testo

Measuring Instruments for Humidity

Info

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 indicated as relative humidity by mechanical means.	A temperature probe covered 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 great 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 and portable
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 which it developed:

– 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)

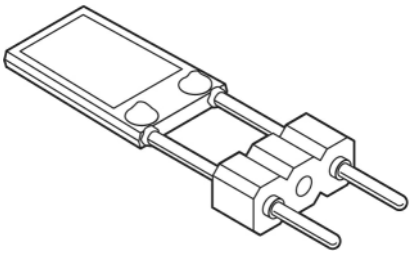
The outstanding characteristics of the Testo humidity sensor are as follows:

– Precision

– Long-term stability

– Temperature resistance

– Robustness



Contents

Measuring Instruments

Accessories

Measurement Systems

Huminator

Huminator, accurate humidity 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 measuring instrument with battery, Li cell, calibration protocol (Part no. 0563 6501)
- Power unit 230 V/ 8 V/ 1 A, for instrument (European plug) (Part no. 0554 1084)
- Highly accurate reference humidity/temp. probe incl. cal. cert. (Part no. 0636 9741)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- DKD calibration certificate/Humidity (Part no. 0520 0206)

Accessories	Part no.
Additional Accessories and Spare Parts	
testo 650, reference humidity measuring instrument with battery, Li cell, 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
Power 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 incl. cal. cert. 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	
DKD calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206

Technical data			
Meas. range	+15 to +40 °C +5 to +95 %RH	Meas. chamber dimensions	Diameter: approx. 147 mm Probe imm. depth: app. 170 mm
Accuracy ±1 digit	0.5 °C (10 to 85 %RH at 25 °C) 2 %RH (10 to 85 %RH at 25 °C)	Dimensions	350 x 470 x 200 mm
Stability	0.2 °C (10 to 85 %RH at 25 °C) 1 %RH (10 to 85 %RH at 25 °C)	Display	LCD graphics display
Power supply	85 to 264 VAC, 47 to 63 Hz	Conn.	RS232 interface
		Weight	14.5 kg

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 damaged by water saturation
- Battery monitoring
- testo 608-H2, with LED alarm, warns if limits are exceeded
- High accuracy ±2 %RH (testo 608-H2)

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, Electronic hygrometers; calibration points 0520 0006
11.3%RH and 75.3%RH at +25°C

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 (0 to +100 %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 (-10 to +70 °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

Mini thermohygrometer

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

- Worldwide patented, accurate and long-term stable Testo humidity sensor
- With dew point calculation td
- Attached by clip to breast pocket
- User-friendly
- Humidity sensor unaffected by condensation
- Auto OFF function
- A quick twist and the humidity sensor is protected by the attached cap
- Can always be read
- Display, fast and large

Humidity measurement stick, with duct holder, incl. multi-function clip and battery

Part no.	0560 6051

Accessories

ISO calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0006
ISO calibration certificate/Humidity Electronic hygrometers; 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 (+5 to +95 %RH) ±0.5 °C (0 to +50 °C)
Resolution	0.1 %RH 0.1 °C

Oper. temp.	0 to +50 °C
Storage temp.	-20 to +70 °C
Battery type	3V button cell (CR 2032)
Battery life	200 h
Auto Off	10 min
Warranty	2 years
Weight	120 g

testo 606

Compact wood/material moisture meter

The compact testo 606 moisture meter is very user-friendly. Simply remove protective cap, place measuring electrodes in the building material - finished. Measures moisture levels in wood, building materials e.g plaster, flooring...

- Moisture scale for wood and building materials
- Protection cap with clip - testo 606 is always ready to hand
- Automatic meter and battery test

testo 606, wood/material moisture meter, with clip and battery

Part no.
0560 6061

Technical data	
Electrodes: integrated, exchangeable, 8 mm long Applications: Wood, wood products, veneer, cardboard, paper, set building materials, plaster, flooring, coatings Measuring range of wood: 6 to 44%/accuracy ±1% Measuring range of material: 0.2 to 2%/accuracy ±0.05%	
Oper. humidity	0 to +85 %RH
Oper. temp.	0 to +40 °C
Battery type	3V button cell (CR 2032)

Probe tip diameter	Ø 8 mm
Weight	98 g
Material/Housing	ABS
Warranty	2 years
Dimensions	130 x 40 x 21 mm

Accessories	Part no.
Pocket For safe transport	0516 6061

testo 615

Compact thermohygrometer

testo 615, the compact thermohygrometer for measuring ambient air conditions in e.g. buildings, offices, warehouses etc.

- Accuracy adjustment can be carried out by user
- With dew point calculation td
- 2 years` guaranteed long-term stability

testo 615, humidity instrument, with integrated humidity/temperature probe, battery and calibration protocol

Part no.
0560 6150

Technical data	
Meas. range	+5 to +95 %RH 0 to +50 °C -20 to +50 °C td
Accuracy ±1 digit	±3 %RH (+5 to +95 %RH) ±0.5 °C (0 to +50 °C)
Resolution	0.1 %RH (+5 to +95 %RH) 0.1 °C (0 to +50 °C)
Oper. temp.	0 to +50 °C
Storage temp.	-20 to +70 °C
Battery type	Alkali manganese

Battery life	100 h
Display	LCD, 2 lines
Material/Housing	ABS
Weight	300 g
Warranty	2 years
Dimensions	190 x 57 x 42 mm

Accessories	Part no.
TopSafe (protection case) with bench stand Protects instrument from impact and dirt	0516 0183
Case for instrument and probes For safe and orderly storage	0516 0182
Control/adjustment containers (75.3%RH) for 1 point control and adjustment of instrument	0554 0638
ISO calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0006

testo 625

Thermohygrometer with flexible probe

Close conformance to specified air humidity and temperature values plays a major role in many work, production and storage areas.

testo 625 with flexible humidity probe is suitable for measurements in hard to reach places, e.g. climatic cabinets, ducts.

