



Committing to the future

2010

Measurement Solutions for Production, Quality Control and Maintenance





Measurement Solutions for Production, Quality Control and Maintenance

Measuring tasks in industry place a variety of complex demands on the measuring technology used. It is in light of this challenging task that Testo places a great deal of importance on quality, operating reliability and security of results. A large selection of standard probes and measuring accessories already offers immense flexibility in providing the required measurement solutions. We offer customer-specific probes tailored to special measuring tasks.

Many years of experience gained from industrial applications are incorporated into Testo's in-house research activities, thus ensuring a practical approach to new developments and, in turn, a technological advantage. As such, Testo has assumed a pacesetter role in the market. Real innovations in sensor systems as well as advances made in microelectronics, measurement data storage or communication with other media such as a PC benefit all Testo customers.

This combination of longtime practical experience and close customer proximity as well as theoretical examination – including the area of basic research – increases the utility of Testo measurement solutions for all users and underscores future development.

Testo provides sophisticated measuring instrument variants and services to meet a wide application spectrum. With 1800 employees and 27 subsidiaries, Testo has representation on all continents.

Certified reliability

Quality assurance is serious business. This is why Testo industrial services offers certified calibrations in accordance with all applicable standards (e.g. ISO 9000ff, QS 9000, DKD, ÖKD, Cofrac, NIST, GMP, HACCP, FDA etc.) as well as various services. Calibration takes place in accredited, in-house high-tech laboratories.

Qualified service

Testo offers professional, fair consultation for all questions pertaining to measuring technology. We provide users quick assistance also after the purchase is made – worldwide. Our products have a 10-year service warranty, translating into a long-term and safe investment for our customers.

We are the market leader because we also take all product-related services very seriously: service, support and availability. We set the standard, both before and after the purchase as well as in all application phases.

Continuing education and qualification

Being a market leader requires not only top-class products, but also the ability to react quickly to changes. In this context, continuing education and qualification play a prominent role at Testo - both internally and externally.

Staying at the cutting edge of knowledge: that is one of the most critical conditions that must be satisfied if complex measuring tasks and increasing quality requirements are to be met.

To this end, our own employees are promoted and advanced in their capacity as much as possible, while users are offered practically-oriented knowledge. Testo imparts knowledge to customers in the areas of measuring technology and application know-how in the form of training courses, seminars and field guides.

Highly recommended

Renowned companies from many different industry sectors utilize decisive productivity and quality advantages by choosing Testo right from the beginning. Take advantage of a successful partnership as well! More than 100,000 users have already done so.

PHILIPS

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RENAULT

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Intel Inside

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www.testo.com

The international Testo portal provides quick access to our products and services in 86 countries around the world.

Up-to-date information is at your fingertips. Our Internet Web site has many features:

- Convenient product searching
- Configuration of your individual measuring system
- Many application examples
- Online ordering

- Querying a Testo dealer in your neighbourhood
- Service notes for Testo measuring instruments
- Current trade fair and seminar dates
- Download centre
- Specialised library
- Press releases
- Job offers

Our Internet presence gives visitors of the Testo sites access to comprehensive product information. Online queries and orders are possible same as downloading user and press release information all about measuring technology.

A concise navigation and a list of current topics on the homepage ensure fast entry.



Global entry point: www.testo.com



Country-specific Web sites incl. all product catalogues



Detailed product information incl. direct ordering option



A multitude of additional information such as trade fair dates

Product overview according to instrument classes, with capabilities

Reference measuring instruments for ultra-precise requirements:
testo 650, 950, 645, 521, 525, 526

Professional line: High level of functionality and precision:
testo 735, 635

Compact line: Standard measuring instruments:
testo 925, 922, 720, 720 Ex

Infrared measuring instruments: Different models for surface temperature measurement:
testo 875, 881, 845, 830 T1/-T2/-T3/-T4, 810

Measuring strips and mini measuring instruments:
The cost-effective solution for measuring temperatures:
Measuring strips, testo 905-T1/-T2

Rpm measuring instruments, stroboscope, endoscope:
testo 465, 470, 471, 460, 475, 476, 319

Long-term measurement data monitoring and data
loggers:
testo Saveris, testo 171-8, 175-T3, 177-T4, 175-S1/-S2



Profiles

Parameters	Temperature	Air temperature	X				X	X	X
		Immersion temperature in liquids/media	X		X		X	X	X
		Differential temperature	X				X	X	X
		Surface temperature - contact	X		X	X	X	X	X
		Surface temperature - non-contact IR				X			
	Humidity	Air humidity	X			X		X	X
		Material moisture						X	X
		Pressure dew point						X	X
	Pressure	Differential pressure					X		X
		Relative pressure							X
		Absolute pressure							X
	Other	Rpm		X					X
		Fiberscope		X					
		Stroboscope		X					
Technical features	Multi-channel		X			X	X	X	X
	Probe selection		X	X		X	X	X	X
	Wireless probes (radio)		X				X	X	
	Print function		X			X	X	X	X
	PC evaluation		X			X		X	X
	Instrument memory		X			X		X	X
	Explosion protection		X				X		

testo 950 precision measuring instrument with up to 0.05 °C system accuracy

testo 950

Temperature measurement

- The PTB accredited DKD laboratory for temperature guarantees reliable readings
- First PTB accredited DKD laboratory for surface temperature, developed in cooperation with PTB and the University of Ilmenau
- Patented crossband probe for fast surface measurements
- Custom-designed temperature probes for your application

Highest precision

testo 950 combines user-friendly, menu-driven operation with the highest precision. In addition to fast and efficient thermocouple probes, Pt100 probes corresponding to EN 60751 (previously IEC 751) or selected high precision probes on a Pt100 basis with 1/10 DIN accuracy can be connected.

The immersion/penetration probe 0614 0240 provides a system accuracy of 0.05 °C in the measuring range from 0 to 100 °C and a resolution of up to 0.001 °C.

Current/voltage measurement

- Optional connection of external transmitters, such as particle counters and pressure transmitters and scaling of input in instrument

CO and CO₂ measurement

- Long-term stable 2 beam procedure to measure reference and measurement duct for CO₂

Rpm measurement

- Mechanical rpm measurement from 20 to 20,000 rpm

More on temperature measurement, e.g. selection of the correct probe and sensors: see „Measuring technology“ starting on page 64



Attachable printer

Readings are printed on site in seconds

Clear graphics display

3 user defined function buttons

Saves (max. 500,000 readings) or prints at the touch of a button

Data communication with PC

User-friendly operation with cursor

2 user-defined probe sockets

Mains connection/quick battery recharging



testo 950 precision measuring instrument with up to 0.05 °C system accuracy

testo 950

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

testo 950 includes the basic parameters temperature, CO₂, rpm, current and voltage. testo 950 can be upgraded to the multi-function measuring instrument, testo 400.

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

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

- System accuracy up to 0.05 °C and up to a resolution of 0.001 °C
- Stores a surface allowance for EEPROM probes
- The system for each probe can be adjusted to "zero error" at an adjustment point via precision adjustment, e.g. system adjustment in a highly accurate adjustment bath to "zero error".
- Adjustment of a quick-action EEPROM temperature probe to a highly accurate precision probe ensuring fast and highly accurate measurement.
- Fast temperature measurement with extrapolation to full-scale value



Ethernet adapter, RS 232
- Ethernet incl. software driver, mains unit, allows data communication in the network



Attachable printer, readings can be printed out on site in seconds



The Ethernet adapter allows measurement data to be immediately transferred to a central office. This enables quick reaction times when further action is required.



testo 950

testo 950, reference temperature meas. instr., with battery, Li cell and calibration protocol

Part no. 0563 9501

Ordering suggestion: Precision measuring instrument with up to 0.05 °C system accuracy

testo 950, reference temperature meas. instr., with battery, Li cell and calibration protocol, 2 channel instrument (thermocouple, Pt100, NTC) with option of connecting CO ₂ , CO ₂ , rpm and mV/mA transmitter	0563 9501
Highly accurate immersion/penetration probe incl. certificate, plug-in head, connection cable 0430 0143 or 0430 0145 required	0614 0240
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Attachable printer (securely attached) including 1 roll of thermal paper and batteries, quickly prints readings on location	0554 0570
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

We recommend:	Part no.
4-point adjustment incl. ISO calibration certificate, calibration points freely selectable (for probe 0614 0240)	0520 0142
4-point adjustment incl. DKD calibration certificate, calibration points freely selectable (for probe 0614 0240)	0520 0241
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

Accessories, testo 950

ComSoft 3 Professional

see page 13



ComSoft 3 - Professional with data management

incl. database, analysis and graphics function, data analysis, trend curve

Part no. 0554 0830

Ethernet adapter



Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit

facilitates data communication in network

Part no. 0554 1711

Attachable printer



Attachable printer (securely attached) including 1 roll of thermal paper and batteries

quickly prints readings on location

Part no. 0554 0570

Testo fast printer



with 1 roll thermal paper and 4 AA batteries

Testo fast printer Part no. 0554 0549

testo 575 fast printer Part no. 0554 1775

Part no. 0554 0549

Part no. 0554 1775

SoftCase



SoftCase for measuring instrument (impact protection) incl. carrying strap, magnetic and probe holder
Part no. 0516 0401

