	±0.1% of mv (+200.1 to +800 °C) ±0.2 °C (-200 to +200 °C)	±0.5% of mv (+60 to +1370 °C) ±0.3 °C (-200 to +59.9 °C)
Resolution	0.1 %RH (0 to +100 %RH)	0.1 °C (-200 to +800 °C)	0.1 °C (-200 to +1370 °C)

Probe type	Type S (Pt10Rh-Pt)	Type J (Fe-CuNi)	NTC
Meas. range	-50 to +1700 °C	-40 to +750 °C	-50 to +150 °C
Accuracy ±1 digit			
Resolution			0.1 °C (-50 to +150 °C)

Oper. temp.	0 to +50 °C
Storage temp.	-20 to +70 °C
Display	LCD, 4 lines
Battery type	Alkali manganese
Battery life	45 h
Dimensions	215 x 68 x 47 mm
Weight	255 g
Material/Housing	ABS
Warranty	2 years

Accuracy of temperature: ± 1 digit at +22°C
Ni 10000 sensor: meas. range: ...+180°C
Typical battery lives: 9V block (Al-Mn) 20-45h. The hour times are reduced by a factor of 5 if a 9V rech. battery is used
Calculated humidity parameters: td, g/m³, g/kg, J/g (pressure compensated)
Mains connection and battery recharging in instrument

testo 650

Reference humidity measuring instrument with psychrometric chart and aw value measurement

Precision reference class measuring instruments have everything the professional user needs to complete complicated measurement tasks efficiently, accurately and conveniently.

testo 650 includes the basic parameters temperature, CO2, rpm, current and voltage. It is also possible to measure humidity and pressure using testo 650. testo 650 can be upgraded to the multi-function measuring instrument testo 400.

The measuring instrument can keep up with the measurement tasks at hand thanks to upgrades. Intelligent electronics ensure the latest technology is used thanks to software updates.

Upgradable and teachable, highly reliable and of the highest quality - they are the properties which guarantee that the customer is equipped for the future.

Useful instrument functions:

- All functions of testo 950
- Calculation of all parameters in the psychrometric chart:
- Relative humidity %RH, dewpoint and pressure dewpoint (td, tpd)
- Absolute humidity g/m³, psychrometric wet bulb temperature
- Degree of humidity (g/kg), partial pressure in water vapour in mbar/hPa
- Enthalpy kcal/kg
- aW value measurement with trend display
- Barometric air pressure

- integrated reading memory up to 500,000 readings
- Special advantage: automatic correction of absolute pressure for accurate measurements. aw value measurement with trend display and automatic recognition of equilibrium.
- Clear graphics display
- 3 user defined function buttons
- Saves or prints at the touch of a button
- Mains connection/fast recharging
- Attachable printer (optional) Print readings in seconds on site
- Data communication by PC
- Barcode pen (optional)
- User-friendly operation with cursor via menu structure
- 2 user defined probe sockets, automatic recognition of all connected probes

Attachable printer
Readings can be printed in seconds on site

Clear graphics display

Data communication with PC

3 user defined function buttons

Saves or prints at the touch of a button

Easy operation with cursor

Power connection/fast recharging

2 user-defined probe sockets

testo 650, reference humidity meas. instr., readings memory included (up to 500,000 readings), battery, Li cell and calibration protocol	
Part no. **0563 6501**	

testo 650 — Recommended sets and accessories

Accessories	Part no.
Update from testo 650 to testo 400	
Velocity module, incl. volume flow, degree of turbulence... upgrade via service (updates testo 650 to testo 400)	0450 4003
Accessories for measuring instrument	
Rech. batt. set for instr. (2 rech. 2.4V/1100mAh) selected for quick recharging in instrument	0554 0196
Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug) for mains operation and battery recharging	0554 1084
Lithium battery, button cell, type CR 2032, Spare Li cell to save RAM data, when changing battery and rech. battery	0515 0028
Printer and Accessories	
Attachable printer (securely attached) including 1 roll of thermal paper and batteries	0554 0570
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries infrared thermal line printer with graphics function	0554 1775
External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz	0554 0610
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls) measurement data documentation legible for up to 10 years	0554 0568
Label thermal paper (Testo patent) for testo 575 printer (6 rolls), can be applied directly	0554 0561
SoftCase for instrument and printer	
SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder	0516 0401
SoftCase for attachable printer (protects printer from dirt/impact) protects from impact and falls	0516 0411
Software and Accessories	
ComSoft 3 - Professional with data management incl. database, analysis and graphics function, data analysis, trend curve	0554 0830
RS232 cable connects instrument to PC (1.8 m) for data transfer	0409 0178
Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit facilitates data communication in network	0554 1711
System case	
System case (plastic) for measuring instrument, probes and accessories probes in lid make it easy to find parts in case (540 x 440 x 130 mm)	0516 0400
System case (aluminium) for measuring instrument, probes and accessories probes in lid make it easy to find parts in case	0516 0410