testo 625, humidity instrument, with separate humidity/temperature probe, battery and calibration protocol

Part no.	
0560 6250	

- 2 years` guaranteed long-term stability
- Displays dew point
- Humidity sensor, not damaged by water saturation
- Practical accessories: TopSafe (tough protective case): protects instrument from impact, dirt...with bench stand

Accessories	Part no.
Transport and Protection	
TopSafe (protection case) with bench stand Protects instrument from impact and dirt	0516 0183
Case for instrument and probes For safe and orderly storage	0516 0182
Accessories set (for instrument without TopSafe) includes multi-function clip, carrier loop, probe holder	0554 0550
Accessories set (for instrument with TopSafe) includes multi-function clip and probe holder	0554 0552
Additional Accessories and Spare Parts	
9V rech. battery for instrument Instead of battery	0515 0025
Recharger for 9V rechargeable battery For external recharging of 0515 0025 battery	0554 0025
Adapter for surface humidity measuring, for humidity probes Ø 12mm 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
Control/adjustment containers (75.3%RH) for 1 point control and adjustment of instrument	0554 0638
Stainless steel sintered cap, Ø 12 mm, is screwed onto humidity probe For measurements at high velocity speeds or in dirt ingressed air	0554 0647
Calibration Certificates	
ISO calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0006
ISO calibration certificate/Humidity Electronic hygrometers; calibration point 75.3%RH at +25°C	0520 0096
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
DKD calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
DKD calibration certificate/Humidity Cal. points freely selectable from 5 to 95%RH at +25°C or -20°C to +85°C	0520 0216

Recommended Set

testo 625, Standard set

- testo 625, humidity instrument, with separate humidity/temperature probe, battery and calibration protocol (Part no. 0560 6250)
- Case for instrument and probes (Part no. 0516 0182)
- Control/adjustment containers (75.3%RH) (Part no. 0554 0638)

Technical data

Meas. range	+5 to +95 %RH -10 to +60 °C -20 to +50 °C td	Oper. temp.	0 to +50 °C
Accuracy ±1 digit	±3 %RH (+5 to +95 %RH) ±0.5 °C (-10 to +60 °C)	Storage temp.	-20 to +70 °C
Resolution	0.1 %RH (+5 to +95 %RH) 0.1 °C (-10 to +60 °C)	Battery type	Alkali manganese
		Battery life	100 h
		Dimensions	190 x 57 x 42 mm
		Weight	300 g
		Display	LCD, 2 lines
		Material/Housing	ABS
		Warranty	2 years

testo 635

Thermohygrometer with probes

The testo 635 measuring instrument has two probe sockets. One combination probe socket for %RH/°C and a temperature probe socket e.g. to determine the difference in dew point between ambient air and a wall surface.

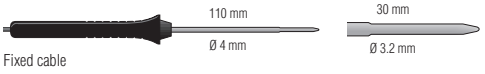
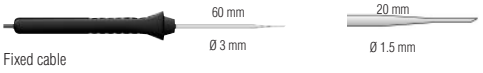
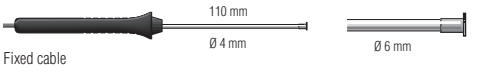
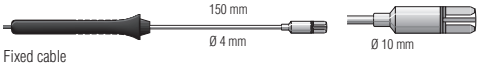
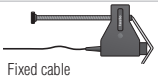
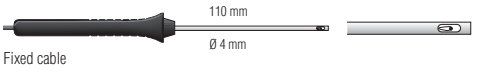
Relative humidity and temperature are shown simultaneously in the display. Dewpoint is quickly calculated.

- 2 years´ guaranteed long-term stability
- Humidity sensor is not damaged by water saturation
- Quick and easy accuracy check on location
- Testo printer for printing data on location

ttesto 635, humidity/temperature instrument with battery and calibration protocol

Part no.
0560 6350

Probes	Illustration	Meas. range	Accuracy		t_{99}	Part no.
Standard ambient air probe up to +70°C		0 to +100 %RH -20 to +70 °C	±2 %RH (0 to +100 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	15 s	0636 9769
Robust humidity probe for measurements up to +140°C in e.g. exhaust ducts and for measuring equilibrium moisture in e.g. bulk material		0 to +100 %RH -20 to +125 °C	±2 %RH (0 to +100 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	30 s	0636 2161

More probes	Illustration	Meas. range	Accuracy	t_{99}	Part no.
Waterproof immersion/penetration probe		-60 to +400 °C	Class 2	7 s	0602 1292
Quick-action, waterproof immersion/penetration probe for measurements in viscoplastic material, ideal for plastic, food etc.		-60 to +800 °C	Class 1	3 s	0602 2692
Clamp probe for measurements on pipes, pipe diameter 15 to 25 mm (max. 1"), meas. range short-term up to +130°C		-50 to +100 °C	Class 2	5 s	0602 4692
Waterproof surface probe with widened measuring tip for flat surfaces		-60 to +400 °C	Class 2	30 s	0602 1992
Quick-action surface probe with spring-loaded thermocouple, also for rough surfaces, measuring range short-term up to 500°C		-60 to +300 °C	Class 2	3 s	0602 0392
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Measuring range short-term to +280°C		-60 to +130 °C	Class 2	5 s	0602 4592
Spare meas. head for pipe wrap probe		-60 to +130 °C	Class 2	5 s	0602 0092
Robust, affordable air probe		-60 to +400 °C	Class 2	25 s	0602 1792

See testo 925 for more temperature probes

Recommended Set

testo 635, Set for Indoor Air Quality measurements

- testo 635, humidity/temperature instrument with battery and calibration protocol (Part no. 0560 6350)
- Standard ambient air probe up to +70°C (Part no. 0636 9769)
- Case for instrument and probes (Part no. 0516 0182)

testo 635, Set for ambient air measurements

- testo 635, humidity/temperature instrument with battery and calibration protocol (Part no. 0560 6350)
- Standard ambient air probe up to +70°C (Part no. 0636 9769)
- Quick-action surface probe with spring-loaded thermocouple, also for rough surfaces, measuring range short-term up to 500°C (Part no. 0602 0392)
- Accessories set (for instrument without TopSafe) includes multi-function clip, carrier loop, probe holder (Part no. 0554 0550)
- Transport case (plastic) for instrument and accessories (Part no. 0516 0184)