SoftCase for attachable printer (protects printer from dirt/impact)
Part no. 0516 0411

Part no. 0516 0401





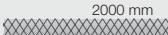
Part no. 0516 0411

Transport and protection	Part no.
SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder, protects against impact and falls	0516 0401
SoftCase for attachable printer (protects printer from dirt/impact), protects from impact and falls	0516 0411
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
Printer and Accessories	Part no.
Attachable printer (securely attached) including 1 roll of thermal paper and batteries, quickly prints readings on location	0554 0570
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries, infrared thermal line printer with graphics function	0554 1775
External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz	0554 0610
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls), measurement data documentation legible for up to 10 years	0554 0568
Label thermal paper (Testo patent) for testo 575 printer (6 rolls), can be applied directly	0554 0561
Further accessories and spare parts	Part no.
Rech. batt. set for instr. (2 rech. 2.4V/1100mAh)	0554 0196
Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug)	0554 1084
Lithium battery, button cell, type CR 2032	0515 0028
Update	Part no.
Humidity/pressure module, Upgrade via service (updates testo 950 to testo 650)	0450 4002
Velocity module, incl. volume flow, degree of turbulence... , upgrade via service (updates testo 650 to testo 400)	0450 4003
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
Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit, facilitates data communication in network	0554 1711
Calibration Certificates	Part no.
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature, Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C	0520 0021
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
DKD calibration certificate/temperature, meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
DKD calibration certificate/temperature, contact surface temperature probes; calibration points +100°C; +200°C; +300°C	0520 0271








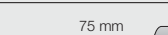

ISO/DKD calibration certificates at freely selectable points within the measurement range are available for testo 950. Prices on request.

Suitable probes at a glance, testo 950

Air probes

Probes NTC	Illustration	Meas. range	Accuracy	t99	Part no.
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 Conn.: Fixed cable
Probes Pt100	Illustration	Meas. range	Accuracy	t99	Part no.
Standard air probe	 150 mm Ø 3 mm	-200... +600 °C	Class A	75 s	0604 9773 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Precision air probe	 150 mm Ø 3 mm	-100 to +400 °C	1/10 Class B (0 to 100°C) 1/5 Class B (rem. range) to EN 60751	75 s	0628 0017 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t99	Part no.
Super quick-action immersion/penetration probe for measurements in gases and liquids with a low-mass tip	 150 mm Ø 1.4 mm	-200 to +600 °C	Class 1	1 s	0604 9794 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Thermocouple, made of fibre-glass insulated thermal pipes, pack of 5	 2000 mm	-200 to +400 °C	Class 1	5 s	0644 1109 Insulation: twin conductor, flat, oval, opposed and covered with fibre-glass, both conductors are wrapped together with fibre-glass and soaked with lacquer, please order adapter 0600 1693

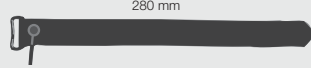

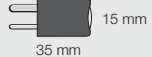
Surface probes

Probes Pt100	Illustration	Meas. range	Accuracy	t99	Part no.
Robust surface probe	 150 mm Ø 4 mm	-50 to +400 °C	Class B	40 s	0604 9973 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t99	Part no.
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C	 150 mm	-200 to +300 °C	Class 2	3 s	0604 0194 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Super quick-action surface probe, probe tip at 90° angle, with sprung thermocouple strip	 100 mm	-200 to +300 °C	Class 2	3 s	0604 0994 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Robust surface probe	 150 mm Ø 4 mm	-200 to +600 °C	Class 1	25 s	0604 9993 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Robust surface probe with sprung thermocouple strip for high temperature range up to +700°C	 200 mm	-200 to +700 °C	Class 2	3 s	0600 0394 Conn.: Fixed cable, coiled
Roller surface probe for measurements on rollers and rotating drums, max. circumferential velocity 18 to 400m/min	 274 mm	-50 to +240 °C	Class 2		0600 5093 Conn.: Fixed cable, coiled
Magnetic probe, adhesive power approx. 20 N, with magnets, for measurements on metal surfaces	 35 mm	-50 to +170 °C	Class 2		0600 4793 Conn.: Fixed cable
Magnetic probe, adhesive power approx. 10 N, with magnets, for higher temperatures, measures on metal surfaces	 75 mm	-50 to +400 °C	Class 2	25 s	0600 4893 Conn.: Fixed cable
Adhesive thermocouple, pack of 2, carrier material: aluminium foil Is fixed at the measuring point using conventional adhesives or silicone heat paste 0554 0004	 Diameter extension 2 x 0.2 mm, 0.1 mm thick	-200 to +200 °C	Class 1		0644 1607
Adapter to connect NiCr-Ni thermocouples and probes with open wire ends					0600 1693





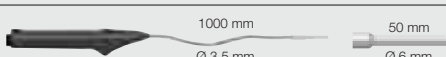
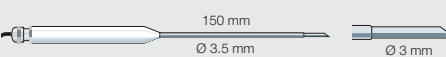



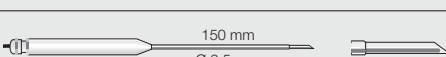
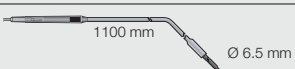


Suitable probes at a glance, testo 950

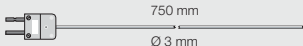

Pipe wrap probes

Probes Pt100	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Velcro probe for pipes with diameter of max. 75 mm	 280 mm	-50 to +150 °C	Class B	40 s	0628 0019 Conn.: Fixed cable
Probes Type K (NiCr-Ni)	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 Conn.: Fixed cable
Spare meas. head for pipe wrap probe, TC Type K	 15 mm 35 mm	-60 to +130 °C	Class 2	5 s	0602 0092







Immersion/penetr. probes

Probes Pt100	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Standard immersion/penetration probe	 200 mm Ø 3 mm	Stainless Steel -200 to +400 °C	Class A	20 s	0604 0273 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Standard immersion/penetration probe	 200 mm Ø 3 mm	Nickel -200 to +600 °C	Class A	20 s	0604 0274 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Highly accurate immersion/penetration probe incl. certificate	 295 mm Ø 4 mm	Stainless Steel -40 to +300 °C	$\pm 0.05^\circ\text{C}$ (+0.01 to +100 °C) $\pm (0.05^\circ\text{C} + 0.05\% \text{ of } m)$ (-40 to 0 °C) $\pm (0.05^\circ\text{C} + 0.05\% \text{ of } m)$ (+100.01 to +300 °C)	60 s	0614 0240 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Highly accurate immersion/penetration probe	 200 mm Ø 3 mm	-100 to +400 °C	1/10 Class B (0 to 100 °C) 1/5 Class B (rem. range) to EN 60751	30 s	0628 0015 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Flexible precision immersion probe, cable heat-proof up to +300 °C	 1000 mm Ø 3.5 mm	50 mm Ø 6 mm -100 to +265 °C	1/10 Class B (0 to 100 °C) 1/5 Class B (rem. range) to EN 60751	80 s	0628 0016 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Robust immersion/penetration probe with sharpened measuring tip, waterproof and oven-proof	 150 mm Ø 3.5 mm	Ø 3 mm -200 to +400 °C	Class A	30 s	0604 2573 Conn.: Fixed cable, 1.5 m
Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Fast response immersion/penetration probe	 150 mm Ø 3 mm	-200 to +400 °C	Class 1	3 s	0604 0293 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Super quick-action immersion/penetration probe for measurements in liquids	 150 mm Ø 1.5 mm	-200 to +600 °C	Class 1	1 s	0604 0493 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Super quick-action immersion/penetration probe for high temperatures	 470 mm Ø 1.5 mm	-200 to +1100 °C	Class 1	1 s	0604 0593 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Robust immersion/penetration probe made of V4A stainless steel, waterproof and oven-proof, e.g. for the food sector	 150 mm Ø 3.5 mm	Ø 3 mm -200 to +400 °C	Class 1	3 s	0600 2593 Conn.: Fixed cable
Smelting probe for measurements in non-ferrous melting baths, with exchangeable measuring tip (Measurement tip lifetime: up to 500 measurements in aluminium smelter)	 1100 mm Ø 6.5 mm	-200 to +1250 °C	Class 1	60 s	0600 5993 Conn.: Fixed cable, 1.5 m

Immersion/penetr. probes

Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Plug-in measuring tip, 750mm long, flexible, for high temperatures, outer casing: stainless steel 1.4541	 750 mm Ø 3 mm	-200 to +900 °C	Class 1	4 s	0600 5393
Please order handle with Part no. 0600 5593					
Plug-in measuring tip, 550mm long, flexible, for high temperatures, outer casing: Inconel 2.4816	 550 mm Ø 3 mm	-200 to +1100 °C	Class 1	4 s	0600 5793
Please order handle with Part no. 0600 5593					
Plug-in measuring tip, 1030mm long, flexible, for high temperatures, outer casing: Inconel 2.4816	 1030 mm Ø 3 mm	-200 to +1100 °C	Class 1	4 s	0600 5893
Please order handle with Part no. 0600 5593					

