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Measurement Engineering for Air Conditioning and Ventilation





Checking Indoor Air Quality using the new testo 435 multi-function meter



testo 400, the reliable reference measuring instrument

For a good climate

Air conditioning and ventilation engineering is a complicated and multifaceted field – You know that as well as we do.

Highly diverse tasks such as planning, initial operation, approval and service with different interfaces and high demands on energy efficiency, hygiene and Indoor Air Quality all have to function in harmony.

Technical requirements are high. Low energy consumption, high operational safety, long-term availability, – at the same time, it must be possible to regulate air conditioning and ventilation in the different rooms individually and in real time.

Testo has the measurement engineering required. Complete solutions for all parameters. Our many years of experience are reflected in our practical and efficient measurement solutions.

Nobody offers more

It is impossible to find a comparable range of probes, optional probes or conventional probes, for all the parameters required in air conditioning: flow, humidity, temperature, pressure, absolute

pressure, lux, sound, CO₂, volt and milliampere. Absolute assurance is supplied by Testo Calibration Certificates, regardless for which parameter. Testo has a pacesetter function in the calibration sector.

How accurate are you?

Measuring instruments have to measure accurately, stably and reliably over a period of years. These requirements are the basis of our product philosophy. An indication of how serious we are is made clear by the example of the development of our own, patented humidity sensor. It took almost eight years before the sensor met our requirements in terms of precision and long-term stability, response time and temperature tolerance. It was then subjected to thorough testing lasting more than a year before it was finally approved for use by our customers. But we were still not satisfied. Over a period of five years, inter-laboratory tests were undertaken involving nine renowned international testing institutes, such as the PTB in Berlin (National metrology institute), which documents the accuracy of the sensor over this time in each of the testing institutes.

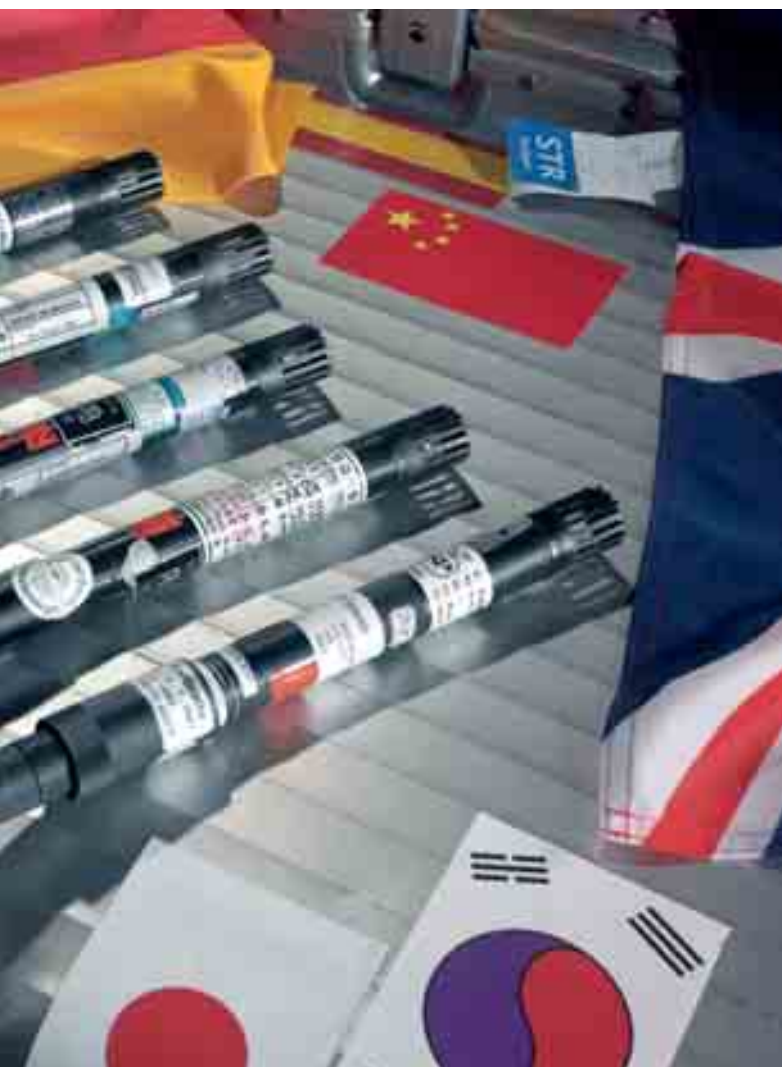
Learning changes

What was the difference again between standard and working volume flow? Or how are draughts in offices assessed?

If you need the answers to the above questions, just give us a call. We will do our best to help you.

Inter-laboratory tests

Three precision probes were tested in extensive inter-laboratory tests at the PTB in Berlin, NIST in the USA, in the French National Institute CETIAT, the Italian national institute IMGC, the English national institute NPL, the Spanish national institute INTA, at JQA in Japan, KRISS in Korea, NRCCRM in Peking and in the Testo DKD calibration laboratory. The results measured confirm a probe accuracy of ± 1 %RH as specified by Testo.



We owe Testo a lot

Wolfgang Schlee, Head of Commissioning at M+W Zander Facility Engineering GmbH



Mr. Schlee and his team are not only loyal Testo customers, they also attend seminars on air conditioning and ventilation engineering at Testo on a regular basis.

Mr. Schlee, what developments do you see in air conditioning engineering?

In the EU, there is a strong trend towards air conditioning in rooms, particularly in Southern European countries but also in Germany. In particular, split systems, decentralised systems for partial air conditioning in which an outside unit is combined with one or more inside units, are on the increase. The technical development is clearly targeting at a high efficiency level using intelligent system and regulation concepts.

What significance does measurement engineering have in your sector?

In order to be able to ideally adjust air conditioning and ventilation systems, we have to know numerous parameters and adjust them to each other. Without the proper measuring instruments and the know-how as to how to measure, it would simply be impossible.

What keeps you loyal to Testo?

The right instrument for every measurement job in air conditioning and ventilation engineering. I do not know any other company with such a comparable complete and well thought-through range of products for our sector. You could nearly believe that the Testo developers watch us everyday when we are measuring. For example, the SoftCase protection case with magnetic holder so that I can attach my meter to the system and have my hands free to guide the probe and make adjustments.

Service is also first-class. With the few defects we experienced over the years, we always received help straightaway. When we had to send in an instrument, a replacement instrument was immediately made available to us.

In your sector you could be referred to as an „old hat“, why are you still attending seminars at Testo?

Even old hats have to keep up-to-date. I have to pay attention to new developments in measurement engineering and new technical rules and legal stipulations about which I want to be informed. I always choose the aspects which I consider important. The same applies to my colleagues.

What would you write for Testo in the register?

Good instruments, good service, a lot of know-how. We owe Testo a lot.

The right VAC measuring



instrument for every task

Reference Measuring Instruments								
Professional Line Measuring Instruments								
Compact Line Measuring Instruments								
Mini Measuring Instruments								
Measurement data monitoring system								
Data loggers								
Stationary Measurement Engineering								
Stationary Measurement Engineering								
Profiles								
Air Temperature	X	X	X	X	X	X	X	X
Surface Temperature			X	X	X	X	X	X
Differential Temperature				X	X	X	X	X
Wireless probes (radio transmission)				X		X	X	
Air Humidity	X	X	X	X	X	X	X	X
Precision moisture		X		X				X
Material moisture					X		X	
Vane					X	X	X	X
Thermal Probe					X	X	X	X
Pitot Tube					X	X	X	X
VAC module								X
Differential Pressure					X	X	X	X
External differential pressure probe								X
Absolute Pressure					X		X	X
CO2							X	X
Light					X		X	
Rpm /current/voltage (0 to 20 mA, 0 to 1/10 V)					X			X
Readings printout (infrared printer)		X	X			X	X	X
Data processing on PC		X	X	X			X	X
Data Memory			X	X				
Ethernet probes				X				
Central measurement data monitoring				X				

testo 435 – Allrounder for service on air conditioning systems

Do you manage to get home by 5pm every day?



Axel Rieple,
Head of Sales,
Germany

Probably not, because your job expects above-average dedication. You also need partners who won't let you down. We are leading the way with our quality service. Check it out for yourself.

Do you need an accessory, do you have a question about measuring or do you need a replacement instrument? – Testo Service employees are at your service when you need them. Good to know when the situation requires.

All parameters required by air conditioning units in one instrument: m^3/h , m/s , CO_2 , %RH, $^{\circ}C$, hPa, Lux

Practical user profiles directly on function button, e.g. duct measurement with area input and mean calculation

Wireless temperature and humidity measurement over a distance of up to 20 m without obstructions

High quality documentation makes you a pro



testo 435 - The new all-rounder

The all-rounder

testo 435 is the new multi-function measuring instrument which analyses Indoor Air Quality to tune air conditioning systems. The new IAQ probe measures Indoor Air Quality using the parameters CO₂, % relative humidity and ambient air temperature. Absolute pressure is also available. The degree of turbulence probe is used to achieve an objective assessment of ambient air flow. The new Lux probe measures light conditions in the workplace and the repetition frequency of monitors. The surface probe and air moisture probe are used to show where dewpoint has been exceeded and mould has developed. The heat transfer coefficient (U-value) is measured using the U-value temperature

probe and a radio probe.

Temperature and humidity measurement are built-in in the new thermal probe. In this way, flow speed, volume flow, air humidity and air temperature can be measured in one procedure. Different measurement principles (hot wire, vane and Pitot tube measurement) can be used depending on flow speed and application.

Improved user comfort thanks to user profiles

testo 435 is easy to operate. User profiles for typical applications such as duct measurement and IAQ measurement are stored in the instrument making time-consuming programming in the instrument no longer necessary.

Reliable measurement data documentation

Measurement logs provide the customer with data from duct, long-term and degree of turbulence measurements. The company logo can be included on the form. Readings can be printed cyclically in testo 435-1 and -3 on your Testo printer.

Radio probes for temperature and humidity

You have the option of transmitting readings wirelessly via radio from the probe to measuring instrument over a distance of up to 20 m (without obstructions). The lack of cable means more convenience and it cannot get dirty or damaged.

The right instrument for every application

The new testo 435 is available in four versions. Depending on the application, you can choose from versions with built-in differential pressure measurement as well as versions with additional instrument functions such as instrument memory, PC software and an extended range of probes.

Common product advantages: testo 435

- **Wide selection of probes:**
 - IAQ probe for assessing ambient air quality based on CO₂, air temperature, ambient air moisture and absolute pressure
 - Thermal probes with built-in temperature and air moisture measurement
 - Vane and hot wire probes
 - Radio probes for temperature
- **Easy operation with user profiles**
- **Printout on Testo printer**

Additional benefits of the versions

- **Built-in differential pressure measurement (435-3/-4, cannot be upgraded)**
 - for flow measurement using Pitot tubes
 - for monitoring filters
- **Extended instrument functions (435-2/-4, cannot be upgraded)**
 - Instrument store for 10,000 readings
 - PC software for analysing, filing and documenting measurement data
 - Radio probe also for humidity
 - Lux probe connection possible
 - Comfort level probe connection possible
 - U-value probe connection possible

testo 435-1

testo 435-1, multi-functional meas. instr., for A/C, ventilation and Indoor Air Quality, with battery and calibration protocol

Part no. 0560 4351

testo 435-2

testo 435-2, multi-functional measuring instrument for A/C, ventilation and Indoor Air Quality with readings memory, PC software and USB data transmission cable, incl. battery and calibration protocol

Part no. 0563 4352

testo 435-3

Built-in differential pressure measurement

testo 435-3, multi-functional measuring instrument with built-in differential pressure measurement for air conditioning, ventilation and Indoor Air Quality, with battery and calibration protocol

Part no. 0560 4353

testo 435-4

Built-in differential pressure measurement

Extended instrument functions

testo 435-4, multi-functional meas. instr. with built-in differential pressure measurement for A/C, ventilation and Indoor Air Quality with readings memory, PC software and USB data transmission cable, with battery and calibration protocol

Part no. 0563 4354

Technical data	435-1/-2/-3/-4	435-3/-4	435-2/-4	435-1/-2/-3/-4
Probe type	NTC	Type K (NiCr-Ni)	Differential pressure probe, internal	Lux
Meas. range	-50 to +150 °C	-200 to +1370 °C	0 to +25 hPa	0 to +100000 Lux
Accuracy ±1 digit	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-50 to -25.1 °C) ±0.4 °C (+75 to +99.9 °C) ±0.5% of mv (remaining range)	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)	±0.02 hPa (0 to +2 hPa) 1% of mv (remaining range)	See probe data
Resolution	0.1 °C	0.1 °C	0.01 hPa	1 Lux / 0.1 Hz
Overload			200 hPa	
				Oper. temp. -20 to +50 °C
				Storage temp. -30 to +70 °C
				Battery life 200 h (typical vane measurement)
				Dimensions 225 x 74 x 46 mm

Technical data for thermal, vane and IAQ probes see probe data (next page)

Probes

435-1/-2/-3/-4

IAQ probes	Illustration	Meas. range	Accuracy	Part no.
IAQ probe to assess Indoor Air Quality, CO ₂ , humidity, temperature and absolute pressure measurement, with desk-top stand		0 to +50 °C 0 to +100 %RH 0 to +10000 ppm CO ₂ +600 to +1150 hPa	±0.3 °C ±2 %RH (+2 to +98 %RH) ±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) ±3 hPa	0632 1535
Ambient CO probe, for detecting CO in buildings and rooms		0 to +500 ppm CO	±5% of mv (+100.1 to +500 ppm CO) ±5 ppm CO (0 to +100 ppm CO)	0632 1235
Flow velocity probes	Illustration	Meas. range	Accuracy	Part no.
Thermal velocity probe with built-in temperature and humidity measurement, Ø 12 mm, with telescopic handle (max. 745 mm)		-20 to +70 °C 0 to +100 %RH 0 to +20 m/s	±0.3 °C ±2 %RH (+2 to +98 %RH) ±(0.03 m/s +4% of mv)	0635 1535
Vane meas. probe, 16 mm diameter, with telescopic handle max. 890 mm, e.g. for meas. in ducts, can be used from 0 to +60 °C		Oper. temp. 0 to +60 °C +0.6 to +40 m/s	±(0.2 m/s +1.5% of mv)	0635 9535
Vane meas. probe, 60 mm diameter, with telescopic handle max. 910 mm, e.g. for meas. at duct exit, can be used from 0 to +60 °C		Oper. temp. 0 to +60 °C +0.25 to +20 m/s	±(0.1 m/s +1.5% of mv)	0635 9335
Hot wire probe for m/s and °C, Ø probe head 7.5 mm, with telescopic handle (max. 820 mm)		0 to +20 m/s -20 to +70 °C	±(0.03 m/s +5% of mv) ±0.3 °C (-20 to +70 °C)	0635 1025
Funnel measurement	Illustration	Meas. range	Accuracy	Part no.
Vane meas. probe, 100 mm diameter, for measurements with funnel set 0563 4170		+0.3 to +20 m/s 0 to +50 °C	±(0.1 m/s +1.5% of mv) ±0.5 °C	0635 9435
Funnel set consisting of funnel for disc outlets (Ø 200) and funnel for ventilator (330 x 330 mm) for in- and outgoing air				0563 4170
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.
Efficient, robust NTC air probe	 115 mm 50 mm Ø 5 mm Ø 4 mm	-50 to +125 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (remaining range)	60 s 0613 1712
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 5 mm Ø 12 mm	-60 to +300 °C	Class 2	3 s 0602 0393
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K		-60 to +130 °C	Class 2	5 s 0602 4592
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		-50 to +100 °C	Class 2	5 s 0602 4692
Immers./penetr. probes	Illustration	Meas. range	Accuracy	t99 Part no.
Waterproof immersion/penetration probe, TC Type K	 114 mm 50 mm Ø 5 mm Ø 3.7 mm	-60 to +400 °C	Class 2	7 s 0602 1293

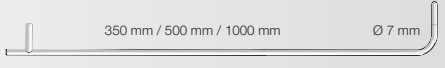
Probes / Option: Radio

435-2/-4

IAQ probes	Illustration	Meas. range	Accuracy	Part no.
Comfort level probe for degree of turbulence measurement with telescopic handle (max. 820 mm) and stand, meets EN 13779 requirements		0 to +50 °C 0 to +5 m/s	±0.3 °C ±(0.03 m/s +4% of mv)	0628 0109
Lux probe, for measuring light intensity		0 to 100.000 Lux 0 to 300 Hz	Accuracy Lux (acc. to DIN 5032). f1 = 6% = V(Lambda) adaptation f2 = 5% = cos like rating Class C Accuracy Hz: ±0.1% of f.v.	0635 0545
Humidity probes	Illustration	Meas. range	Accuracy	Part no.
Humidity/temperature probe		-20 to +70 °C 0 to +100 %RH	±0.3 °C ±2 %RH (+2 to +98 %RH)	0636 9735
Surface probes	Illustration	Meas. range	Accuracy	Part no.
Temperature probe to determine U-value, triple sensor system for measuring wall temperature, modelling clay included		-20 to +70 °C	Class 1 ±0.1 ±2% of mv*	0614 1635

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

435-3/-4

Prandtl's Pitot tubes	Illustration	Oper. temp.	Part no.
Pitot tube, 350 mm long, stainless steel, measures flow speed		-60 to +400 °C	0635 2145
Pitot tube, 500 mm long		0 to +600 °C	0635 2045
Pitot tube, 1000 mm long		0 to +600 °C	0635 2345

435-1/-2/-3/-4

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	t99
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	

435-2/-4

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 probes: General technical data

	Radio immersion/penetration probe, NTC	Radio handle	Measuring rate	Radio transmission
Battery type	2 x 3V button cell (CR 2032)	2 AAA micro batteries	0.5 s or 10 s, adjustable on handle	Unidirectional
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)		Oper. temp. -20 to +50 °C Storage temp. -40 to +70 °C
			Radio coverage	Protection class IP54
			Up to 20 m (without obstructions)	



Accessories

Accessories for measuring instrument/probes	Part no.	Printer and Accessories	Part no.
Funnel set consisting of funnel for disc outlets (Ø 200) and funnel for ventilator (330 x 330 mm) for in- and outgoing air	0563 4170	Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries, for printing out measurements on site	0554 0549
Plug-in mains adapter, 5 VDC 500 mA with European adapter, 100-250 VAC, 50-60 Hz	0554 0447	Spare thermal paper for printer (6 rolls), permanent ink, measurement data documentation legible for up to 10 years	0554 0568
Connection hose, silicone, 5m long, max. load 700 hPa (mbar)	0554 0440	Spare thermal paper for printer (6 rolls)	0554 0569
Handle for plug-in humidity probe head for connection to testo 635 and testo 435, probe cable included, measures/calibrates humidity probe head	0430 9735	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 saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe	0554 0660	Calibration Certificates	Part no.
Sintered PTFE filter, Ø 12 mm, for corrosive media, High humidity range (long-term measurements), high flow velocities.	0554 0756	ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
Stainless steel sintered filter, pore size 100 µm, probe protection in dusty atmospheres or at higher flow speeds, for measurements at higher flow velocities or in contaminated air	0554 0647	ISO calibration certificate humidity, Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
Lithium battery button cell, CR2032 AA batteries for radio handle	0515 0028	ISO calibration certificate/pressure, differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
Adhesive material for fixing and sealing	0554 0761	ISO calibration certificate velocity, hot wire, vane anemometer; calibration points 0.5; 0.8; 1; 1.5 m/s	0520 0024
System case	Part no.	ISO calibration certificate velocity, hot wire, vane anemometer, Pitot tube; calibration points 1; 2; 5; 10 m/s	0520 0004
Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm	0516 0035	ISO calibration certificate/Velocity, hot wire, vane anemometer, Pitot tube; calibration points 5; 10; 15; 20 m/s	0520 0034
Service case for measuring instrument, probe and accessories, dimensions 520 x 380 x 120 mm	0516 0435	ISO calibration certificate/light, Calibration points 0;500;1000;2000;4000 Lux	0520 0010
		ISO calibration certificate/CO ₂ , CO ₂ probes; calibration points 0; 1000; 5000 ppm	0520 0033

Measure U-value and flow using testo 435

Using testo 435-2 and testo 435-4, the U-value (the most important value when assessing heat in components, formerly known as K-value) and even the smallest air currents, such as at leaking windows, can be measured reliably.

Three temperature values are needed to calculate the U-value: outer temperature, surface temperature of the inner wall and the ambient air temperature. The outer temperature can be measured quickly and easily, with the window closed, using the new wireless probes. The probe is simply positioned outside and transmits the values wirelessly to the measuring instrument inside.

The two other temperatures required can be measured using only one probe; the new patented U-value probe. To measure the surface temperature, the three wires of the U-value probe are attached to the inner wall using modelling clay. The air temperature is measured by a sensor on the probe plug.

The three temperatures needed are determined by the connected temperature probes and transferred to the testo 435. The instrument calculates the U-value from them and shows it directly in the display.

Detection of tiny air currents such as at leaking windows and sockets is also possible using testo 435 together with a thermal measurement probe. The accurate hot-wire probe reliably detects even the tiniest air flows.

Air temperature and air moisture can be measured using testo 435-2 and testo 435-4. With a securely attached probe or with a wireless probe.



Measuring the U-value at a wall in need of repair with a U-value and wireless temperature/humidity probe (also possible with a temperature probe)



Measuring flow at a leaking window

Recommended sets		Part no.
testo 435-2, multi-functional measuring instrument for A/C, ventilation and Indoor Air Quality with readings memory, PC software and USB data transmission cable, incl. battery and calibration protocol		0563 4352
testo 435-4, multi-functional meas. instr. with built-in differential pressure measurement for A/C, ventilation and Indoor Air Quality with readings memory, PC software and USB data transmission cable, with battery and calibration protocol		0563 4354

Recommended set for measuring U-value	
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	0554 0188
Radio immersion/penetration probe, NTC, 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	0613 1001
or alternatively	
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	0554 0189
Humidity probe head, attachable to radio handle	0636 9736
Temperature probe to determine U-value, triple sensor system for measuring wall temperature, modelling clay included	0614 1635
Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm	0516 0035

Recommended set for measuring flow	
Hot wire probe for m/s and °C, Ø probe head 7.5 mm, with telescopic handle (max. 820 mm)	0635 1025

Recommended set for temperature/humidity measurement	
Humidity/temperature probe	0636 9735
or wireless with versatile handle and humidity probe head (See U-value measurement for Ordering data)	

The reference for air conditioning/ventilation units

testo 400

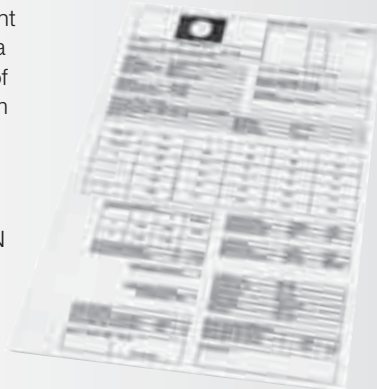
VAC module now included

testo 400, with the VAC module, is currently the only measurement system in the world with which a fast and objective assessment of the functionality of a VAC system is possible without the need for additional manual calculations.

Of course, measurement stipulations are based on the EN Standard 12599 as well as the Ashrae Standard USA.

The measurement technician always has one hand free.

The measurement data saved in testo 400 is uploaded to the PC at the touch of a button. Time-consuming manual written work is now a thing of the past, the required calculations are completed automatically by testo 400. Measurement results are documented in an EN standardised layout.



testo 400

testo 400, multi-functional meas. instr., incl. meas. value store up to 500,000 readings, VAC-module (determination of volume flow with error calc.), battery, Li-cell and calibration protocol

Applications for:

- Flow velocity, volume flow
- Humidity, pressure
- Temperature
- CO₂, current/voltage

Part no. 0563 4001

Additional benefits of testo 400

- 2 freely selectable channels
- Memory for 500,000 readings
- Up to 6 measurement parameters simultaneously in display
- Extended software functions e.g. measurement program is started if readings are exceeded
- Attachable printer (optional)

Measurement data processing with "Retrieval Guarantee"

Data is filed using a clear tree structure with "retrieval guarantee" - in the large display and, of course, on your PC.

Versatile display, presentation and analysis options, e.g. calculation functions in tables, diagrams, histograms, digit boxes or forms, are available on your PC.

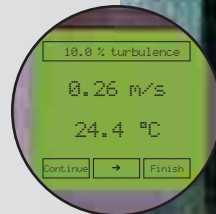
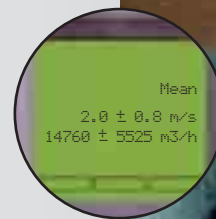
For scheduling purposes, locations with site can be compiled on your PC and then downloaded to your handheld

instrument.

Specific sites are combined as required and divided into groups, e.g. according to products.

Assessment of measurement directly on site with built-in uncertainty calculation

Display with calculated degree of turbulence, mean air velocity and air temperature



The coordinates required for the grid measurement are shown in the display. The depth data on the vane telescope makes your work much easier.

Reference probes

Vane probes

- Professional telescopic handle for plug-in vanes Ø 16 mm and Ø 100 mm
- Vane measurement probe Ø 16 mm with built-in temperature measurement and extended measurement range 0.4 to 60 m/s
- Vane probe Ø 100 mm with meas. range from 0.1 m/s

Differential pressure probes

- Wide selection of probes for measuring smallest pressures from 100 Pa up to 400 bar high pressure probe

Precision probes

- Humidity probe with 1% accuracy
- Precision temperature probe with a system accuracy of up to 0.05 °C

Current/voltage cable

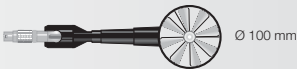
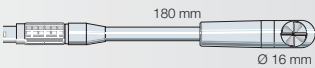
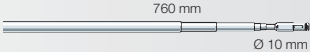
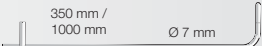
- For example, for measuring and adjusting stationary transmitters

Comprehensive monitoring of processes

All relevant parameters such as beginning and end of measurement, measurement intervals, undershooting/exceeding and date/time are programmable.