Accessories	Part no.
Transport and Protection	
TopSafe (protection case) with bench stand Protects instrument from impact and dirt	0516 0183
Accessories set (for instrument without TopSafe) includes multi-function clip, carrier loop, probe holder	0554 0550
Accessories set (for instrument with TopSafe) includes multi-function clip and probe holder	0554 0552
Case for instrument and probes For safe and orderly storage	0516 0182
Transport case (plastic) for instrument and accessories For safe and orderly storage	0516 0184
Transport case (plastic) for measuring instrument, probes and accessories Now bigger for safe and orderly storage	0516 0445
Additional Accessories and Spare Parts	
9V rech. battery for instrument Instead of battery	0515 0025
Recharger for 9V rechargeable battery For external recharging of 0515 0025 battery	0554 0025
Adapter for surface humidity measuring, for humidity probes Ø 12mm 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
Teflon sintered filter, Ø 12 mm, for corrosive substances High humidity range (long-term measurements), high velocities	0554 0756
Control and humidity adjustment set 11.3%RH/75.3%RH incl. adapter for humidity probes	0554 0660
Printers and Accessories	
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries	0554 0547
Recharger for printer (with 4 standard rech. batteries) Rechargeable batteries are recharged externally	0554 0110
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
Calibration Certificates	
ISO calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0006
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
DKD calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206

Technical data

Probe type	Testo humid. sensor, cap.	Type K (NiCr-Ni)	Calc. parameter
Meas. range	0 to +100 %RH	-50 to +1000 °C	-20 to +70 °C td
Accuracy ±1 digit	See probe data	±(1 °C ±0.5% of mv) (-40 to +900 °C) ±(2 °C ±1% of mv) (remaining range)	
Resolution	0.1 %RH (0 to +100 %RH)	0.1 °C (-50 to +200 °C) 1 °C (+200.1 to +1000 °C)	

Oper. temp.	0 to +50 °C
Storage temp.	-20 to +70 °C
Display	LCD, 2 lines
Battery type	Alkali manganese
Battery life	100 h
Dimensions	190 x 57 x 42 mm
Weight	300 g
Material/Housing	ABS
Warranty	2 years

Building moisture case

Wood moisture - Building moisture - Air moisture - Temperature

4 measuring instruments in a robust aluminium case:

testo 606, the humidity gauge for fast checks on the moisture in wood and building materials

testo 825-T4, infrared thermometer and surface temperature probe for measuring the surface temperature of ceilings and walls (e.g. cold/thermal bridges)

testo 608-H2, the highly accurate alarm thermohygrometer monitors temperature, humidity and dew point continuously

testo 605-H1, the mini thermal hygrometer for spot checks on temperature, humidity and dew point

Building moisture case
Complete kit in aluminium measurement case equipped with 4 measuring instruments: testo 606, testo 825-T4, testo 608-H2, testo 605-H1

Part no.	
0563 0600	

Set
The complete kit in an aluminium measurement case (Part no. 0563 0600)
① - testo 606, wood/material moisture meter, with clip and battery (Part no. 0560 6061)
② - testo 825-T4, 2 in 1 thermometer with laser and alarm, incl. TopSafe and wall/belt holder (Part no. 0560 8258)
③ - Alarm thermohygrometer testo 608-H2, humidity/dewpoint/temperature measuring instrument, incl. LED alarm, battery and calibration protocol (Part no. 0560 6082)
④ - Mini thermohygrometer testo 605-H1 with duct holder, incl. positioning clip and battery (Part no. 0560 6051)
⑤ - Aluminium case, with removable section, for safe storage (Part no. 0516 0600)

Testo printer

Versatile infrared printer

The versatile printer with IRDA and infrared interface saves time since it saves the data to be printed prior to printing. Data is transmitted within 2 seconds. The instrument is then immediately ready to operate.

The readings are stored black on white with date and time.

Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries

Part no.	
0554 0547	

Technical data			
Printer type	Infrared-controlled thermal printer, adjustable contrast, prints graphics	Oper. temp.	0 to +50 °C
		Storage temp.	-40 to +60 °C
		Power supply	4 round cell batteries, 1.5 V or rechargeable batteries
Reception radius	Max. 2 m	Weight	430 g
Dimensions	147 x 77 x 47 mm		

Accessories	Part no.
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
Recharger for printer (with 4 standard rech. batteries), Rechargeable batteries are recharged externally	0554 0110

Ethernet adapter

The new Ethernet adapter enables the following:

- On site measurements, e.g. in production, storage halls, Incoming Goods
- Measuring instrument remains on site, transport not necessary
- Data inspection from office or administration
- Centralised filing of measurement data

Ethernet offers:

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

Ethernet adapter, RS 232 - Ethernet incl. software driver, mains unit Facilitates data communication in network (not for use in Ex-zone)

Part no.
0554 1711

Access Ethernet with testo measuring instruments

Long-term monitoring of ambient data

The parameters, temperature and humidity, are measured and saved on site by the datalogger. Using the Ethernet adapter, measurement data stored in the logger can be read out and filed via the PC network. The measurement data is then easily analysed and checked on your PC in the office.
The Ethernet adapter therefore has the following advantages:
· Affordable operation since it is no longer necessary to read out data on site or take the logger to the office
· Fast access times because current measurement data can be accessed at any time.

Multi-point checks on site

Testo's handheld measuring instruments are used in production or in Incoming Goods to take spot checks on site. Using an Ethernet adapter, measurement data can be transmitted immediately to a central office which enables fast reaction times, if further actions are required.