Calibration Certificates	Part no.
Calibration certificates/temperature	
ISO calibration certificate/temperature for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C	0520 0021
ISO calibration certificate/temperature meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
DAkkS calibration certificate/temperature* meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
DAkkS calibration certificate/temperature* contact surface temperature probes; calibration points +100°C; +200°C; +300°C	0520 0271
Calibration certificates/humidity	
ISO calibration certificate/humidity cal. points freely selectable from 5 to 95%RH at +15 to +35°C or at -18 to +80°C	0520 0106
ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate dewpoint two adjustment points -10/-40 °Ctd at 6 bar	0520 0136
ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
DAkkS calibration certificate/humidity* electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
DAkkS calibration certificate/humidity* cal. points freely selectable from 5 to 95%RH at +25°C or -18°C to +70°C	0520 0216
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 11.3%RH	0520 0213
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 75.3%RH	0520 0283
Calibration certificates/pressure	
ISO calibration certificate/pressure differential pressure, accuracy > 0.6 (% of full-scale value)	0520 0005
DAkkS calibration certificate/pressure* differential pressure, accuracy > 0.6 (% of full-scale value)	0520 0225
ISO calibration certificate/pressure differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
DAkkS calibration certificate/pressure* differential pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0215
ISO calibration certificate/absolute pressure, 5 measurement points distributed over meas. range absolute pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0125
DAkkS calibration certificate/pressure* absolute pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0212

* Nachfolgeorganisation des DKD

Technical data			
Probe type	**Testo humid. sensor, cap.**	**Pressure**	**aw value**
Meas. range	0 to +100 %RH	0 to +2000 hPa	0 to +1 aW
Accuracy ±1 digit	See probe data	Probe 0638 1347 Probe 0638 1447 Probe 0638 1547 Probe 0638 1647 Probe 0638 1747 Probe 0638 1847 ±0.1% of mv Probe 0638 1741 Probe 0638 1841 Probe 0638 1941 Probe 0638 2041 Probe 0638 2141 ±0.2% of mv	See probe data
Resolution	0.1 %RH (0 to +100 %RH)	0.001 hPa (probe 0638 1347) 0.001 hPa (probe 0638 1447) 0.01 hPa (probe 0638 1547) 0.1 hPa (probe 0638 1647) 0.1 hPa (probe 0638 1747) 0.1 hPa (probe 0638 1847) 0.01 bar (probe 0638 1741) 0.01 bar (probe 0638 1841) 0.01 bar (probe 0638 1941) 0.01 bar (probe 0638 2041) 0.01 bar (probe 0638 2141)	

Probe type	**NTC**	**Pt100**	
Meas. range	-40 to +150 °C	-200 to +800 °C	20 to 20000 rpm
Accuracy ±1 digit	±0.2 °C (-10 to +50 °C) ±0.4 °C (-40 to -10.1 °C) ±0.4 °C (+50.1 to +150 °C)	±0.1 °C (-49.9 to +99.9 °C) ±(0.1 °C + 0.1% of mv) remaining range	±1 digit
Resolution	0.1 °C (-40 to +150 °C)	0.01 °C (-99.9 to +300 °C) 0.1 °C (-200 to -100 °C) 0.1 °C (+300.1 to +800 °C)	1 rpm

Probe type	**Type K (NiCr-Ni)**	**Type S (Pt10Rh-Pt)**	**Type J (Fe-CuNi)**
Meas. range	-200 to +1370 °C	0 to +1760 °C	-200 to +1000 °C
Accuracy ±1 digit	±(0.3 °C + 0.1% of mv)	±1 °C (0 to +1760 °C)	±0.4 °C (-150 to +150 °C) ±1 °C (-200 to -150.1 °C) ±1 °C (+150.1 to +1000 °C)
Resolution	0.1 °C (-200 to +1370 °C)	1 °C (0 to +1760 °C)	0.1 °C (-200 to +1000 °C)

Probe type			
Meas. range	0 to +500 ppm CO	0 to +1 Vol. % CO_2 0 to +10000 ppm CO_2	
Accuracy ±1 digit	±5% of mv (0 to +500 ppm CO)	See probe data	
Resolution			

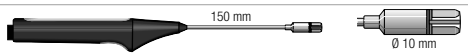
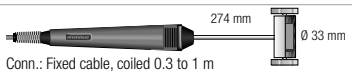
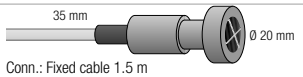
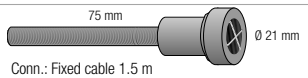
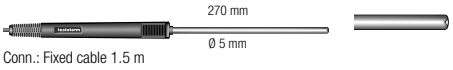
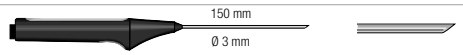
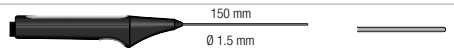
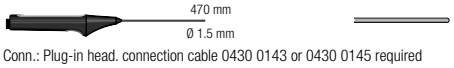
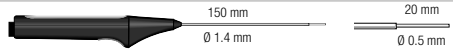
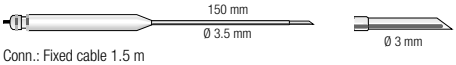
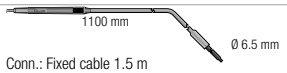
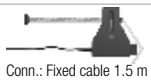
Probe type			
Meas. range	0 to +20 mA	0 to +10 V	
Accuracy ±1 digit	±0.04 mA (0 to +20 mA)	±0.01 V (0 to +10 V)	
Resolution	0.01 mA (0 to +20 mA)	0.01 V (0 to +10 V)	