Online measurement via PC is also possible.

Spot measurement with immediate printout of log which includes company logo, site and measurement data is also provided.

Flow probes	Illustration	Meas. range	Accuracy	Part no.
Bendable vane probe (can be bent by 90°), Ø 100 mm, attachable to handle 0430 3545 or telescopic handle 0430 0941, for measurements on ventilation outlets		+0.2 to +15 m/s Oper. temp. 0 to +60 °C	±(0.1 m/s ±1.5% of mv) (+0.1 to +15 m/s)	0635 9340
Vane/temperature probe, Ø 16 mm, attachable to 0430 3545 handle or 0430 0941 telescopic handle		+0.4 to +60 m/s -30 to +140 °C	±(0.2 m/s ±1% of mv) (+0.4 to +40 m/s) ±(0.2 m/s ±2% of mv) (+40.1 to +50 m/s)	0635 9540
Professional telescopic handle for plug-in vane probes, max. 1 m long				0430 0941
Extension for telescopic handle, 2 m long. please also order the 0409 0063 extension cable				0430 0942
Handle for plug-in vane probes				0430 3545
Quick-action hot wire probe, Ø 10 mm, with telescopic handle, for measurements in the lower velocity range with direction recognition		0 to +20 m/s -20 to +70 °C	±(0.03 m/s ±4% of mv) (0 to +20 m/s)	0635 1041
Differential pressure measurement	Illustration	Meas. range	Accuracy	Part no.
Pressure probe in robust metal housing with impact protection, incl. magnet for fast attachment, measures differential pressure and flow speeds (in combination with Pitot tube)		Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required 0 to +100 Pa 0 to +10 hPa 0 to +100 hPa	±(0.3 Pa ±0.5% of mv) ±0.03 hPa ±0.5% of mv (+20 to +100 hPa) ±0.1 hPa (0 to +20 hPa)	0638 1347 0638 1447 0638 1547
Pitot tube, 1000 mm long, stainless steel, measures flow speed in combination with pressure probes		Oper. temp. 0 to +600 °C	Length 1000 mm Length 350 mm	0635 2345 0635 2145
Low pressure probe, refrigerant-proof stainless steel, up to 10 bar		screw-in thread 7/16" UNF -1 to +10 bar	±1% of fsv Overload 25 bar	0638 1741 Conn.: Plug-in head, connection cable 0409 0202 required
High pressure probe made of refrigerant-proof stainless steel Conn.: Plug-in head, connection cable 0409 0202 required		screw-in thread 7/16" UNF -1 to +40 bar -1 to +400 bar	±1% of fsv Overload 120 bar ±1% of fsv Overload 600 bar	0638 1941 0638 2141
More probes	Illustration	Meas. range	Accuracy	Part no.
Comfort level probe for measuring degree of turbulence, with telescopic handle and stand. Fulfills EN 13779 requirements		0 to +5 m/s 0 to +50 °C	±(0.03 m/s ±4% of mv) (0 to +5 m/s) ±0.3 °C (0 to +50 °C)	0628 0009
Ambient CO probe, for detecting CO in buildings and rooms		0 to +500 ppm CO	±5% of mv (+100.1 to +500 ppm CO) ±5 ppm CO (0 to +100 ppm CO)	0632 3331 Conn.: Fixed cable
CO2 probe measures indoor air quality and monitors the workplace. With 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 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Wet Bulb Globe temperature probe to assess workplaces subjected to heat, in accordance with ISO 7243 or DIN 33403, incl. WBGT case		Ø 150 mm 0 to +120 °C	In accordance with ISO 7243 or DIN 33403	0635 8888 ID No. 0699 4239/1
Highly accurate reference humidity/temp. probe		Ø 21 mm 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)	0636 9741 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Standard ambient air probe up to +70°C		Ø 12 mm 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)	0636 9740 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C		150 mm Ø 10 mm -200 to +300 °C	Class 2 t99 3 s	0604 0194 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Highly accurate immersion/penetration probe incl. certificate		295 mm Ø 4 mm -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)	t99 60 s 0614 0240 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required

Accessories for measuring instrument/probes	Part no.
Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug), for mains operation and battery recharging	0554 1084
testovent 410, volume flow funnel, Ø 340 mm/330x330 mm, incl. case	0554 0410
testovent 415, volume flow funnel, Ø 210 mm/210x210 mm, incl. case	0554 0415
Rech. batt. set for instr. (2 rech. 2.4V/1100mAh), selected for quick recharging in instrument	0554 0196
Connection hose, silicone, 5m long, max. load 700 hPa (mbar)	0554 0440

Software and Accessories	Part no.
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

For more information, refer to the brochure "Reference Measurement Technology for Industry" and www.testo.com.

Printer and Accessories	Part no.
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, for printing out measurements on site	0554 0549

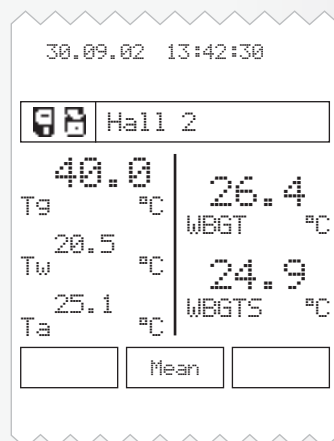
SoftCase for instrument and printer	Part no.
SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder	0516 0401
SoftCase for attachable printer (protects printer from dirt/impact)	0516 0411

System case	Part no.
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

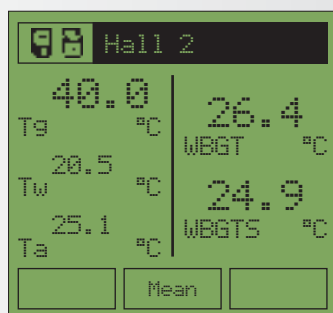
The professional set for assessing workplaces subjected to heat, testo 400



Measure with testo 400 and WBGT probe



testo 400 on-site printout e.g. with attachable printer



Calculated WBGT and WBGTS indices are displayed directly

Wet Bulb Globe Temperature Probe

The measurement task involves assessing workplaces, particularly those subjected to heat radiation:

The WBGT probe is used to determine the WBGT (Wet Bulb Globe Temperature) climate index in accordance with DIN 33403 and ISO 7243.

The WBGT index is used to determine the maximum allowable exposure time at workplaces subjected to heat.

Possible applications are e.g.:

- Steel industry
- Foundries
- Glass industry
- Furnaces
- Ceramics industry.

Heat radiation causes an increase in temperature based on:

- the thermal influence of the surroundings
- Work intensity
- Thermal transfer of clothing
- Duration of exposure.

If this burden is too high, there is a risk of a circulatory collapse, heat cramps or heat stroke.

Three different temperatures have to be measured for WBGT calculation:

- Temperature of a naturally aired, humidified thermometer (Tw), natural wet bulb temperature
- Globe temperature (Tg)
- Air temperature (Ta).

Calculation occurs inside and outside the building without exposure to sun:

$$\text{WBGT} = 0.7 \text{ Tw} + 0.3 \text{ Tg}$$

Outside buildings with exposure to sun:

$$\text{WBGTS} = 0.7 \text{ Tw} + 0.2 \text{ Tg} + 0.1 \text{ Ta}$$

The testo 400 measuring instrument calculates indices and shows them in its display.



The WBGT case for fast assessment of workplaces

Recommended Set:	Part no.
testo 400, multi-functional meas. instr., incl. meas. value store up to 500,000 readings, VAC-module (determination of volume flow with error calc.), battery, Li-cell and calibration protocol	0563 4001
Wet Bulb Globe temperature probe to assess workplaces subjected to heat, in accordance with ISO 7243 or DIN 33403, incl. WBGT case	0635 8888 ID No. 0699 4239/1
Attachable printer (securely attached) including 1 roll of thermal paper and batteries, quickly prints readings on location	0554 0570
Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug), for mains operation and battery recharging	0554 1084

We recommend the following for each of the 3 temperature probes:

ISO calibration certificate/temperature for air/immersion probes, calibration points -8°C; 0°C; +40°C	0520 0181
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The pro set for comfort level measurements & occupational safety/health, testo 400

The thermal well-being of humans depends to a great extent on ambient air flow. Humans react sensitively to draughts. Draught air is the most common reason for complaints about ambient conditions.

Testo's direction-independent comfort probe has been specially designed to analyse draughts. When used together with the testo 400 reference measuring instrument, it is possible to set up a reading sequence and to calculate the corresponding mean.

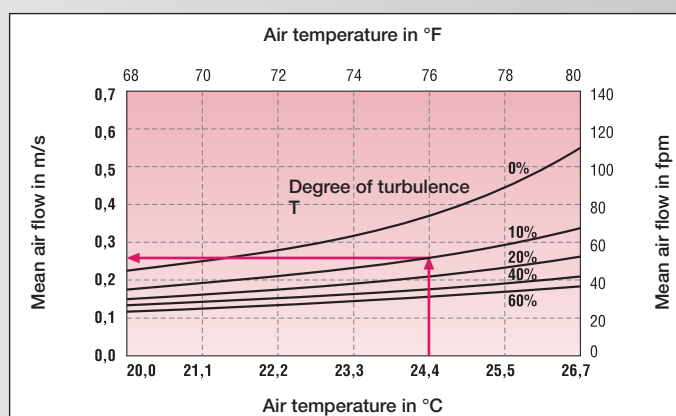
However, the mean air flow alone is not sufficient to assess the effect on people. The fluctuations over time in ambient air flow are also of interest. The degree of turbulence required in the respective standards and guidelines is a measure of this. It is also calculated automatically by the testo 400 reference measuring instrument.

Standards recommend that air flow is measured directly at the workplace at a height of 0.1 m, 0.6 m and 1.1 m (for seated persons) or 0.1 m, 1.1 m and 1.7 m (for standing persons).

The maximum mean air flow depends on the air temperature measured and the degree of turbulence calculated in each case (see graphic).

- Draught prevention in the workplace

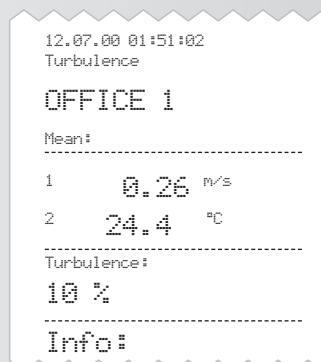
- Measure ambient air flow in air-conditioned rooms in accordance with EN 13779
- Automatic calculation of degree of turbulence (with testo 400)



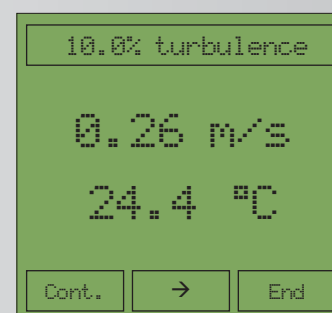
The normally time-consuming degree of turbulence calculation is carried out automatically by the testo 400 measuring instrument.

Example: Air temp.: 24.4°C, degree of turbulence: 10%

Degree of turbulence calculation: maximum mean air flow 0.26 m/s



testo 400 printout e.g. on attachable printer



testo 400 display with calculated degree of turbulence, mean air flow and air temperature

Recommended Set:	Part no.
testo 400, multi-functional meas. instr., incl. meas. value store up to 500,000 readings, VAC-module (determination of volume flow with error calc.), battery, Li-cell and calibration protocol 2 channel multi-function measuring instrument	0563 4001
Comfort level probe for measuring degree of turbulence, with telescopic handle and stand. Fulfills EN 13779 requirements	0628 0009
Attachable printer (securely attached) including 1 roll of thermal paper and batteries	0554 0570
Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug), for mains operation and battery recharging	0554 1084
We recommend:	
CO2 probe measures indoor air quality and monitors the workplace. With plug-in head, connection cable 0430 0143 or 0430 0145 required	0632 1240
Standard ambient air probe up to +70°C Measures all physical parameters in the psychrometric chart, Plug-in head, connection cable 0430 0143 or 0430 0145 required	0636 9740
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C, Plug-in head, connection cable 0430 0143 or 0430 0145 required	0604 0194
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	0430 0145



testo 400 set up with turbulence degree probe

The pro set for cleanroom technology, testo 400



Example of layout of a clean room



testo 400 display during the calibration of a stationary transmitter:

Left display half: Reference humidity probe

Right display half: 4-20 output measurement in a transmitter using current/voltage cable (scaling 0-100%RH)

The Pro Set for clean room technology

testo 400, multi-functional meas. instr., incl. meas. value store up to 500,000 readings, VAC-module (determination of volume flow with error calc.), battery, Li-cell and calibration protocol	0563 4001
Precision pressure probe, 100 Pa (differential pressure)	0638 1347
Precision air probe, Plug-in head, connection cable 0430 0143 or 0430 0145 required	0628 0017
Highly accurate reference humidity/temp. probe, Plug-in head, connection cable 0430 0143 or 0430 0145 required	0636 9741
Connection cable, length 1.5 m, for probes with plug-in heads	0430 0143
Connection cable, 5 m long, for probe with plug-in head	0430 0145
Thermal anemometer probe, Ø 10 mm, w. telescopic handle, measures air flow in lab fume cupboards to DIN EN 14175	0635 1047
Bendable vane probe (90° bend radius) Ø 100 mm, attachable to handle or telescope	0635 9340
Pro telescope for plug-in vane probes, length max. 1 m	0430 0941
Current/voltage cable (±1 V, ±10 V, 20 mA)	0554 0007
System case (aluminium) for measuring instrument, probes and accessories	0516 0410
ComSoft 3 - Professional with data management	0554 0830
RS232 cable	0409 0178

We recommend:

DKD calibration certificates for temperature, humidity, velocity, pressure

Defined process ambient conditions must be assured for the qualification and validation of the high quality standards of production units in clean rooms.

Air exchange and the resulting air flow are linked directly to air temperature and air moisture. Specified air flows produce defined positive pressures which prevent the ingress of impurities from outside.

Testo's measurement technology has proven to be ideal for testing process ambient conditions.

With the testo 400 reference measuring instrument, you have the possibility of connecting 2 probes simultaneously. The measuring instrument can then be used to monitor measurements on-site or for long-term measurements thanks to the integrated readings memory with capacity for 500,000 data.

Typical measurement tasks: differential pressure monitoring using the 100 Pa probe

The testo 100 Pa probe with an accuracy of $\pm(0.3 \text{ Pa} + 0.5 \% \text{ of the reading})$ is the ideal solution.

Position dependencies are completely eliminated thanks to the revolutionary double membrane technology and fluctuations in temperature no longer have any influence on the measured result thanks to temperature compensation.

Accurate air temp. measurement

testo 400 achieves a system accuracy of 0.1°C and a resolution of 0.01°C when used together with the precision air probe (Pt100 Class B 1/10).

Accurate air moisture measurement

The task at hand is to monitor exactly the fluctuations in air moisture with an accuracy of up to $\pm 1\% \text{RH}$. testo 400 sets new standards in terms of accuracy and long-term stability. The worldwide inter-laboratory test with the patented humidity sensor in leading, international institutes confirm the stated values.

Measurement of ideal air supply

testo 400, with its thermal, vane and pitot tube measurements, has all the engineering available to measure air flow. A calibration accuracy from 0.5% of the reading is assured thanks to the first PTB accredited DKD laboratory for flow.

Measuring laminar flow

The probe 0635 1047 for testing laboratory fume cupboards and for measuring laminar flow is new. Owing to its optimum flow impact characteristics with a direction-independent measurement within a possible twist angle (20°) and an accuracy of $\pm(0.02 \text{ m/s} + 5 \% \text{ of reading})$, the probe is optimally designed for the measurement of laminar flow.

Stationary transmitters

The check is carried out using the current/voltage cable (0 to 20 mA, 0 to 1 V, 0 to 10 V) and there is a possibility of integrating additional parameters.



Checking flow speed using the hot wire probe Part no.: 0635 1047

On site test procedure to DIN EN 14175, testo 400

Laboratory fume cupboard probe

The thermal anemometer probe is used for measurements and monitoring of fume cupboards. The probe corresponds to the new DIN EN 14175.

The advantages of the new thermal anemometer probe are the optimum flow impact behaviour and the easy handling. testo 400 provides necessary calculation such as mean value and standard deviation.

The objective of the on-site test procedure is to test the correct set-up of the fume cupboard, and to establish the performance of the fume cupboard under the prevailing conditions (indoor air flow/outgoing air system). For this purpose, the inflow as well as the outflow is measured.

For commissioning test (Part 4), the requirements of the measuring instrument are identical to those in the design check (Part 3).

- Direction-dependent, however measurement must be possible within $\pm 20^\circ$
- Time constant (τ_{63}) 0.5 s
- Accuracy $\pm (0.02 \text{ m/s} + 5\% \text{ of reading})$ in measuring range 0.2 to 1 m/s
- Anemometers must be calibrated

For the repetition test (Part 3), the anemometer must show an accuracy of 10% of reading for the inflow velocity test, and $\pm(0.02 \text{ m/s} + 5\% \text{ of reading})$ for the outflow velocity test in the range from 0.3

m/s. The new laboratory fume cupboard probe here fulfils the requirements from Parts 3 and 4.

General indoor air conditions during air tests, including temperature, air pressure, air humidity and pressure difference between indoor air input and indoor air output, must continue to be measured. According to DIN EN 14175-3: 2003, the anemometer must be able to measure indoor air velocity independently of direction.

With additional probes testo 400 offers the possibility of measuring the general indoor conditions.

testo 400

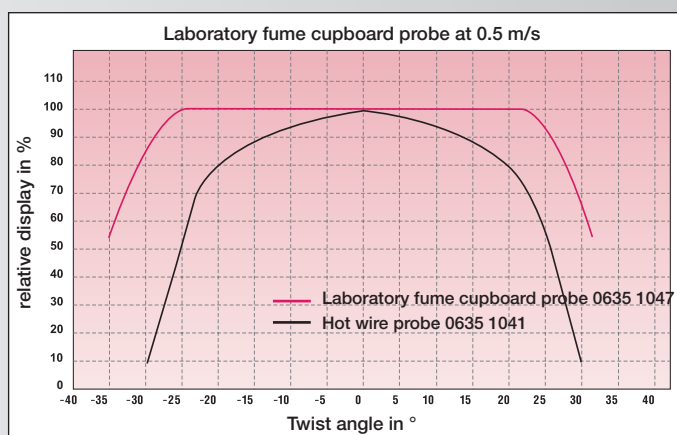
- Multi-function instrument testo 400 for measuring temperature, humidity, ΔP , flow velocity, absolute pressure
- PC interface and ComSoft 3

Advantages of the laboratory exhaust probe

- optimum flow impact characteristics
- robust probe with protective cap
- corresponds to norm DIN EN 14175



On-site testing of a laboratory fume cupboard with testo 400



Optimum flow impact behaviour of the laboratory fume cupboard probe (0635 1047)

Hot wire probe (0635 1041) optimized for duct measurement with direction recognition

We recommend:

ComSoft 3 - Professional with data management	0554 0830
RS232 cable	0409 0178
Attachable printer (securely attached) including 1 roll of thermal paper and batteries	0554 0570
SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder	0516 0401
SoftCase for attachable printer (protects printer from dirt/impact)	0516 0411
System case (aluminium) for measuring instrument, probes and accessories	0516 0410
DKD calibration certificate/velocity, hot wire anemometer; calibration points 0.1; 0.2; 0.5; 0.8; 1 m/s	0520 0224
ISO calibration certificate velocity, hot wire, vane anemometer; calibration points 0.5; 0.8; 1; 1.5 m/s	0520 0024

Recommended set

testo 400, multi-functional meas. instr., incl. meas. value store up to 500,000 readings, VAC-module (determination of volume flow with error calc.), battery, Li-cell and calibration protocol	0563 4001
Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug)	0554 1084
Rech. batt. set for instr. (2 rech. 2.4V/1100mAh)	0554 0196
Thermal anemometer probe, $\varnothing$ 10 mm, w. telescopic handle, measures air flow in lab fume cupboards to DIN EN 14175	0635 1047
Standard ambient air probe up to $+70^\circ\text{C}$, Plug-in head, connection cable 0430 0143 or 0430 0145 required	0636 9740
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	0638 1847
Precision pressure probe, 100 Pa, measures differential pressure, in robust metal housing with impact protection, incl. magnet for fast attachment	0638 1347
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument	0430 0143
Comfort level probe for measuring degree of turbulence, with telescopic handle and stand. Fulfills EN 13779 requirements	0628 0009

Air speed, temperature and moisture in one instrument

testo 410

testo 410-1 measures air speed and temperature. It is ideal for spot measurements at air outlets on account of its 40 mm vane. Timed mean calculation is possible.

In addition to air speed and temperature, testo 410-2 also measures air moisture. Testo's own, patented humidity sensor guarantees measurements you can build on. In this way, air conditions can be reliably checked.

- Flow velocity measuring instrument with temperature measurement
- Timed mean value calculation
- Hold function and max./min. values
- Windchill calculation for outside areas (perceived temperature)
- Display illumination

Additional benefits of testo 410-2:

- Air humidity measurement with long-term stable Testo humidity sensor
- Incl. dewpoint calculation and wet bulb

testo 410-1

testo 410-1; vane anemometer with built-in NTC air thermometer, incl protective cap, batteries and calibration protocol

Part no. 0560 4101

testo 410-2

testo 410-2; vane anemometer with integrated humidity measurement and NTC air thermometer, incl protective cap, batteries and calibration protocol

Part no. 0560 4102



Attachable protective cap



Flow measurement at a duct outlet with 40 mm vane

Technical data	testo 410-1/-2	testo 410-2
Probe type	Vane	NTC
Meas. range	0.4 to 20 m/s	-10 to +50 °C
Accuracy ±1 digit	±(0.2 m/s + 2% of mv)	±0.5 °C
Resolution	0.1 m/s	0.1 °C
Oper. temp.	-10 to +50 °C	
Battery type	2 batteries Type AAA	
Battery life	testo 410-1: 100 h (average, without display illumination) testo 410-2: 60 h (average, without display illumination)	
Dimensions	133 x 46 x 25 mm (incl. protective cap)	

Measures air flow and temperature – Flexibly and easily

testo 405

testo 405 is a thermal anemometer. It allows the measurement of air flow velocity, volume flow and temperature. testo 405 is ideal for measuring the flow in ducts or at duct openings or draughty windows.

- Volume flow calculation up to 99,990 m³/h
- Ideal for measurements in ducts
- Telescopic handle to 300 mm

testo 405

testo 405; thermal anemometer with duct holder, holding clip, battery included

Part no. 0560 4053



Easy-to-read readings thanks to swivel display



Flow velocity measurement at nontight windows

Accessories Ordering data	Part no.
testovent 410, volume flow funnel, Ø 340 mm/330x330 mm, incl. case	0554 0410
testovent 415, volume flow funnel, Ø 210 mm/210x210 mm, incl. case	0554 0415
ISO calibration certificate velocity, two point calibration; calibration points 5m/s and 10m/s	0520 0094
ISO calibration certificate velocity, hot wire, vane anemometer, Pitot tube; calibration points 1; 2; 5; 10 m/s	0520 0004

Technical data	Thermal	NTC
Probe type	Thermal	NTC
Meas. range	0 to 5 m/s (-20 to 0 °C) 0 to 10 m/s (0 to +50 °C) 0 to +99990 m ³ /h	-20 to +50 °C
Accuracy ±1 digit	±(0.1 m/s + 5% of mv) (0 to +2 m/s) ±(0.3 m/s + 5% of mv) (remaining range)	±0.5 °C
Resolution	0.01 m/s	0.1 °C
Oper. temp.	0 to +50 °C	Battery life
Storage temp.	-20 to +70 °C	Dimensions
		Approx. 20 h 490 x 37 x 36 mm

Compact Vane Anemometer

testo 416

The compact testo 416 anemometer with permanently attached vane probe with telescopic handle (max. 890mm).

Volume flow is shown directly in the display. Accurate volume flow calculation due to easy input of duct area.

Timed and multi-point mean calculation provide information on mean volume flow.

Min/max values can also be shown in the display. The Hold function enables you to freeze the current reading in the display.

- Direct display of volume flow
- Multi-point or timed mean calculation
- Max/min values
- Hold button to freeze readings
- Display light
- Auto-Off function

Telescopic vane (length max. 890 mm, Ø 16 mm)



Monitoring air velocity in air conditioning ducts

testo 416

testo 416, vane anemometer with permanently attached 16 mm telescopic vane (max. 890 mm), with battery and calibration protocol

Part no. 0560 4160

Technical data

Meas. range	+0.6 to +40 m/s
Accuracy ±1 digit	±(0.2 m/s +1.5% of mv)
Resolution	0.1 m/s
Oper. temp.	-20 to +50 °C
Storage temp.	-40 to +85 °C
Battery life	80 h
Dimensions	182 x 64 x 40 mm

Accessories Ordering data	Part no.
Case for measuring instrument and probes	0516 0210
Transport case for meas. instr. and probes (405 x 170 x 85 mm)	0516 0201
TopSafe, protects from impact and dirt	0516 0221
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
9V rech. battery for instrument, instead of battery	0515 0025

Compact Thermal Anemometer

testo 425

The compact anemometer, testo 425, with permanently attached thermal flow probe and telescopic handle.

Volume flow is shown directly in the display. Exact volume flow calculation thanks to easy input of duct area. You can also switch to the current temperature reading.

Timed and multi-point mean calculation provide information on mean volume flow, flow speed and temperature reading. Min/Max and Hold function included.