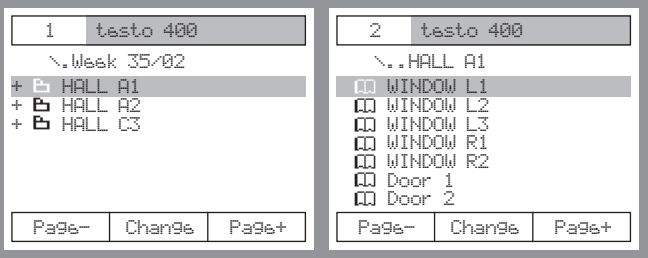
Accessories	Part no.
System accessories: testo 400, testo 650, testo 950	
ComSoft 3 - Professional with data management, Incl. database, analysis and graphics function, data analysis, trend curve (without interface)	0554 0830
RS232 cable, Connects instrument to PC (1.8 m) for data transfer	0409 0178

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

structure - measure - print on-site

Structuring measurement data:

- Readings can be saved at individual locations
  - with guarantee of retrieval.
- The “tree structure” - folders, sub-folders and measurement protocols - guarantees an uncomplicated view.
- Practical additional information such as measurement information or required value input can be saved with the location.
- The locations can be selected via barcode labels using the reader.
- It is easy to draw an effective tour plan using the locations list.



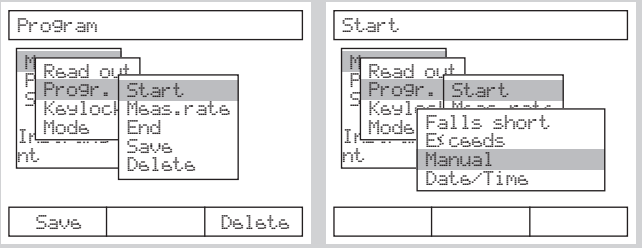
Long-term control made easy:

User-friendly data logging, not only for spot checks

- **The start of the measurement can be…**
  - determined manually each time.
  - activated if a user defined limit value is exceeded.
  - set according to date/time.

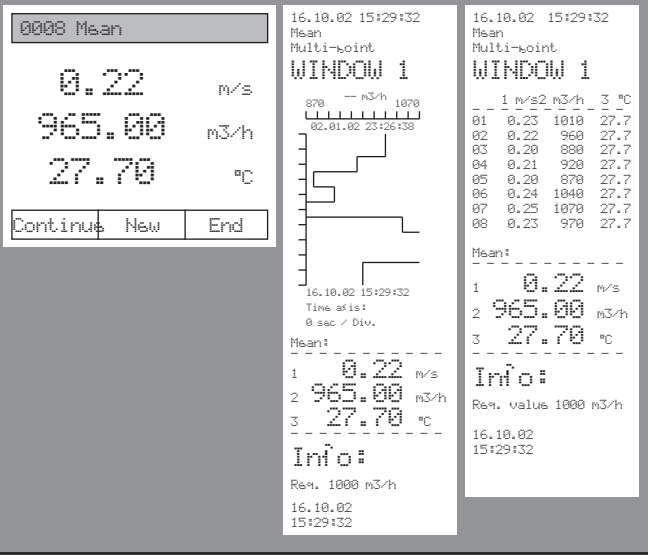
- **The measurement is completed when…**
  - the predefined number of readings is reached.
  - date/time is reached.
  - the memory is full.
  - ended manually.

- **Non-stop measurement via wrap-around memory…**
  - deletes the oldest respective value.
  - is deactivated manually.



Documentation on-site:

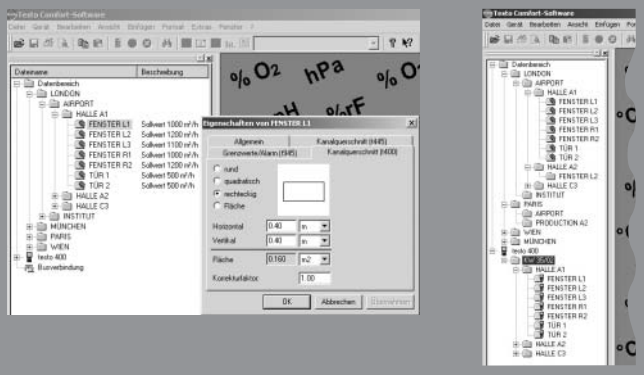
- The individual measurement protocol can be either saved or deleted following analysis.
- The printer immediately supplies the documentation required.
- The attachable comfort printer also offers graphical analysis options.
- Thermal paper for long-term legible measurement data documentation of up to 10 years.



prepare - analyse - file -document

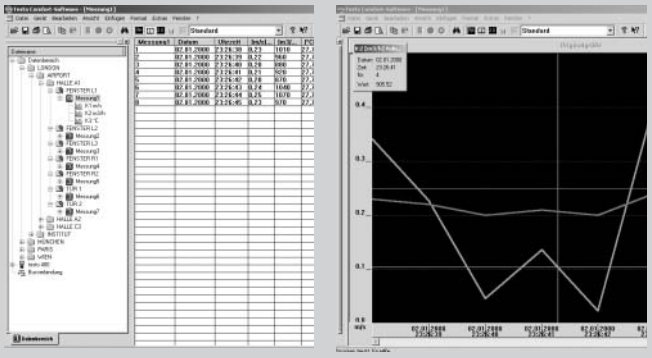
Easy reading management:

- Preparation of the measurement:
  - The measurement program is determined and loaded into instrument
  - Tour plan is drawn up based on locations and is loaded into instrument.
- The measuring instrument is downloaded once measuring is complete:
  - The saved protocols are conveniently filed via the software using "Drag & Drop" or are analysed in Data.
- The readings are determined using the measuring instrument and can also be displayed online using the software.