Oper. temp.	0 to +50 °C
Storage temp.	-25 to +60 °C
Display	LCD, 4 lines
Battery type	1,5 V AA
Battery life	18 h
PC	RS232 interface
Weight	500 g
Material/Housing	ABS
Warranty	3 years
Memory	45000

Memory space: 500,000 readings
Other features: Automatic recognition of all connected probes
Power supply: Battery/rech. batt., alternatively 8V mains unit
Battery life in continuous operation with 2 thermocouple probes

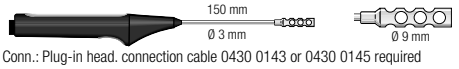
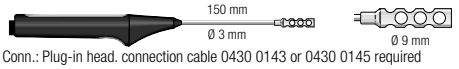
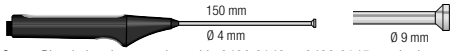
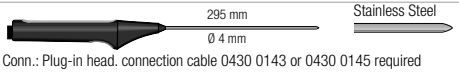
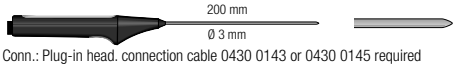
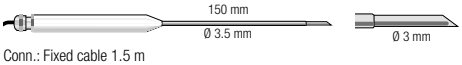
testo 650

Suitable probes at a glance

Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t99	Part no.
Thermocouple, made of fibre-glass insulated thermal pipes, pack of 5		-200 to +400 °C	Class 1*	5 s	0644 1109
	Insulation: twin conductor, flat, oval, opposed and covered with fibre-glass, both conductors are wrapped together with fibre-glass and soaked with lacquer, please order adapter 0600 1693				
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500 °C	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +300 °C	Class 2*	3 s	0604 0194
Super quick-action surface probe, probe tip at 90° angle, with sprung thermocouple strip	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +300 °C	Class 2*	3 s	0604 0994
Robust surface probe	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +600 °C	Class 1*	25 s	0604 9993
Robust surface probe with sprung thermocouple strip for high temperature range up to +700°C	 Conn.: Fixed cable, coiled 0.3 to 1 m	-200 to +700 °C	Class 2*	3 s	0600 0394
Roller surface probe for measurements on rollers and rotating drums, max. circumferential velocity 18 to 400m/min	 Conn.: Fixed cable, coiled 0.3 to 1 m	-50 to +240 °C	Class 2*		0600 5093
Magnetic probe, adhesive power approx. 20 N, with magnets, for measurements on metal surfaces	 Conn.: Fixed cable 1.5 m	-50 to +170 °C	Class 2*		0600 4793
Magnetic probe, adhesive power approx. 10 N, with magnets, for higher temperatures, measures on metal surfaces	 Conn.: Fixed cable 1.5 m	-50 to +400 °C	Class 2*		0600 4893
Miniature surface probe for measurements on electronic components, small motors...	 Conn.: Fixed cable 1.5 m	-200 to +400 °C	Class 2*	3 s	0600 1494
Adhesive thermocouple, pack of 2, carrier material: aluminium foil	 Is fixed at the measuring point using conventional adhesives or silicone heat paste 0554 0004	-200 to +200 °C	Class 1*		0644 1607
Fast response immersion/penetration probe	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +400 °C	Class 1*	3 s	0604 0293
Super quick-action immersion/penetration probe for measurements in liquids	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +600 °C	Class 1*	1 s	0604 0493
Super quick-action immersion/penetration probe for high temperatures	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +1100 °C	Class 1*	1 s	0604 0593
Super quick-action immersion/penetration probe for measurements in gases and liquids with a low-mass tip	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +600 °C	Class 1*	1 s	0604 9794
Robust immersion/penetration probe made of V4A stainless steel, waterproof and oven-proof, e.g. for the food sector	 Conn.: Fixed cable 1.5 m	-200 to +400 °C	Class 1*	3 s	0600 2593
Smelting probe for measurements in non-ferrous melting baths, with exchangeable measuring tip Measurement tip lifetime: up to 500 measurements in aluminium smelter	 Conn.: Fixed cable 1.5 m	-200 to +1250 °C	Class 1*	60 s	0600 5993
Pipe wrap probe for pipes with diameter of up to 2", for flow/return temp. meas. in hydronic systems	 Conn.: Fixed cable 1.5 m	-60 to +130 °C	Class 2*	5 s	0600 4593
Spare meas. head for pipe wrap probe, TC Type K		-60 to +130 °C	Class 2*	5 s	0602 0092

* According to standard EN 60751, the accuracy of Classes 1/2 refers to -40 to +1000/+1200 °C.

Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t99	Part no.
Plug-in measuring tip, 750mm long, flexible, for high temperatures, outer casing: stainless steel 1.4541	 Please order handle with Part no. 0600 5593	-200 to +900 °C	Class 1*	4 s	0600 5393
Plug-in measuring tip, 1200 mm long, flexible, for high temperatures, outer casing: stainless steel 1.4541	 Please order handle with Part no. 0600 5593	-200 to +900 °C	Class 1*	4 s	0600 5493
Plug-in measuring tip, 550mm long, flexible, for high temperatures, outer casing: Inconel 2.4816	 Please order handle with Part no. 0600 5593	-200 to +1100 °C	Class 1*	4 s	0600 5793
Plug-in measuring tip, 1030mm long, flexible, for high temperatures, outer casing: Inconel 2.4816	 Please order handle with Part no. 0600 5593	-200 to +1100 °C	Class 1*	4 s	0600 5893

Probes Pt100	Illustration	Meas. range	Accuracy	t99	Part no.
Standard air probe	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200... +600 °C	Class A**	75 s	0604 9773
Precision air probe	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-100 to +400 °C	1/10 Class B (0 to 100°C) 1/5 Class B (rem. range) to EN 60751**	75 s	0628 0017
Robust surface probe	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-50 to +400 °C	Class B**	40 s	0604 9973
Velcro probe for pipes with diameter of max. 75 mm	 Conn.: Fixed cable 1.6 m	-50 to +150 °C	Class B**	40 s	0628 0019
Standard immersion/penetration probe	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +400 °C	Class A**	20 s	0604 0273
Standard immersion/penetration probe	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +550 °C	Class A**	20 s	0604 0274
Highly accurate immersion/penetration probe incl. certificate	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-40 to +300 °C	±0.05 °C (+0.01 to +100 °C) ±(0.05 °C ±0.05% of mv) (-40 to 0 °C) ±(0.05 °C ±0.05% of mv) (+100.01 to +300 °C)	60 s	0614 0240
Highly accurate immersion/penetration probe	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-100 to +400 °C	1/10 Class B (0 to 100°C) 1/5 Class B (rem. range) to EN 60751**	30 s	0628 0015
Flexible precision immersion probe, cable heat-proof up to +300°C	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-100 to +265 °C	1/10 Class B (0 to 100°C) 1/5 Class B (rem. range) to EN 60751**	80 s	0628 0016
Robust immersion/penetration probe with sharpened measuring tip, waterproof and oven-proof	 Conn.: Fixed cable 1.5 m	-200 to +400 °C	Class A**	30 s	0604 2573

Probes NTC	Illustration	Meas. range	Accuracy	t99	Part no.
Highly accurate air probe for air and gas temperature measurements with bare, mechanically protected sensor	 Conn.: Fixed cable 1.6 m	-40 to +130 °C	To UNI curve	60 s	0610 9714
Globe thermometer to measure radiant heat	 Conn.: Fixed cable 1.5 m	0 to +120 °C	±0.5 °C (0 to +49.9 °C) ±1 °C (+50 to +120 °C) Accuracy corresponds to ISO 7243, ISO 7726, DIN EN 27726, DIN 33403 requirements		0554 0670

*According to standard EN 60584-2, the accuracy of Class 1 refers to -40 to +1000 °C.

***According to standard EN 60751, the accuracy of Class A and B refer to -200 to +600 °C.*

testo 650 — Suitable probes at a glance

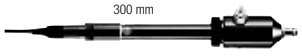
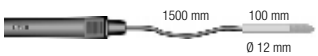
More probes	Illustration	Meas. range	Accuracy	Part no.
Ambient CO probe, for detecting CO in buildings and rooms	 Conn.: Fixed cable 1.5 m	0 to +500 ppm CO	±5% of mv (+100.1 to +500 ppm CO) ±5 ppm CO (0 to +100 ppm CO)	0632 3331
CO2 probe measures indoor air quality and monitors the workplace. With plug-in head, connection cable 0430 0143 or 0430 0145 required	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 ... +1 Vol. % CO_2 0 ... +10000 ppm CO_2	±(50 ppm CO_2 ±2% of mv)(0 to +5000 ppm CO_2) ±(100 ppm CO_2 ±3% of mv)(+5001 to +10000 ppm CO_2)	0632 1240
Mechanical rpm probe with plug-in head Included 2 probe tips Ø 8 and Ø 12 mm 1 hollow cone Ø 8 mm 1 surface speed disc Ø 19 mm to measure rotational speed: rpm = rotational speed in mm/s	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	20 to 20000 rpm	±1 digit	0640 0340
Current/voltage cable (±1 V, ±10 V, 20 mA)		0 to +1000 mV 0 to +10 V 0 to +20 mA	±1 mV (0 to +1000 mV) ±0.01 V (0 to +10 V) ±0.04 mA (0 to +20 mA)	0554 0007
4 to 20 mA interface for connection and intermittent power supply to transmitters (scaling via hand-held instrument), in robust metal housing with impact protection, incl. magnet for fast attachment	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	0/4 to 20 mA Channels: 1 channel, transmitter connection via terminal board Auxiliary energy output: 18V DC ± 20% max. connection load: 30 mA	±0.04 mA	0554 0528