More probes / Accessories, testo 950

Other temperature probes	Illustration	Meas. range	Accuracy	Part no.
Globe thermometer to measure radiant heat	 Ø 150 mm Conn.: Fixed cable, 1.5 m	0 to +120 °C	±0.5 °C (0 to +49.9 °C) ±1 °C (+50 to +120 °C) Accuracy corresponds to ISO 7243, ISO 7726, DIN EN 27726, DIN 33403 requirements	0554 0670
More probes	Illustration	Meas. range	Accuracy	Part no.
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, 1.5 m
CO ₂ 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
Mechanical rpm probe with plug-in head	 Included 2 probe tips Ø 8 and Ø 12 mm 1 hollow cone Ø 8 mm 1 surface speed disc Ø 19 mm to measure rotational speed: rpm = rotational speed in mm/s	20 to 20000 rpm	±1 digit	0640 0340 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Current/voltage cable (±1 V, ±10 V, 20 mA)		0 to +1000 mV 0 to +10 V 0 to +20 mA	±1 mV (0 to +1000 mV) ±0.01 V (0 to +10 V) ±0.04 mA (0 to +20 mA)	0554 0007
4 to 20 mA interface for connection and intermittent power supply to transmitters (scaling via hand-held instrument), in robust metal housing with impact protection, incl. magnet for fast attachment		0/4 to 20 mA	±0.04 mA Channels: 1 channel, transmitter connection via terminal board Auxiliary energy output: 18V DC ± 20% max. connection load: 30 mA	0554 0528 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required

Accessories	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument, PUR coating material	0430 0145
Extension cable, 5 m long, between plug-in head cable and instrument, PUR coating material	0409 0063
Telescopic handle, max. 1 m, for probe with plug-in head, cable: 2.5 m long, PUR coating material	0430 0144

Accessories	Part no.
Adapter to connect NiCr-Ni thermocouples and probes with open wire ends	0600 1693
Handle for plug-in measuring tip	0600 5593
Silicone heat paste (14g), Tmax = +260°C, improves heat transfer in surface probes	0554 0004
Spare measuring tip for smelting probe	0363 1712

Technical data					
Probe type	NTC	Pt100	Type K (NiCr-Ni)	Type S (Pt10Rh-Pt)	Type J (Fe-CuNi)
Measurement range temp.	-40 to +150 °C	-200 to +800 °C	-200 to +1370 °C	0 to +1760 °C	-200 to +1000 °C
Accuracy ±1 digit	±0.2 °C (-10 to +50 °C) ±0.4 °C (-40 to -10.1 °C) ±0.4 °C (+50.1 to +150 °C)	±0.1 °C (-49.9 to +99.9 °C) ±(0.1 °C + 0.1% of mv) remaining range	±(0.3 °C + 0.1% of mv)	±1 °C	±0.4 °C (-150 to +150 °C) ±1 °C (-200 to -150.1 °C) ±1 °C (+150.1 to +1000 °C)
Resolution	0.1 °C	0.01 °C (-99.9 to +300 °C) 0.1 °C (-200 to -100 °C) 0.1 °C (+300.1 to +800 °C)	0.1 °C (-200 to +1370 °C)	1 °C	0.1 °C
Probe type	CO ₂ probe	CO probe	Mechanical	Current measurement	Voltage measurement
Meas. range	0 to +1 Vol. % CO ₂ 0 to +10000 ppm CO ₂	0 to +500 ppm CO	20 to 20000 rpm	0 to +20 mA	0 to +10 V
Accuracy ±1 digit	See probe data	±5% of mv (0 to +500 ppm CO)	±1 digit	±0.04 mA	±0.01 V
Resolution			1 rpm	0.01 mA	0.01 V
Oper. temp.	0 to +50 °C			Memory space: 1 MB, corresponds to approx. 500,000 readings Other features: automatic recognition of all connected probes Power supply: Battery/rech. batt., alternatively 8V mains unit Battery life in continuous operation with 2 TC probes: 18 h	
Storage temp.	-25 to +60 °C	Weight	500 g		
Battery type	1.5 V AA	PC	RS232 interface		
Battery life	18 h	Warranty	3 years		

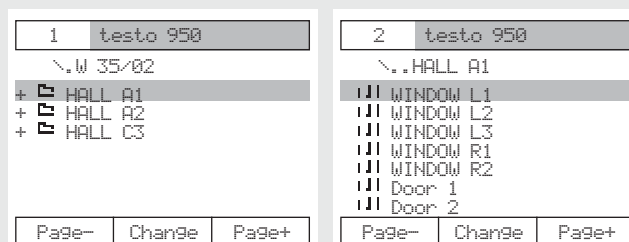




Measurement data with the measuring instrument: Structure - Measure - Printout on-site

Structuring measurement data:

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



Long-term monitoring made easy:

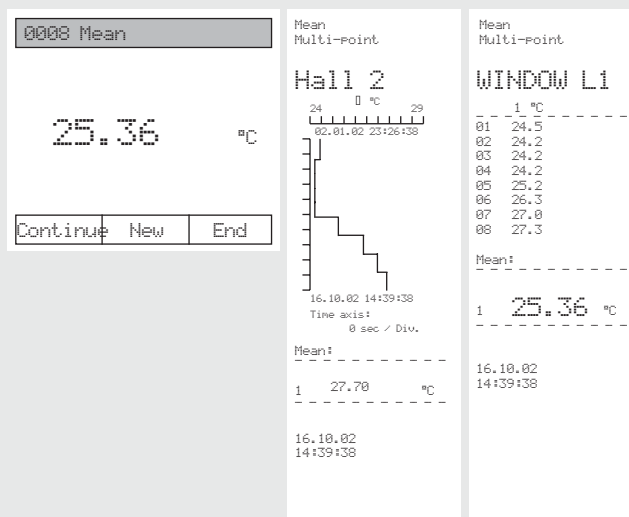
User-friendly data recording, not only for spot checks

- The beginning of the measurement can be...
 - determined manually each time.
 - activated if a user defined limit value is exceeded.
 - set according to date/time.
- The measurement is completed when...
 - the predefined number of readings is reached.
 - date/time is reached.
 - the memory is full.
 - ended manually.
- Non-stop measurement via wrap-around memory...
 - deletes the oldest respective value.
 - is deactivated manually.



Documentation on-site:

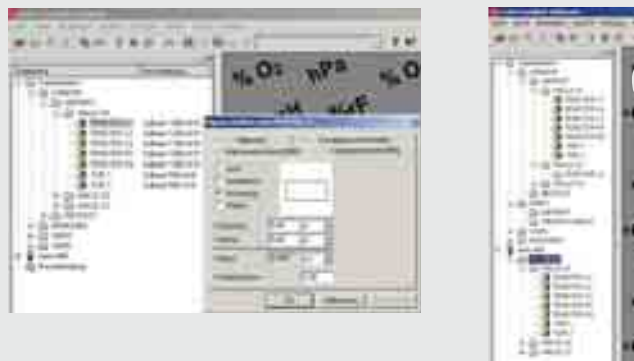
- The individual measurement protocol can be either saved or deleted following analysis.
- The printer immediately supplies the documentation required.
- The attachable comfort printer also offers graphical analysis options.
- Thermal paper for long-term legible measurement data documentation of up to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



Measurements with ComSoft 3 software: Preparation - Analysis - Filing - Documentation

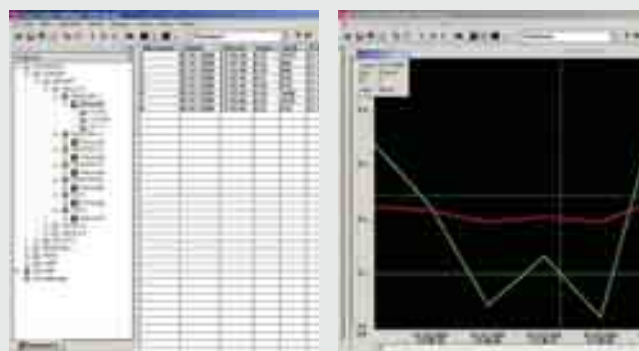
Easy reading management:

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



Comprehensive analysis, easy archiving:

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



Individual configuration options:

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



testo 735, highly accurate alarm and logger thermometer – with measurement site management



Wireless measurement
with radio probes for air,
immersion and
penetration measurement



Evaluate and document
readings by measurement
location with PC software
(included with testo 735-
2)



A robust and reliable
measuring instrument,
protection class IP54 from
impact



Measurement data print-
out with Testo fast printer



testo 735

Measuring several temperatures simultaneously

testo 735 – the highly versatile multi-channel measuring instrument. Fully equipped, up to 6 temperature probes can be recorded and displayed: Three radio probes and three attachable probes. For classical probes with wire, two inputs for fast thermocouple probes (Type K/T/J/S) and one input for highly precise Pt100 probes are available. The highly precise immersion/penetration probe reaches an accuracy of up to 0.05 °C via the Pt100 probe input. The resolution of the probe is 0.001 °C.