- Temperature, flow and volume flow measurement
- Multi-point and timed mean calculation
- Max/min values
- Hold button to freeze readings
- Display light
- Auto Off function

testo 425

testo 425, thermal anemometer with permanently attached flow probe (Ø probe head 7.5 mm), incl. temperature measurement and telescopic handle (max. 820 mm), battery and calibration protocol

Part no. 0560 4251

Thermal telescopic flow probe (max. 820 mm), permanently attached



testo 425, e.g. for monitoring the volume flow of exhaust air

Technical data

Probe type	Thermal	NTC
Meas. range	0 to +20 m/s	-20 to +70 °C
Accuracy ±1 digit	±(0.03 m/s +5% of mv)	±0.5 °C (0 to +60 °C) ±0.7 °C (remaining range)
Resolution	0.01 m/s	0.1 °C
Oper. temp.	-20 to +50 °C	
Storage temp.	-40 to +85 °C	
Battery life	20 h	
Dimensions	182 x 64 x 40 mm	

Accessories Ordering data	Part no.
Case for measuring instrument and probes	0516 0210
Transport case for meas. instr. and probes (405 x 170 x 85 mm)	0516 0201
TopSafe, protects from impact and dirt	0516 0221
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
9V rech. battery for instrument, instead of battery	0515 0025

Large-Area Vane Anemometer

testo 417

The compact testo 417 anemometer with built-in flow/temperature vane Ø 100 mm to measure flow speed, volume flow and temperature.

Volume flow is shown directly in the display. Accurate volume flow calculation thanks to easy input of duct area. In addition, it is easy to switch to the current temperature reading.

The flow direction, i.e. drawn in or blowing, is visible in the display.

Timed and multi-point mean calculation provide information on mean volume flow, flow speed and temperature readings.

The optional funnel set facilitates efficient measurements at ventilator grilles and disc outlets.

Min/max values can also be shown in the display. Current readings can be frozen in the display using the Hold function.

- Direction of flow recognition
- Temperature, flow and volume flow measurement
- Multi-point and timed mean calculation
- Max/min values
- Hold button to freeze readings
- Display light
- Auto Off function



Built-in Ø 100 mm vane



Volume flow is shown directly in the large display



Volume flow measurement with a large Ø 100 mm vane at duct outlet



Monitoring ingoing air in a disc outlet



Monitors outgoing air in an on-wall ventilator

testo 417

testo 417, vane anemometer with built-in 100 mm vane, incl. temperature measurement, battery and calibration protocol

Part no. 0560 4170

Accessories Ordering data	Part no.
Case for measuring instrument and probes	0516 0210
Funnel set consisting of funnel for disc outlets (Ø 200) and funnel for ventilator (330 x 330 mm) for in- and outgoing air	0563 4170
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
9V rech. battery for instrument, instead of battery	0515 0025
ISO calibration certificate velocity, hot wire, vane anemometer, Pitot tube; calibration points 1; 2; 5; 10 m/s	0520 0004
ISO calibration certificate/Velocit, hot wire, vane anemometer, Pitot tube; calibration points 5; 10; 15; 20 m/s	0520 0034
ISO calibration certificate velocity, hot wire, vane anemometer; calibration points 0.5; 0.8; 1; 1.5 m/s	0520 0024

Technical data			
Probe type	NTC	Vane	Volume flow
Meas. range	0 to +50 °C	+0.3 to +20 m/s	0 to +99999 m³/h
Accuracy ±1 digit	±0.5 °C	±(0.1 m/s + 1.5% of mv)	±0.5 °C
Resolution	0.1 °C	0.01 m/s	0.1 m³/h (0 to +99.9 m³/h) 1 m³/h (+100 to +99999 m³/h)
Oper. temp.	0 to +50 °C		
Storage temp.	-40 to +85 °C		
Battery life	50 h		
Dimensions	277 x 105 x 45 mm		

Notes

Measures differential pressure 0 to 100 hPa – Practical and robust

testo 510

Differential pressure measurement in testo 510 is temperature-compensated for accurate readings. They can be displayed in Pascal over the whole measurement range. Magnets on the back of the instrument allow you to work hands-free. When used with a Pitot tube, testo 510 measures air speed. Air density can be compensated to give accurate readings.

- Flow velocity measurement with Pitot tube (Pitot tube not included in delivery)
- Backlit display
- Selectable units: hPa, mbar, Pa, mmH₂O, inH₂O, inHg, mmHg, psi, m/s, fpm

testo 510

testo 510; differential pressure meter incl. protective cap, batteries and calibration protocol

Part no. 0560 0510

Accessories Ordering data	Part no.
Hose set: Connection hose, silicone, 2 m long, max. load 700 hPa (mbar)	0554 0448
Pitot tube, 350 mm long, stainless steel, measures flow speed	0635 2145
Pitot tube, 500 mm long, stainless steel, measures flow speed	0635 2045
ISO calibration certificate/Pressure, Differential pressure; 3 points distributed over meas. range	0520 0095
ISO calibration certificate/pressure, differential pressure; 5 points distributed over meas. range	0520 0005



Included: belt case, wrist strap, protective cap and calibration protocol



Differential pressure measurement on filters

Technical data	
Probe type	Differential pressure probe
Meas. range	0 to 100 hPa
Accuracy ±1 digit	±0.03 hPa (0 to 0.30 hPa) ±0.05 hPa (0.31 to 1.00 hPa) ±(0.1 hPa + 1.5 % of mv) (1.01 to 100 hPa)
Resolution	0.01 hPa
Oper. temp.	0 to +50 °C
Battery type	2 batteries Type AAA
Battery life	50 h (average, without display illumination)
Dimensions	119 x 46 x 25 mm (incl. protective cap)

Absolute pressure and barometric elevation measurement – Practical and accurate

testo 511

testo 511 measures absolute pressure with an accuracy of ± 3 hPa. It is then converted to barometric air pressure by entering on-site height above sea level.

Barometric elevation measurement between two points is also possible.

- Measures absolute pressure, e.g. for absolute pressure compensation in flow velocity measurements with a Pitot tube
- Backlit display
- Selectable units: hPa, mbar, Pa, mmH₂O, mmHg, inH₂O, inHg, psi, m, ft

testo 511

testo 511; absolute pressure meter incl. protective cap, batteries and calibration certificate

Part no. 0560 0511

Accessories Ordering data	Part no.
Hose set: Connection hose, silicone, 2 m long, max. load 700 hPa (mbar)	0554 0448
ISO calibration certificate/absolute pressure, 3 meas. points distributed over meas. range	0520 0185
ISO calibration certificate/absolute pressure, 5 measurement points distributed over meas. range	0520 0125



Included: belt case, wrist strap, protective cap and calibration protocol



Absolute pressure measurement to determine absolute pressure compensation when measuring flow with a Pitot tube

Technical data	
Probe type	Absolute pressure probe
Meas. range	300 to 1200 hPa
Accuracy ±1 digit	±3.0 hPa
Resolution	0.1 hPa
Oper. temp.	0 to +50 °C
Battery type	2 batteries Type AAA
Battery life	200 h (average, without display illumination)
Dimensions	119 x 46 x 25 mm (incl. protective cap)

Pressure and flow velocity measuring instrument

testo 512

testo 512 shows pressure and flow velocity simultaneously in an easy-to-read, large, backlit display. Measurement data is printed on site with date and time as well as minimum and maximum values. testo 512 has two switchable units for flow: m/s and fpm. Eight units can be set for pressure: kPa, hPa, Pa, mm H₂O, mmHg, psi, inch H₂O, inch Hg.

Adjustable damping for sliding mean calculation, density compensation is built-in. The displayed actual value can be frozen in the display by pressing the HOLD button. The measured minimum and maximum value can be displayed and stored in the meter.

TopSafe protects the measuring instrument in the field from impact, dirt and splash water.

- 8 units for pressure: kPa, hPa, Pa, mm H₂O, mmHg, psi, inch H₂O, inch Hg
- 2 units for flow: m/s, fpm
- Built-in density compensation
- Display light
- Hold/Max/Min function
- Readings printout with date/time and min./max. values



Simultaneous display of flow and pressure value



Measuring process air

0 to 2 hPa/mbar	1	0 to 20 hPa/mbar	2
testo 512 differential pressure meter, 0 to 2 hPa, incl. battery and calibration protocol		testo 512 differential pressure meter, 0 to 20 hPa, incl. battery and calibration protocol	
Part no. 0560 5126		Part no. 0560 5127	
0 to 200 hPa/mbar	3	0 to 2000 hPa/mbar w/o flow velocity and Pascal measurement	4
testo 512 differential pressure meter, 0 to 200 hPa, incl. battery and calibration protocol		testo 512 differential pressure meter, 0 to 2000 hPa, incl. battery and calibration protocol	
Part no. 0560 5128		Part no. 0560 5129	

Technical data	1	2	3	4
Meas. range	0 to +2 hPa +2 to +17.5 m/s	0 to +20 hPa +5 to +55 m/s	0 to +200 hPa +10 to +100 m/s	0 to +2000 hPa
Resolution	0.001 hPa 0.1 m/s	0.01 hPa 0.1 m/s	0.1 hPa 0.1 m/s	1 hPa
Overload	±10 hPa	±200 hPa	±2000 hPa	±4000 hPa
Accuracy	0.5% of fsv			
Measuring medium	All non-corrosive gases			
Display	LCD, 2 lines			
Oper. temp.	0 to +60 °C			
Storage temp.	-10 to +70 °C			
Battery type	9V block battery, 6F22			
Battery life	120 h			
Auto Off	10 min			
Dimensions	202 x 57 x 42 mm			
Weight	300 g			

Accessories Ordering data	Part no.
9V rech. battery for instrument, instead of battery	0515 0025
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
Printer and Accessories	Part no.
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Spare thermal paper for printer (6 rolls), permanent ink, measurement data documentation legible for up to 10 years	0554 0568
Spare thermal paper for printer (6 rolls)	0554 0569
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
Transport and Protection	Part no.
TopSafe, protects from impact and dirt	0516 0221
Case for measuring instrument and probes	0516 0210
Transport case for meas. instr. and probes (405 x 170 x 85 mm)	0516 0201

Pitot tube measurement	Part no.
Pitot tube, 350 mm long, stainless steel, measures flow speed	0635 2145
Pitot tube, 500 mm long, stainless steel, measures flow speed, Longer versions on request	0635 2045
Pitot tube, 1000 mm long, stainless steel, measures flow speed in combination with pressure probes, Longer versions on request	0635 2345
Connection hose, silicone, 5m long, max. load 700 hPa (mbar)	0554 0440
Calibration Certificates	Part no.
DKD calibration certificate/pressure, diff. and pos. pressure; 11 measuring points distributed over the instr. meas. range	0520 0215
ISO calibration certificate/pressure, differential pressure; 5 points distributed over meas. range	0520 0005

Pressure meters for all measurement ranges

testo 521-1/-2 with internal sensor 0 to 100 hPa

Highly accurate with internal differential pressure sensor, ideal for inspecting extraction units and ventilators and for monitoring pressure drops in filters. When used with the Pitot tube, the internal pressure sensor measures velocities from 5 - 100 m/s. The 100 Pa probe, which can be connected externally, measures accurately from 1 - 12 m/s.

testo 521-3 with internal sensor 0 to 250 Pa

Using testo 521-3 even the smallest differential pressures up to 250 Pa are measured. High accuracy and a resolution of 0.1 Pa mean the instrument is ideal for differential pressure measurements in clean rooms.

When used with a Pitot tube, the internal pressure sensor measures flow speeds in the range 1 to 20 m/s.

Save data according to site and analyse on PC/notebook



Pitot tube measurement with external 100 Pa probe

- Temp. compensated differential pressure sensor built into instrument
- Calculation of velocity and volume flow via Pitot tube measurement
- Multi-point and timed mean calculation
- 2 probe sockets for pressure and temperature

testo 521-1 / 0 ... 100 hPa

Accuracy 0.2% of fsv

Differential pressure meter 0 to 100 hPa incl. battery and calibration protocol

Part no. 0560 5210

testo 521-2 / 0 to 100 hPa

Accuracy 0.1% of fsv

Differential pressure meter 0 to 100 hPa incl. battery and calibration protocol

Part no. 0560 5211

testo 521-3 / 0 to 2.5 hPa

Differential pressure measuring instrument 0 to 2.5 hPa
testo 521-3, differential pressure meter 0 to 2.5 hPa, battery and calibration protocol included

Part no. 0560 5213

Accessories Ordering data

Part no.

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

Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material 0430 0143

TopSafe (protection case), incl. carrier strap, bench stand and magnet. Protects instrument from dust, impact, scratches 0516 0446

Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries 0554 0549

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

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

Transport case, for measuring instrument, probes, Prandtl Pitot tube, accessories 0516 0527

Technical data

testo 521-1 / testo 521-2

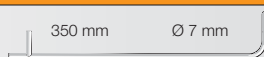
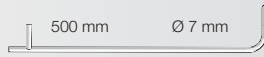
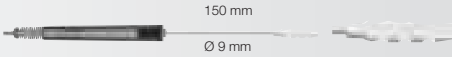
Probe type	Piezoresistive pressure sensor (internal)	Piezoresistive pressure sensor for external pressure probes
Meas. range	0 ... 100 hPa	0 to 2000 hPa
Accuracy ±1 digit	±0.2 % of fsv(testo 521-1) ±0.1 % of fsv(testo 521-2)	±0.1 % of mv
Resolution	0.01 hPa	0.1 Pa (0638 1347) 0.001 hPa (0638 1447) 0.1 hPa (0638 1647; 0638 1747; 0638 1847)
Overload	300 hPa	
Static pressure	2000 hPa	

testo 521-3

Probe type	Piezoresistive pressure sensor (internal)	Piezoresistive pressure sensor for external pressure probes
Meas. range	0 to 2.5 hPa	0 to 2000 hPa
Accuracy ±1 digit	±0.5 Pa (0 to 20 Pa) ±(0.5 Pa ±0.5% of mv) (20.1 to 250 Pa)	±0.1 % of mv
Resolution	0.1 Pa	0.1 Pa (0638 1347) 0.001 hPa (0638 1447) 0.1 hPa (0638 1647; 0638 1747; 0638 1847)
Overload	50 hPa	
Static pressure	100 hPa	

Common data

Oper. temp. (compensated)	0 to +50 °C	Dimensions	219 x 68 x 50 mm
Storage temp.	-20 to +70 °C	Weight	300 g
Memory	25,000	Display	LCD, 2 lines
PC	RS232 interface	Battery type	9 V (6LR61)

Differential pressure probes	Illustration	Meas. range	Accuracy	Conn.	Part no.	
Pressure probe in robust metal housing with impact protection, incl. magnet for fast attachment, measures differential pressure and flow speeds (in combination with Pitot tube)		0 to +100 Pa	±(0.3 Pa ±0.5% of mv)	Plug-in head, connection cable 0430 0143 or 0430 0145 required	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)		0 to +10 hPa	±0.03 hPa	Plug-in head, connection cable 0430 0143 or 0430 0145 required	0638 1447	
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		0 to +1000 hPa	±1 hPa (0 to 200 hPa) ±0.5% of mv (200 to 1000 hPa)	Plug-in head, connection cable 0430 0143 or 0430 0145 required	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		0 to +2000 hPa	±2 hPa (0 to 400 hPa) ±0.5% of mv (400 to 2000 hPa)	Plug-in head, connection cable 0430 0143 or 0430 0145 required	0638 1747	
Absolute pressure probe	Illustration	Meas. range	Accuracy	Conn.	Part no.	
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		0 to +2000 hPa	±5 hPa (0 to +2000 hPa)	Plug-in head, connection cable 0430 0143 or 0430 0145 required	0638 1847	
Pitot tubes	Illustration			Oper. temp.	Part no.	
Pitot tube, 350 mm long, stainless steel, measures flow speed		350 mm	Ø 7 mm	0 to +600 °C	0635 2145	
Pitot tube, 500 mm long, stainless steel, measures flow speed		500 mm	Ø 7 mm	0 to +600 °C	0635 2045	
Temperature probes	Illustration		Meas. range	Accuracy	t ₉₉	Part no.
Pipe wrap probe for pipes with diameter of up to 2", for flow/return temp. meas. in hydronic systems			-60 to +130 °C	Class 2	5 s	0600 4593
Highly accurate air probe for air and gas temperature measurements with bare, mechanically protected sensor		150 mm Ø 9 mm	-40 to +130 °C	To UNI curve	60 s	0610 9714



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Measures humidity and temperature – Professional and reliable

What is the temperature really?



Wolfgang Schwörer,
Head of Product
Development
Portable and
Systems

How can you be sure that your analyser measures exactly what it should be measuring? Our certified DKD laboratories are unbeatable in their accuracy and give the

values for all Testo measuring instruments - That's what true measurement efficiency is all about.

The competence of our engineers is held in high esteem by expert groups and committees in Berlin and Brussels where they are involved in the developments of future guidelines in their capacity as representatives of industry.

A comprehensive exchange of knowledge and experience with official measurement institutes around the world (e.g. DKD) ensures that your Testo measuring instrument can hold up to any comparison. Indeed, these efforts do have an objective: whoever uses Testo measurement engineering, can be assured that he is using the industrial standard.

Of further benefit to you: We know today about the guidelines and test specifications we will be faced with in the future.

The right probe for every application:

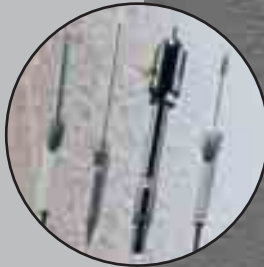
Relative humidity, equilibrium moisture, pressure dewpoint, surface temperature

Wireless humidity and temperature measurement

Over a distance of up to 20 m without obstructions

Definition of a material moisture characteristic curve in PC software for testo 635-2

High quality documentation makes you a pro



testo 635-1

The versatile instrument for measuring air humidity, U-value, material equilibrium moisture and pressure dewpoint in compressed air systems.

The humidity sensor, developed by Testo, has proven itself worldwide and has excellent features in terms of precision, long-term stability, temperature resistance and robustness.

Up to 3 temperature or humidity probes can be displayed wirelessly in the testo 635 measuring instrument, i.e. data is transmitted by radio. Selectable user profiles, i.e. function buttons allocated to a specified application and menu guide facilitate intuitive operation. Data is transmitted via infrared to the Testo printer.

Material moisture can be displayed directly using special probes. The heat transfer coefficient (U-value) is measured using the U-value temperature probe and a radio probe. To analyse humidity on ceilings and walls, testo 635 shows the dewpoint difference between ambient air and wall surface. Precision probes up to -60 °C tpd are available for checking pressure dewpoint in compressed air systems.

testo 635 Common advantages

- Connection of 3 radio probes
- Measurement of air humidity, material equilibrium moisture and pressure dewpoint in compressed air systems
- Display of dewpoint difference, min, max and mean values
- Print data on testo printer (optional)
- Backlit display
- Protection type IP 54

testo 635-1 Advantages

Cyclic printing of readings on testo printer, e.g. once per minute

testo 635-2 Advantages

- Instrument store for 10,000 readings
- PC software for filing and documenting measurement data
- Direct display of material moisture due to storable characteristics curves (Basis: material equilibrium moisture)
- U-value probe connection possible
- Storage of single measurements or measurement series by measurement site
- Quick 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



Wireless measurement of warehouse temperature and humidity, with radio handle and attachable humidity probe head

Technical data

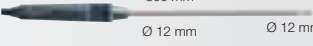
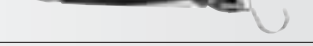
Probe type	Type K (NiCr-Ni)	NTC (Humidity Probes)	Testo humid. sensor, cap.	Absolute pressure probe
Meas. range	-200 to +1370 °C	-40 to +150 °C	0 to +100 %RH	0 to 2000 hPa
Accuracy ±1 digit	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-40 to -25.1 °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			
Weight	428 g			
Dimensions	220 x 74 x 46 mm			

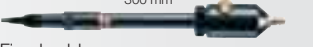
Time for the essentials

"To be quite honest, the phones are usually quiet between 6 and 7pm but the few people who do call are delighted when somebody answers the phone. That's why I'm happy to be here. Testo at your service"

Regina Walz
Sales

testo 635: Probes / Accessories

Humidity probes	Illustration	Meas. range	Accuracy	Part no.
Humidity/temperature probe		-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		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		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	t ₉₉	Part no.
Pressure dewpoint probe for measurements in compressed air systems		-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		-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	t ₉₉	Part no.
Robust air probe, T/C Type K		-60 to +400 °C	Class 2	25 s	0602 1793

Surface probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Fast-action surface probe with sprung thermocouple strip, also for uneven surfaces, measurement range short-term to +500 °C, TC Type K		-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		-20 to +70 °C	Class 1 U-value: ±0.1 ±2% of fsy *		0614 1635

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

Further accessories measuring instrument/probes	Part no.	Printer and Accessories	Part no.
Plug-in mains adapter, 5 VDC 500 mA with European adapter, 100-250 VAC, 50-60 Hz	0554 0447	Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Handle for plug-in humidity probe head for connection to testo 635 and testo 435, probe cable included, measures/calibrates humidity probe head	0430 9735	Spare thermal paper for printer (6 rolls), permanent ink, 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	0554 0660	Spare thermal paper for printer (6 rolls)	0554 0569
Sintered PTFE filter, Ø 12 mm, for corrosive media	0554 0756	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
PTFE cap, Ø 5 mm, attachable, PTFE material, (5 off) PTFE	0554 1031	Transport and Protection	Part no.
Stainless steel sintered filter, pore size 100 µm, probe protection in dusty atmospheres or at higher flow speeds	0554 0647	Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm	0516 0035
Adapter for surface humidity measurement, for humidity probes Ø 12mm	0628 0012	Service case for measuring instrument, probes and accessories, dimensions 520 x 380 x 120 mm	0516 0735
Adhesive material for fixing and sealing	0554 0761	Calibration Certificates	Part no.
Cap for bore holes, for humidity probe Ø 12 mm, Measures equilibrium moisture in bore holes	0554 2140	ISO calibration certificate humidity, Calibration points 11.3 %RH and 75.3 %RH at +25 °C	0520 0006
Lithium battery button cell, CR2032 AA batteries for radio handle	0515 0028	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
		ISO calibration certificate/U-value probe	0520 0481
		DKD calibration certificate/U-value probe	0520 0981

testo 635: Option: Radio

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 probes for immersion/penetration measurements

Radio immersion/penetration probes	Meas. range	Accuracy	Resolution	t ₉₉
Radio immersion/penetration probe, NTC 	-50 to +275 °C	±0.5 °C (-20 to +80 °C) ±0.8 °C (-50 to -20.1 °C) ±0.8 °C (+80.1 to +200 °C) ±1.5 °C (remaining range)	0.1 °C	t ₉₉ (in water) 12 s

Country versions	Radio freq.	Part no.
Radio immersion/penetration probe, NTC, 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	0613 1001
Radio immersion/penetration probe, NTC, approval for USA, CA, CL	915.00 MHz FSK	0613 1002

Assembled for you: Radio handles with probe head

Radio handles with probe head for air-/ immersion-penetration-meas.	Meas. range	Accuracy	Resolution	t ₉₉
Radio handle for attachable probe heads with T/C probe head for air and immersion/penetration 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)	t ₉₉ (in water) 10 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 air/immersion/penetration measurement, attachable to radio handle, T/C Type K		0602 0293
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 air/immersion/penetration measurement, attachable to radio handle, T/C Type K		0602 0293

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	Measuring rate	Radio transmission
Battery type	2 x 3V button cell (CR 2032)	2 AAA micro batteries	0.5 s or 10 s, adjustable on handle	Unidirectional
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)	Radio coverage	Oper. temp. -20 to +50 °C Storage temp. -40 to +70 °C Protection class IP54
			Up to 20 m (without obstructions)	

U-value measurement made easy with testo 635-2

The U-value (formerly k-value) is the most important value used to rate the energy efficiency of building components. With the new testo 635 measuring this value has never been easier.

Three temperature values are needed to determine the U-value: outer temperature, surface temperature of inner wall as well as indoor air temperature.

Using the new wireless probes, the outer temperature can be quickly and easily measured with the window closed. The probe is simply positioned outside and transmits readings by radio to the measuring instrument in the room.

With the new patented U-value probe the two other temperatures required are measured using one probe. To measure surface temperature, three wires from the U-value probe are attached to the

inner wall using modelling clay.

The air temperature is measured by a sensor on the probe plug.

The three temperatures needed are determined by the connected temperature probes and transferred to the testo 435. The instrument calculates the U-value from them and shows it directly in the display.



Temperature probe to determine U-value, triple sensor system for measuring wall temperature, modelling clay included

Part no. 0614 1635



Measures the U-value in a wall in need of renovation using U-value and wireless temperature/humidity probe (alternatively conventional temperature probe also)



Measures wall surface temperature using three fast-action thermocouple sensors

U-value measurement made easy with 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	0563 6352
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	0554 0188
Radio immersion/penetration probe, NTC, 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	0613 1001
Or alternatively	
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	0554 0189
Humidity probe head, attachable to radio handle	0636 9736
Temperature probe to determine U-value, triple sensor system for measuring wall temperature, modelling clay included Accuracy: U-value: $\pm 0.1 \pm 2\%$ of fsv (when used with an NTC or wireless humidity probe for measuring outside temperature and 20 K difference between the air inside and outside)	0614 1635
Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm	0516 0035
ISO calibration certificate/U-value probe	0520 0481
DKD calibration certificate/U-value probe	0520 0981

Convenient material moisture equilibrium measurement with testo 635-2

The moisture of materials can be determined with the testo 635 using two different measurement principles.

Surface measurement

In surface measurement, the influence of water on electrical fields is exploited. With the help of the capacitive measurement principle, the material moisture is determined by the strength of the scatter field measured. The testo scatter field probe provides the benefits of non-destructive and fast measurement on the outer surface of objects, reaching up to 5 cm into the material. Testing large areas is thus child's play, and in combination with the memory function of the testo 635, quickly gives the user an overview.

Detecting extremely damp spots and creating moisture maps can be carried out quickly, easily and frequently.

Depth measurement

Hygroscopic materials (those which absorb moisture) always try to create a moisture balance, the so-called equilibrium moisture, with the surrounding air. By measuring the equilibrium moisture, this behaviour allows conclusions to be drawn about the material moisture.

The measurement is ideally taken in a drill hole in the material. In order to keep the hole as small as possible, a humidity probe with a width of 4 mm and a protective cap is ideal. An adhesive putty is used to seal the drill hole. The measurement allows the spot measurement of material moisture at greater depths.