Accessories	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument, PUR coating material	0430 0145
Extension cable, 5 m long, between plug-in head cable and instrument, PUR coating material	0409 0063
Telescopic handle, max. 1 m, for probe with plug-in head, cable: 2.5 m long, PUR coating material	0430 0144
Adapter to connect NiCr-Ni thermocouples and probes with open wire ends	0600 1693
Handle for plug-in measuring tip	0600 5593
Silicone heat paste (14g), Tmax = +260°C, improves heat transfer in surface probes	0554 0004
Spare measuring tip for smelting probe	0363 1712

Humidity probes	Illustration	Meas. range	Accuracy		t99	Part no.
Standard ambient air probe up to +70°C	 Ø 12 mm Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9740
Duct humidity/temperature probe	 180 mm Ø 12 mm Fixed cable 3 m	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9715
Thin humidity probe incl. 4 attachable protection caps for ambient air measurements, measurements in exhaust air ducts and equilibrium moisture measurements	 250 mm Ø 4 mm Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	15 s	0636 2130
Highly accurate reference humidity/temp. probe	 Ø 21 mm Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±1 %RH (+10 to +90 %RH)* ±2 %RH (remaining range)	* ±0.2 °C (+10 to +40 °C) ±0.4 °C (remaining range)	12 s	0636 9741
Humidity/temperature probe	 Ø 21 mm Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	0... +100 %RH -20 to +70 °C	±2 %RH (+2... +98 %RH)	±0.4 °C (+0.1 to +50 °C) ±0.5 °C (-20 to 0 °C) ±0.5 °C (+50.1 to +70 °C)	12 s	0636 9742

* in the temperature range from +15°C to +30°C

Suitable probes at a glance

Probes Process humidity	Illustration	Meas. range	Accuracy		t99	Part no.
Standard pressure dew point probe for measurements in compressed air systems	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -30 to +50 °C tpd		±0.9 °C tpd (+0.1 to +50 °C tpd) ±1 °C tpd (-4.9 to 0 °C tpd) ±2 °C tpd (-9.9 to -5 °C tpd) ±3 °C tpd (-19.9 to -10 °C tpd) ±4 °C tpd (-30 to -20 °C tpd)	300 s	0636 9840
Precision pressure dew point probe for measurements in compressed air systems incl. cert. with test point -40°C tpd	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -60 to +50 °C tpd		±0.8 °C tpd (-4.9 to +50 °C tpd) ±1 °C tpd (-9.9 to -5 °C tpd) ±2 °C tpd (-19.9 to -10 °C tpd) ±3 °C tpd (-29.9 to -20 °C tpd) ±4 °C tpd (-40 to -30 °C tpd)	300 s	0636 9841
High humidity level probe w/ heated sensor element, no humidity on sensor	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +85 °C	±2.5 %RH (0 to +100 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +100 °C)	30 s	0636 2142 *
Robust high temperature/humidity probe up to +180°C	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (+0.1 to +50 °C) ±0.5 °C (remaining range)	30 s	0628 0021
Flexible humidity probe (does not retain shape) for measurements in inaccessible places	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (+0.1 to +50 °C) ±0.5 °C (-20 to 0 °C) ±0.5 °C (+50.1 to +180 °C)	30 s	0628 0022

* in the temperature range from +10°C to +30°C

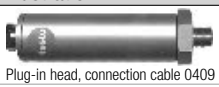
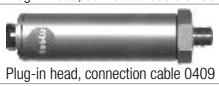
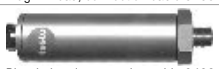
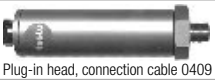
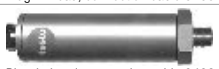
Probes Material and equilibrium moisture	Illustration	Meas. range	Accuracy		t99	Part no.
Flexible humidity probe with mini module for meas. e.g. on material testing rigs, module cable length 1500mm, probe tip 50x19x7mm	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +125 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	20 s	0628 0013
Sword probe for measuring humidity and temperature in stacked material	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	12 s	0636 0340
Robust humidity probe e.g. for measuring equilibrium moisture or for measurements in exhaust ducts to +120°C	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +120 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	30 s	0636 2140
Material moisture probe				Free scaling, reference measurement, no water level		0636 0365
Material/building moisture cable		0 to 100 k Ohm = 100 to 0 %		Display values in instrument display mean: 100 to 66 wet; 0 to 1 very dry		0636 0565