Versatility through radio probes

Readings can be transmitted to the testo 735 over a distance of up to 20 m (without obstruction) by radio. This takes place using the optional radio module and the corresponding probes. Damage to the wire or hindrances in usage are thus eliminated.

More user comfort

The testo 735 excels through its logical use and easy-to-follow menu. Functions such as timed and multi-point mean value calculation, differential temperature measurement, display of min/max values and the freezing of readings in the display provide support in day-to-day measurement.

Common advantages

- Connection of 3 plug-in probes and three wireless probes
- Data printout on the Testofast printer
- Audible alarm when limit values are exceeded
- System accuracy up to 0,05 °C
- Display of Delta T, min., max. and mean values
- Backlit display
- Protection class IP 65

Further advantages testo 735-1

- Cyclic printing of readings on Testo fast printer, e.g. once per minute

Further advantages testo 735-2

- Instrument store for 10,000 readings
- PC software for archiving and documenting measurement data
- Measurement values can be shown in the instrument display and simultaneously transferred to a PC
- Storage of single measurements or measurement series by measurement location, measurement rate from 0.5 sec.
- Quick access to the most important functions via user profiles
- Accuracy over the entire measurement range thanks to system adjustment



PC software for filing and documenting measurement data (included) testo 735-2

Highly precise Pt100 immersion/penetration probe with an accuracy of ± 0.05 °C

Simultaneous measurement of several temperatures

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), 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.
Plug-in mains adapter, 5 VDC 500 mA with European adapter, 100-250 VAC, 50-60 Hz	0554 0447
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
Handle for attachable measurement tips	0409 1092
Transport and protection	Part no.
Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm	0516 0035
Service case for measuring instrument, probes and accessories, dimensions 520 x 380 x 120 mm	0516 0735
Adjustment software for testo 735-2	Part no.
Software for adjustment testo 735-2 with user management, incl. USB data transfer cable	0554 0823
Calibration certificates incl. adjustment for testo 735-2	
2-point adjustment incl. ISO calibration certificate, calibration points freely selectable	0520 0178
4-point adjustment incl. ISO calibration certificate, calibration points freely selectable	0520 0142
2-point adjustment incl. DKD calibration certificate, calibration points freely selectable	0520 0278
4-point adjustment incl. DKD calibration certificate, calibration points freely selectable	0520 0241
Calibration Certificates	Part no.
ISO calibration certificate/temperature, single point calibration for surface thermometer; calibration point +60°C	0520 0072
ISO calibration certificate/temperature, single point calibration for surface thermometer; calibration point +120°C	0520 0073
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature, for air/immersion probes, calibration points -8°C; 0°C; +40°C	0520 0181

testo 735-1

testo 735-1, 3 channel temperature measuring instrument T/C Type K/T/J/S/Pt100, audible alarm, connection for max. 3 optional radio probes, incl. battery and calibration protocol

Part no. 0560 7351

testo 735-2

testo 735-2, 3 channel temp. meas. instr. T/C Type K/T/J/S/Pt100, audible alarm, connection for max. 3 optional radio probes, with readings memory, PC software and USB data transmission cable, with battery and calibration protocol

Part no. 0563 7352



System adjustment

Precision over the entire measurement range due to system adjustment

The system adjustment of testo 735-2 offers precise measurement results at critical temperature points. Due to a system calibration, the testo 735-2, including probe, can be adjusted at up to six user-defined temperature points across the entire measurement range. The adjustment takes place in the course of an ISO or DKD calibration by the Testo calibration laboratory Testo industrial services, or can be carried out individually by the user via an optional adjustment software.

This results in the following advantages.

Very accurate measurements at critical temperature points

Customers appreciate the broad measurement range of thermocouple probes, however they are often dissatisfied with the accuracy according to EN. Thanks to a system adjustment on the testo 735-2, system deviations up to the accuracy of the reference system can be achieved even with thermocouples!

In the course of a DKD calibration of thermocouple probes and testo 735-2 by the Testo calibration laboratory, deviations from 0.2 K from the reference value can be achieved after adjustment has taken place.

Flexible handling

Up to 6 probes can be operated simultaneously from the testo 735-2:

- 2 plug-in thermocouple probes
- 1 plug-in Pt100 probe
- 3 wireless probes: Option of thermocouple and NTC probes

The complete range of probes of the testo 735-2 can be adjusted to the testo 735-2. This allows flexible handling.

Traceability of the adjustment

The adjustment data recorded and the probe identification (e.g. the number of the calibration certificate) are stored in the hand instrument. If a thermocouple probe is adjusted to the testo 735-2 on channel 3, for example, the recorded adjustment data are stored in channel 3 of the hand instrument.

The adjustment data and the probe identification can be viewed in testo 735-2 at any time, and can be matched with the corresponding calibration certificates and connected probes. This guarantees the traceability of the data. The adjustment data stored in the testo 735-2, the probe identification and the date of the adjustment can be printed out on site with the optional Testo fast printer.



Manipulation-proof

The adjustment data stored in the testo 735-2 and the probe identification cannot be manipulated in the instrument. An alteration or update of the data is carried out by the Testo calibration laboratory in the course of a new system adjustment, or can be done by the user with the optional adjustment software.

Assurance in measurement

Probes with stored adjustment data are identified with „adj.“ in the instrument's display. This allows the user to see immediately in which channels adjustment data are stored. This clear referencing provides assurance in measurement.

Adjustment by the Testo calibration laboratory

The adjustment takes place on request in the course of a DKD or ISO calibration in the Testo calibration laboratory. You select the temperature points at which the measurement system (probe and instrument) is to be adjusted. You have the option of a two-point or a four-point adjustment. The ISO/DKD certificate documents the system accuracy recorded, including certificate number, date of adjustment and the instrument and probe serial numbers. The certificate number and the adjustment data are stored in the hand instrument. They can be viewed there at any time. This guarantees the traceability of the data.

Example of system deviation before and after adjustment with a TC probe.

Temperature	Accuracy probe 0602 1293, TC class 2	Deviation testo 735-2	System accuracy before adjustment	System deviation from the reference value after adjustment by Testo industrial services
+60 °C	±2,5 °C	±0,3 °C	±2,8 °C	from 0,2 K
+400 °C	±3,0 °C	±1,4 °C	±4,4 °C	from 0,4 K

Example of system deviation before and after adjustment with a Pt100 probe.







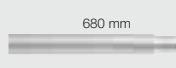




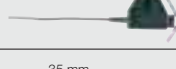

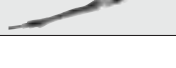
Temperature	Deviation probe 0609 1273, Pt100	Deviation testo 735-2	System accuracy before adjustment	System deviation from the reference value after adjustment by Testo industrial services
+60 °C	±0,27 °C	±0,3 °C	±0,57 °C	from 0,02 K
+400 °C	±0,95 °C	±1,4 °C	±2,34 °C	from 0,03 K

System adjustment / Suitable probes at a glance, testo 735

Adjustment by the user

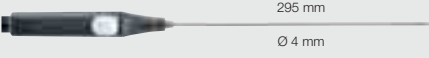
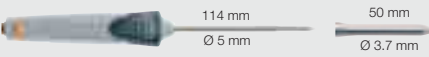

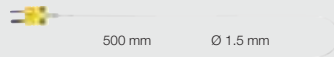
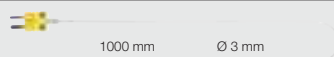
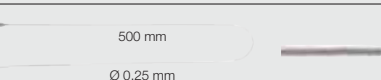
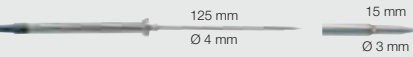
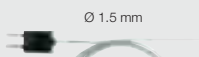


The adjustment can be carried out individually by the user himself, using the optional adjustment software. Up to six adjustment points per probe can be recorded during the course of a system calibration and entered into the software. You also have the option of documenting a probe identification and the date of the adjustment in the software. The data are transferred to the testo 735-2 via a USB cable. They can be viewed there at any time. This guarantees the traceability of the data.