Material characteristics curves for the following materials are stored in the instrument for the calculation and display in percent by weight [%] for both measurement principles:

- Soft wood
- Hard wood
- Chipboard
- Insulating (vertically perforated) brick
- Solid brick
- Aerated concrete
- Sand-lime brick
- Calcium sulphate screed
- Cement screed
- Concrete

The materials can be easily selected in the menu. When using the user profile "Material", the material can be selected directly with the press of a button.



Determining screed moisture quickly and easily. Measuring several points over a surface with the scatter field probe ensures better security of measurement.



Inserting the humidity probe in a bore hole with PTFE protective cap

Convenient material moisture equilibrium measurement with 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	0563 6352
Scatter field probe for fast and damage-free material moisture measurement, with probe cable 1.2 m.	0636 6160
Thin humidity probe with built-in electronics, incl. 4 attachable PTFE protection caps for material moisture equilibrium measurement	0636 2135
Adhesive material for fixing and sealing	0554 0761

Checks ambient conditions – Flexible and robust

testo 625

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)

testo 625

testo 625, humidity/temperature measuring instrument, incl. plug-in humidity probe head, battery and calibration protocol

Part no. 0563 6251

Accessories Ordering data	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
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
9V rech. battery for instrument, instead of battery	0515 0025
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, CR2032 AA batteries for radio handle	0515 0028
ISO calibration certificate humidity, 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

testo 625 with handle, probe cable included

testo 625 with radio handle and radio module

Monitors Indoor Air Quality

Technical data

Probe type	NTC	Testo humid. sensor, cap.	Type K (NiCr-Ni)
Meas. range	-10 to +60 °C	0 to +100 %RH	-200 to +1370 °C
Accuracy ±1 digit	±0.5 °C	±2.5 %RH (+5 to +95 %RH)	
Resolution	0.1 °C	0.1 %RH	0.1 °C
Oper. temp.	-20 to +50 °C		
Storage temp.	-40 to +85 °C		
Battery type	9V block battery, 6F22		
Battery life	70 h (without radio operation)		
Dimensions	182 x 64 x 40 mm		

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 immersion/penetration probe, NTC	Radio handle	Measuring rate	0.5 s or 10 s, adjustable on handle	Radio transmission	Unidirectional
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)			Oper. temp.	-20 to +50 °C
			Radio coverage	Up to 20 m (without obstructions)	Storage temp.	-40 to +70 °C

Air moisture and temperature in one instrument

testo 610

testo 610 measures relative air moisture and temperature simultaneously. Dew point calculation, and wet bulb as well as hold function and the display of max. and min. values are possible with the instrument.

testo 610 is ideal for quick checks on indoor quality in offices, production rooms or in warehouses, for example.

- Air moisture and air temperature
- Dewpoint calculation and wet bulb included
- Hold function and max./min. values
- Backlit display
- Protective cap for safe storage



Included: belt case, wrist strap, protective cap and calibration protocol



Monitors indoor air quality in office buildings

testo 610

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

Part no. 0560 0610

Accessories Ordering data

Part no.

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

0520 0006

ISO calibration certificate air temperature, calibration points -8 °C; 0 °C; +40 °C

0520 0171

Technical data

Probe type	NTC	Testo humid. sensor, cap.
Meas. range	-10 to +50 °C	0 to 100 %RH
Accuracy	±0.5 °C	±2.5 %RH (5 to 95 %RH)
Resolution	0.1 °C	0.1 %RH
Oper. temp.	-10 to +50 °C	
Battery type	2 batteries Type AAA	
Battery life	200 h (average, without display illumination)	
Dimensions	119 x 46 x 25 mm (incl. protective cap)	

Measures duct moisture – Flexible and user-friendly

testo 605-H1

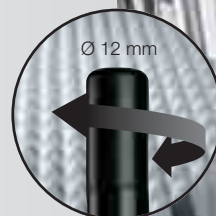
The thermo-hygrometer you can bend. Small, compact and accurate. testo 605 measures relative air moisture and temperature and also calculates dew point temperature. testo 605 is ideal for monitoring air moisture in ducts.

- Air moisture, air temperature and dew point
- Long-term stable Testo humidity sensor
- Ideal for measurements in ducts

testo 605-H1

testo 605-H1: thermohygrometer with duct holder, incl. attachment clip and battery

Part no. 0560 6053



Sensor protection due to rotatable protective cap, probe shaft 125 mm long



With flexible joint

Monitoring air humidity, e.g. in an air conditioning duct

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	Battery life	Approx. 1000 h
Oper. temp.	0 to +50 °C	Storage temp.	-20 to +70 °C

Accessories Ordering data

Part no.

ISO calibration certificate/humidity, Calibration point 75.3%RH at +25°C

0520 0096

ISO calibration certificate air temperature, calibration points -8 °C; 0 °C; +40 °C

0520 0171



Monitoring indoor climate – with history function

testo 623

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.

testo 623

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

Part no. 0560 6230

Histogram shows current and past temperature or humidity values.

Technical data

Meas. range	-10 to +60 °C 0 to 100 %RH		
Accuracy ±1 digit	±0.4 °C ±2 %RH at +25 °C (10 to 90 %RH) ±3 %RH (remaining range)		
Resolution	0.1 °C 0.1 %RH		
Oper. temp.	-10 to +60 °C	Storage temp.	-20 to +60 °C
Measuring rate	20 s	Dimensions	185 x 105 x 36 mm
Battery life	12 months	Weight	240 g (without batteries)

Hanging and standing bracket allows flexible positioning on a wall or desktop

The testo 623 is ideal for the fast, on-site monitoring of indoor climate

Accessories Ordering data

Part no.

Calibration and adjustment software with USB cable for testo 622/623	0554 6230
ISO calibration certificate humidity, 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

Monitoring indoor climate – quickly, accurately and reliably

testo 622

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.

testo 622

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

Part no. 0560 6220

Large, optimally legible display

Technical data

Meas. range	-10 to +60 °C 0 to 100 %RH 300 to 1200 hPa		
Accuracy ±1 digit	±0.4 °C ±2 %RH at +25 °C (10 to 90 %RH) ±3 %RH (remaining range) ±3 hPa		
Resolution	0.1 °C 0.1 %RH 0.1 hPa		
Oper. temp.	-10 to +60 °C	Storage temp.	-20 to +60 °C
Measuring rate	10 s	Dimensions	185 x 105 x 36 mm
Battery life	12 months	Weight	240 g (without batteries)

Hanging and standing bracket allows flexible positioning on a wall or desktop

Especially in laboratories, the testo 622 is ideal for monitoring the ambient conditions in calibrations or when setting up experiments.

Accessories Ordering data

Part no.

Calibration and adjustment software with USB cable for testo 622/623	0554 6230
ISO calibration certificate humidity, 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

Monitors Ambient Conditions – Efficient and Accurate

testo 608-H1 /-H2

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

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

- With dewpoint calculation td and Max/Min value display
- Humidity sensor not affected by condensation



Display can be read from a great distance



testo 608-H2 with LED alarm



Precision monitoring of production climate

testo 608-H1

Humidity/dewpoint/temperature measuring instrument incl. battery

Part no. 0560 6081

testo 608-H2 with alarm

Humidity/dewpoint/temperature measuring instrument, incl. LED alarm, battery and calibration protocol

Part no. 0560 6082

Technical data	testo 608-H1	testo 608-H2
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) ±0.5 °C (at +25 °C)	±2 %RH (+2 to +98 %RH) ±0.5 °C (at +25 °C)
Oper. temp.	0 to +50 °C	-10 to +70 °C
Resolution	0.1 %RH / 0.1 °C	Measuring rate 18 s
Storage temp.	-40 to +70 °C	Dimensions 120 x 89 x 40 mm
Battery life	8736 h	Weight 168 g

Accessories Ordering data

Part no.

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

0520 0006



Material moisture, air moisture and temperature in one instrument

testo 606-1/-2

testo 606-1 measures material moisture. Material moisture is displayed directly 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, for example, 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

Additional advantages of testo 606-2

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



Included: belt case, wrist strap, protective cap and calibration protocol



Checking wood moisture

testo 606-1

testo 606-1; wood and material moisture meter, incl. protective cap, batteries and calibration protocol

Part no. 0560 6060

testo 606-2

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

Accessories Ordering data

For testo 606-1: Spare electrodes (1 pair)

For testo 606-2: Spare electrodes (1 pair)

Part no.

On request

On request

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 % (Conductivity)	±0.5 °C	±2.5 %RH (5 to 95 %RH)
Resolution	0.1	0.1 °C	0.1 %RH
Oper. temp.	-10 to +50 °C		
Battery life	testo 606-1: 200 h (average, without display illumination) testo 606-2: 130 h (average, without display illumination)		
Dimensions	119 x 46 x 25 mm (incl. protective cap)		

Material moisture measurement – non-destructive and fast

testo 616

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

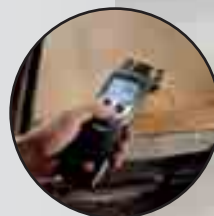
- Measurement depth up to 5 cm

- Handy shape for optimum contact pressure

- Hold, max., min. function

- Illuminated digital display

- Characteristics curves were developed in cooperation with the LPI institut



Advantageous for measurements on exotic woods: non-destructive determination of wood moisture



Fast and easy – moisture checks on screed. Measuring several points across a surface ensures more security.

testo 616

testo 616, wood and material moisture measuring instrument, incl. battery and calibration protocol

Part no. 0560 6160

Technical data

Measuring range wood: <50 %	Measurement depth: up to 5 cm
Measuring range building materials: <20 %	Oper. temp. +5 to +40 °C
Unit: Percent by weight [%]	Storage temp. -20 to +70 °C
Resolution: 0.1	Battery life up to 60 h

Accessories Ordering data	Part no.
Case for measuring instrument and probes	0516 0210
9V rech. battery for instrument, instead of battery	0515 0025
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
ISO calibration certificate/Wood moisture	0520 0406

Temperature measurement – fast and easy

Mini thermometer

The quick-action immersion/penetration thermometer is ideal for measuring the temperature in air, soft or powdery substances and liquids.

- Easy to read thanks to large display
- Can be used anywhere

Mini thermometer 1

up to +150 °C, length 133 mm

Part no. 0560 1110

Mini thermometer 2

up to +250 °C, length 213 mm

Part no. 0560 1111

Waterproof mini thermometer 3

up to +230 °C, length 133 mm

Part no. 0560 1112

Mini surface thermometer 4

up to +300 °C, length 120 mm

Part no. 0560 1109

1 + 2 + 3

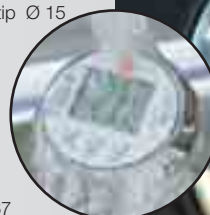
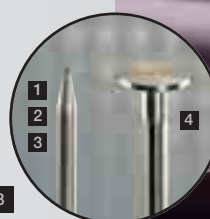
Immersion/penetration probe Ø 3.5 mm

4

surface temperature, measurement tip Ø 15 mm

3

Waterproof IP67



Measurements on air conditioning systems

	1	2	3	4
Meas. range	-50 to +150 °C	-50 to +250 °C	-40 to +230 °C	-50 to +300 °C
Accuracy ±1 digit	±1 °C (-10 to +99.9 °C) ±2 °C (-30 to -10.1 °C) ±2% of mv (+100 to +150 °C)	±1 °C (-10 to +99.9 °C) ±2% of mv (+100 to +199.9 °C) ±3% of mv (+200 to +250 °C)	±1 °C (-20 to +99.9 °C) ±2% of mv (+100 to +199.9 °C) ±3% of mv (+200 to +230 °C)	±1 °C (-30 to +250 °C) ±2 °C (remaining range)
Resolution	0.1 °C (-19.9 to +150 °C) 1 °C (remaining range)	0.1 °C (-19.9 to +199.9 °C) 1 °C (remaining range)	0.1 °C (-19.9 to +199.9 °C) 1 °C (remaining range)	0.1 °C (-19.9 to +199.9 °C) 1 °C (remaining range)
Oper. temp.	-10 to +50 °C	-10 to +50 °C	-10 to +50 °C	-10 to +50 °C

Accessories	Part no.
Button cell batteries, Type LR 44, 1.5 Volt (4 off)	0515 0032

Temperature measurement - Accurate and super-fast

testo 905-T1

One of the fastest penetration thermometers, with a broad measurement range and high accuracy.

testo 905-T1 1

testo 905-T1: penetration thermometer incl. attachment clip, battery

Part no. 0560 9055

testo 905-T2

The surface thermometer in professional quality with a sprung thermocouple measurement head, very fast reaction time and high accuracy.

testo 905-T2 2

testo 905-T2: surface thermometer with cross-band probe, incl. attachment clip, battery

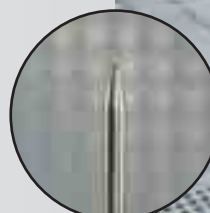
Part no. 0560 9056

1

testo 905-T1: Immersion/penetration probe, Ø 3mm with pro sensor (thermocouple Type K)

2

testo 905-T2: sprung thermocouple cross-band Ø 12 mm adapts to any surface



Checking temperature on a radiator

Technical data	1	2
Meas. range	-50 to +350 °C Short-term to +500 °C	-50 to +350 °C Short-term to +500 °C
Accuracy ±1 digit	±1 °C (-50 to +99.9 °C) ±1% of mv (remaining range)	±(1 °C ±1% of mv)
Resolution	0.1 °C	Battery life 1000 h
Oper. temp.	0 to +40 °C	Storage temp. -20 to +70 °C

Accessories testo 905-T1	Part no.
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001

Accessories testo 905-T2	Part no.
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071

Universal thermometers – Fast and reliable

Experts are our favourite customers



Detlef Higgelke,
Head of Testo
AG Academy

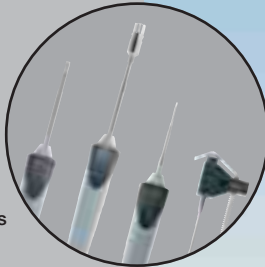
... because they know what they are doing. We offer you our support with our field-oriented trainings on measurement procedures, stipulations and on physical cohesions.

Even more important is the exchange with other specialists from your branch. After all, we are dealing with your competence and your professional routine when using our instruments.

By the way: 98% of our training participants fully recommend our seminars and training.

For more information, refer to our brochure or check out our website at www.testo.com.

Wide range of probes



Simultaneous recording of temperature by two connected probes and display of differential temperature (testo 922)



Radio range up to 20 metres (without obstruction)



On site printout on Testo fast printer
Cyclical printing of readings, e.g. once a minute (testo 922)



testo 925

Single channel thermometer

The one channel temperature measuring instrument for connection to reliable, fast-action thermocouple probes. An additional temperature probe can be displayed in testo 925; data is transmitted by radio, i.e. wirelessly. An audible alarm sounds if limit values are exceeded. Current measurement data as well as max/min data can be printed on site on the Testo fast printer.

Advantages testo 925

- 1 channel measuring instrument with optional radio probe
- An audible alarm sounds when limit values are exceeded

Common advantages testo 925, testo 922

- On site printout on Testo fast printer
- Continuous display of max/min values
- Hold button to freeze reading
- TopSafe, indestructible case, protects from dirt and impact (option)
- Display light

testo 925

testo 925, 1 channel temperature measuring instrument T/C Type K, audible alarm, connection of an optional radio probe, with battery and calibration protocol

Part no. 0560 9250

testo 922

Differential thermometer

The differential thermometer records temperature values from 2 connected thermocouple probes and displays them simultaneously. The reading from an additional temperature probe can also be wirelessly displayed in the testo 922 measuring instrument; i.e. measurement data is transmitted by radio. Differential temperature can be called up immediately. Current measurement data such as max/min data can be printed on the Testo fast printer on site. It is possible to print measurement data once a minute, for example, on the printer if cyclical printing is in operation.

Advantages testo 922

- 2 channel measuring instrument with optional radio probe
- Displays differential temperature
- Cyclical printing of readings, e.g. once a minute

testo 922

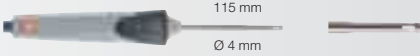
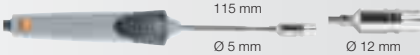
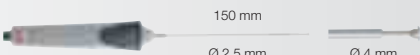
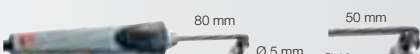
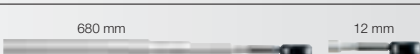
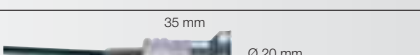
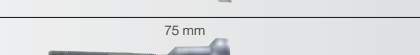
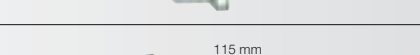
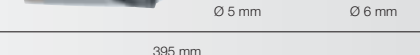
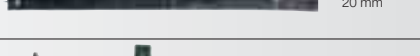
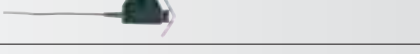
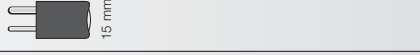
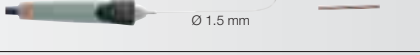
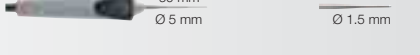
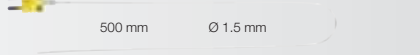
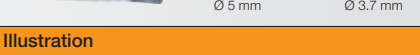
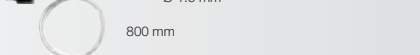
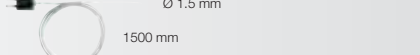
testo 922, 2 channel temperature measuring instrument T/C Type K, connection of an optional radio probe, with battery and calibration protocol

Part no. 0560 9221

Printer and Accessories	Part no.
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Spare thermal paper for printer (6 rolls), permanent ink, measurement data documentation legible for up to 10 years	0554 0568
Spare thermal paper for printer (6 rolls)	0554 0569
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
Additional accessories	Part no.
9V rech. battery for instrument, instead of battery	0515 0025
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
Handle for attachable measurement tips	0409 1092
Extension cable, 5m, for thermocouple probe Type K	0554 0592
Silicone heat paste (14g), Tmax = +260°C, improves heat transfer in surface probes	0554 0004
Lithium battery button cell, CR2032 AA batteries for radio handle	0515 0028
Transport and Protection	Part no.
TopSafe, protects from impact and dirt (testo 925)	0516 0221
TopSafe, protects from impact and dirt (testo 922)	0516 0222
Case for measuring instrument and probes	0516 0210
Transport case for meas. instr. and probes (405 x 170 x 85 mm)	0516 0201
Transport case for measuring instrument, 3 probes and accessories (430 x 310 x 85 mm)	0516 0200
Calibration Certificates	Part no.
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
DKD calibration certificate/temperature, meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
ISO calibration certificate/temperature, Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C (Applies only to immersion/penetration probe 0602 2693)	0520 0021

Technical data testo 922 / testo 925	
Probe type	Type K (NiCr-Ni)
Meas. range	-50 to +1000 °C
Accuracy	±(0.5 °C +0.3% of mv) (-40 to +900 °C) ±1 digit ±(0.7 °C +0.5% of mv) (remaining range)
Resolution	0.1 °C (-50 to +199.9 °C) 1 °C (remaining range)
Oper. temp.	-20 to +50 °C
Storage temp.	-40 to +70 °C
Battery type	9V block battery, 6F22
Battery life	200 h (connected probe, backlight off) 45 h (radio mode, backlight off) 68 h (connected probe, backlight always on) 33 h (radio mode, backlight always on)
Dimensions	182 x 64 x 40 mm
Weight	171 g

testo 922/925: Probes

Air probes		Illustration	Meas. range	Accuracy	t99	Part no.
	Robust air probe, T/C Type K		-60 to +400 °C Class 2		25 s	0602 1793
						Conn.: Fixed cable, 1.2 m
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		-60 to +300 °C Class 2		3 s	0602 0393
						Conn.: Fixed cable, 1.2 m
	Efficient, waterproof surface probe with small measurement head for flat surfaces, TC Type K		-60 to +1000 °C Class 1		20 s	0602 0693
						Conn.: Fixed cable, 1.2 m
	Fast-action surface probe with sprung thermocouple strip, bent, also for uneven surfaces, measurement range short-term to +500°C, TC Type K		-60 to +300 °C Class 2		3 s	0602 0993
						Conn.: Fixed cable, 1.2 m
	Flat head surface probe with telescopic handle max. 680 mm for measurements at hard-to-access points, TC Type K		-50 to +250 °C Class 2		3 s	0602 2394
						Conn.: Fixed cable, 1.6 m (correspondingly shorter when telescope extended)
	Magnetic probe, adhesive force approx. 20 N, with magnets, for measurements on metal surfaces, TC Type K		-50 to +170 °C Class 2			0602 4792
						Conn.: Fixed cable
	Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temp., for measurements on metal surfaces, TC Type K		-50 to +400 °C Class 2			0602 4892
						Conn.: Fixed cable
	Waterproof surface probe with widened measurement tip for flat surfaces, T/C Type K		-60 to +400 °C Class 2		30 s	0602 1993
						Conn.: Fixed cable, 1.2 m
	Pipe wrap probe with Velcro strip, for temperature measurement on pipes with diameter up to max. 120 mm, Tmax +120°C, TC Type K		-50 to +120 °C Class 1		90 s	0628 0020
						Conn.: Fixed cable
	Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K		-60 to +130 °C Class 2		5 s	0602 4592
						Conn.: Fixed cable
	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		-50 to +100 °C Class 2		5 s	0602 4692
						Conn.: Fixed cable
Immers./penetr. probes		Illustration	Meas. range	Accuracy	t99	Part no.
	Efficient and fast-action immersion probe, waterproof, TC Type K		-60 to +1000 °C Class 1		2 s	0602 0593
						Conn.: Fixed cable 1.2 m
	Fast-action, waterproof immersion/penetration probe, TC Type K (Calibration not possible over +300 °C)		-60 to +800 °C Class 1		3 s	0602 2693
						Conn.: Fixed cable 1.2 m
	Immersion tip, flexible, TC Type K		-200 to +1000 °C Class 1		5 s	0602 5792
	Waterproof immersion/penetration probe, TC Type K		-60 to +400 °C Class 2		7 s	0602 1293
						Conn.: Fixed cable
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
	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

The measuring instrument inside TopSafe is waterproof with this probe.

testo 922/925: Option: Radio

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 probes for immersion/penetration measurements

Radio immersion/penetration probes	Meas. range	Accuracy	Resolution	t ₉₉
Radio immersion/penetration probe, NTC	-50 to +275 °C	±0.5 °C (-20 to +80 °C) ±0.8 °C (-50 to -20.1 °C) ±0.8 °C (+80.1 to +200 °C) ±1.5 °C (remaining range)	0.1 °C	t ₉₉ (in water) 12 s



Country versions	Radio freq.	Part no.
Radio immersion/penetration probe, NTC, 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	0613 1001
Radio immersion/penetration probe, NTC, approval for USA, CA, CL	915.00 MHz FSK	0613 1002

Assembled for you: Radio handles with probe head

Radio handles with probe head for air-/ immersion-penetration-meas.	Meas. range	Accuracy	Resolution	t ₉₉
Radio handle for attachable probe heads with T/C probe head for air and immersion/penetration 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)	t ₉₉ (in water) 10 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 air/immersion/penetration measurement, attachable to radio handle, T/C Type K		0602 0293
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 air/immersion/penetration measurement, attachable to radio handle, T/C Type K		0602 0293

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 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	Measuring rate	Radio transmission
Battery type	2 x 3V button cell (CR 2032)	2 AAA micro batteries	0.5 s or 10 s, adjustable on handle	Unidirectional
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)	Radio coverage	Oper. temp. -20 to +50 °C Storage temp. -40 to +70 °C Protection class IP54
			Up to 20 m (without obstructions)	

Temperature monitoring — Highly accurate

testo 110

The engineering in testo 110 was specially designed for measurements in cold storage rooms and warehouses and for outdoor applications.

Minimum and maximum values

testo 110

testo 110, 1 channel temperature measuring instrument NTC, audible alarm, connection to an optional radio probe, with battery and calibration protocol

Part no. 0560 1108

are clearly shown in a two-line backlit display or are printed on site on the Testo printer. In addition to a wide range of conventional hand probes, a wireless radio probe can also be used.

- TopSafe, the indestructible protective case (optional)
- Audible alarm (adjustable alarm limits)

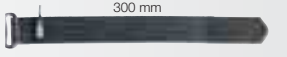
Wireless measurement with radio probes possible (optional)



Checks incoming goods, no annoying cables thanks to radio probe

Accessories Ordering data	Part no.
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Spare thermal paper for printer (6 rolls), permanent ink, measurement data documentation legible for up to 10 years	0554 0568
Spare thermal paper for printer (6 rolls)	0554 0569
TopSafe, protects from impact and dirt	0516 0221
Case for measuring instrument and probes	0516 0210
Transport case for meas. instr. and probes (405 x 170 x 85 mm)	0516 0201
Transport case for measuring instrument, 3 probes and accessories (430 x 310 x 85 mm)	0516 0200
Lithium battery button cell, CR2032 AA batteries for radio handle	0515 0028

Accessories Ordering data	Part no.
9V rech. battery for instrument, instead of battery	0515 0025
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
Technical data	
Probe type	NTC
Meas. range	-50 to +150 °C
Accuracy ±1 digit	±0.2 °C (-20 to +80 °C) ±0.3 °C (remaining range)
Resolution	0.1 °C
Dimensions	182 x 64 x 40 mm
Oper. temp.	-20 to +50 °C
Storage temp.	-40 to +70 °C
Battery life	200 h (connected probe, backlight off) 45 h (radio mode, backlight off) 68 h (connected probe, backlight always on) 33 h (radio mode, backlight always on)

Air probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Efficient, robust NTC air probe	 115 mm Ø 5 mm	-50 to +125 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (remaining range)	60 s	0613 1712 Conn.: Fixed cable 1.2 m
Surface probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Waterproof NTC surface probe for flat surfaces	 115 mm Ø 5 mm	-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)	35 s	0613 1912 Conn.: Fixed cable 1.2 m
Pipe wrap probe with Velcro for pipe diameter to max. 75 mm, Tmax. +75 °C, NTC	 300 mm	-50 to +70 °C	±0.2 °C (-25 to +70 °C) ±0.4 °C (-50 to -25.1 °C)	60 s	0613 4611 Conn.: Fixed cable
Immers./penetr. probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Waterproof NTC immersion/penetration probe	 115 mm Ø 5 mm	-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 Conn.: Fixed cable

The measuring instrument inside TopSafe is waterproof with this probe.