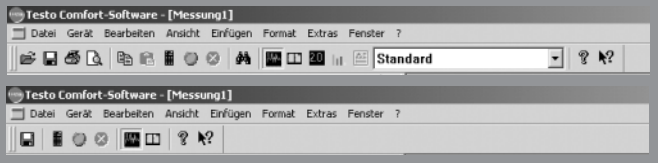
Comprehensive analysis, easy filing:

- Analysis:
  - with calculation functions
  - with crosshairs
  - with mean calculation
  - with calculation of standard deviation
  - taking all conventional refrigerants into consideration (refrigeration module, optional)
- Display:
  - as table or as graphic
  - as digit field or as histogram
  - with analog display
  - Measurement channels can be activated or deactivated at the touch of a button
- Documenting:
  - Data is transferred to Excel table using "Copy and Paste".



Individual configuration options:

- Your company logo can be included on the printouts.
- Functions can be selected from the function list and the finished profile can be saved.
- The online interface is available for LabVIEW software.
- Menu can be individually tailored to your needs.



ComSoft 3 - Professional for:

- **Dataloggers from the testo 175, testo 177 and testostor 171 series**
- **testo 945, testo 645, testo 445 and testo 545 monitoring instruments**
- **testo 950, testo 650, testo 400 reference measuring instruments (as version also for testo 454 and testo 350)**

ComSoft 3 - Professional with data management
Incl. database, analysis and graphics function, data analysis, trend curve (without interface)

Part no.	
0554 0830	

Accessories	Part no.
RS 232 interface for testo 175/177 incl. desk-top holders, PC connection cable, (please also order for ComSoft 3 - Professional)	0554 1757
USB interface, for testo 175/177 incl. desk-top holders, PC conn. cable, (Please order with ComSoft 3 - Professional)	0554 1768

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		t_{90}	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, can be connected to telescopic handle	180 mm Ø 12 mm Fixed cable	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 incl. cal. cert.	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)	±0.4 °C (-10 to +50 °C) ±0.5 °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 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 +85 °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

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

The measuring instrument inside TopSafe is waterproof with this probe.

See testo 650 (humidity) and 950 (temperature) for more probes

testo 645 — Sets, practical accessories and technical data

Set

The standard set for humidity and temperature measurement (Part no. 0563 6451)

- testo 645, humidity/temperature measuring instrument, with TopSafe, battery and calibration protocol (Part no. 0563 6450)
- Standard ambient air probe up to +70°C (Part no. 0636 9740)
- Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C (Part no. 0604 0194)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Transport case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0445)

The set for industrial humidity measurement(Part no. 0563 6452)

- testo 645, humidity/temperature measuring instrument, with TopSafe, battery and calibration protocol (Part no. 0563 6450)
- Robust humidity probe e.g. for measuring equilibrium moisture or for measurements in exhaust ducts to +120°C (Part no. 0636 2140)
- Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C (Part no. 0604 0194)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Transport case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0445)

Precision set (± 1% RH / up to ± 0.23 °C) (Part no.0563 6453)

- testo 645, humidity/temperature measuring instrument, with TopSafe, battery and calibration protocol (Part no. 0563 6450)
- Highly accurate reference humidity/temp. probe incl. cal. cert. (Part no. 0636 9741)
- Precision air probe (Part no. 0628 0017)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Transport case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0445)

The set for monitoring humidity in compressed air systems (Part no. 0563 6454)

- testo 645, humidity/temperature measuring instrument, with TopSafe, battery and calibration protocol (Part no. 0563 6450)
- Standard pressure dew point probe for measurements in compressed air systems (Part no. 0636 9840)
- Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C (Part no. 0604 0194)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Transport case (plastic) for measuring instrument, probes and accessories Part no. 0516 0445)

Professional set for industrial temp. meas. up to +1100 °C (Part no. 0563 6455)

- testo 645, humidity/temperature measuring instrument, with TopSafe, battery and calibration protocol (Part no. 0563 6450)
- Quick-action immersion/penetration probe for high temperatures (Part no. 0614 0593)
- Highly accurate immersion/penetration probe (Part no. 0628 0015)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- Transport case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0445)

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

Accessories	Part no.
Transport and Protection	
Transport case (plastic) for measuring instrument, probes and accessories Now bigger for safe and orderly storage	0516 0445
Additional Accessories and Spare Parts	
Plug-in mains unit For mains operation and recharging battery in instrument	0554 0088
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
Telescopic handle, 340 - 800mm long	0430 9715
Adapter for surface humidity measuring, for humidity probes Ø 12mm 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
Control and humidity adjustment set 11.3%RH/75.3%RH incl. adapter for humidity probes	0554 0660
Teflon sintered filter, Ø 12 mm, for corrosive substances High humidity range (long-term measurements), high velocities	0554 0756
Stainless steel sintered cap, Ø 12 mm, is screwed onto humidity probe For measurements at high velocity speeds or in dirt ingressed air	0554 0647
Printers and Accessories	
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries	0554 0547
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries Infrared thermal line printer with graphics function	0554 1775
Recharger for printer (with 4 standard rech. batteries) Rechargeable batteries are recharged externally	0554 0110
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 Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0006
DKD calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206

Technical data

Probe type	Testo humid. sensor, cap.	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)

testo 650

Reference humidity measuring instrument with Mollier diagram 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 Mollier diagram:
- 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

- 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
- Print readings in seconds on site
- Data communication by PC
- Barcode pen
- User-friendly operation with cursor
- 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, barcode pen

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

Recommended Set

The reference set for measuring trace moisture

- testo 650, reference humidity measuring instrument with battery, Li cell, calibration protocol (Part no. 0563 6501)
- Precision pressure dew point probe for measurements in compressed air systems incl. cert. with test point -40°C tpd (Part no. 0636 9841)
- Attachable printer (securely attached) including 1 roll of thermal paper and batteries (Part no. 0554 0570)
- SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder (Part no. 0516 0401)
- SoftCase for attachable printer (protects printer from dirt/impact) (Part no. 0516 0411)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- System case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0400)