Air probes	Illustration	Meas. range	Accuracy	t99	Part no.
Efficient, robust air probe, Pt100	 114 mm Ø 5 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	70 s	0609 1773 Conn.: Fixed cable
Surface probes	Illustration	Meas. range	Accuracy	t99	Part no.
Robust, waterproof surface temperature probe, Pt100	 114 mm Ø 5 mm	-50 to +400 °C	Class B	40 s	0609 1973 Conn.: Fixed cable
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	-60 to +300 °C	Class 2	3 s	0602 0393 Conn.: Fixed cable, 1.2 m
Fast-reaction paddle surface probe, for measurements in inaccessible places, e.g. narrow apertures and slots, TC Type K	 145 mm Ø 8 mm	0 to +300 °C	Class 2	5 s	0602 0193 Conn.: Fixed cable
Efficient, waterproof surface probe with small measurement head for flat surfaces, TC Type K	 150 mm Ø 2.5 mm	-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	 80 mm Ø 5 mm	-60 to +300 °C	Class 2	3 s	0602 0993 Conn.: Fixed cable, 1.2 m
Flat head probe with telescopic handle max. 680 mm for measurements at hard-to-access points, TC Type K	 680 mm 12 mm Ø 25 mm	-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	 35 mm Ø 20 mm	-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	 75 mm Ø 21 mm	-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	 115 mm Ø 5 mm	-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	 395 mm 20 mm	-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	 35 mm 15 mm	-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




Suitable probes at a glance, testo 735

Immersion/penetr. probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Highly accurate Pt100 immersion/penetration probe incl. factory certificate (test points 0 °C and +156 °C)		-40 to +300 °C	±0.05 °C (+0.01 to +100 °C) ±(0.05 °C + 0.05% of mv) (remaining range)	60 s	0614 0235 Conn.: Fixed cable
Robust, waterproof Pt100 immersion/penetration probe		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	12 s	0609 1273
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
Immersion tip, flexible, TC Type K		-200 to +1000 °C	Class 1	5 s	0602 5792
Immersion measurement tip, flexible, for measurements in air/exhaust gases (not suitable for measurements in smelters), TC Type K		-200 to +1300 °C	Class 1	4 s	0602 5693
Flexible, low-mass immersion measurement tip, ideal for measurements in small volumes such as petri dishes, or for surface measurements (e.g. attached with adhesive tape), TC Type K		-200 to +1000 °C Conn.: 2 m, FEP insulated thermal wire, temperature proof up to 200 °C, oval wire with dimensions: 2.2 mm x 1.4 mm	Class 1	1 s	0602 0493
Robust, Pt100 stainless steel food probe (IP65)		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	10 s	0609 2272 Conn.: Fixed cable
Thermocouples	Illustration	Meas. range	Accuracy	t ₉₉	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

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	t99
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	

Option: Radio / Technical data, testo 735

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 TC probe heads with TC probe head for air/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) TC 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) TC 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 TC probes (Type K) 	-50 to +1000 °C	±(0.5 °C + 0.3% of mv) (-40 to +900 °C) ±(0.7 °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	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)	Storage temp.	-40 to +70 °C
Technical data						
Probe type*	Pt100	Pt100 with probe 0614 0235	Type K (NiCr-Ni)		Type T (Cu-CuNi)	
Meas. range	-200 to +800 °C	-40 to +300 °C	-200 to +1370 °C		-200 to +400 °C	
Accuracy ±1 digit	±0.2 °C (-100 to +199.9 °C) ±0.2% of mv (remaining range)	See probe data	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)		±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)	
Resolution	0.05 °C	0.001 °C (-40 to +199.999 °C) 0.01 °C (remaining range)	0.1 °C		0.1 °C	
Probe type*	Type J (Fe-CuNi)	Type S (Pt10Rh-Pt)				
Meas. range	-200 to +1000 °C	0 to +1760 °C				
Accuracy ±1 digit	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)	±1 °C (0 to +1760 °C)				
Resolution	0.1 °C	1 °C				
Oper. temp.	-20 to +50 °C	Battery type	Alkali manganese, mignon, Type AA		Weight	428 g
Storage temp.	-30 to +70 °C	Dimensions	220 x 74 x 46 mm		Protection class	IP65
Battery life	approx. 300 h with TC probe	approx. 250 h with Pt100	approx. 60 h with 0614 0235			

*Probe type NTC when using radio immersion/penetration probes



testo 925/922, fast temperature measurement with wide measuring range

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.

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 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.



testo 922, simultaneous temperature recording of two connected probes and differential temperature display

testo 925, Monitoring temperature on surfaces

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

Advantages testo 925

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

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

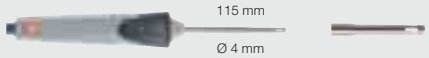
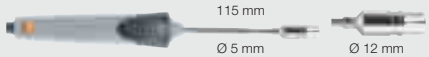
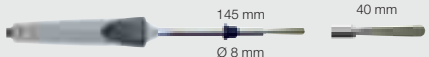
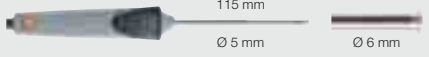
Advantages testo 922

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

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

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), 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), T _{max} = +260°C, improves heat transfer in surface probes	0554 0004
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, Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C (Applies only to immersion/penetration probe 0602 2693)	0520 0021
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

Air probes	Illustration	Meas. range	Accuracy	t99	Part no.
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
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 Conn.: Fixed cable, 1.2 m
Fast-reaction paddle surface probe, for measurements in inaccessible places, e.g. narrow apertures and slots, TC Type K	 145 mm Ø 8 mm 40 mm	0 to +300 °C	Class 2	5 s	0602 0193 Conn.: Fixed cable
Waterproof surface probe with widened measurement tip for flat surfaces, T/C Type K	 115 mm Ø 5 mm Ø 6 mm	-60 to +400 °C	Class 2	30 s	0602 1993 Conn.: Fixed cable, 1.2 m

The measuring instrument inside TopSafe is waterproof with this probe.

Suitable probes at a glance, testo 925/922

Surface probes	Illustration	Meas. range	Accuracy	t99	Part no.
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
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
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
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
Immersion/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
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
Immersion tip, flexible, TC Type K		-200 to +1000 °C	Class 1	5 s	0602 5792
Immersion measurement tip, flexible, for measurements in air/exhaust gases (not suitable for measurements in smelters), TC Type K		-200 to +1300 °C	Class 1	4 s	0602 5693
Flexible, low-mass immersion measurement tip, ideal for measurements in small volumes such as petri dishes, or for surface measurements (e.g. attached with adhesive tape), TC Type K		-200 to +1000 °C	Class 1	1 s	0602 0493 Conn.: 2 m, FEP insulated thermal wire, temperature proof up to 200 °C, oval wire with dimensions: 2.2 mm x 1.4 mm
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
Food probes	Illustration	Meas. range	Accuracy	t99	Part no.
Waterproof food probe made of stainless steel (IP65), TC Type K		-60 to +400 °C	Class 2	7 s	0602 2292

The measuring instrument inside TopSafe is waterproof with this probe.



Option: Radio / Technical data, testo 925/922

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	±(0.5 °C + 0.3% of mv) (-40 to +900 °C) ±(0.7 °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	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

Technical data testo 922 / testo 925

Probe type	Type K (NiCr-Ni)	Storage temp.	-40 to +70 °C
Meas. range	-50 to +1000 °C	Battery type	9V block battery, 6F22
Accuracy	±(0.5 °C + 0.3% of mv) (-40 to +900 °C) ±(0.7 °C + 0.5% of mv) (remaining range)	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)
Resolution	0.1 °C (-50 to +199.9 °C) 1 °C (remaining range)	Dimensions	182 x 64 x 40 mm
Oper. temp.	-20 to +50 °C	Weight	171 g

testo 905-T1, fast penetration/one-hand thermometer

testo 905-T1

testo 905-T1 is one of the fastest mini-thermometers, with a broad measuring range of -50 to +350 °C short-term (1-2 minutes) up to +500 °C. Especially in the higher measuring range, it has a

considerably better accuracy than most thermometers in this price class.

testo 905-T1

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

Part no. 0560 9055

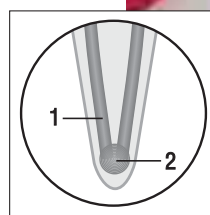
- Professional industrial sensor (thermocouple Type K)
- Large, fast display
- High temperature measurement, short-term up to 500 °C

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

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



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



The Testo original: sensor directly in the measurement tip
1=probe shaft, 2=sensor



Application in a laboratory



testo 905-T2, fast surface thermometer

testo 905-T2

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

- Very fast reaction time
- High accuracy
- Auto-Off function

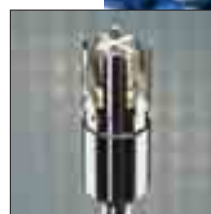
testo 905-T2

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

Part no. 0560 9056

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

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



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



Monitoring surface temperature in refrigeration systems





testo 720, accurate Pt100/NTC laboratory measuring instrument with wide measuring range

testo 720

The robust temperature measuring instrument testo 720 for precise air, surface and immersion measurements in the measuring range from -100 to +800 °C.