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 probes for immersion/penetration measurements

Radio immersion/penetration probes	Meas. range	Accuracy	Resolution	t ₉₉
Radio handle for attachable probe heads with T/C probe head for surface measurement	-50 to +275 °C	±0.5 °C (-20 to +80 °C) ±0.8 °C (-50 to -20.1 °C) ±0.8 °C (+80.1 to +200 °C) ±1.5 °C (remaining range)	0.1 °C	t ₉₉ (in water) 12 s

Country versions	Radio freq.	Part no.
Radio immersion/penetration probe, NTC, 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	0613 1001
Radio immersion/penetration probe, NTC, approval for USA, CA, CL	915.00 MHz FSK	0613 1002

Radio probes: General technical data

Radio coverage	Up to 20 m (without obstructions)	Battery life	150 h (meas. rate 0.5 s) 2 months (meas. rate 10 s)	Measuring rate	0.5 s or 10 s, adjustable on handle	Oper. temp.	-20 to +50 °C
Battery type	2 x 3V button cell (CR 2032)			Radio transmission	Unidirectional	Storage temp.	-40 to +70 °C
						Protection class	IP54

testo 810, air temperature and infrared surface temperature in one instrument

testo 810

testo 810 measures air temperature and surface temperature simultaneously without contact per infrared. In this way, the surface temperature of a radiator, air outlet or window can be compared with the air temperature in the room.

- Infrared measurement with 1-point laser spot marking and 6:1 optics
- Display of differential temperature, e.g. between window and air
- Hold function and min./max. values
- Emissivity adjustable
- Display illumination
- Incl. calibration protocol



Safe storage and transport with protective cap, wrist strap and belt holder



Automatic display of differential pressure

testo 810

testo 810; 2-channel temperature measuring instrument with infrared thermometer with laser spot marking and integrated NTC air thermometer, incl. protective cap, batteries and calibration protocol

Part no. 0560 0810

Accessories Ordering data	Part no.
Adhesive tape, e.g. for bare surfaces (roll, L.: 10 m, W.: 25 mm), E = 0.95, temperature resistant to +250 °C	0554 0051
ISO calibration certificate/temperature, Infrared thermometers, calibration points -18°C, 0°C, +60°C	0520 0401
ISO calibration certificate/temperature, infrared thermometer; calibration points +60°C; +120°C; +180°C	0520 0002
ISO calibration certificate/temperature, for air/immersion probes, calibration points -8°C; 0°C; +40°C	0520 0181

Technical data

Probe type	Infrared	NTC
Meas. range	-30 to +300 °C	-10 to +50 °C
Accuracy ±1 digit	±2.0 °C (-30 to +100 °C) ±2% of mv (remaining range)	±0.5 °C
Resolution	0.1 °C	0.1 °C
Measuring rate	0.5 s	
Optical resolution	6:1	
Emissivity	Adjustable 0.2 to 0.99	
Oper. temp.	-10 to +50 °C	
Weight	90 g (incl. battery and protective cap)	
Battery type	2 batteries Type AAA	
Battery life	50 h (average, without display illumination)	
Dimensions	119 x 46 x 25 mm (incl. protective cap)	

testo 830-T1, non-contact temperature measurement with 1-point laser

testo 830-T1

The fast-action infrared thermometer with 1-point laser sighting. The 10:1 optics are ideal for temperature measurements on larger surfaces. The clear display is backlit so that values can be easily read even in tough conditions.

- 10:1 optics
- 1-point laser sighting
- Displays current value and hold value
- Emissivity adjustable 0.2 to 1.0
- Audible and optical alarm if limit values are exceeded
- Fast data recording with two measurements a second



1-point laser sighting



Checking temperature at a ventilator

testo 830-T1

Infrared thermometer with 1 point laser sighting, adjustable limit values and alarm function, incl. batteries

Part no. 0560 8301

Accessories Ordering data	Part no.
Adhesive tape, e.g. for bare surfaces (roll, L.: 10 m, W.: 25 mm), E = 0.95, temperature resistant to +250 °C	0554 0051
Leather case to protect measuring instrument, including belt holder	0516 8302
ISO calibration certificate/temperature, infrared thermometer; calibration points +60°C; +120°C; +180°C	0520 0002

Technical data	Infrared thermometer
Meas. range	-30 to +400 °C
Accuracy ±1 digit at +23 °C ambient temperature	±1.5 °C or 1.5 % of mv (+0.1 to +400 °C) ±2 °C or ±2 % of mv (-30 to 0 °C)
Resolution	0.5 °C
Measuring rate	0.5 s
Optical resolution	10:1
Emissivity	Adjustable 0.2 to 1.0
Oper. temp.	-20 to +50 °C
Storage temp.	-40 to +70 °C
Battery type	9V block battery
Battery life	15 h

testo 830-T2, non-contact temperature measurement with 2-point laser

testo 830-T2

The fast-action infrared thermometer with 12:1 optics is ideal for temperature measurements on large surfaces. The 2-point laser marks the diameter of the measurement spot thereby preventing areas outside the object from being measured.

- 12:1 optics for larger surfaces
- 2-point laser for spot sighting
- Displays current value and hold value
- Emissivity measurement using external temperature probe
- Audible and optical alarm if limit values are exceeded
- Fast-action data recording with 2 measurements per second
- Backlit display

2-point laser sighting
(actual measurement spot)

Possibility of connecting
external probe

Checks, e.g. of compressor temperature

testo 830-T2

Infrared thermometer with 2-point laser sighting, adjustable limit values, alarm function and connection of external probes, incl. batteries

Part no. 0560 8302

testo 830-T2 Set

Measuring instrument, fast-action surface probe for contact meas. and leather protection case

Part no. 0563 8302

Technical data	Infrared thermometer	Contact measurement (Type K)
Meas. range	-30 to +400 °C	-50 to +500 °C
Accuracy ±1 digit at 23 °C ambient temperature	±1.5 °C or ±1.5% of mv (+0.1 to +400 °C) ±2 °C or ±2% of mv (-30 to 0 °C)	±0.5 °C +0.5% of mv
Resolution	0.5 °C	0.1 °C
Measuring rate	0.5 s	
Oper. temp.	-20 to +50 °C	
Storage temp.	-40 to +70 °C	
Emissivity	Adjustable 0.2 to 1.0	
Battery type	9V block battery	
Battery life	15 h	
Dimensions	190 x 75 x 38 mm	
Optical resolution	12:1	

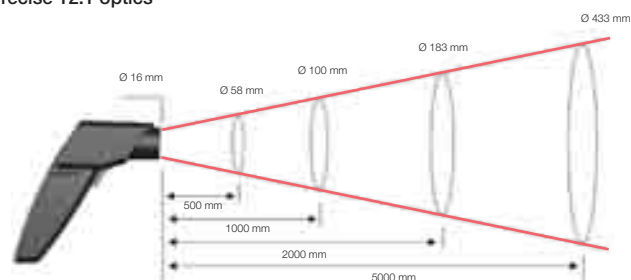
Accessories Ordering data

Part no.

Adhesive tape, e.g. for bare surfaces (roll, L.: 10 m, W.: 25 mm), E = 0.95, temperature resistant to +250 °C	0554 0051
Leather case to protect measuring instrument, including belt holder	0516 8302
Fast-action surface probe with sprung thermocouple strip, also for uneven surfaces, measurement range short-term to +500 °C, TC Type K	0602 0393
Waterproof immersion/penetration probe, TC Type K	0602 1293
Robust air probe, T/C Type K	0602 1793
ISO calibration certificate/temperature, infrared thermometer; calibration points +60 °C; +120 °C; +180 °C	0520 0002
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60 °C; +120 °C; +180 °C	0520 0071
ISO calibration certificate/temperature, for air/immersion probes, calibration point +60 °C	0520 0063
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18 °C; 0 °C; +60 °C	0520 0001

testo 830-T2, 2-point laser spot sighting

Precise 12:1 optics



testo 830-T4, non-contact temperature measurement on small surfaces at a large distance

testo 830-T4

The universal infrared thermometer with 30:1 optics makes it possible to measure temperatures at a safe distance from the object being measured. The spot diameter at a distance of 1 m is only 3.6 mm.

The 2-point laser marks the diameter of the spot thereby preventing areas outside the object from being measured.

With a resolution of 0.1 °C, even the smallest differences in temperature can be detected and dynamic temperature processes analysed.

- 30:1 optics for measuring temperature at a distance, even on small objects
- 2-point laser for spot sighting
- Display of current value and Hold value
- Emissivity determination with external temperature probe
- Audible and optical alarm when limit values are exceeded
- Fast measurement value recording at two measurements per second
- Display illumination

Temperature measurement with external probe



Checking temperature on a compressor

testo 830-T4

IR temperature measuring instrument with 30:1 optics and 2-point laser measurement spot sighting, incl. battery and factory calibration certificate with the meas. points +80 °C and +350 °C

Part no. 0560 8304

Set testo 830-T4

testo 830-T4 set, consisting of testo 830-T4 with protective leather case, incl. cross-band surface probe, battery and factory calibration certificate with the measurement points +80 °C and +350 °C

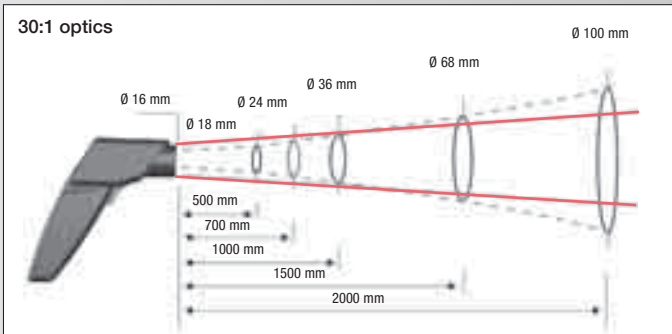
Part no. 0563 8304



Technical data	Infrared thermometer	Contact measurement (Type K)
Meas. range	-30 to +400 °C	-50 to +500 °C
Accuracy ±1 digit at +23 °C ambient temperature	±1,5 °C (-20 to 0 °C) ±2 °C (-30 to -20,1 °C) ±1 °C or 1% of mv (remaining range)	±0,5 °C +0,5% of mv
Resolution	0,1 °C	0.1 °C
Measuring rate	0,5 s	
Oper. temp.	-20 to +50 °C	
Storage temp.	-40 to +70 °C	
Emissivity	Adjustable 0.2 to 1.0	
Spectral range	8 to 14 µm	
Battery type	9V block battery	
Battery life	15 h	
Dimensions	190 x 75 x 38 mm	
Optical resolution D:S	30:1 (typical at a distance of 0.7 m to the measurement object) 24 mm @ 700 mm (90 %)	

Accessories Ordering data	Part no.
Adhesive tape, e.g. for bare surfaces (roll, L.: 10 m, W.: 25 mm), E = 0.95, temperature resistant to +250 °C	0554 0051
Leather case to protect measuring instrument, including belt holder	0516 8302
Fast-action surface probe with sprung thermocouple strip, also for uneven surfaces, measurement range short-term to +500°C, TC Type K	0602 0393
ISO calibration certificate/temperature, infrared thermometer; calibration points +60°C; +120°C; +180°C	0520 0002
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071

testo 830-T4, 2-point laser for spot sighting



testo 845 – Infrared measurement technology for temperature with built-in humidity module

The testo 845 is a milestone in non-contact temperature measurement. 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.

testo 845 is equipped with an optical resolution of 75:1 for far-field measurements. 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. Incorrect measurements are eliminated - you always know exactly where you are measuring.

The close focus optics allow the measurement of temperatures on the smallest surfaces with a diameter of just 1 mm and a distance of 70 mm! Two lasers mark the measuring spot exactly.

- Switchable optics for far-field measurements (75:1) and close focus (1 mm, 70 mm distance)
- Especially bright cross laser sighting for indicating the actual measuring point
- Reference accuracy $\pm 0.75\text{ }^{\circ}\text{C}$ with super-fast measurement technology (scanning 100 ms)
- Backlit display (3-line), shows $^{\circ}\text{C}$, min./max. values, alarm limit values and emissivity; in addition display with humidity module: %RH, $^{\circ}\text{Ctd}$
- Optical and audible alarm when limit values are exceeded
- 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)



Switchable optics 1:
far field 75:1 (16 mm,
1200 mm distance) with
cross-laser sighting



Switchable optics 2:
Near field close focus (1
mm, 70 mm distance)
with 2 point laser
sighting



testo 845 with additional
humidity module for
measuring ambient air
humidity and
determining dew
point difference



Fast documentation
thanks to on-site printout



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

testo 845

testo 845, infrared temperature measuring instrument with cross-laser sighting, 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 8450

testo 845 with integrated humidity module

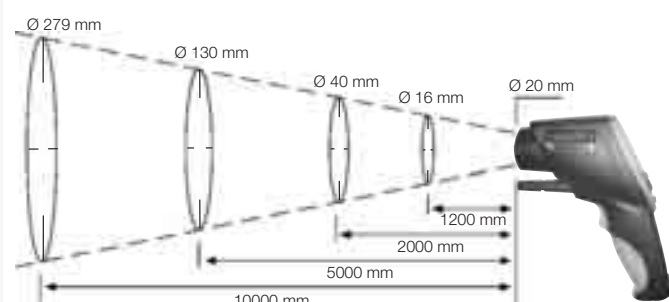
testo 845, infrared temperature measuring instrument with cross laser sighting incl. humidity module, switchable optics for far-field and close focus measurement, contact temperature probe attachable, optical/audible alarm, reading memory, PC software incl. USB data transfer cable, aluminium case, battery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

Part no. 0563 8451

Description	Meas. range	Part no.
Fast-action surface probe with sprung thermocouple strip, also for uneven surfaces, measurement range short-term to +500°C, TC Type K	-60 to +300 °C	0602 0393
		
Robust air probe, T/C Type K	-60 to +400 °C	0602 1793
		

Accessories Ordering data	Part no.
Humidity module, upgradeable for testo 845 (0563 8450)	0636 9784
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), permanent ink, 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	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

Far-field measurement



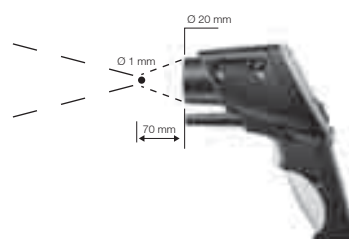
Probe socket for TC probes for determining emissivity

Aluminium case for instrument and accessories (included)

Checks temperature in air conditioning duct

Technical data	Infrared	Contact (type K)	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
Emission factor	Adjustable 0.1 to 1.0		
Optical resolution	Far-field: (75:1) 16 mm, 1200 mm distance (90%) Close focus: 1 mm, 70 mm distance (90%)		
Measuring rate	t95: 250 ms; Scanning Max/Min/Alarm: 100 ms		
Dimensions	155 x 58 x 195 mm		
Battery type	2 AA batteries		
Battery life	25 h (without laser), 10 h (with laser without light), 5 h (with laser and 50% light)		
Material/Housing	ABS Black/gray, metal screen		
Oper. temp.	-20 to +50 °C		
Storage temp.	-40 to +70 °C		

Close focus measurement



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

testo 875 and testo 881 for professional building thermography

The detection and visualization of faults or constructional defects in buildings is important, in order to avoid high costs in the heating or air conditioning of buildings.

The thermal imagers testo 875 and testo 881 detect such energy losses quickly and reliably. Weak spots such as heat bridges as well as construction defects in building facades are shown up immediately using Testo thermal imagers.

Even the smallest temperature differences can be identified with the high temperature resolution of the Testo thermal imagers. Even the smallest defects can be reliably analyzed at large distances, such as on the roof, thanks to the exchangeable telephoto lens. The additionally integrated digital camera considerably facilitates documentation.

Via the manual input of ambient temperature, air humidity and dew-point in the room, the testo 875 and testo 881 visualize mould risk spots in the thermal image at a glance. These important data help to improve indoor climate and prevent dangerous allergenic mould growth, or to minimize the risk of mould – even in the hidden corners and niches of a house.

With the Testo thermal imagers you are hot on the trail of energy loss in building thermography, helping your customers to avoid expensive heating costs!

Professional analysis software

The clearly structured and user-friendly PC software allows the comprehensive analysis and evaluation of thermograms. You can now process, analyze and document several parallel infrared images in a report together with their respective real images. Especially for the purpose of examining building shells for heat bridges, the software offers report templates, with which reports compliant with DIN EN 13187 can be created. In order to achieve precise analysis results, it is possible to correct the thermal image according to the different emissivities of the various materials by area, right up to individual pixels.

The pro software is included in delivery with all Testo thermal imagers.



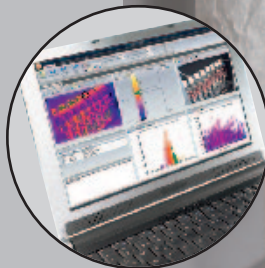
Just take it with you in the Soft-Case



Simply change the lens



Easy operation



Easy and precise analysis



The 4 most important advantages of the thermal imager testo 875

Good image quality

With the temperature resolution of <80 mK, even the smallest temperature differences are displayed.



Integrated digital camera

The testo 875 with integrated digital camera links real and infrared images for your fast and easy documentation of the measurement.



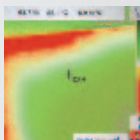
Automatic Hot-Cold-Spot recognition

Critical temperature statuses are displayed using automatic Hot-Cold-Spot recognition. This guarantees uninterrupted error localization on site. Auto Hot/Cold Spot Recognition facilitates analysis and documentation when evaluating the details later on a PC.



Detection of mould-risk spots

Via the manual input of ambient temperature, air humidity and dewpoint in the room, the testo 875 visualizes mould-risk spots in the thermal image at a glance.



testo 875-1

Part no. 0560 8751

testo 875-2

Part no. 0560 8752

testo 875-2 Set

Part no. 0563 8752

The 5 most important advantages of the thermal imager testo 881

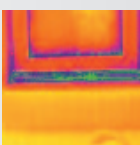
Highest image quality

With a thermal resolution of <50 mK, the testo 881 delivers high definition images which emphasize and visualize even the smallest temperature differences.



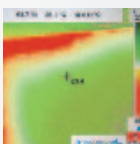
Isotherm function

With the optical coloured alarm, critical temperature areas on the measurement object are marked immediately in colour.



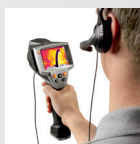
Detection of mould risk spots

Via the manual input of ambient temperature, air humidity and dewpoint in the room, the testo 875 and testo 881 visualize mould risk spots in the thermal image at a glance.



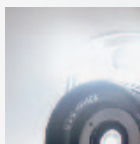
Voice recording

The practical headset and the integrated speech recording function simplify the documentation of the measurement results. Every image can be commented directly on site. This valuable information is stored together with the thermal image.



Integrated digital camera with power LEDs

In addition to infrared recording, the testo 881 creates a parallel real image of the measurement site with the integrated digital camera. The power LEDs guarantee optimum illumination of dark areas when recording real images.



testo 881-1

Part no. 0563 0881 V1

testo 881-2

Part no. 0563 0881 V2

testo 881-3

Part no. 0563 0881 V3

testo 881-3 Set

Part no. 0563 0881 V4



Ordering overview testo 875

testo 875-1

- NETD < 80 mK
- High quality standard lens 32° x 23°
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +280 °C

Part no. 0560 8751

testo 875-2

- NETD < 80 mK
- High quality standard lens 32° x 23°
- Integrated digital camera
- Display of surface moisture distribution
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +280°C
- Telephoto lens (optional)

Part no. 0560 8752

testo 875-2 Set

- NETD < 80 mK
- High quality standard lens 32° x 23°
- Integrated digital camera
- Display of surface moisture distribution
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +280 °C

In addition to the equipment of testo 875-2, the set also includes:

- Telephoto lens 9° x 7°
- Protective lens
- Additional battery
- Charger
- Sun Shield

Part no. 0563 8752



All imagers are delivered in a robust case incl. pro software, SD card, USB cable, mains unit, Li ion rechargeable battery and tripod adapter.

Ordering overview testo 881

testo 881-1

- NETD < 50 mK
- High quality standard lens 32° x 23°
- Integrated digital camera
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +350 °C
- 33 Hz (inside the EU, outside 9 Hz)

Part no. 0563 0881 V1

testo 881-2

- NETD < 50 mK
- High quality standard lens 32° x 23°
- Telephoto lens (optional)
- Auto Hot/Cold Spot Recognition
- Display of surface moisture distribution
- Manual focus
- Temperature range -20 to +350°C
- 33 Hz (inside the EU, outside 9 Hz)
- Headset for speech recording
- Lens protection glass
- Isotherm display in instrument
- Min-/Max on Area calculation

Part no. 0563 0881 V2

testo 881-3

- NETD < 50 mK
- High quality standard lens 32° x 23°
- Telephoto lens (optional)
- Built-in digital camera with power LEDs
- Display of surface moisture distribution
- Auto Hot/Cold Spot Recognition
- Dynamic motor focus
- Temperature range -20 to +350°C
- 33 Hz (inside the EU, outside 9 Hz)
- Headset for speech recording
- Lens protection glass
- Isotherm display in instrument
- Min-/Max on Area calculation
- High temperature measurement (optional)

Part no. 0563 0881 V3

testo 881-3 Set

- NETD < 50 mK
- High quality standard lens 32° x 23°
- Built-in digital camera with power LEDs
- Display of surface moisture distribution
- Auto Hot/Cold Spot Recognition
- Dynamic motor focus
- Temperature range -20 to +350°C
- 33 Hz (inside the EU, outside 9 Hz)
- Headset for speech recording
- Lens protection glass
- Isotherm display in instrument
- Min-/Max on Area calculation
- High temperature measurement (optional)

In addition to the equipment of testo 881-3, the set also includes:

- Telephoto lens 9° x 7°
- Additional battery
- Charger
- Soft-Case

Part no. 0563 0881 V4



		testo 881-1	testo 881-2	testo 881-3	testo 881-3 Set
	Part no.	0563 0881 V1	0563 0881 V2	0563 0881 V3	0563 0881 V4
Additionally in the case:					
Lens protection glass	C1	●	●	●	●
Telephoto lens	A1	—	●	●	●
Additional battery	D1	●	●	●	●
Fast battery charger	E1	●	●	●	●
Soft-Case	H1	●	●	●	●
High temperature measurement	G1	—	—	●	●

● Standard ● Optional — Not available

All imagers are delivered in a robust case incl. pro software, SD card, USB cable, mains unit, Li ion rechargeable battery and tripod adapter.



Accessories for testo 875 and testo 881 thermal imagers

Aluminium tripod

Professional, extremely light and stable aluminium tripod with Quick-Release legs and 3-way tripod head



Part no. 0554 8804

Lens protection glass

Special Germanium protective glass for optimum protection of the lens from dust and scratching



Part no. 0554 8805

Additional battery

Additional lithium ion rechargeable battery for extending the operating time



Part no. 0554 8802

Fast battery charger

Desktop charging station for two rechargeable batteries for the optimization of charging time



Part no. 0554 8801

Sun Shield

Special sun shield for the display of testo 881 and testo 875 in bright surroundings



Part no. 0554 8806

Soft-Case

Practical carrying option for testo 881 and testo 875 (incl. shoulder strap)



Part no. 0554 8814

Additional accessories

Part no.

Retrofit telephoto lens
(for testo 881-2 and -3 and testo 875-2 only); please contact our Service.

Retrofit high temperature measurement
(for testo 881-3 only); Please contact our Service.