We recommend:

DKD calibration certificate/Humidity 0520 0216
Cal. points freely selectable from 5 to 95%RH at +25°C or -20°C to +85°C

Recommended Set

The precision set for air humidity measurement

- testo 650, reference humidity measuring instrument with battery, Li cell, calibration protocol (Part no. 0563 6501)
- Highly accurate reference humidity/temp. probe incl. cal. cert. (Part no. 0636 9741)
- Attachable printer (securely attached) including 1 roll of thermal paper and batteries (Part no. 0554 0570)
- SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder (Part no. 0516 0401)
- SoftCase for attachable printer (protects printer from dirt/impact) (Part no. 0516 0411)
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)
- System case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0400)

We recommend:

DKD calibration certificate/Humidity 0520 0216
Cal. points freely selectable from 5 to 95%RH at +25°C or -20°C to +85°C

testo 650, reference humidity measuring instrument with battery, Li cell, calibration protocol

Part no.
0563 6501

testo 650 — Recommended sets and accessories

Recommended Set	
Reference set for measurements in the high humidity level range	
- testo 650, reference humidity measuring instrument with battery, Li cell, calibration protocol (Part no. 0563 6501) - High humidity level probe w/ heated sensor element, no humidity on sensor (Part no. 0636 2142) - Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143) - Attachable printer (securely attached) including 1 roll of thermal paper and batteries (Part no. 0554 0570) - SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder (Part no. 0516 0401) - SoftCase for attachable printer (protects printer from dirt/impact) (Part no. 0516 0411) - System case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0400)	
We recommend:	
DKD calibration certificate/Humidity; Cal. points freely selectable from 5 to 95%RH at +25°C or -20°C to +85°C	0520 0216
Professional set for localising moisture damage and monitoring drying processes	
- testo 650, reference humidity measuring instrument with battery, Li cell, calibration protocol (Part no. 0563 6501) - Thin humidity probe incl. 4 attachable protection caps for ambient air measurements, measurements in exhaust air ducts and equilibrium moisture measurements (Part no. 0636 2130) - Material moisture probe (Part no. 0636 0365) - Attachable printer (securely attached) including 1 roll of thermal paper and batteries (Part no. 0554 0570) - SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder (Part no. 0516 0401) - SoftCase for attachable printer (protects printer from dirt/impact) (Part no. 0516 0411) - System case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0400) - Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)	
The reference set for aw value measurement	
- testo 650, reference humidity measuring instrument with battery, Li cell, calibration protocol (Part no. 0563 6501) - aw value set: pressure-tight precision humidity probe with certificate, measurement chamber and 5 sample bowls (plastic) (Part no. 0628 0024) - Attachable printer (securely attached) including 1 roll of thermal paper and batteries (Part no. 0554 0570) - SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder (Part no. 0516 0401) - SoftCase for attachable printer (protects printer from dirt/impact) (Part no. 0516 0411)	
We recommend:	
DKD calibration certificate/Humidity Cal. points freely selectable from 5 to 95%RH at +25°C or -20°C to +85°C	0520 0216
Control and humidity adjustment set 11.3%RH/75.3%RH incl. adapter for humidity probes	0554 0660
Reference set for refrigeration engineering	
- testo 650, reference humidity measuring instrument with battery, Li cell, calibration protocol (Part no. 0563 6501) - Low pressure probe, refrigerant-proof stainless steel, up to 10 bar (Part no. 0638 1741) - High press. probe, refrigerant-proof st. steel, up to 40 bar (Part no. 0638 1941) - Connection cable, 2.5 m long, for pressure probes 0638 1741/1841/1941/2041/2141 (Part no. 0409 0202) - Connection cable, 2.5 m long, for pressure probes 0638 1741/1841/1941/2041/2141 (Part no. 0409 0202) - Pipe wrap probe for pipes with diameter of up to 2", for flow/return temp. meas. in hydronic systems (Part no. 0600 4593) - Attachable printer (securely attached) including 1 roll of thermal paper and batteries (Part no. 0554 0570) - SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder (Part no. 0516 0401) - SoftCase for attachable printer (protects printer from dirt/impact) (Part no. 0516 0411) - System case (plastic) for measuring instrument, probes and accessories (Part no. 0516 0400) - ComSoft 3 - Professional with data management (Part no. 0554 0830) - "Refrigeration technology" update with saved curves of all usual refrigerants (Part no. 0554 4035)	

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	
Memory upgrade to 500,000 readings Upgrades memory capacity (by Service)	0554 9481
Rechargeable battery set for instrument (4 rechargeables 2.4V/700mAh) Selected for quick recharging in instrument	0554 0196
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug) For mains operation and battery recharging	0554 1084
Spare Li cell to save RAM data When changing battery or rechargeable battery	0515 0028
Printer and Accessories	
Attachable printer (securely attached) including 1 roll of thermal paper and batteries	0554 0570
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries	0554 0547
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries Infrared thermal line printer with graphics function	0554 1775
Recharger for printer (with 4 standard rech. batteries) Rechargeable batteries are recharged externally	0554 0110
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
Barcode and accessories	
Barcode reader to read in measurement locations Quick and accurate allocation of reading to site	0554 0460
Barcode labels, self-adhesive (1200 off) for labelling site with barcode, printing via software	0554 0411
Adhesive pockets (50 off) for printout, paper barcode labels...	0554 0116
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, RS 232 - Ethernet incl. software driver, mains unit Facilitates data communication in network	0554 1711
Electrical isolation for RS232 (connects measuring instrument to PC)	0554 0006
Refrigeration module	
"Refrigeration technology" update with saved curves of all usual refrigerants	0554 4035
System case	
Transport case (plastic) for measuring instrument, probes For secure and orderly storage	0516 0300
System case (plastic) for measuring instrument, probes and accessories Probes in lid make it easy to find parts in case	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 Thermometers with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
DKD calibration certificate/Temperature Meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
DKD 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 Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0006
ISO calibration certificate/Pressure dew point Two adjustment points -10/-40 °C tpd	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
DKD calibration certificate/Humidity Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
DKD calibration certificate/Humidity Cal. points freely selectable from 5 to 95%RH at +25°C or -20°C to +85°C	0520 0216
DKD calibration certificate/Humidity Saturated saline solutions; calibration point 11.3%RH	0520 0213
DKD 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
DKD 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
DKD calibration certificate/Pressure Differential pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0215
ISO calibration certificate/Pressure Absolute pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0125
DKD calibration certificate/Pressure Absolute pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0212