The glass-coated probe has proved itself in day-to-day laboratory use, as it too is resistant to corrosive media.

testo 720

testo 720, 1 channel temperature measuring instrument Pt100/NTC, with battery and calibration protocol

Part no. 0560 7207

- Accurate one channel measuring instrument for Pt100 or NTC probe
- Continuous display of max/min values
- Hold button to freeze readings
- Display light
- TopSafe, the indestructible protection case (optional)
- Audible alarm (adjustable limit values)



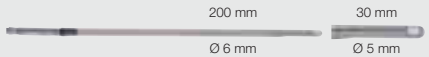
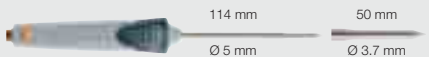
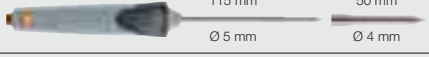
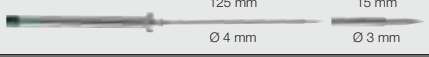
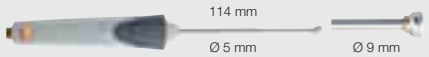
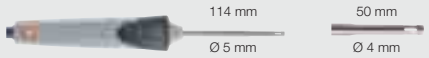
Glass probes, the durable alternative



On-site data printout using Testo fast printer (optional)



Highly accurate temperature measurements in a food laboratory, testo 720 with TopSafe protection case

Laboratory probes	Illustration	Meas. range	Accuracy	t99	Part no.
Laboratory probe Pt100, glass-coated, exchangeable glass pipe (Duran 50), resistant to corrosive substances		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	45 s	0609 7072 Conn.: Fixed cable
Immersion/penetr. probes	Illustration	Meas. range	Accuracy	t99	Part no.
Robust, waterproof Pt100 immersion/penetration probe		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	12 s	0609 1273 Conn.: Fixed cable
Waterproof NTC immersion/penetration probe		-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
Robust, Pt100 stainless steel food probe (IP65)		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	10 s	0609 2272 Conn.: Fixed cable
Surface probes	Illustration	Meas. range	Accuracy	t99	Part no.
Robust, waterproof surface temperature probe, Pt100		-50 to +400 °C	Class B	40 s	0609 1973 Conn.: Fixed cable
Air probes	Illustration	Meas. range	Accuracy	t99	Part no.
Efficient, robust air probe, Pt100		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	70 s	0609 1773 Conn.: Fixed cable
The measuring instrument inside TopSafe is waterproof with this probe.					

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), 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 and spare parts	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
Silicone heat paste (14g), Tmax = +260°C, improves heat transfer in surface probes	0554 0004
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

* TopSafe: TPU casing; TPE lid; PC stand

Calibration Certificates	Part no.
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071

Technical data		
Probe type	Pt100	NTC
Accuracy ±1 digit	±0.2% of mv (+200 to +800 °C) ±0.2 °C (remaining range)	±0.2 °C (-25 to +40 °C) ±0.3 °C (+40.1 to +80 °C) ±0.4 °C (+80.1 to +125 °C) ±0.5 °C (remaining range)
Resolution	0.1 °C	0.1 °C
Meas. range Temperature	-100 to +800 °C	-50 to +150 °C
Oper. temp.	-20 to +50 °C	Storage temp. -30 to +70 °C
Battery life	70 h	Battery type 9V block battery
Weight	171 g	Dimensions 182 x 64 x 40 mm

Ex-Pt 720, highly accurate Ex-Pt thermometer

Ex-Pt 720

Ex-Pt 720 for fast and accurate temperature measurements in hazardous areas up to Zone 0.

Ex-Pt 720 is the ideal measuring instrument for control measurements due to its wide measuring range and accurate four-wire technology.

- Highly accurate
- Wide range of probes
- Fast custom-designed probes service
- Approval in accordance with European and American Standards
- Easy to read thanks to large display

Ex-Pt 720

Ex-Pt 720, temperature measuring instrument with holder strap, incl. battery and calibration protocol

Part no. 0560 7236

Class 1 Zone 0 AEx ia IIC T4

TÜV 01 ATEX 1757 X





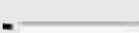

Check temperature in hazardous areas



Highest reliability thanks to ISO/DKD calibration in accredited laboratories



Ex-Pt 720, Temperature measuring instrument

Probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Robust, water-proof immersion/penetration probe for Zone 1 and 2, PUR cable	 110 mm Ø 4 mm 30 mm Ø 3.2 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	12 s	0628 1232 Conn.: Fixed cable
Robust, water-proof surface probe for Zone 1 and 2, with widened measuring tip for flat surfaces, PUR cable	 140 mm Ø 4 mm Ø 9 mm	-50 to +400 °C	Class B	40 s	0628 1932 Conn.: Fixed cable
Robust immersion/penetration probe (IP 65) for Zone 0, 1 and 2, stainless steel, PUR cable can be used for up to +80°C, IP 54 plug-in connection	 126 mm Ø 4 mm 15 mm Ø 3 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	10 s	0628 2232 Conn.: Fixed cable
Robust immersion probe (IP 67), for Zone 0, 1 and 2, stainless steel, FEP cable can be used at up to 205°C. Application: temperature measurement in petrol and oil tanks. Cable: 25 m long	 73 mm Ø 15 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	15 s	0628 2432 Conn.: Fixed cable

Transport and Protection	Part no.
Case for measuring instrument and probes Do not use in explosive areas	0516 0210
Transport case for measuring instrument, 3 probes and accessories (430 x 310 x 85 mm) Do not use in explosive areas	0516 0200
Calibration Certificates	Part no.
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature, Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C	0520 0021
ISO calibration certificate/temperature, meas. instr. with air/immersion probe; calibration points 0°C; +300°C; +600°C	0520 0031
DKD calibration certificate/temperature, meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
DKD calibration certificate/temperature, Meas. instr. with air/immersion probe; cal. points 0°C; +100°C; +200°C	0520 0221
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
DKD calibration certificate/temperature, contact surface temperature probes; calibration points +100°C; +200°C; +300°C	0520 0271

Technical data	
Probe type	Pt100
Accuracy	±0.2% of mv (+200 to +400 °C) ±1 digit
Resolution	0.1 °C (-50 to +199.9 °C) 1 °C (+200 to +400 °C)
Meas. range Temperature	-50 to +400 °C
Oper. temp.	-10 to +50 °C
Storage temp.	-20 to +70 °C
Battery type	9 V, IEC 6LR61
Battery life	100 h
Dimensions	190 x 57 x 42 mm
Weight	200 g
Material/Housing	ABS, coated
Other features	°C/°F
Warranty	2 years



Thermometer strips, easy and efficient

testoterm strips

testoterm thermometer strips are self-adhesive foils with temperature sensitive elements for temperature control and monitoring compressors, for example.

- +37 to +280 °C
- Temperature strips in quantities of more than 5000 are available on rolls

testoterm strips

+37 to +65 °C

Part no. 0646 0108

+71 to +110 °C

Part no. 0646 0916

+116 to +154 °C

Part no. 0646 1724

+161 to +204 °C

Part no. 0646 2532

+204 to +260 °C

Part no. 0646 3341

+249 to +280 °C

Part no. 0646 0005

Ordering data/Quantity discount

1 to 4 booklets (with 10 each)

5 to 9 booklets (with 10 each)

10 to 19 booklets (with 10 each)

20 to 49 booklets (with 10 each)

50 to 99 booklets (with 10 each)

1000 on a roll

(minimum quantity 5000 off)

5000 on a roll

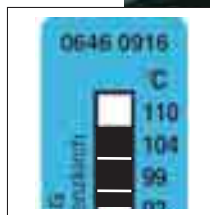
Ordering option for 5000 off:

1 roll of 5000 off

5 rolls of 1000 off

Further rolls of 1000 can be ordered

Individual samples available free of charge on request



Irreversible change in colour within 2 seconds



Practical thermometer strips booklet with 10 strips

Monitoring temperatures e.g. in compressors, clutches, brakes, ball bearings, generators etc.

Technical data

Same as temperature single indicators, see below

Dimensions l x w: 50 x 18 mm or 39 x 18 mm

Temperature single indicators – convenient and reliable

Single indicators

testoterm single indicators are self-adhesive temperature sensitive foils with elements to check a given maximum temperature.

- +46 to +199 °C
- Practical single indicator booklet
- Single indicators from 5000 off available on rolls or sheets

Single indicators

Measuring range: +46°C to +199°C

Part no. 0646 1... (...=reading)

Ordering examples:

Single indicator: +46°C: 0646 1046

Single indicator: +199°C: 0646 1199

Ordering data/Quantity discount

1 to 4 booklets (with 50 each)

5 to 9 booklets (with 50 each)

10 to 19 booklets (with 50 each)

20 to 49 booklets (with 50 each)

50 to 99 booklets (with 50 each)

5000 on sheets

on sheets or rolls

Ordering options for rolls

1 roll of 5000 off

5 rolls of 1000 off

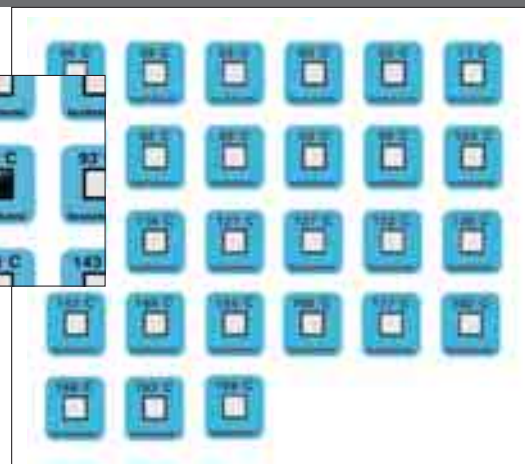
In stock:

71 °C, 77 °C, 82 °C, 110 °C, 143 °C

Individual samples available free of charge on request



Irreversible change in colour within 2 seconds



Temperature control, for example, during storage, transport, when analysing damage etc.