Adhesive tape, e.g. for bare surfaces (roll, L.: 10 m, W.: 25 mm), E = 0.95, temperature resistant to +250 °C

0554 0051

ISO calibration certificates for testo 875, testo 881
Calibration points at 0 °C, 25 °C, 50 °C in measuring range -20 °C to 100 °C

0520 0489

ISO calibration certificates for testo 881
Calibration points at 0 °C, 100 °C, 200 °C in measuring range 0 °C to 350 °C

0520 0490

ISO calibration certificates for testo 875, testo 881
Freely selectable calibration points in the range -18 °C to 250 °C

0520 0495



205 Westwood Ave
Long Branch, NJ 07740
1-877-742-TEST (8378)
Fax: (732) 222-7088
salesteam@Tequipment.NET

Technical data for testo 875 and testo 881 thermal imagers

	testo 875-1	testo 875-2	testo 881-1	testo 881-2	testo 881-3
Infrared image output					
Detector type	FPA 160 x 120 pixels, a.Si		FPA 160 x 120 pixels, a.Si		
Thermal sensitivity (NETD)	< 80 mK at +30 °C		< 50 mK at +30 °C		
Field of vision/min. focusing distance	32° x 23° / 0.1 m (standard lens), 9° x 7° / 0.5 m (telephoto lens)		32° x 23° / 0.1 m (standard lens), 9° x 7° / 0.5 m (telephoto lens)		
Geometric resolution (IFOV)	3.3 mrad (standard lens), 1.0 mrad (telephoto lens)		3.3 mrad (standard lens), 1.0 mrad (telephoto lens)		
Image refresh rate	9 Hz		33 Hz for EU, otherwise 9 Hz		
Focus	manual		manual	manual and motor focus	
Spectral range	8 to 14 µm		8 to 14 µm		
Visual image output					
Field of vision/min. focusing distance	–	33° x 25° / 0.4 m	33° x 25° / 0.4 m	–	33° x 25° / 0.4 m
Image size	–	640 x 480 pixels	640 x 480 pixels	–	640 x 480 pixels
Image presentation					
Image display	3.5" LCD with 320 x 240 pixels		3.5" LCD with 320 x 240 pixels		
Display options	IR image only	IR image only / real image only/ IR and real image	IR image only / real image only/ IR and real image	IR image only	IR image only / real image only/ IR and real image
Video output	USB 2.0		USB 2.0		
Colour palettes	4 options (iron, rainbow, blue-red, shades of grey)		9 options (iron, rainbow, cold-hot, blue-red, grey, inverted grey, sepia, Testo, iron HT)		
Measurement					
Temperature range	-20 °C to +100°C / 0 °to +280 °C (switchable)		-20 °C to +100°C / 0 °to +350 °C (switchable)		
High temperature measurement (optional)	–		–	+350 °C to +550 °C	
Accuracy	±2 °C, ±2% of mv (-20 °C to +280 °C)		±2 °C, ±2% of mv (-20 °C to +350 °C)		
	–		–	±3% of mv (+350 °C to +550 °C)	
Minimum measurement spot diameter	10 mm at 1 m (standard lens), 3 mm at 1 m (telephoto lens)		10 mm at 1 m (standard lens), 3 mm at 1 m (telephoto lens)		
Setting emissivity	0,01 to 1		0,01 to 1		
Reflected temperature compensation	manual		manual		
Imager equipment					
Digital camera	–	yes	yes	–	yes
Power LEDs	–	–	–	–	yes
Motor focus	–	–	–	–	yes
Standard lens (32° x 23°)	yes		yes		
Telephoto lens (9° x 7°)	–	optional	–	optional	
Laser sighting	–		yes (laser classification 635 nm, Class 2)		
Speech recording	–		–	yes (using headset)	
Display of surface moisture distribution	–	yes (using manual input)	–	yes (using manual input)	
Measuring functions	Centre point	Standard measurement (1-point)	Standard measurement (1-point)		
	Hot/Cold Spot Recognition		Hot/Cold Spot Recognition		
	–		Two-point measurement		
	–		–	Isotherms	
	–		–	Min-/Max on Area	
Image storage					
File format	.bmt; export option in .bmp, .jpg, .csv		.bmt; export option in .bmp, .jpg, .csv		
Removable memory	SD card 2GB (approx. 1,000 images)		SD card 2GB (approx. 1,000 images)		
Power supply					
Battery type	Fast-charging, Li-ion battery can be changed on-site		Fast-charging, Li-ion battery can be changed on-site		
Operating time	4 hours		4 hours		
Charging options	In instrument/in charging station (optional)		In instrument/in charging station (optional)		
Mains operation	yes		yes		
Ambient conditions					
Operating temperature range	-15 °C to +40 °C		-15 °C to +40 °C		
Storage temperature range	-30 °C to +60 °C		-30 °C to +60 °C		
Air humidity	20% to 80% non-condensing		20% to 80% non-condensing		
Housing protection class	IP54		IP54		
Vibration (IEC 68-2-6)	2G		2G		
Physical features					
Weight	Approx. 900 g		Approx. 900 g		
Dimensions (L x W x H)	152 x 108 x 262 mm		152 x 108 x 262 mm		
Tripod mounting	yes		yes		
Housing	ABS		ABS		
PC software					
System requirements	Windows XP (Service Pack 2) Windows Vista, interface USB 2.0		Windows XP (Service Pack 2) Windows Vista, interface USB 2.0		
Norms, tests, warranty					
EU Directive	2004 / 108 / EC		2004 / 108 / EC		
Warrantv	2 years		2 years		



Checks light intensity – With site management

testo 545

Light intensity in workplaces must fulfill minimum values and have to be checked regularly. Using software, a site list can be stored and individual luminous intensity values can be connected to form a curve. This light profile provides information on the uniformity of the lighting.

- Stores up to 99 file locations
- Logger function (3000 readings)
- Multi-point or timed mean calculation

testo 545

Light meter, incl. probe, battery and calibration protocol

Part no. 0560 0545

Accessories Ordering data	Part no.
Case, for secure storage of measuring instrument	0516 0191
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
ISO calibration certificate/light, Calibration points 0;500;1000;2000;4000 Lux	0520 0010

Recommended Set: testo 545 Comfort Set

Light meter, incl. probe, battery and calibration protocol	0560 0545
Testo fast printer	0554 0549
Transport case (plastic) for measuring instrument, probes and accessories	0516 0445

Data is printed on site on the Testo printer (optional)



Measures light intensity in the workplace

Technical data

Meas. range	0 to +100000 Lux
Accuracy ±1 digit	Accuracy to DIN 13032-1: f1 = 6% = V (Lambda) adaptation f2 = 5% = cos like rating
Resolution	1 Lux (0 to +32000 Lux) 10 Lux (0 to +100000 Lux)
Oper. temp.	0 to +50 °C
Storage temp.	-20 to +70 °C
Battery life	50 h
PC	RS232 interface
Memory	3000
Dimensions	220 x 68 x 50 mm
Weight	500 g

Checks light intensity

testo 540

testo's 540 sensor is adapted to the eye's spectral sensitivity. testo 540 is therefore ideal for measuring light intensity in the workplace. Practical and small, it fits all pockets.

- Sensor adapted to spectral sensitivity of the eye
- Hold function and max./min. values
- Display light
- Protective cap for safe storage
- Including wrist strap and belt holder

Easy-read readings thanks to Hold function



Included

Measures light intensity at the workplace

testo 540

testo 540; light intensity measuring instrument incl. protective cap, batteries and calibration protocol

Part no. 0560 0540

Accessories Ordering data	Part no.
ISO calibration certificate/light, Calibration points 0;500;1000;2000;4000 Lux	0520 0010

Technical data

Probe type	Lux
Meas. range	0 to 99,999 Lux
Accuracy ±1 digit	±3 % (compared to reference Class B, DIN 5032 Part 7)
Resolution	1 Lux (0 to 19,999 Lux) 10 Lux (remaining range)
Oper. temp.	0 to +50 °C
Battery type	2 batteries Type AAA
Battery life	200 h (average, without display illumination)
Dimensions	133 x 46 x 25 mm (incl. protective cap)

Monitors Indoor Air Quality – With fast documentation

testo 535

Bad air quality in rooms caused by high CO₂ concentrations (greater than 1000 ppm) can lead to tiredness, lack of concentration and illness.

testo 535 is a highly accurate and reliable CO₂ measuring instrument.

- Repeated calibration is unnecessary

- Long-term monitoring

testo 535

CO₂ measuring instrument with securely attached probe, batteries and calibration protocol

Part no. 0560 5350

Long-term monitoring with maximum and mean calculation



Monitors Indoor Air Quality e.g. in open-plan offices and fast data documentation on Testo printer

Accessories Ordering data	Part no.
TopSafe (protection case) with bench stand, protects instrument from impact and dirt	0516 0183
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
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), permanent ink, measurement data documentation legible for up to 10 years	0554 0568
9V rech. battery for instrument, instead of battery	0515 0025
Recharger for 9V rechargeable battery, for external recharging of 0515 0025 battery	0554 0025
Desk-top power supply with international connection options	0554 1143
Case, for secure storage of measuring instrument	0516 0191
ISO calibration certificate/CO ₂ , CO ₂ probes; calibration points 0; 1000; 5000 ppm	0520 0033

Technical data

Probe type	2 channel infrared sensor		
Meas. range	0 to +9999 ppm CO ₂		
Accuracy	±(50 ppm CO ₂ ±2% of mv) (0 to +5000 ppm CO ₂) ±1 digit ±(100 ppm CO ₂ ±3% of mv) (+5001 to +9999 ppm CO ₂)		
Resolution	1 ppm CO ₂	Storage temp.	-20 to +70 °C
Measuring medium	Air	Battery life	6 h
Oper. temp.	0 to +50 °C	Dimensions	190 x 57 x 42 mm

Flexible fiberscope for fast diagnoses

testo 319

The testo 319 fibre-glass fiberscope facilitates easy inspections at difficult-to-access points such as in air ducts, ventilators, machines and motors etc. Diagnoses such as corrosion, friction wear, condition of welding joints, loose parts and lots more can be made very early, very quickly and very easily using endoscopy.

The flexible testo 319 can be guided through hollow spaces, bore holes and bends. You can adjust the focus using the

focussing wheel. In this way the damaged point can be appraised without the need for dismantling.

- Optics: 6,000 pixels with a field of view of 50°
- Low bending radius (50 mm), small diameter (6 mm)
- Stability thanks to Decabon pipe
- Gooseneck casing for medium flexibility
- 3-arm gripper: Grips small objects (optional)



LED light, high contrast display



Inspects air duct, with gooseneck casing, middle flexibility

testo 319

testo 319 fiberscope

Part no. 0632 3191

testo 319 set

Fiberscope set, consisting of testo 319 fiberscope, gooseneck tube, magnet and mirror attachments, bag

Part no. 0563 3191

Accessories Ordering data	Part no.
Flexible push-on gooseneck tube,	0554 3196
Decabon push-on tube	0554 3191
Two-channel push-on hose	0554 3190
Magnet attachment	0554 3195
Mirror attachment 45° angle	0554 3194
3-arm gripper, for two-channel hose	0554 3192
Bag for basic set testo 319, gooseneck tube, magnet and mirror attachment	0516 3192

Technical data

Angle of field of view:	45° +/- 5°
Min. focus distance:	15 mm (close)
Max. focus distance:	150 mm (light)
Working temperature/Probe:	-20° to + 80°C
Probe diameter:	6.5 mm
Probe length:	1247 mm +/- 6
Max. bending radius:	50

LED hand-held stroboscope for high revolutions

testo 477

The testo 477 LED hand-held stroboscope measures rotations and vibrations and facilitates measurements during operation. The stationary image enables the inspection and quality assessment of high-frequency moving parts.

- Extremely wide measurement range: Up to 300,000 flashes per minute (fpm)
- Very high light intensity of up to 1500 Lux
- Long operating time due to long battery life of up to 5 h
- Ideal also for robust applications on account of impact protection and protection class IP65
- Trigger input and output enable connection to external systems and control by an external sensor

testo 477

testo 477, LED hand-held stroboscope, with case, trigger signal plug, batteries and calibration protocol

Part no. 0563 4770

Accessories Ordering data	Part no.
ISO calibration certificate/rpm, optical and mechanical rpm measuring instruments; cal. points 500; 1000; 3000 rpm	0520 0012
ISO calibration certificate/rpm, optical rpm measuring instruments; calibration points 10; 100; 1000; 10000; 99500 rpm	0520 0022
DKD calibration certificate/rpm, Optical rpm probes, 3 points in instrument measurement range (1 to 99,999 rpm)	0520 0422



Rpm measurement on high-frequency moving parts, for example turbines

Technical data	
Meas. range	30 to 300.000 fpm (Flashes per minute)
Accuracy ± 1 digit	0.02 %
Resolution	± 0.1 (30 to 999 fpm) / ± 1 (1000 to 300.000 fpm)
Dimensions	191 x 82 x 60 mm
Oper. temp.	0 to +45 °C
Weight	Approx. 400 g (with battery)
Flash intensity	1500 Lux at 6000 FPM / 20 cm
Service life	NiMH rechargeable battery: Approx. 11 h at 6000 fpm Batteries: approx. 5 h at 6000 fpm

Hand-held stroboscope – Light-intensive

testo 476

The hand-held stroboscope testo 476 hand-held stroboscope measures and inspects rotations and vibrations. It is possible to measure during operation. The stationary image enables inspection and a qualitative assessment of high-frequency moving parts.

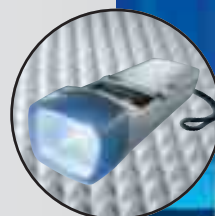
- High setting accuracy and stability thanks to dynamic setting dial
- Even higher light intensity due to improved, high-performance Xenon flash lamp
- Powerful rechargeable battery pack for min. 2 hour operation time over the frequency range
- Trigger input to synchronise flash sequence (long-term observation)
- Mains operation possible with simultaneous battery charging

testo 476

testo 476, Pocket Strobe™ hand-held stroboscope incl. transport case, recharger with 4 country adapters and trigger signal connector

Part no. 0563 4760

Accessories Ordering data	Part no.
ISO calibration certificate/rpm, optical and mechanical rpm measuring instruments; cal. points 500; 1000; 3000 rpm	0520 0012
ISO calibration certificate/rpm, optical rpm measuring instruments; calibration points 10; 100; 1000; 10000; 99500 rpm	0520 0022
DKD calibration certificate/rpm, Optical rpm probes, 3 points in instrument measurement range (1 to 99,999 rpm)	0520 0422



Even higher light intensity of 800 Lux for optimum illumination



rpm measurement on a turbo ventilator

Technical data	
Meas. range	+30 to +12500 rpm
Accuracy ± 1 digit	$\pm 0.01\%$ of mv
Resolution	1 rpm
Dimensions	240 x 65 x 50 mm
Oper. temp.	0 to +40 °C
Weight	415 g
Illumination: 800 Lux at distance of approx. 20 cm	
Flash energy: max. 170 mJ	
Operating time: 2h at 30 to 12,500 rpm and 23°C (typically)	

Rpm measurement – Non-contact and mechanical

testo 465

Non-contact

Using testo 465, rpm can be easily measured without contact. Simply attach a reflector to the object to be measured and then point the visible, red light beam at the reflector and measure.

- Saves mean/maximum value (last reading)
- Robust design on account of SoftCase (protective case)

testo 470

Non-contact and mechanical

The ideal combination of optical and mechanical rpm measurement. An optical measurement becomes a mechanical measurement by simply attaching an adapter for a probe tip or surface speed disc.

- Measurement of rpm, speeds and lengths
- Low Batt warning
- Robust design thanks to SoftCase (protective case)

testo 470, mechanical rpm measurement



testo 465 and testo 470, non-contact (optical) rpm measurement on rotating parts

testo 465	testo 470
Rpm measuring instrument set: Measuring instrument in transport case (plastic), incl. reflectors and batteries	testo 470, rpm measuring instrument set: measuring instrument in transport case, incl. adapter, probe tip, surface speed disc, reflectors, batteries
Part no. 0563 0465	Part no. 0563 0470
Accessories Ordering data	Part no.
Reflectors, self-adhesive (1 pack = 5 off, each 150 mm long)	0554 0493
ISO calibration certificate/rpm, optical and mechanical rpm measuring instruments; cal. points 500; 1000; 3000 rpm	0520 0012
ISO calibration certificate/rpm, optical rpm measuring instruments; calibration points 10; 100; 1000; 10000; 99500 rpm	0520 0022

Technical data			
Probe type	Optically with mod. light beam		Mechanical (testo 470)
Meas. range	+1 to +99999 rpm		+1 to +19.999 rpm
Accuracy ±1 digit	±0.02% of mv		
Resolution	0.01 rpm (+1 to +99.99 rpm) 0.1 rpm (+100 to +999.9 rpm) 1 rpm (+1000 to +99999 rpm)		
Oper. temp.	0 to +50 °C	Dimensions	175 x 60 x 28 mm
Storage temp.	-20 to +70 °C	Weight	190 g
testo 470			
Speed: 0.10 to 1.999 m/min; 0.30 to 6500ft/min; 4.00 to 78,000in/min			
Lengths: 0.02 to 99,000m; 0.01 to 99,000 ft; 1.00 to 99,999 in			
Accuracy: (±1 digit/0.02m/1.00 inch depending on resolution)			

Rpm measurement – Non-contact

testo 460

testo 460 is used for non-contact measurement of revolutions. The spot is displayed using an LED sighting on the object being measured. Practical and small; it fits in all pockets.

- Optical rpm measurement with LED measurement spot marking
- Max./min. values
- Display light
- Protective cap for safe storage
- Including wrist strap and belt holder

Easy readout of measurement values with Hold function



Non-contact rpm measurement on a ventilator

testo 460

testo 460; rpm measuring instrument incl. protective cap, batteries and calibration protocol

Part no. 0560 0460

Accessories Ordering data	Part no.
Reflectors, self-adhesive (1 pack = 5 off, each 150 mm long)	0554 0493
ISO calibration certificate/rpm, optical rpm measuring instruments; calibration points 10; 100; 1000; 10000; 99500 rpm	0520 0022
DKD calibration certificate/rpm, Optical rpm probes, 3 points in instrument measurement range (1 to 99,999 rpm)	0520 0422

Technical data	
Meas. range	100 to 29999 rpm
Accuracy ±1 digit	±(0.02 % of mv + 1 digit)
Resolution	0.1 rpm (100 to 999.9 rpm) 1 rpm (1000 to 29.999 rpm)
Selectable units	rpm, rps
Oper. temp.	0 to +50 °C
Battery type	2 batteries Type AAA
Battery life	20 h (average, without display illumination)
Weight	85 g
Dimensions	119 x 46 x 25 mm (incl. protective cap)

Sound level measurement

testo 815

The ideal instrument for daily use. Whether it is for air conditioning or heating, disco noise, machine noise or noise in combustion systems, testo 815 is the ideal partner.

Common features:

- Easy to adjust (adjustment screwdriver included)
- Frequency weighting to Characteristic A and C
- Maximum and minimum value memory
- Built-in tripod knuckle screw (1/4 inch)
- Switchable time weighting Fast / Slow

testo 816

Compared to testo 815, the larger model has additional features which make it ideal for assessors, workplace measurements and for measuring industrial and environmental noise.

Additional benefits of testo 816:

- Automatic range switchover
- Backlit display
- Mains unit connection
- BarGraph display
- AC output to connection from recorders and amplifiers
- DC output with 10 mV/dB to connect recorders or dataloggers

testo 815:
Frequency weighting
Current value
Time weighting
Section measurement
range



testo 815, Monitoring measurements in ventilation

testo 816:
Time weighting
Section measurement
range
Frequency weighting
Current reading



testo 816, Checking noise control

testo 815

Sound level meter, incl. microphone, wind protection cap and battery

Part no. 0563 8155

testo 816

Sound level meter, incl. microphone, wind protection cap, battery, stereo jack 3.5 mm, in a practical measurement case

Part no. 0563 8165

Accessories Ordering data

Part no.

Calibrator, for regular calibration of testo 815, testo 816 0554 0452

Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug), for mains operation and battery recharging 0554 1084

ISO calibration cert./sound pressure, calibration points 94 dB; 104 dB; 114 dB at different frequencies 0520 0111

ISO calibration certificate sound pressure calibrators 0520 0411

Technical data

testo 815

testo 816

Meas. range	+32 to +130 dB	+30 to +130 dB 3.5 to 8 kHz
Accuracy ±1 digit	±1.0 dB	±1.0 dB
Resolution	0.1 dB	0.1 dB
Battery life	70 h	50 h
Weight	195 g	315 g
Dimensions	255 x 55 x 43 mm	309 x 68 x 50 mm
Battery type	9V block battery	
Oper. temp.	0 to +40 °C	
Storage temp.	-10 to +60 °C	
Other features	Section meas. ranges: 30 to 80 dB; 50 to 100 dB; 80 to 130 dB Time weighting: FAST 125 ms setting / SLOW 1 s setting Pressure dependency: -0.0016 dB/hPa	

Technical data

Sound level calibrator



Battery type	9V block battery
Battery life	40 h
Accuracy	±0.5 dB in accordance with Class 2 to IEC 60942

Sound pressure level: 94 dB/114 dB, switchable
Frequency: 1000 Hz

Also suitable for 1/2 and 1 inch microphones by other manufacturers

3 day service warranty

"In 3 days: collection, service and return – we hoped it would be a success. Now two out of three customers use this express service which surpasses all our expectations."



Jörg Wittermer
Head of Customer Service

Notes

testo Saveris™ – Measurement data monitoring system

In the qualitative analysis of ambient conditions and in the monitoring of centralized air conditioning, exact temperature and humidity values are crucial.

testo Saveris™ provides assistance in a number of VAC applications, such as in the monitoring of storage conditions, collecting temperature and humidity values by wireless or Ethernet, and safely storing and presenting them. A selection of alarms which can be used flexibly, support those responsible for the system in keeping the values in the required range.



The testo Saveris Ethernet probes are able to use the LAN infrastructure, and transfer the measurement data safely over large distances.



The testo Saveris base saves all measurement values in its long-term memory, and sends optical and audible alarm reports, e.g. by SMS.



Now new!

The testo analog coupler enables the integration of all transmitters with standardized current/voltage interfaces, e.g. 4 to 20 mA



The network-capable testo Saveris software offers a central overview of the measurement data, and uninterrupted documentation.



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)



for air conditioning and ventilation applications



Saveris set 1

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

Set 1, 868 MHz

Part no. 0572 0110

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

Set 1, 2.4 GHz

Part no. 0572 0150

Saveris set 2

Set 2: 868 MHz, consisting of base 0572 0120, 5 NTC radio probes with display 0572 1120, router 0572 0119, 2 mains units for base and router 0554 1096 and SBE software 0572 0180 incl. USB cable

Set 2, 868 MHz

Part no. 0572 0111

Set 2: 2.4 GHz, consisting of base 0572 0160, 5 NTC radio probes with display 0572 1160, router 0572 0159, 2 mains units for base and router 0554 1096 and SBE software 0572 0180 incl. USB cable

Set 2, 2.4 GHz

Part no. 0572 0151

Saveris set 3

Set 3: 868 MHz, consisting of base 0572 0121 incl. GSM module for SMS alarm, aerial with magnetic base 0554 0525, 5 NTC radio probes with display 0572 1120, router 0572 0119, 2 mains units for base and router 0554 1096 and SBE software 0572 0180 incl. USB cable

Set 3, 868 MHz

Part no. 0572 0112

Set 3: 2.4 GHz, consisting of base 0572 0161 incl. GSM module for SMS alarm, aerial with magnetic base 0554 0525, 5 NTC radio probes with display 0572 1160, router 0572 0159, 2 mains units for base and router 0554 1096 and SBE software 0572 0180 incl. USB cable

Set 3, 2.4 GHz

Part no. 0572 0152



testo Saveris™ System overview

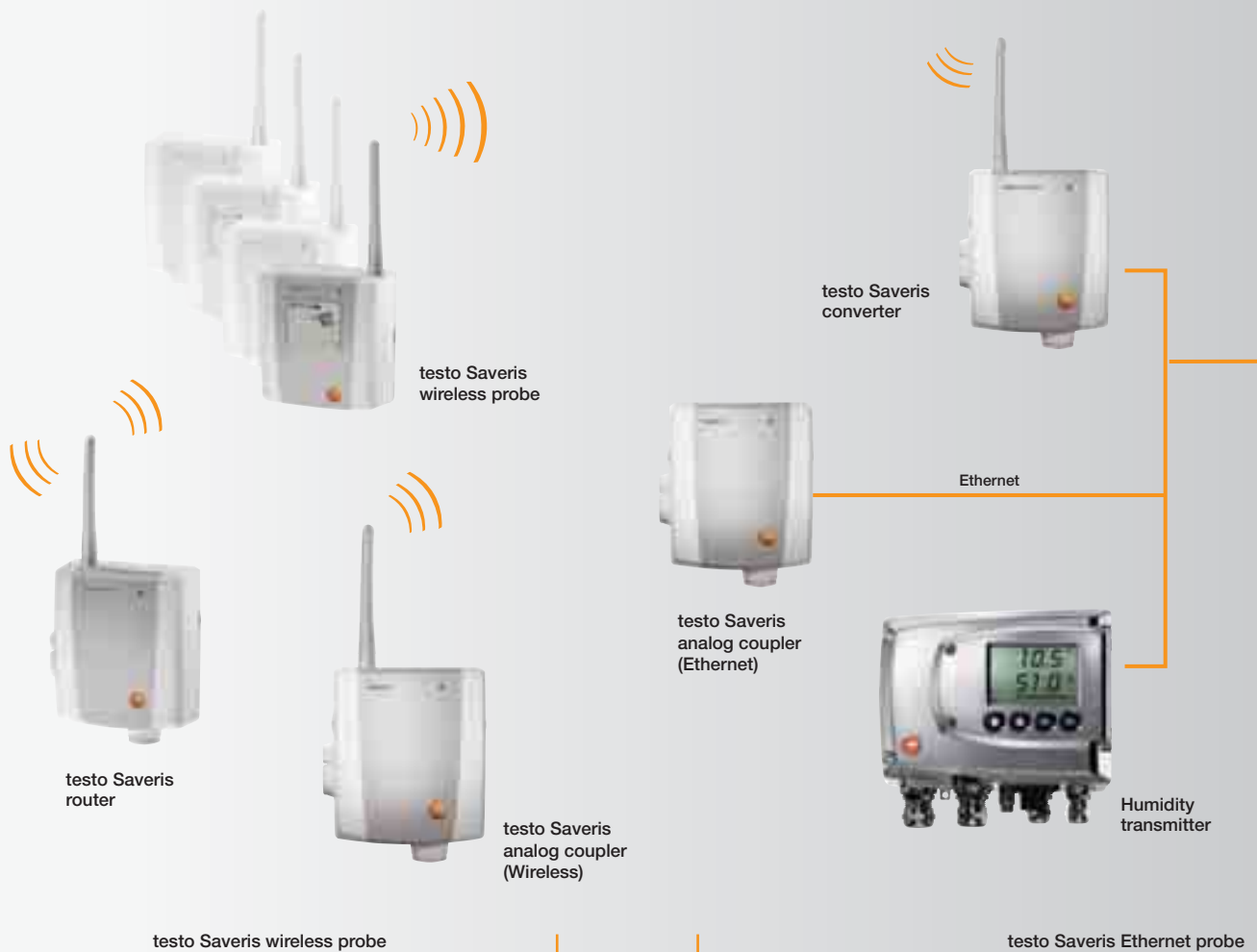
testo Saveris radio probe

Probe versions with internal and external temperature and humidity sensors allow the adaptation to every application. The radio probes are available with or without a display as an option. The memory in the probe ensures that the measurement data is not lost in the event of an interference in the radio link. Current measurement data, the battery status and the quality of the radio link are shown in the display.

testo Saveris router

The radio link can be improved or lengthened with poor structural conditions by using a router. Naturally several routers are possible in the testo Saveris system, but several routers are not connected in series.

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.



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.

Humidity transmitter testo 6651/6681

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 Ethernet probe

In addition to the wireless probes, probes can be used which are directly connectable to the Ethernet. This allows the existing LAN infrastructure to be used, making data transfer from the probe to the base possible, even over long distances.

By connecting a converter to an Ethernet socket, the signal from a wireless probe can be converted to an Ethernet signal. This combines the flexible positioning of a wireless probe with the use of the existing Ethernet even over long transfer distances.