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 in basic version: 128 kB corresponds to approx. 45,000 readings
Memory space extended: 1 MB, corresponds to approx. 500,000 readings
Other features: Automatic recognition of all connected probes
Power supply: Battery/rech. batt., alternatively 8V mains unit
Batter life in continuous operation with 2 thermocouple probes

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	Mechanical
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) ±0.4 °C (-99.9 to -50 °C) ±0.4 °C (+100 to +199.9 °C) ±1 °C (-200 to -100 °C) ±1 °C (+200 to +800 °C)	(+20 to +20000 rpm)
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 (+20 to +20000 rpm)

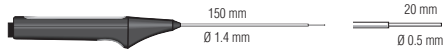
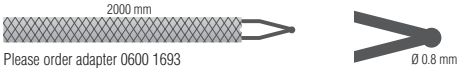
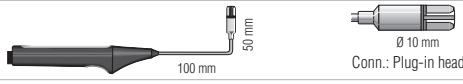
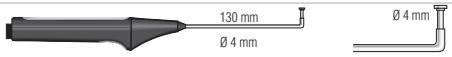
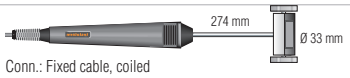
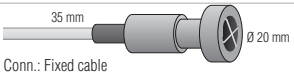
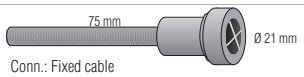
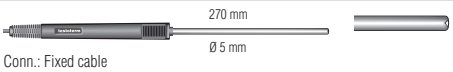
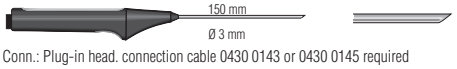
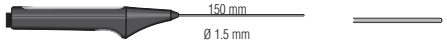
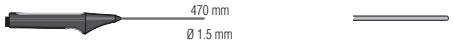
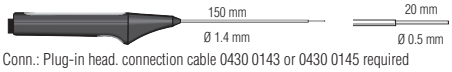
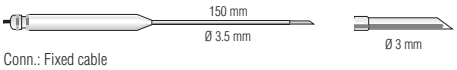
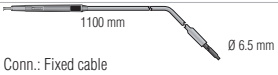
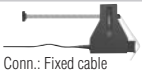
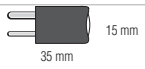
Probe type	Type K (NiCr-Ni)	Type S (Pt10Rh-Pt)	Type J (Fe-CuNi)
Meas. range	-200 to +1370 °C	0 to +1760 °C	-200 to +1000 °C
Accuracy ±1 digit	±0.4 °C (-100 to +200 °C) ±1 °C (-200 to -100.1 °C) ±1 °C (+200.1 to +1370 °C)	±1 °C (0 to +1760 °C)	±0.4 °C (-150 to +150 °C) ±1 °C (-200 to -150.1 °C) ±1 °C (+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	CO probe	CO2 probe	
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	Current/voltage measurement	Current/voltage measurement	
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)	

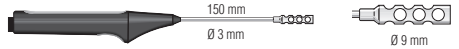
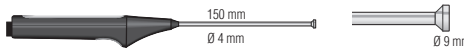
testo 650

Suitable probes at a glance

Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t_{99}	Part no.
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 0614 9794 *
Thermocouple, made of fibre-glass insulated thermal pipes, pack of 5	 Please order adapter 0600 1693	-200 to +400 °C	Class 1 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	5 s	0644 1109
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 0614 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 *0614 9993* *
Robust surface probe, at 90° angle, suitable for inaccessible places	 Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	-200 to +600 °C	Class 1	25 s	0604 9893 *0614 9893* *
Robust surface probe with sprung thermocouple strip for high temperature range up to +700°C	 Conn.: Fixed cable, coiled	-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	-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	-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	-50 to +400 °C	Class 2		0600 4893
Miniature surface probe for measurements on electronic components, small motors...	 Conn.: Fixed cable	-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 *0614 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 *0614 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 *0614 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 *0614 9794* *
Robust immersion/penetration probe made of V4A stainless steel, waterproof and oven-proof, e.g. for the food sector	 Conn.: Fixed cable	-200 to +400 °C	Class 1	3 s	0600 2593
Smelting probe for measurements in non-ferrous melting baths, with exchangeable measuring tips	 Conn.: Fixed cable	-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	-60 to +130 °C	Class 2	5 s	0600 4593
Spare meas. head for pipe wrap probe		-60 to +130 °C	Class 2	5 s	0602 0092

**with EEPROM: Precision adjustment for each probe at a measuring point; measuring range limits are saved in probe; t95 extrapolation; surface allowance in surface probe can be adapted to measuring task*

Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t_{99}	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	t_{99}	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 *0628 0018* *
Velcro probe for pipes with diameter of max. 75 mm	 Conn.: Fixed cable	-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 +600 °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	-200 to +400 °C	Class A	30 s	0604 2573

**with EEPROM: Precision adjustment for each probe at a measuring point; measuring range limits are saved in probe; t95 extrapolation; surface allowance in surface probe can be adapted to measuring task*