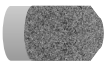
Probes aw value	Illustration	Meas. range	Accuracy		t99	Part no.
aw value set: pressure-tight precision humidity probe with certificate, measurement chamber and 5 sample bowls (plastic)	 Reproducibility of aw value ±0.003	0 to +1 aW 0 to +100 %RH -20 to +70 °C	±0.01 aW (+0.1 to +0.9 aW) ±0.02 aW (+0.9 to +1 aW)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)		0628 0024

Differential pressure probes	Illustration	Meas. range	Accuracy	Overload	Static pressure	Zeroing	Part no.
Precision pressure probe, 100 Pa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and flow speeds (in combination with Pitot tube)	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 Pa	±(0.3 Pa ±0.5% of mv)	50 hPa	100 hPa	one-touch	0638 1347
Pressure probe, 10 hPa, in robust metal housing with impact protection incl. magnet for fast attachment, to measure differential pressure and flow speeds (in combination with Pitot tube)	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +10 hPa	±0.03 hPa	50 hPa	1000 hPa	one-touch	0638 1447
Pressure probe, 100 hPa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and flow speeds (in combination with Pitot tube)	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 hPa	±0.5% of mv (+20 to +100 hPa) ±0.1 hPa (0 to +20 hPa)	300 hPa	1000 hPa	one-touch	0638 1547
Pressure probe, 1000 hPa, measures differential pressure, in robust metal housing with impact protection, incl. quick-closing coupling (M8 x 0.5), magnet for fast attachment	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +1000 hPa	±1 hPa (0 to 200 hPa) ±0.5% of mv (200 to 1000 hPa)	2000 hPa	1000 hPa	one-touch	0638 1647
Pressure probe, 2000 hPa, measures differential pressure, in robust metal housing with impact protection, incl. quick-closing coupling (M8 x 0.5), magnet for fast attachment	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +2000 hPa	±2 hPa (0 to 400 hPa) ±0.5% of mv (400 to 2000 hPa)	3000 hPa	1000 hPa	one-touch	0638 1747
Pressure probe, 2000 hPa, measures absolute pressure, in robust metal housing with impact protection, incl. quick-closing coupling (M8 x 0.5), magnet for fast attachment	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +2000 hPa	±5 hPa (0 to +2000 hPa)	4000 hPa		one-touch	0638 1847

testo 650

Suitable probes at a glance

Relative pressure probes	Illustration	Meas. range	Accuracy	Overload	Zeroing	Part no.
Low pressure probe, refrigerant-proof stainless steel, up to 10 bar	 Plug-in head, connection cable 0409 0202 required	-1 to +10 bar	±1% of fsv Overload 25 bar	25 bar	one-touch	0638 1741 screw-in thread 7/16" UNF
High pressure probe, refrigerant-proof stainless steel, up to 30 bar	 Plug-in head, connection cable 0409 0202 required	-1 to +30 bar	±1% of fsv Overload 120 bar	120 bar	one-touch	0638 1841 screw-in thread 7/16" UNF
High pressure probe, refrigerant-proof stainless steel, up to 40 bar	 Plug-in head, connection cable 0409 0202 required	-1 to +40 bar	±1% of fsv Overload 120 bar	120 bar	one-touch	0638 1941 screw-in thread 7/16" UNF
High pressure probe, refrigerant-proof stainless steel, up to 100 bar	 Plug-in head, connection cable 0409 0202 required	-1 to +100 bar	±1% of fsv Overload 250 bar	250 bar	one-touch	0638 2041 Screw-in thread 7/16" UNF
High pressure probe, refrigerant-proof stainless steel, up to 400 bar	 Plug-in head, connection cable 0409 0202 required	-1 to +400 bar	±1% of fsv Overload 600 bar	600 bar	one-touch	0638 2141 Screw-in thread 7/16" UNF

Caps for humidity probes Ø 12m and 21mm	Illustration		For humidity probes	Part no.
Metal protection cage, Ø 12 mm for humidity probes, material: stainless steel V4A. Quick adjustment time, robust and temperature-proof. Used when measuring velocities of less than 10 m/s.		Ø 12 mm	0636 9740, 0636 9715	0554 0755
Cap with wire mesh filter, Ø 12 mm			All humidity probes with Ø 12 mm	0554 0757
PTFE sintered filter, Ø 21 mm, PTFE. Not affected by condensation, water-repellent, resistant to corrosive substances. Applications: compressed air measurements, high humidity range (continuous measurements), high flow velocities		Ø 21 mm	All humidity probes with Ø 21 mm	0554 0666
Sintered PTFE filter, Ø 12 mm material PTFE. Favourable behaviour in condensation, water repellent, high resistance to aggressive media. Applications: Compressed air measurements, high humidity range (long-term measurements), high flow velocities.		Ø 12 mm	0636 9740, 0636 9715	0554 0756
PTFE sintered filter, Ø 12 mm, PTFE. Not affected by condensation, water-repellent, resistant to corrosive substances. Applications: compressed air measurements, high humidity range (continuous measurements), high flowvelocities		Ø 12 mm	0628 0021, 0628 0022, 0636 2140, 0636 2142	0554 0758
Stainless steel sintered cap, Ø 21 mm, made of stainless steel V2A. Highly robust, suitable for penetration, clean with compressed air, mechanical protection of sensor. Applications: high mechanical loads, high flow velocities.		Ø 21 mm	All humidity probes Ø 21 mm	0554 0640
Stainless steel sintered cap, Ø 12 mm, material: stainless steel V2A. Very rugged, suitable for penetration, can be cleaned with compressed air, mechanical sensor protection. Applications: High mechanical loads, high flow velocities.		Ø 12 mm	0636 9740, 0636 9715	0554 0647
PTFE cap, Ø 5 mm, attachable, PTFE material, (5 off). Applications: dust protection, high humidity level measurements, high flow velocities		Ø 5 mm	0636 2130	0554 1031