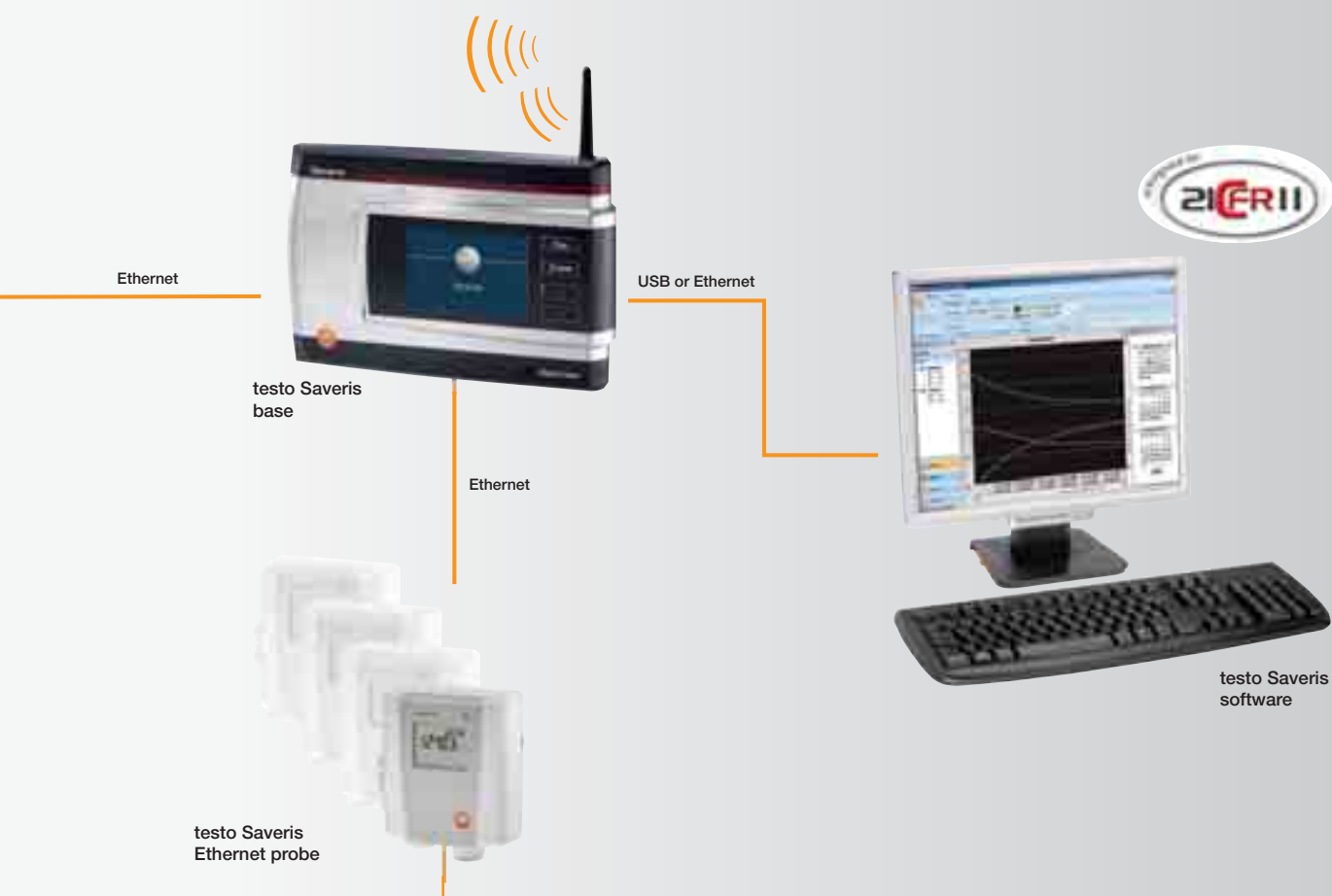
testo Saveris™ System overview

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. The system data and alarms are visible via the display of the Saveris base.

testo Saveris software

The testo Saveris software offers simple operation and an intuitive user interface. The Saveris software is available in two different versions: as the basic version SBE (Small Business Edition) or the PROF (Professional) software version with diverse additional options, or as a CFR version. The CFR software fulfils the requirements of 21 CFR Part 11 of the FDA, and is thus validatable.



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)		•	•
Conform to 21CFR11 (validatable)			•
Electronic signature			•
Audit trail			•
Allocation of access rights on 3 user levels			•





testo Saveris™ Components: Radio probes

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				
 Radio		NTC internal  81 mm Saveris T1 Radio probe with internal NTC	NTC internal  81 mm Saveris T2 Radio probe with external probe connection and internal NTC, door contact	NTC external  81 mm Saveris T3 2-channel radio probe with 2 external TC probe connections (Choice of TC characteristics)	TC external  81 mm 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	
	Meas. range (Instrument)		-50 to +150 °C	-195 to +1350 °C	-100 to +750 °C	
	Accuracy (Instrument)		±0.2 °C (-25 to +70 °C) ±0.4 °C (remaining range)	TC type T	TC type S	
				-200 to +400 °C	0 to +1760 °C	
			±0.5 °C or 0.5% of mv			
	Resolution (Instrument)		0.1 °C	0.1 °C / TC type S 1 °C	Pt100 -200 to +600 °C	
					at 25 °C ±0.1 °C (0 to +60 °C) ±0.2 °C (-100 to +200 °C) ±0.5 °C (remaining range)	
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	
 Radio	%RH NTC external 	%RH NTC internal 	%RH NTC external 	mA V internal 			
	Saveris H2D Wireless humidity probe	Saveris H3 Humidity radio probe	Saveris H4D Wireless probe with 1 external humidity probe connection	Saveris U1 Wireless probe with current/voltage output			
	Internal sensor	Probe type	NTC	Humidity sensor		1 channel: current/voltage input	
	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	
	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	
Resolution		0.1 °C	0.1 °C / 0.1 °C td				
External probe	Probe type	NTC	Humidity sensor				
Meas. range (Instrument)	-20 to +50 °C	0 to +100 %RH*		-20 to +70 °C	0 to +100 %RH*		
Accuracy (Instrument)	±0.5 °C	to 90 %RH: ±2 %RH > 90 %RH: ±3 %RH		±0.2 °C	see probes		
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		
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 H3Wireless 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 U1Analog 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.

testo Saveris™ Components: Ethernet probes

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.

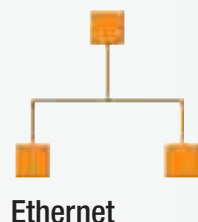
°C				
Ethernet	NTC external	TC external		Pt 100 external
				
	Saveris T1E	Saveris T2		Saveris T3
	Ethernet probe with 1 external probe connection NTC	4-channel Ethernet probe with 4 external TC probe connections		Ethernet probe with external Pt100 probe connection
Internal sensor				
External probe sensor	Probe type	NTC	TC type K	Pt100
	Meas. range (Instrument)	-50 to +150 °C	-195 to +1350 °C	-200 to +600 °C
	Accuracy (Instrument)	±0.2 °C (-25 to +70 °C) ±0.4 °C (remaining range)	TC type J TC type T -100 to +750 °C -200 to +400 °C 0 to +1760 °C	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				
Approx. 85 x 100 x 38 mm				
Approx. 220 g				
6.3 V DC mains unit; alternatively via 24 V AC/DC plug-in/screw terminals, PoE				
Li-ion				
Plastic				
IP54				
2 s to 24 h				
-20 to +60 °C				
-40 to +60 °C				
PoE Class 0 (typical ≤ 3 W)				
LCD, 2 lines; 7-segment with symbols				
included				

Ordering data Ethernet probes

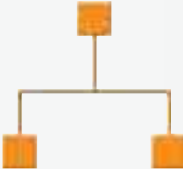
Part no.	
0572 1191	Saveris T1E Ethernet probe with 1 external probe connection NTC
0572 9194	Saveris T4 E 4-channel Ethernet probe with 4 external TC probe connections (With display)
0572 7191	Saveris Pt E Ethernet probe with external Pt100 probe connection (With display)
0572 6191	Saveris H1 E Humidity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

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.

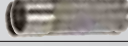
testo Saveris™ Components: Ethernet probes



Ethernet

Ethernet		°C / °F and %RH						mA and V	
		%RH NTC		%RH NTC		%RH NTC		mA V	
		external		external		external		internal	
									
Saveris H1E		Saveris H3		Saveris H4E		Saveris U1E			
Humidity Ethernet probe 1%		Humidity Ethernet probe 2 %		Ethernet probe with external humidity probe connection		Ethernet probe with current/voltage probe connection			
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*	0.1 °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 (-25 to +70 °C) ±0.4 °C (remaining range)	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							
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 protective cap (open), fast reaction time at flow velocities < 7 m/s (not suitable for dusty atmospheres), for measurement in flow velocities of less than 10 m/s		0554 0755
Stainless steel sintered filter, pore size 100 µm, probe protection in dusty atmospheres or higher flow velocities, for measurements at higher flow velocities or in contaminated air		0554 0647
Wire mesh filter, probe protection from coarse particles		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™ Components: Base, Router, Converter and accessories

Base	Part no.	Saveris router	Part no.
Saveris base, radio frequency 868 MHz	0572 0120	Saveris router, 868 MHz, radio transmission medium	0572 0119
Saveris base, radio frequency 868 MHz, GSM module integrated (for SMS alarm)	0572 0121	Saveris router, 2.4 GHz, radio transmission medium	0572 0159
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.			
Power supply	Part no.	Saveris converter	Part no.
Battery for radio probe (4 AA alkali manganese mignon batteries)	0515 0414	Saveris converter, 868 MHz, converts the radio transmission medium to Ethernet	0572 0118
Battery for radio probe for use below -10 °C (4 Energizer L91 Photo lithium)	0515 0572	Saveris converter, 2.4 GHz, converts the radio transmission medium to Ethernet	0572 0158
100-240 V AC / 6.3 V DC international mains unit for mains operation or battery charging in instrument	0554 1096	No mains units are contained in this ordering data.	
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.	Software	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	SBE software, incl. USB connecting cable base-PC	0572 0180
Magnetic foot aerial (quadband) for base with GSM module	0554 0525	PROF software, incl. USB connecting cable base-PC	0572 0181
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	CFR software, incl. Ethernet connection cable PC to Base	0572 0182
Programming adapter (from mini-DIN to USB) for Ethernet probe and converter (necessary if no DHCP server available)	0440 6723	Saveris adjustment software incl. connection cable for wireless and Ethernet probes	0572 0183
		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
		DKD 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 Humidity probe, calibration points 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0076
		DKD calibration cert./humidity Humidity probe, calibration points 11.3 %RH and 75.3 %RH at +25 °C; per channel/instrument	0520 0246

Magnetic foot aerial (dualband)



Magnetic foot aerial (dualband) with 3 m cable, for base with GSM module (not suitable for USA, Canada, Chile, Argentina, Mexico)

Part no. 0554 0524

Alarm module



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)
ID-Nr. 0699 6111/1

Part no. 0572 9999

Software versions



SBE software, incl. USB connecting cable base-PC

Part no. 0572 0180

PROF software, incl. USB connecting cable base-PC

Part no. 0572 0181

CFR software, incl. Ethernet connection cable PC to Base

Part no. 0572 0182

testo Saveris™ Technical data



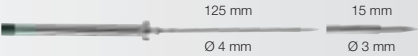
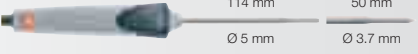
Technical data	
	Saveris-Base
Memory	40,000 values per channel (total max. 10,160,000 values)
Dimensions	225 x 150 x 49 mm
Weight	Approx. 1510 g
Protection class	IP42
Material/Housing	Diecast zinc / plastic
Radio frequency	868 MHz / 2.4 GHz
Power supply (absolutely necessary)	6.3 V DC mains unit; alternatively 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

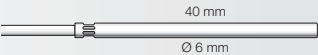
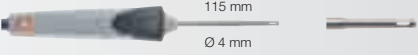
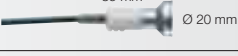
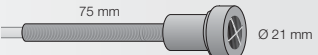
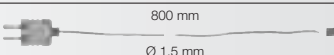
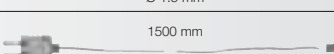
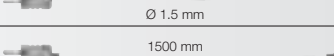
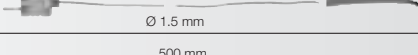
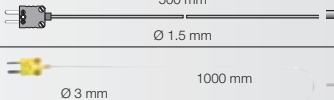


Technical data		
	Saveris router	Saveris converter
Dimensions	Approx. 85 x 100 x 38 mm	Approx. 85 x 100 x 35 mm
Weight	Approx. 180 g	Approx. 190 g
Power supply	6.3 V DC mains unit; alternatively via 24 V AC/DC plug-in/screw terminals, power consumption < 0.5 W	6.3 V DC mains unit; alternatively via 24 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

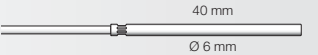
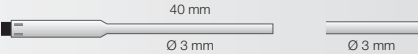
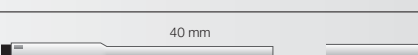
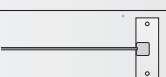
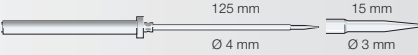
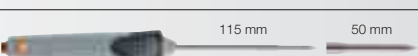
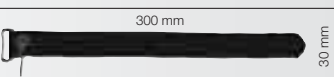


testo Saveris™ Accessories: External temperature probes

Pt100	Plug-in probes	Illustration	Meas. range	Accuracy	t99	Part no.
	Robust, Pt100 stainless steel food probe (IP65)	 125 mm Ø 4 mm 15 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	10 s	0609 2272 Conn.: Fixed cable
	Robust, waterproof Pt100 immersion/penetration probe	 114 mm Ø 5 mm 50 mm Ø 3.7 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	12 s	0609 1273 Conn.: Fixed cable
	Connection cable for unlimited Pt100 stationary probes with screw terminals (4-wire technology), max. cable length: 20 m					0554 0213

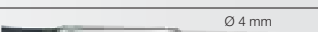
TC	Plug-in probes	Illustration	Meas. range	Accuracy	t99	Part no.
	Stationary probe with stainless steel sleeve, TC Type K	 40 mm Ø 6 mm	-50 to +205 °C	Class 2*	20 s	0628 7533 Conn.: Fixed cable 1.9 m
	Robust air probe, T/C Type K	 115 mm Ø 4 mm	-60 to +400 °C	Class 2*	25 s	0602 1793 Conn.: Fixed cable 1.2 m
	Magnetic probe, adhesive force approx. 20 N, with magnets, for measurements on metal surfaces, TC Type K	 35 mm Ø 20 mm	-50 to +170 °C	Class 2*	150 s	0602 4792 Conn.: Fixed cable
	Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temp., for measurements on metal surfaces, TC Type K	 75 mm Ø 21 mm	-50 to +400 °C	Class 2*		0602 4892 Conn.: Fixed cable 1.6 m
	Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K		-60 to +130 °C	Class 2*	5 s	0602 4592 Conn.: Fixed cable 1.2 m
	Pipe wrap probe with Velcro strip, for temperature measurement on pipes with diameter up to max. 120 mm, Tmax +120°C, TC Type K	 395 mm 20 mm	-50 to +120 °C	Class 1*	90 s	0628 0020 Conn.: Fixed cable 1.5 m
	Thermocouple with TC adapter, flexible, 800mm long, fibre glass, TC Type K	 800 mm Ø 1.5 mm	-50 to +400 °C	Class 2*	5 s	0602 0644
	Thermocouple with TC adapter, flexible, 1500mm long, fibre glass, TC Type K	 1500 mm Ø 1.5 mm	-50 to +400 °C	Class 2*	5 s	0602 0645
	Thermocouple with TC adapter, flexible, 1500mm long, PTFE, TC Type K	 1500 mm Ø 1.5 mm	-50 to +250 °C	Class 2*	5 s	0602 0646
	Immersion tip, flexible, TC Type K	 500 mm Ø 1.5 mm	-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	 Ø 3 mm 1000 mm	-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	 35 mm Ø 3 mm	-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	 40 mm Ø 6 mm	-30 to +90 °C	±0.2 °C (0 to +70 °C) ±0.5 °C (remaining range)	190 s	0628 7503* Conn.: Fixed cable 2.4 m
	Accurate imm./pen. probe, 6m cable, IP 67	 40 mm Ø 3 mm Ø 3 mm	-35 to +80 °C	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining range)	5 s	0610 1725* Conn.: Fixed cable 6 m
	Accurate immersion/penetration probe, cable: 1.5 m long, IP 67	 40 mm Ø 3 mm Ø 3 mm	-35 to +80 °C	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-35 to -25.1 °C) ±0.4 °C (+75 to +80 °C)	5 s	0628 0006* Conn.: Fixed cable 1.5 m
	Wall surface temperature probe, e.g. to prove damage in building material		-50 to +80 °C	±0.2 °C (0 to +70 °C)	20 s	0628 7507 Conn.: Fixed cable 3 m
	Stainless steel NTC food probe (IP65) with PUR cable	 125 mm Ø 4 mm 15 mm Ø 3 mm	-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* Conn.: Fixed cable 1.6 m
	Waterproof NTC immersion/penetration probe	 115 mm Ø 5 mm 50 mm Ø 4 mm	-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 Conn.: Fixed cable 1.2 m
	Pipe wrap probe with Velcro for pipe diameter to max. 75 mm, Tmax. +75°C, NTC	 300 mm 30 mm	-50 to +70 °C	±0.2 °C (-25 to +70 °C) ±0.4 °C (-50 to -25.1 °C)		0613 4611 Conn.: Fixed cable 1.5 m

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

2) Long-term meas. range +125°C, short-term +150°C (2 minutes)

%RH	Plug-in probes	Illustration	Meas. range	Accuracy	Part no.
	Humidity / Temperature Probe 12mm	 Ø 12 mm	-20 to +70 °C, 0 to +100 %RH	±0.3 °C, ±2 %RH (2 to 98 %RH)	0572 6172
	Humidity / Temperature Probe 4 mm	 Ø 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 Saveris™ Examples of applications



Avoiding incorrect humidity values in production and storage

Reiner Lippert, Technical Director
Technocell Dekor GmbH & Co. KG

"With the testo Saveris measurement system, I am certain the the storage of our valuable products is always performed in the appropriate climate. I am immediately alarmed in the event of a breach of limit values."



Protect valuable investments

When storing sensitive goods, like in the area of server rooms, it is imperative to ensure ideal temperatures (and often also humidity values).

testo Saveris monitors the limit values, sends an SMS or e-mail in the event of an alarm and centrally saves all values.

Thanks to the radio probes, no complex cabling is required. Alternatively, Ethernet probes are also available that rely on the existing IT network for the transmission.



No complex cable routing due to the use of radio probes

Frank Brunecker, Museum Director
Museum Biberach

"With testo Saveris we finally have a system that automatically documents our room climate. With this, I know that our most prized inventory is being stored in a secure climate, and all this without cabling."



Avoiding incorrect temperature and humidity values in office buildings

Olaf Hartleb, Head of Building Services
Sparkasse

"Fortunately we have no more complaints about a poor office climate since we started using testo Saveris for automatic and central monitoring of the room conditions."



Data loggers for long-term monitoring of temperature and humidity

You can monitor temperature and humidity values efficiently and conveniently for long time periods using Testo's data loggers which have proven themselves thousands of times over. The readings are saved in the logger and simply printed on the optional fast testo 575 printer. The saved measurement data is collected on site on the testo 580 data collector and read out centrally on your PC.

testo 174 mini data logger

- Memory for 3,900 readings
- Freely selectable measurement cycle from 1 min to 4 h
- Battery life: 1.5 years (typical)

Compact data logger testo 175

- Memory for 16,000 readings
- Freely selectable measuring cycle from 10 s to 24 h
- Battery life of more than 2.5 years*

Pro data logger: testo 177

- Memory for up to 48,000 readings
- Freely selectable measuring cycle from 2 s to 24 h
- Battery life of more than 5 years*

* at a measuring cycle of 15 min (-10 to +50 °C)



testo 174
Temperature mini data logger



testo 175
Compact data loggers for temperature and humidity



testo 177
Professional data logger for temperature and humidity



ComSoft
Convenient data analysis on PC or notebook



Monitors ambient temperature – Practical and compact

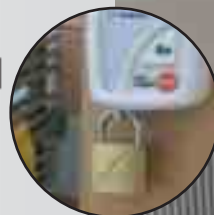
testo 174

The testo 174 mini data logger can log room temperatures and therefore monitor the behaviour of a thermostat valve. The display shows the current reading. The following can be called up: stored minimum and maximum value, limit values and battery life.

- Accurate, punctual temperature logging with up to 3900 readings
- Alarm display if user-defined maximum/minimum values are exceeded
- Secure data even if battery is spent



Tamper-proof installation on site



Room temperature logging with immediate alarm display when limits are exceeded



Data upload to PC or notebook via interface (optional)

testo 174

Mini temperature data logger, 1 channel, incl. wall holder, lock and battery

Part no. 0563 1741

Technical data

Meas. range	-30 to +70 °C
Memory	3900 readings
Measuring rate	1 min to 4 h (selectable)
Battery life	500 days (typical)
Analysis software	MS Windows 95b / 98 / ME / 2000 / XP / Vista
Dimensions	55 x 35 x 14 mm
Weight	24 g

testo 174, Starter Set

Mini temperature data logger, 1 channel, ComSoft 4 Basic, wall holder, lock, interface with PC connection cable, battery

Part no. 0563 1742

testo 174, USB Set

Mini temperature data logger, 1 channel, ComSoft 4 Basic, wall holder, USB interface with PC connection cable and battery

Part no. 0563 1743

Accessories

Accessories	Part no.
Lithium battery button cell	0515 0028
ISO calibration certificate/temperature, temperature data logger, calibration points -18°C, +60°C	0520 0443

Documents ambient temperature – Fast and easy

testo 175-T1

The testo 175-T1 temperature datalogger guarantees uninterrupted documentation of up to 7800 readings.

- Provides quick overview of current reading, last value saved, max/min value, number of times limits exceeded
- Secure data even if battery is empty

testo 175-T1

Internal °C

testo 175-T1, temperature data logger, 1 channel with internal sensor, incl. wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1754



Data is printed on fast testo 575 printer (optional)



Records temperature fluctuations in warehouses

Technical data

Chann. intern	1
Probe type	NTC
Meas. range	-35 to +70 °C
Accuracy	±0.5 °C (-20 to +70 °C) ±1 °C (-35 to -20.1 °C)
Resolution	0.1 °C (-20 to +70 °C) 0.3 °C (-35 to -20.1 °C)
Memory	7800
Measuring rate	10 s ... 24 h
Battery life	2.5 years at a meas. rate of 15 min (-10 to +50 °C)
Analysis software	MS Windows 95b / 98 / ME / 2000 / XP / Vista
Dimensions	82 x 52 x 30 mm
Weight	90 g
Protection class	IP68

Recommended Set: testo 175-T1, Starter Set

testo 175-T1, temperature data logger, 1 channel with internal sensor, incl. wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1754
Lock for wall holder for testo 175/177 data loggers	0554 1755
ComSoft 3 Set - Basic with USB interface	0554 1766

Accessories Ordering data See page 78

Logs temperature – Simultaneously at two sites

testo 175-T2

With an additional external probe connection, the temperature data logger provides a further temperature measurement option.

testo 175-T2

Internal °C + external °C

testo 175-T2, temperature data logger, 2 channels, with internal sensor and external probe socket, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1755

- Monitors 2 temperatures simultaneously
- Fast overview of current reading, last value saved, max/min values, number of times limits exceeded
- User-friendly operation, convenient analysis

Collects data on site, uploads to PC and analyses

Tamper-proof with wall holder and lock (optional)

Simultaneous monitoring of ambient air temperature and temperature in a refrigeration unit

Technical data

Chann. intern	1
Meas. range	-35 to +70 °C
Accuracy ±1 digit	±0.5 °C (-20 to +70 °C) ±1 °C (remaining range)
Resolution	0.1 °C (-20 to +70 °C) 0.3 °C (remaining range)
Chann. external (var.)	1
Meas. range	-40 to +120 °C
Accuracy ±1 digit	±0.3 °C (-25 to +70 °C) ±0.5 °C (remaining range)
Resolution	0.1 °C (-25 to +70 °C) 0.3 °C (remaining range)
Memory	16000
Measuring rate	10 s to 24 h
Battery life	2.5 years at meas. rate of 15min (-10 to +50°C)
Analysis software	MS Windows 95b / 98 / ME / 2000 / XP / Vista
Oper. temp.	-35 to +70 °C
Storage temp.	-40 to +85 °C
Protection class	IP68
Dimensions	82 x 52 x 30 mm
Weight	84 g

Recommended Set: testo 175-T2, Starter Set

testo 175-T2, temperature data logger, 2 channels, with internal sensor and external probe socket, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1755
Lock for wall holder for testo 175/177 data loggers	0554 1755
Stationary probe with aluminium sleeve, IP 65	0628 7503
ComSoft 3 Set - Basic with USB interface	0554 1766

Accessories Ordering data See page 78

Description	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		-30 to +90 °C	±0.2 °C (0 to +70 °C) ±0.5 °C (remaining range)	190 s	0628 7503 * Conn.: Fixed cable
Accurate imm./pen. probe, 6m cable, IP 67		-35 to +80 °C	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining range)	5 s	0610 1725 * Conn.: Fixed cable
Accurate immersion/penetration probe, cable: 1.5 m long, IP 67					0628 0006 *
Probe for surface measurement		-50 to +80 °C	±0.2 °C (0 to +70 °C)	150 s	0628 7516 * Conn.: Fixed cable
Wall surface temperature probe, e.g. to prove damage in building material		-50 to +80 °C	±0.2 °C (0 to +70 °C)	20 s	0628 7507 Conn.: Fixed cable
Pipe wrap probe with Velcro for pipe diameter to max. 75 mm, Tmax. +75°C, NTC		-50 to +70 °C	±0.2 °C (-25 to +70 °C) ±0.4 °C (-50 to -25.1 °C)		0613 4611 Conn.: Fixed cable
Efficient, robust NTC air probe		-50 to +125 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (remaining range)	60 s	0613 1712 Conn.: Fixed cable 1.2 m

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

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

Logs high temperatures – With external thermocouples

testo 175-T3

The temperature data logger records temperature simultaneously at two different points over a period of several days, weeks or months.

testo 175-T3

2 x external °C

testo 175-T3, temperature data logger, 2 channels, with 2 probe inputs, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1756

- Specially for the measurement of low and high temperatures
- Data analysis as table or graph, with e-mail function
- Alarm message, reliable indication when limits are exceeded

Data upload to PC or notebook via attachable interface (optional)



Measurement of air inlet and outlet temperature in refrigeration units

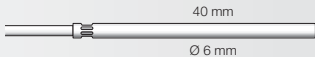
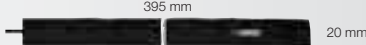
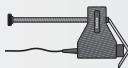
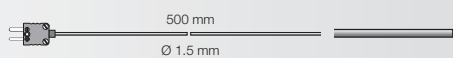
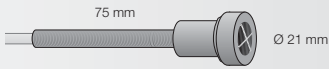
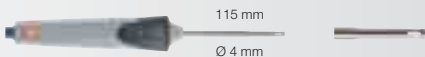
Technical data

Chann. external (var.)	2		
Probe type	Type T (Cu-CuNi)	Meas. range	-50 to +400 °C
Probe type	Type K (NiCr-Ni)	Meas. range	-50 to +1000 °C
Accuracy ±1 digit	±0.7% of mv (+70.1 to +1000 °C)	±0.5 °C (-50 to +70 °C)	
Resolution	0.1 °C	Memory	16000
Measuring rate	10 s to 24 h	Protection class	IP54
Battery life	2.5 years at a meas. rate of 15 min (-10 to +50 °C)		
Analysis software	MS Windows 95b / 98 / ME / 2000 / XP / Vista		
Oper. temp.	0 to +70 °C	Storage temp.	-40 to +85 °C
Dimensions	82 x 52 x 30 mm	Weight	90 g

Recommended Set: testo 175-T3, Set for monitoring temperature in processes

testo 175-T3, temperature data logger, 2 channels, with 2 probe inputs, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1756
Lock for wall holder for testo 175/177 data loggers	0554 1755
Thermocouple with TC adapter, flexible, 1500mm long, fibre glass, TC Type K	0602 0645
Thermocouple with TC adapter, flexible, 1500mm long, fibre glass, TC Type K	0602 0645
testo 580 data collector set with USB, readout holders included, for testo 175/177 data loggers	0554 1764
ComSoft 3 Set - Basic with USB interface	0554 1766

Accessories Ordering data See page 78

Description	Illustration	Meas. range	Accuracy	t99	Part no.
Stationary probe with stainless steel sleeve, TC Type K		-50 to +205 °C	Class 2	20 s	0628 7533 Conn.: Fixed cable
Pipe wrap probe with Velcro strip, for temperature measurement on pipes with diameter up to max. 120 mm, Tmax +120°C, TC Type K		-50 to +120 °C	Class 1	90 s	0628 0020 Conn.: Fixed cable
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K		-60 to +130 °C	Class 2	5 s	0602 4592 Conn.: Fixed cable
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
Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temp., for measurements on metal surfaces, TC Type K		-50 to +400 °C	Class 2		0602 4892 Conn.: Fixed cable
Robust air probe, T/C Type K		-60 to +400 °C	Class 2	25 s	0602 1793 Conn.: Fixed cable, 1.2 m

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



Monitors ambient conditions – Efficiently and accurately

testo 175-H2

The compact humidity/temperature logger with display. It provides a fast overview on-site of current readings, values last saved, max and min values and the number of limits exceeded.