Probes NTC	Illustration	Meas. range	Accuracy	t_{99}	Part no.
Highly accurate air probe for air and gas temperature measurements with bare, mechanically protected sensor	 Conn.: Fixed cable	-40 to +130 °C	To UNI curve	60 s	0610 9714
Globe thermometer to measure radiant heat	 Conn.: Fixed cable	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

testo 650 — Suitable probes at a glance

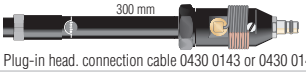
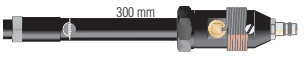
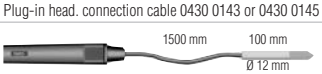
More probes	Illustration	Meas. range	Accuracy	Part no.
Ambient CO probe to measure CO level in ambient air	Ø 25 mm; 190 mm; Conn.: Fixed cable	0 to +500 ppm CO	±5% of mv (+100.1 to +500 ppm CO) ±5 ppm CO (0 to +100 ppm CO)	0632 1247
CO2 probe measures indoor air quality and monitors the workplace. With plug-in head, connection cable 0430 0143 or 0430 0145 required	Conn.: Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +1 Vol. % CO_2 0 to +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	±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
Glass shaft for immersion/penetration probe to protect from corrosive agents For probes with Part nos. 0604 0273 and 0628 0015	0554 7072
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

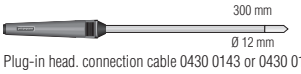
More probes

Humidity probes	Illustration	Meas. range	Accuracy		t_{99}	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, can be connected to telescopic handle	180 mm; Ø 12 mm Fixed cable	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 incl. cal. cert.	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)	* ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9741
Humidity/temperature probe	Ø 21 mm 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 +10°C to +30°C

Probes Process humidity	Illustration	Meas. range	Accuracy		t_{99}	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 +85 °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

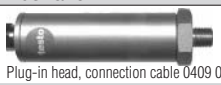
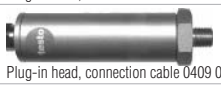
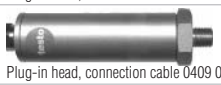
Probes Material and equilibrium moisture	Illustration	Meas. range	Accuracy		t_{99}	Part no.
Flexible humidity probe with mini module for meas. e.g. on material testing rigs, module cable length 1500mm, probe tip 50x19x7mm	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 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

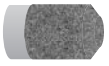
Probes aw value	Illustration	Meas. range	Accuracy		t_{99}	Part no.
aw value set: pressure-tight precision humidity probe with certificate, measurement chamber and 5 sample bowls (plastic)	 Reproducibility of aw value ±0.003	0 to +1 aW 0 to +100 %RH -20 to +70 °C	±0.01 aW (+0.1 to +0.9 aW) ±0.02 aW (+0.9 to +1 aW)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)		0628 0024

Differential pressure probes	Illustration	Meas. range	Accuracy	Part no.
Precision pressure probe, 100 Pa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and velocity speeds (in connection 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)	0638 1347
Pressure probe, 10 hPa, in robust metal housing with impact protection incl. magnet for fast attachment, to measure differential pressure and velocity speeds (in connection with Pitot tube)	 Plug-in head. connection cable 0430 0143 or 0430 0145 required	0 to +10 hPa	±0.03 hPa	0638 1447
Pressure probe, 100 hPa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and velocity speeds (in connection 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)	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)	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)	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)	0638 1847

testo 650

Suitable probes at a glance

Relative pressure probes	Illustration	Meas. range	Accuracy		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	Screw-in thread 7/16" UNF	0638 1741
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	Screw-in thread 7/16" UNF	0638 1841
High press. probe, refrigerant-proof st. steel, up to 40 bar	 Plug-in head, connection cable 0409 0202 required	-1 to +40 bar	±1% of fsv Overload 120 bar	Screw-in thread 7/16" UNF	0638 1941
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	Screw-in thread 7/16" UNF	0638 2041
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	Screw-in thread 7/16" UNF	0638 2141

Caps for humidity probes Ø 12m and 21mm	Illustration		For humidity probes	Part no.
Metal protection cage, Ø 21 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 21 mm	All humidity probes with Ø 21 mm	0554 0665
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
Wire mesh filter, Ø 21 mm, insertable filter for metal protection cage and plastic cap. Material: stainless steel V4A, quick adjustment time, protects from dirt and damage. Applications: meteorology, splashwater, condensation.		Ø 21 mm	All humidity probes with Ø 21 mm	0554 0667
Cap with wire mesh filter, Ø 12 mm			All humidity probes with Ø 12 mm	0554 0757
Teflon 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 velocities		Ø 21 mm	All humidity probes with Ø 21 mm	0554 0666
Teflon 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 velocities		Ø 12 mm	0636 9740, 0636 9715	0554 0756
Teflon 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 velocities		Ø 12 mm	0628 0021, 0628 0022, 0636 2140, 0636 2142	0554 0758
Teflon 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 velocities		Ø 21 mm	All humidity probes Ø 21 mm	0554 0640
Stainless steel sintered cap, Ø 12mm, made of stainless steel V2A. Highly robust, suitable for penetration, should be cleaned with compressed air, mechanical protection of sensor. Applications: high mechanical loads, high velocity speeds.		Ø 12 mm	0636 9740, 0636 9715	0554 0647
Teflon cap, Ø 5 mm, attachable, PTFE material, (5 off). Applications: dust protection, high humidity level measurements, high 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
Telescopic handle, 340 - 800mm long	0430 9715
Adapter for surface humidity measuring, for humidity probes Ø 12mm 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
Control and humidity adjustment set 11.3%RH/75.3%RH incl. adapter for humidity probes	0554 0660
Control and storage humidity (33%RH) for humidity probes	0554 0636

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

Always at your service!

Please send for more information

Portable Reference Measurement Engineering
The Intelligent Modular testo 905/650/400 Measurement Instrument Product Line

Quality Assured
With robust testostor 171 dataloggers

Stationary Temperature Probes
Professional Complete Solutions for Stationary Measurement Engineering

Log, Save, Print and Analyse Data On-Site Quickly and Efficiently
With the testo 175/177 dataloggers

0000 0000/dk/X/A/01.2005