Accessories: Humidity probes	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument PUR coating material	0430 0145
Extension cable, 5 m long, between plug-in head cable and instrument PUR coating material	0409 0063
Telescopic handle, max. 1 m, for probe with plug-in head cable: 2.5 m long, PUR coating material	0430 0144
Adapter for surface humidity measurement, for humidity probes Ø 12 mm locates damp spots on walls, for example	0628 0012
Cap for bore holes, for humidity probe Ø 12 mm Measures equilibrium moisture in bore holes	0554 2140
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe	0554 0660
ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 11.3%RH	0520 0213
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 75.3%RH	0520 0283

* Successor organization of the DKD

Accessories: Pressure probes	Part no.
Connection cable, 2.5 m long, for pressure probes 0638 1741/1841/1941/2041/2141	0409 0202
Adapter for pressure probes, 1/2" outer thread, 1/4" inner thread for pressure probes 0638 1741/1841/1941/2041/2141	0699 3127
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument PUR coating material	0430 0145
Connection hose, silicone, 5m long max. load 700 hPa (mbar)	0554 0440
Connection hose set, 2 x 1 m, coiled, incl. 1/8" screw connection Pressure-tight up to 20 bar, for probe 0638 1647/1747/1847	0554 0441

ComSoft 3 - Professional

Pro software incl. data archiving for testo 645/650

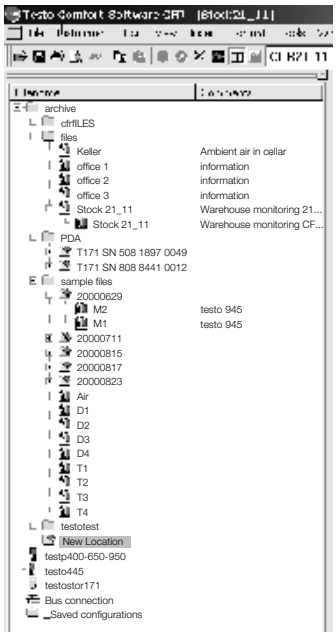
In addition to all the functions of the Basic version, the Professional also has extra display options (e.g. digit box, bar chart, analog instrument, xy plot) and convenient data filing. Measurement data can be stored in their own folders so that, for example, several data loggers from different locations can be organised in a tree structure. It is particularly recommended for instruments, which can manage many measurement logs e.g. the testo 580 data collector. The driver in this instrument is set up such that the directory structure of the Professional software is supported. The result is clear and comprehensible data handling.

Additional functions:

- Adapt menus and range of functions
- Select different print heads when printing tables and graphics
- Extended display options such as digit box, bar chart, analog instrument and xy plot
- Input of mathematical functions with calculation on a new measurement channel
- Compensation functions 0 (mean) to 7th degree
- Developer ToolBox with functions for integrating the instrument driver in non-Testo software

ComSoft 3 - Professional with data management
incl. database, analysis and graphics function, data analysis, trend curve

Part no. **0554 0830**



Structured filing of measured data and parameters in folders, locations, logs and channels

Comsoft 3 -Professional for:

- **testo 645 monitoring instruments**
- **testo 650 reference measuring instruments**

Ethernet adapter

With testo measuring instruments in Ethernet

The new Ethernet adapter facilitates:

- Measurements on site, e.g. production, warehouses, incoming goods
- Measuring instrument remains on site, transport not necessary
- Data can be checked from office
- Centralised data filing

Ethernet offers:

- Fast transfer of readings
- Use of an existing network without additional cabling
- Long transmission paths
- Identification of measuring instruments in system network

Multi-point checks on site

Spot checks are carried out on site in production halls or in incoming goods departments using Testo handheld measuring instruments. The measurement data can be sent immediately to a central office via the Ethernet adapter. This facilitates fast reaction times if further actions are required.

Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit facilitates data communication in network (not for use in Ex-zone)

Part no. **0554 1711**

Technical data	
Dimensions	45 x 48 x 14 mm
Oper. temp.	+0 to +70 °C
Software	Microsoft Windows 2000 / NT 4.0 / ME / 98 / 95
Power supply	Mains unit, 5 Volt app. 230 mA
Humidity class	F to DIN 40040
EMC	Radio interference/Fault free op.
Interface	25 pin RS 232 connection with adapter 25/9pin
Logs	TCP/IP, LPR, Telnet, SNMP, DHCP DDNS, ARP, BOOTP, ICMP
Management and software config.	Internet Browser e.g. from Netscape or Microsoft Telnet
Interface	Serial interface on computer board with terminal program Provision of a local virtual COM port (Windows systems)

Accessories	Part no.
System accessories: testo 650	
ComSoft 3 - Professional with data management, incl. database, analysis and graphics function, data analysis, trend curve	0554 0830
RS232 cable, connects instrument to PC (1.8 m) for data transfer	0409 0178

Huminator

Huminator, accurate humidity generator for climate calibrations

The Huminator is one of the smallest and therefore one of the most suitable climate chambers available on the market for mobile as well as stationary applications. Humidity readings in the range from 5 to 95%RH can be determined quickly and efficiently stabilised. The built-in temperature control function generates temperatures in the range from 15° to 40°C. Using an appropriate reference, it is possible to carry out fast and easy humidity calibrations on the measuring instruments, probes and data loggers from Testo and other manufacturers. The desk-top instrument is ideally suitable for testing the performance of all types of material, electronic components and instruments under special climatic conditions. The timed programming function facilitates extensive automation of test runs and calibrations, since up to 3 humidity/temperature readings can be activated one after the other. The time for this can be defined by the user.

- Can be programmed individually
- User-friendly
- LCD display
- High adjustment speed
- RS232 interface

Huminator with Testo sensor incl. 15 probe adapters (5 of each: 12mm, 21mm, flexible)

Part no. **0519 0801**

Recommended Set

Huminator Kit

- Huminator with Testo sensor incl. 15 probe adapters (5 of each: 12mm, 21mm, flexible) (Part no. 0519 0801)
- testo 650, reference humidity meas. instr., readings memory included (up to 500,000 readings), battery, Li cell and calibration protocol (Part no. 0563 6501)
- Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug) (Part no. 0554 1084)
- Highly accurate reference humidity/temp. probe (Part no. 0636 9741)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- DAkkS calibration certificate/humidity* (Part no. 0520 0206)

Accessories	Part no.
Additional Accessories and Spare Parts	
testo 650, reference humidity meas. instr., readings memory included (up to 500,000 readings), battery, Li cell and calibration protocol 2 channel humidity and temperature meas. instrument with aw value measurement, pressure measurement with option of connecting pressure probes, CO, CO2, rpm, mV/mA transmitters	0563 6501
Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug) for mains operation and battery recharging	0554 1084
Highly accurate reference humidity/temp. probe Plug-in head, connection cable 0430 0143 or 0430 0145 required	0636 9741
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material	0430 0143
Case for Huminator	0519 0820
Calibration Certificates	
DAkkS calibration certificate/humidity* electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206

* Successor organization of the DKD

Technical data	
Meas. range	+15 to +40 °C +5 to +95 %RH
Accuracy ±1 digit	0.5 °C (10 to 85 %RH at 25 °C) 2 %RH (10 to 85 %RH at 25 °C)
Stability	0.2 °C (10 to 85 %RH at 25 °C) 1 %RH (10 to 85 %RH at 25 °C)
Power supply	85 to 264 VAC, 47 to 63 Hz

Meas. chamber dimensions	Diameter: approx. 147 mm Probe imm. depth: app. 170 mm
Dimensions	350 x 470 x 200 mm
Display	LCD graphics display
Conn.	RS232 interface
Weight	14.5 kg

Always at your service!

Please send for more information:

- Monitoring Instruments for Food Production, Transport and Storage
- Measurement Engineering for Restaurants, Catering and Supermarkets
- Measurement Engineering for Air Conditioning and Ventilation
- Measurement Engineering for Heating and Installation
- Measurement Solutions for Emissions, Service and Thermal Processes
- Measurement Solutions for Refrigeration Technology
- Stationary Measurement Solutions – Transmitters and Monitoring Systems
- Measurement Solutions for Production, Quality Control and Maintenance
- Measurement Solutions for Climate Applications in Industry
- Reference Measurement Technology for Industry
- Measuring Instruments For Temperature
- Measuring Instruments for Humidity
- Measuring Instruments For Velocity
- Measuring Instruments for Pressure and Refrigeration
- Multi-Function Measuring Instruments
- Measuring Instruments for Flue Gas and Emissions
- Measuring Instruments for RPM, Analysis, Current/Voltage
- Measuring Instruments For Indoor Air Quality, Light And Sound
- Stationary Measurement Technology Humidity / Differential Pressure / Temperature / Process Displays
- Stationary Measurement Technology Compressed Air Humidity / Compressed Air Consumption

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