- Fast documentation with infrared printer, 6 lines/s

- Collect data using testo 580 and download to your PC/notebook for analysis

testo 175-H2

testo 175-H2, humidity/temperature logger, 2 channels, with internal sensors, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1758

Technical data

Chann. intern	2		
Probe type	Testo humid. sensor, cap.	NTC	
Meas. range	0 to +100 %RH*	-20 to +70 °C	
Accuracy ±1 digit	±3 %RH	±0.5 °C	
Resolution	0.1 %RH	0.1 °C	
Measuring rate	10 s to 24 h	Memory	16000
Oper. temp.	-20 to +70 °C	Storage temp.	-40 to +85 °C
Dimensions	82 x 52 x 30 mm	Weight	85 g
Battery life	2.5 years at a meas. rate of 15 min (-10 to +50 °C)		
Analysis software	MS Windows 95b / 98 / ME / 2000 / XP / Vista		

* not affected by condensation

Accessories Ordering data See Page 78

Data analysis with easy-to-use Windows® software



Logging ambient air conditions with immediate display of limits exceeded

Recommended Set: testo 175-H2, Starter Set

testo 175-H2, humidity/temperature logger, 2 channels, with internal sensors, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1758
Lock for wall holder for testo 175/177 data loggers	0554 1755
ComSoft 3 Set - Basic with USB interface	0554 1766

Long-term temperature monitoring – Professional and non-stop

testo 177-T2

The professional data logger provides you with a quick overview of the current readings, the last values stored, min/max values and the number of limits exceeded. All of the values collected by testo 580 during long-term monitoring over months/years can be uploaded to your notebook/PC. Convenient analysis via Windows® software.

- Memory for up to 48,000 readings
- On site: Fast documentation on the infrared printer, 6 lines/s

testo 177-T2

testo 177-T2, temperature data logger, 1 channel, with internal sensor, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1772

Technical data

Chann. intern	1	Probe type	NTC
Meas. range	-40 to +70 °C	Resolution	0.1 °C
Accuracy ±1 digit	±0.4 °C (-25 to +70 °C)		±0.8 °C (-40 to -25.1 °C)
Measuring rate	2 s to 24 h	Memory	48000
Oper. temp.	-40 to +70 °C	Storage temp.	-40 to +85 °C
Dimensions	103 x 64 x 33 mm	Weight	122 g
Battery life	5 years with a meas. cycle of 15 min (-10 to +50 °C)		
Analysis software	MS Windows 95b / 98 / ME / 2000 / XP / Vista		

Accessories Ordering data See Page 78

Collect data on site, upload to PC and analyse



Long-term temperature logging with immediate display of limits exceeded

Recommended Set: testo 177-T2, Starter Set

testo 177-T2, temperature data logger, 1 channel, with internal sensor, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1772
Lock for wall holder for testo 175/177 data loggers	0554 1755
ComSoft 4 Set - Basic with USB interface	0554 1767

Long-term monitoring of ambient conditions – Professional and non-stop

testo 177-H1

Sensitive products require the right ambient conditions during production and storage. Efficient measurement and documentation of the readings over months/years is possible with the testo 177-H1 professional data logger.

Additional surface, immersion and air probes can be attached to the data logger e.g. for uninterrupted measurement of the dewpoint difference.

- Long-term stable humidity sensor with fast response time
- Memory for up to 48,000 readings
- Control and adjustment option with adjustment set
- Protective caps for dirt-ingressed air or corrosive gases

testo 177-H1

Intern. %RH, °C, °C td + extern. °C
testo 177-H1, humidity/temperature logger, 4 channels, with internal sensors and additional external temp. probe socket, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1775

Collect data on site, upload to PC and analyse

Alarm message, reliable notification when limits are exceeded



Efficient measurement of production and storage conditions

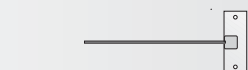
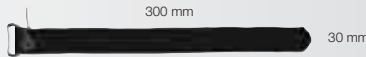
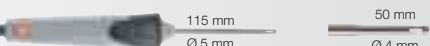
Technical data

Chann. intern	3
Meas. range	0 to +100 %RH -20 to +70 °C -40 to +70 °C td
Accuracy ±1 digit	±2 %RH ±0.5 °C
Resolution	0.1 %RH 0.1 °C 0.1 °C td
Chann. external (var.)	1
Meas. range	-40 to +120 °C
Accuracy ±1 digit	±0.2 °C (-25 to +70 °C) ±0.4 °C (remaining range)
Resolution	0.1 °C
Memory	48000
Measuring rate	2 s to 24 h Protection class IP54
Battery life	5 years at a meas. cycle of 15 min (-10 to +50 °C)
Analysis software	MS Windows 95b / 98 / ME / 2000 / XP / Vista
Oper. temp.	-20 to +70 °C Storage temp. -40 to +85 °C
Dimensions	103 x 64 x 33 mm Weight 130 g

Recommended Set: Professional set for measuring differential dewpoint

testo 177-H1, humidity/temperature logger, 4 channels, with internal sensors and additional external temp. probe socket, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1775
Lock for wall holder for testo 175/177 data loggers	0554 1755
Wall surface temperature probe, e.g. to prove damage in building material	0628 7507
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries	0554 1775
ComSoft 4 Set - Basic with USB interface	0554 1767

Accessories Ordering data See Page 78

Description	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		-30 to +90 °C	±0.2 °C (0 to +70 °C) ±0.5 °C (remaining range)	190 s	0628 7503 * Conn.: Fixed cable
Probe for surface measurement		-50 to +80 °C	±0.2 °C (0 to +70 °C)	150 s	0628 7516 * Conn.: Fixed cable
Wall surface temperature probe, e.g. to prove damage in building material		-50 to +80 °C	±0.2 °C (0 to +70 °C)	20 s	0628 7507 Conn.: Fixed cable
Pipe wrap probe with Velcro for pipe diameter to max. 75 mm, Tmax. +75°C, NTC		-50 to +70 °C	±0.2 °C (-25 to +70 °C) ±0.4 °C (-50 to -25.1 °C)		0613 4611 Conn.: Fixed cable
Efficient, robust NTC air probe		-50 to +125 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (remaining range)	60 s	0613 1712 Conn.: Fixed cable 1.2 m

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

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

Accessories for testo 175 and 177

testo 575 fast printer



High speed documentation and logger rebooting with testo 575

- Fast-action print mechanism, 6 lines/s.
- Prints tables/graphics
- Brief info. or full memory can be printed as required
- Determine section to be printed
- Your language can be set
- Self-adhesive Testo paper can also be used

Part no. 0554 1775

testo 580 data collector



The testo 580 data collects data on site for upload to PC and analysis

- Can read out up to 25 full testo 175 loggers or 10 full testo 177 loggers
- Displays all status information
- Download collected data to PC using Testo ComSoft 3

RS232 Version

Part no. 0554 1778

USB version

Part no. 0554 1764

testo 581 alarm signal output



Alarm signal output for reliable notification of limits exceeded

- Transmission of alarm messages – e.g. when programmed limit values in the data logger are exceeded – to external components such as horns, lamps, PLC etc.
- Signal transfer via floating signal output

Part no. 0554 1769

Ethernet adapter



Read out the data stored in the logger via the PC network using the Ethernet adapter

- Fast transfer of readings
- Use of an existing network without additional cabling
- Long transmission paths
- Identification of measuring instruments in system network
- In connection with ComSoft 3

Part no. 0554 1711

Accessories for testo 175 and 177

Printer and Accessories	Part no.
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries, infrared thermal line printer with graphics function	0554 1775
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls), permanent ink, 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
Additional accessories	Part no.
testo 580 data collector set with RS232, readout holders included, for testo 175/177 data loggers	0554 1778
testo 580 data collector set with USB, readout holders included, for testo 175/177 data loggers	0554 1764
testo 581 alarm signal output, floating, for testo 175/177, forwards information efficiently when limits are exceeded to e.g. horns, lamps, PLC etc.	0554 1769
Battery, 3.6 V/0.8 Ah 1/2 AA, for testo 175-T3/175-H1/175-H2/175-S1	0515 0175
Battery, 3.6 V/1.9 Ah 1AA, for testo 175-T1/175-T2 and all testo 177 loggers	0515 0177
Transport and Protection	Part no.
Lock for wall holder for testo 175/177 data loggers	0554 1755
Transport case for up to 6 testo 177 data loggers, testo 575 printer, testo 580 data collector and accessories	0516 1770
Accessories for humidity probes	Part no.
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
Metal protection cage, Ø 12 mm for humidity probes, for measurement in flow velocities of less than 10 m/s	0554 0755
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
Stainless steel sintered filter, pore size 100 µm, probe protection in dusty atmospheres or at higher flow speeds, for measurements at higher flow velocities or in contaminated air	0554 0647

Software and Accessories	Part no.
For testo 175: ComSoft 4 Set - Basic with RS 232 interface, Basic software with diagram and table function, incl. desk-top holder, PC connection cable	0554 1759
For testo 175: ComSoft 3 Set - Basic with USB interface, Basic software with diagram and table function, incl. desk-top holders, PC connection cable	0554 1766
For testo 177: ComSoft 4 Set - Basic with RS 232 interface, Basic software with diagram and table function, incl. desk-top holder, PC connection cable	0554 1774
For testo 177: ComSoft 4 Set - Basic with USB interface, Basic software with diagram and table function, incl. desk-top holders, PC connection cable	0554 1767
ComSoft 3 - Professional with data management, incl. database, analysis and graphics function, data analysis, trend curve (without interface)	0554 0830
ComSoft 3 - For requirements to CFR 21 Part 11, incl. database, analysis and graphics function, data analysis, trend curve (w/o interface)	0554 0821
RS232 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
Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit, facilitates data communication in network	0554 1711
Calibration Certificates	Part no.
ISO calibration certificate/temperature, temperature probe; calibration points -18°C; 0°C; +60°C per channel/instrument	0520 0151
ISO calibration certificate/temperature, temp. data logger; calibration points -8°C; 0°C; +40°C per channel/instrument	0520 0171
ISO calibration certificate humidity, calibration points 11.3 %RH and 75.3 %RH at +25 °C/+77 °F; per channel/instrument	0520 0076
DKD calibration certificate/temperature, Temperature probe; cal. points -20°C; 0°C; +60°C (-4 °F, 92 °F, 140 °F); per channel/instrument	0520 0261
DKD calibration cert./humidity, humidity data logger; cal. points 11.3%RH and 75.3%RH at +25°C; per channel/instrument	0520 0246

Stationary temperature measurement

Building climate under control – Operating costs under control



Jochen Kern,
Product Manager
Stationary
Measurement
Technology

When developing, manufacturing and storing products, the right ambient air conditions are very important for an optimum product quality. At a time when energy is

becoming scarce and more expensive, you also have to look more closely at operating costs. A finely tuned air conditioning and ventilation unit saves energy and operating costs. Using the new transmitters from Testo, you can measure humidity, temperature and differential pressure highly accurately and with long-term stability and consequently have a basis for efficient control of your system.



The testo 6920 temperature transmitter has a wide selection of temperature sensors



An individual room temperature can be set with the set point control



Measurement data can be analyzed and the transmitter adjusted using the external interface and P2A software



Measure temperature, humidity and differential pressure



Monitoring ambient conditions in warehouses



Monitoring ambient conditions in ducts



Ideal air conditioning in museums



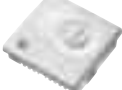
Monitoring ambient conditions in offices

Ideal building air conditioning depends above all on the measurement and regulation of temperature, humidity and differential pressure.

The Testo transmitters are ideal for the monitoring and regulation of climate, e. g. in:

- Industrial and commercial buildings (e. g. production, storage),
- Offices and administrative buildings,
- Sales outlets and exhibition halls,
- Museums and libraries,
- School buildings, hotels, clinics etc.

Overview of Testo transmitters

	Temperature transmitter testo 6920		Humidity and temperature transmitter testo 6621		Differential pressure transmitter testo 6321	
Instrument versions	Wall version with target value setter  Duct version with display 	Wall version with display and buttons  Duct version without display 	Wall version with display  Wall version with external probe and display 	Wall version without display  Duct version without display 	Wall version with display  Wall version without display 	
Properties	- easy operation via P2A software and fast on-site adjustment		- easy operation via P2A software and fast on-site adjustment - patented robust humidity sensor - large selection of protective filters		- easy operation via P2A software and fast on-site adjustment - extremely long-term stable sensor	
Measurement sensor	wide selection of temperature sensors (Pt100/1000, NTC, Ni1000)		Testo humidity sensor, NTC (active temperature sensor), Ni1000 (passive temperature sensor)		Piezoresistive sensor	
Measuring range	0 to +70 °C (active without display) 0 to +50 °C (active with display) -20 to +70 °C (passive sensors)		Humidity: 0 to 100%RH (> 90%RH short-term) Temperature: 0 to 60 °C (wall version) -20 to 70 °C (duct version)		2 to +2 bar selectable in the ranges 100 to +100 Pa	
Accuracy	±0.5 °C		Humidity: ±2.5%RH (0 to 90%RH), ±4.0%RH (> 90 to 100%RH) Temperature active: ±0.5 °C Temperature passive, tolerance Ni1000 < 0 °C: 0.4 °C + (0.028 x t) > 0 °C: 0.4 °C + (0.007 x t)		1.2 % of measuring range (+ 0.3 Pa basic error) 0.05 % of measuring range per Kelvin deviation from 22 °C	
Outputs	4 to 20 mA (±0.05 mA) 0 to 1 VDC (±2.5 mV) 0 to 5 VDC (±12.5 mV) 0 to 10 VDC (±25 mV) passive output optional		4 to 20 mA (±0.05mA); 2-wire 0 to 1 VDC (±2.5mV); 4-wire 0 to 5 VDC (±12.5 mV); 4-wire 0 to 10 VDC (±25 mV); 4-wire Passive temperature output optional Scaling range: -50 to +100 °C / -50 to +100 %RH		4 to 20 mA (±0.05mA); 4-wire 0 to 1 VDC (±2.5mV); 4-wire 0 to 5 VDC (±12.5 mV); 4-wire 0 to 10 VDC (±25 mV); 4-wire	



Testo transmitter configuration options

testo 6920 (°C) Temperature transmitters	testo 6621 (%RH/°C) Humidity transmitters	testo 6321 (ΔP) Differential pressure transmitters
A01 Wall version IP30 A02 Duct version IP65 B01 4 to 20 mA (2-wire, 24 V DC) B02 0 to 1 V (4-wire, 20 ... 30 V AC/DC) B03 0 to 5 V (4-wire, 20 ... 30 V AC/DC) B04 0 to 10 V (4-wire, 20 ... 30 V AC/DC) B21 Pt 100 Class A passive B22 Pt 100 Class B passive B23 Pt 1000 Class B passive B24 Ni1000 passive B25 NTC 5kΩ passive B26 NTC 10kΩ passive C00 Without display C01 With display (only for B0x) E02 Housing colour: pure white (RAL 9010), without Testo logo E03 Housing colour: pure white (RAL 9010), with Testo logo (black & white) S00 Without external interface S01 With external interface (only for B0x) G00 No unit (only for B2x) G01 Temperature (°C) (only for B0x) G02 Temperature (°F) (only for B0x9) K01 Instruction Manual German-English K02 Instruction Manual French-English K03 Instruction Manual Spanish-English K04 Instruction Manual Italian-English K05 Instruction Manual Dutch-English K06 Instruction Manual Japanese-English K07 Instruction Manual Chinese-English W00 Without set value control W01 With set point control 10 to 32 °C ¹⁾ W02 With set point control 50 to 90 °F ²⁾ W03 With set point control - to 0 to + ³⁾ W04 With set point control 5k, 10 to 32 °C ⁴⁾ W05 With set point control 5k, 50 to 90 °F ⁴⁾ W06 With set point control 5k, - to 0 to + ⁴⁾ W07 With set point control 10k, 10 to 32 °C ⁴⁾ W08 With set point control 10k, 50 to 90 °F ⁴⁾ W09 With set point control 10k, - to 0 to + ⁴⁾ ¹⁾ (only for A01 B0x .. G01) ²⁾ (only for A01 B0x .. G02) ³⁾ (only for A01 B0x C00) ⁴⁾ (only for A01 B2x)	A01 Wall version (not with B01, B05) A02 Duct version A03 Wall version with external probe for 4 to 20 mA analog output (with B01 only) B01 4 to 0 mA (2-wire, 24 V DC) ¹⁾ B02 0 to 1 V (4-wire, 24 V AC/DC) ¹⁾ B03 0 to 5 V (4-wire, 24 V AC/DC) ¹⁾ B04 0 to 10 V (4-wire, 24 V AC/DC) ¹⁾ B05 4 to 20 mA (2-wire, 24 V DC) ²⁾ B06 0 to 1 V (4-wire, 24 V AC/DC) ²⁾ B07 0 to 5 V (4-wire, 24 V AC/DC) ²⁾ B08 0 to 10 V (4-wire, 24 V AC/DC) ²⁾ C00 Without display C01 With display F01 Relative humidity (%RH) G02 Temperature (°C) (for B01–B04 only) G03 Temperature (°F) (for B01–B04 only) E01 Housing colour: light blue, with Testo logo (colour) E02 Housing colour: pure white (RAL 9010), without Testo logo E03 Housing colour: pure white (RAL 9010), with Testo logo (black & white) M01 Stainless steel sintered filter ³⁾ M02 Metal wire protection cap ³⁾ M03 PTFE sintered filter ³⁾ M04 Metal protection cap, open ³⁾ M05 Plastic cap ABS (open) ³⁾ K01 Instruction Manual German-English K02 Instruction Manual French-English K03 Instruction Manual Spanish-English K04 Instruction Manual Italian-English K05 Instruction Manual Dutch-English K06 Instruction Manual Japanese-English K07 Instruction Manual Chinese-English (Language version of Instruction Manual) ¹⁾ 2 Analog outputs (humidity / temperature) ²⁾ Humidity: analog output, temperature: passive, Ni1000 ³⁾ not for A01	A03 0 to 100 Pa A05 0 to 10 hPa A06 0 to 20 hPa A07 0 to 50 hPa A08 0 to 100 hPa A09 0 to 500 hPa A10 0 to 1000 hPa A11 0 to 2000 hPa A23 -100 to 100 Pa A25 -10 to 10 hPa A26 -20 to 20 hPa A27 -50 to 50 hPa A28 -100 to 100 hPa A29 -500 to 500 hPa A30 -1000 to 1000 hPa A31 -2000 to 2000 hPa B02 0 to 1 V (4-wire, 24 V AC/DC) B03 0 to 5 V (4-wire, 24 V AC/DC) B04 0 to 10 V (4-wire, 24 V AC/DC) B06 4 to 20 mA (4-wire, 24 V AC/DC) C00 Without display C01 With display E01 Housing colour: light blue, with Testo logo (colour) E02 Housing colour: pure white (RAL 9010), without Testo logo E03 Housing colour: pure white (RAL 9010), with Testo logo (black & white) F01 Pa / min / max F02 hPa / min / max F03 kPa / min / max F04 mbar / min / max F05 bar / min / max F06 mmH₂O / min / max F07 inch H₂O / min / max F08 inch HG / min / max F09 kg/cm² / min / max F10 PSI / min / max K01 Instruction Manual German-English K02 Instruction Manual French-English K03 Instruction Manual Spanish-English K04 Instruction Manual Italian-English K05 Instruction Manual Dutch-English K06 Instruction Manual Japanese-English K07 Instruction Manual Chinese-English (Language version of Instruction Manual)
Order example 0555 6920 A02 B22 C00 E02 S00 G00 K01 W00	Order example 0555 6621 A02 B03 C00 F01 G02 E01 M02 K01	Order example 0555 6321 A03 B03 C00 E00 F04 K01

Accessories for Testo transmitters

Accessories	Part no.	testo 6920 (°C)	testo 6621 (%RH/°C)	testo 6321 (ΔP)
P2A software (parameterization, adjustment and analysis software for PC), incl. USB cable (PC side) to the Mini-DIN interface (instrument)	0554 6020	✓	✓	✓
Wall/duct holder (for mounting duct version in duct or for mounting duct version on wall)	0554 6651	✓	✓	
Adjustment adapter (for 1-point adjustment with testo 400 or testo 650)	0554 6022	✓	✓	✓
Mains unit (desk-top) 110 to 240 VAC/24 VDC (350mA)	0554 1748	✓	✓	✓
Mains unit (top-hat rail mounting) 90 to 264 VAC/24 VDC (2.5 A)	0554 1749	✓	✓	✓
Stainless steel sintered filter, pore size 100 µm, probe protection in dusty atmospheres or at higher flow speeds	0554 0647 ¹⁾		✓	
Cap with wire mesh filter, Ø 12 mm	0554 0757 ¹⁾		✓	
PTFE sintered filter, Ø 12 mm, for corrosive substances, high humidity range (non-stop measurements), high flow speeds	0554 0758 ¹⁾		✓	
Metal protection cage, Ø 12 mm for humidity probes, for measurement in flow velocities of less than 10 m/s	0554 0755 ¹⁾		✓	
Plastic protective cap (open), fast reaction time at flow velocities <7 m/s (not suitable for dusty atmospheres)	0192 0265 ¹⁾		✓	
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		✓	
Reference set (testo 650, 1 %RH probe with certificate)	0699 3556/15		✓	
Spare sensor system (%RH) for testo 6621 and probe series 6600	0420 0006		✓	
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	0520 0176		✓	
Extension and adjustment cable, 10 m	0554 6610			✓
Silicon hose ID 4 transparent	0086 0001			✓
Tygon hose ID 4.8 transparent	0086 0031			✓
ISO calibration certificate/electrical	0520 1000			✓
Standard DKD calibration	0520 1200			✓
¹⁾ For duct version only				



Testo: At Your Service



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Long Branch, NJ 07740
1-877-742-TEST (8378)
Fax: (732) 222-7088
salesteam@Tequipment.NET**

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Stationary Measurement Solutions for Air Conditioning, Drying, Cleanrooms and Compressed Air
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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Icons



Backlit display



User-friendly operation based on menu-driven operations



SoftCase or TopSafe to protect instrument in tough applications



Shock-proof



Infrared printer
Efficient paper documentation of measured results on site



PC interface
Analyses measurement data in PC



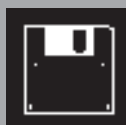
Battery and rechargeable battery operation possible



Battery can be recharged in instrument



Connectable radio probes



Measurement data store integrated in instrument