Technical data

Accuracy: From +46 °C to +154 °C: ± 1.5 °C; from +160 °C: $\pm 1\% \pm 1$ °C of respective reading

Max. operating temperature corresponds to the respective measuring ranges

Storage of single indicators: Up to +65 °C: max. 9 months;

other measuring ranges up to 2 years; max. storage temperature +25 °C. Storage in a refrigerator is recommended.

Dimensions l x w: 15 x 14 mm

Temperature clock indicators

testoterm clock indicators

testoterm clock indicators are self-adhesive, temperature-resistant foils with heat-sensitive elements to monitor temperature.

- Practical booklet with 10 clock indicators
- Clock indicators available on sheets from 5000 off (100 sheets of 50 off)

testoterm clock indicators

+40 to +54 °C

Part no. 0646 0071

+60 to +82 °C

Part no. 0646 0072

+88 to +110 °C

Part no. 0646 0073

+116 to +138 °C

Part no. 0646 0074

+143 to +166 °C

Part no. 0646 0075

+171 to +193 °C

Part no. 0646 0076

+199 to +224 °C

Part no. 0646 0077

+232 to +260 °C

Part no. 0646 0078

Ordering data/Quantity discount

1 to 4 booklets (with 10 each)

5 to 9 booklets (with 10 each)

10 to 19 booklets (with 10 each)

20 to 49 booklets (with 10 each)

50 to 99 booklets (with 10 each)

1000 on sheets of 50

(Minimum quantity 5000 off)

Individual samples available free of charge on request



Actual size
Irreversible change in
colour within 2 seconds



Temperature control on electrical and electronic components, valves etc.

Technical data

Accuracy: from +43 °C to +154 °C: ± 1.5 °C; from +160 °C: $\pm 1\%$ ± 1 °C of respective temperature value

Maximum operating temperature: corresponding to respective measuring ranges

Storage of clock indicators: up to +65 °C: max. 9 months; remaining measuring ranges up to 2 years; max. storage temperature +25 °C. Storage in refrigerator recommended.

Company name/logo

From 10,000 off (per temperature value), the printing of the company name/logo is possible on testoterm thermometer strips and testoterm single indicators



III. 1:1



III. 1:1

On request, your company name/logo can appear here.

Ask your Testo sales partner.

testo 875 and testo 881 for professional industrial thermography

Thermography has proven its worth as a tool for preventive maintenance, in order to monitor mechanical and electrical systems or production processes. The thermal imagers testo 875 and testo 881 detect anomalies and weak spots in industrial maintenance and production monitoring quickly and reliably. Materials and components are tested completely damage-free. Problem zones are identified before a malfunction or a fire risk occurs. Whereas with other methods, production processes must first be stopped, or cable and pipeline systems dismantled, with a Testo thermal imager, a single glance is enough. Even the smallest temperature differences can be identified with the high temperature resolution of the new Testo thermal imagers. Versatile and application-oriented, exchangeable lenses ensure that the right image section is always visible in the camera display. The additionally integrated digital camera considerably facilitates documentation. An exchangeable lens protection glass protects the optics from damage even in rough conditions. Testo thermal imagers for daily applications in industrial surroundings, offer you security and prevent damage!



Just take it with you in the Soft-Case



Simply change the lens



Easy operation



Easy and precise analysis

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. 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.

The 4 most important advantages of the thermal imager testo 875

Good image quality

With the temperature resolution of <110 mK, even the smallest temperature differences are displayed.

NETD
 <110 mK

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



Lens protection glass

The Germanium lens protection glass is permeable for infrared radiation and is simply placed over the lens. It thus protects the valuable optics from dirt and scratches.



testo 875-1

Part no. 0560 8751

testo 875-2

Part no. 0560 8752

Set testo 875-2

Part no. 0563 8752



The 7 most important advantages of the thermal imager testo 881

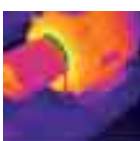
Highest image quality

With a thermal resolution of <85 mK, the testo 881 delivers high definition images which emphasize and visualize even the smallest temperature differences.

NETD
 <80 mK

Isotherm function

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



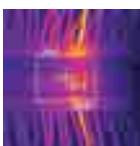
Motor focus for one-hand operation

The motor focus allows focussing of the image via a rocker switch. This allows the thermal imager to be operated with only one hand.



Min/Max on Area

The minimum and maximum values of an image section can be determined live directly on site and at a glance.



Integrated digital camera with power LED's

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



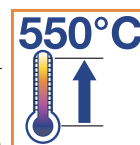
Voice recording

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.



High temperature option

With the high temperature option, the measuring range of the testo 881 can be flexibly extended. If required, a high temperature filter is simply fitted onto the camera lens. This allows temperatures up to 550°C to be measured.



testo 881-1

Part no. 0563 0881 V1

testo 881-2

Part no. 0563 0881 V2

testo 881-3

Part no. 0563 0881 V3

Set testo 881-3

Part no. 0563 0881 V4



Ordering overview testo 875

testo 875-1

- NETD < 110 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 < 110 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

Set testo 875-2

- NETD < 110 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 the 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 < 80 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 < 80 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 < 80 mK
- High quality standard lens 32° x 23°
- Telephoto lens (optional)
- Built-in digital camera with power LED's
- 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

Set testo 881-3

- NETD < 80 mK
- High quality standard lens 32° x 23°
- Built-in digital camera with power LED's
- 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 the 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	Set testo 881-3
	Part no.	0563 0881 V1	0563 0881 V2	0563 0881 V3	0563 0881 V4
	Price				
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 the thermal imagers testo 875 and testo 881

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

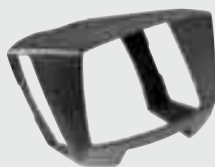
Desktop charging station for two rechargeable batteries for the optimization of the charging time



Part no. 0554 8801

Sun Shield

Special sun shield for the display of the 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

Technical data of the thermal imagers testo 875 and testo 881

	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)	< 110 mK at +30 °C		< 80 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 at1 m (standard lens), 3 mm at1 m (telephoto lens)		10 mm at1 m (standard lens), 3 mm at1 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 LED's	–		–		yes
Motor focus	–		–		yes
Standard lens (32° x 23°)	yes		yes		
Telephoto lens (9° x 7°)	–	optional	–	optional	
Laser measuring spot marking	–		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 options in .bmp, .jpg, .csv		.bmt; export options in .bmp, .jpg, .csv		
Removable memory	SD card 2GB (approx. 3.000 images)		SD card 2GB (approx. 3.000 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		
Warranty	2 years		2 years		



testo 845 – the infrared measurement technology for temperature with integrated 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)



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



Switch optics 2:
close focus (1 mm,
distance 70 mm) with 2-
point laser sighting



testo 845 with additional
humidity module for
measuring ambient air
humidity and for determining
dewpoint distance



Fast documentation with
measurement data
printout on site



Infrared Thermometer with Switchable Optics (far-field/close focus), testo 845

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

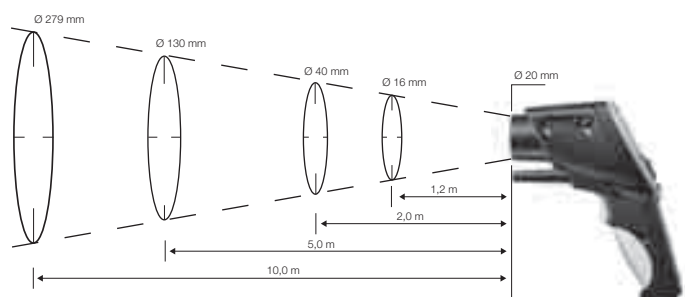
testo 845, infrared temperature measuring instrument with cross laser sighting incl. humidity module, switchable optics for far-field and close focus measurement, contact temperature probe attachable, optical/audible alarm, reading memory, PC software incl. USB data transfer cable, aluminium case, battery 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
		115 mm Ø 5 mm
Robust air probe, T/C Type K	-60 to +400 °C	0602 1793
		115 mm Ø 4 mm

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), measurement data documentation legible for up to 10 years	0554 0568
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe, quick checks or calibration of humidity probe	0554 0660
Adhesive tape, e.g. for bare surfaces (roll, L.: 10 m, W.: 25 mm), E = 0.95, temperature resistant to +250 °C	0554 0051
Silicone heat paste (14g), Tmax = +260°C, improves heat transfer in surface probes	0554 0004
ISO calibration certificate/temperature, infrared thermometer; calibration points +60°C; +120°C; +180°C	0520 0002
ISO calibration certificate/temperature, Infrared thermometers, calibration points -18°C, 0°C, +60°C	0520 0401

Far-field measurement



Measurement point diameter and distance to measurement field



Probe socket for TC probes for determining emissivity



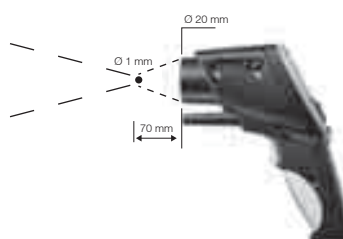
Aluminium case (405 x 340 x 93 mm) for measuring instrument and accessories (included in delivery)



Checks surface temperature

Technical data			
Probe type	Infrared		Contact (Type K)
Meas. range	-35 to +950 °C		-35 to +950 °C
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)
Resolution	0.1 °C		0.1 °C
Probe type	Humidity module		
Meas. range	0 to +100 %RH	0 to +50 °C	-20 to +50 °C td
Accuracy ±1 digit	±2 %RH (2 to 98 %RH) ±0.5 °C (+10 to +40 °C) ±1 °C (remaining range)		
Resolution	0.1 %RH	0.1 °C	0.1 °C td
Spectral range	8 to 14 µm		
Emission factor	Adjustable 0.1 to 1.0		
Optical resolution	Far-field (75:1): 16 mm @ 1200 mm (90%) Near-field (close focus): 1 mm @ 70 mm (90%)		
Measurement rate	t95: 250 ms; Scanning Max/Min/Alarm: 100 ms		
Dimensions	155 x 58 x 195 mm		
Voltage supply	2 x AA AlMn or via USB		
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	Weight	465 g
Storage temp.	-40 to +70 °C		

Close focus measurement



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



testo 830-T4, non-contact temperature measurement on small surfaces at greater distances

testo 830-T4

The versatile infrared thermometer with 30:1 optics allows temperature measurement at a safe distance from the measurement object. The measurement spot diameter is only 3.6 mm at a distance of 1 m.

The two-point laser marks the diameter of the measurement spot, thus preventing the measurement of undesired areas outside the measurement object.

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

- 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



Monitoring the temperature of electronic components

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

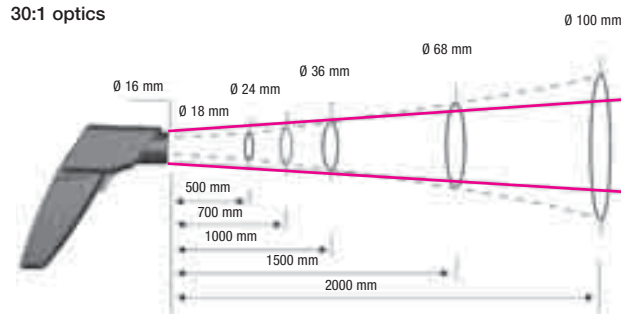


Technical data	Infrared thermometer	Contact measurement (Type K)
Meas. range	-30 to +400 °C	-50 to +500 °C
Accuracy ±1 digit at +23 °C ambient temperature	±1,5 °C (-20 to 0 °C) ±2 °C (-30 to -20,1 °C) ±1 °C or 1% of mv (remaining range)	±0,5 °C +0,5% of mv
Resolution	0,1 °C	0.1 °C
Measuring rate	0,5 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

30:1 optics



testo 830-T2, non-contact temperature measurement on large surfaces

testo 830-T2

The fast infrared thermometer with 12:1 optics is ideally suited for temperature measurements on large surfaces. The 2-point laser marks the diameter of the measurement spot, preventing the measurement of undesired areas outside the measurement object.

- 12:1 optics for larger surfaces
- 2-point laser for marking the measurement spot
- Display of current value and Hold value
- Emissivity measurement with external temperature probe
- Audible and optical alarm when limit values are exceeded
- Fast measurement value recording at 2 measurements per second
- Display illumination



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

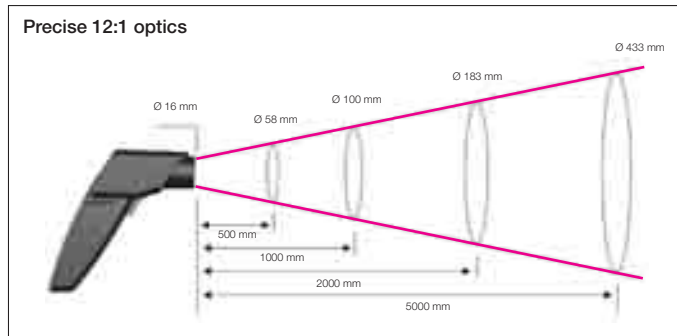
Measuring instrument, fast-action surface probe for contact meas. and leather protection case

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



Non-contact measurement on small or large surfaces

testo 830-T1 specially for large surfaces

The fast infrared thermometer with 1-point laser marking. The 10:1 optics are ideally suited for temperature measurements on large surfaces. The large, clear display is backlit, so that the values can be read easily even in bad light conditions.

testo 830-T3 specially for small surfaces

The infrared thermometer with close focus optics and 2-point laser measurement point marking is especially suited to temperature measurement on surfaces with a small diameter. An external probe can be connected for contact measurement.

- 10:1 optics
- 1-point laser marking
- Display of current value and Hold value
- Emissivity settable 0.2 to 1.0
- Audible and optical alarm when limit values are exceeded
- Fast measurement value recording at two measurements per second
- Backlit display

- Small measurement point of 2 mm, distance 25 mm
- 2 point laser sighting
- Current value and Hold value
- Determine emissivity with external temperature probe
- Audible and optical alarm when limit values are exceeded
- Fast measurement value recording at 2 measurements per second
- Display illumination

testo 830-T1

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

Part no. 0560 8301

testo 830-T3

IR temperature measuring instrument with close focus optics, incl. 2-point laser measurement spot marking, adjustable limit values, connection option for contact temperature probe, incl. battery

Part no. 0560 8303

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

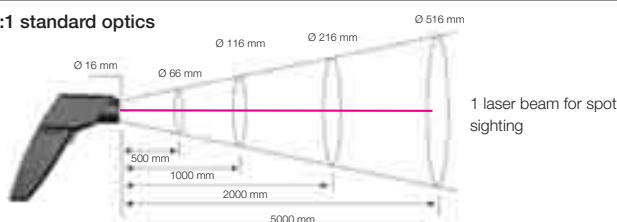
0516 8302

ISO calibration certificate/temperature, infrared thermometer; calibration points +60°C; +120°C; +180°C

0520 0002

testo 830-T1, 1-point laser spot sighting

10:1 standard optics



testo 830-T1
1-point laser marking



Checking temperature at a ventilator



testo 830-T3 with close
focus optics

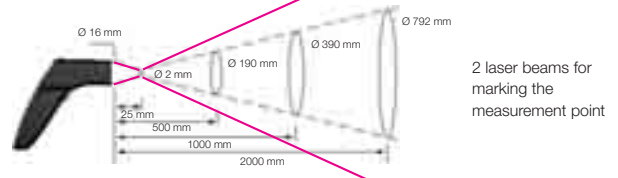


Measuring temperature on V-belts

Technical data	Infrared thermometer	Contact meas. (Type K)
Meas. range	-30 to +400 °C (830-T1) -25 to +400 °C (830-T3)	-50 to +500 °C (830-T3)
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) (830-T1) ±1 °C (-20 to +100 °C) ±2 °C or ±2% of mv (remaining range) (830-T3)	±0.5 °C +0.5% of mv (830-T3)
Resolution	0.5 °C	0.1 °C (830-T3)
Measuring rate	0.5 s	
Oper. temp.	-20 to +50 °C	
Storage temp.	-40 to +70 °C	
Battery type	9V block battery	
Battery life	15 h	
Emissivity	Settable 0.2 to 1.0	

testo 830-T3, close focus optics incl. 2-point laser sighting

2.5:1 close focus optics



testo 810, air temperature and infrared temperature in one instrument

testo 810

testo 810 measures the air temperature and simultaneously the surface temperature by non-contact infrared. The difference between air and surface temperature is automatically displayed. testo 810 is very handy, small and easy to operate.

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

- 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
- Protective cap for safe storage
- Incl. wrist strap and belt holder
- Incl. calibration protocol



Automatic display of differential pressure



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



Checking surface temperature, e.g. electric motors

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 thermometer; calibration points +60°C; +120°C; +180°C	0520 0002
ISO calibration certificate air temperature, calibration points -8 °C; 0 °C; +40 °C	0520 0171

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	
Distance to measurement spot	6:1	
Meas. spot marking	1-point laser	
Spectral range	8 to 14 µm	
Oper. temp.	-10 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)	
Weight	90 g (incl. battery and protective cap)	



testo Saveris™ – Measurement data monitoring

In production, quality assurance and maintenance, exact temperature and humidity values are crucial.

In a number of applications, testo Saveris helps to collect these values wirelessly by Ethernet, to store them securely and to present them. A selection of alarms which can be used flexibly, support those responsible for the system in keeping the values in the required range.

Typical applications:

- Monitoring of storage and production climate
- Monitoring of humidity values, e.g. in climate cabinets
- Monitoring of temperatures, e.g. in heat treatment or in climat cabinets



The Saveris wireless and Ethernet probes stand out thanks to their reliable transfer of measurement data by wireless and LAN structure.



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

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)



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



for production, quality assurance and maintenance



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

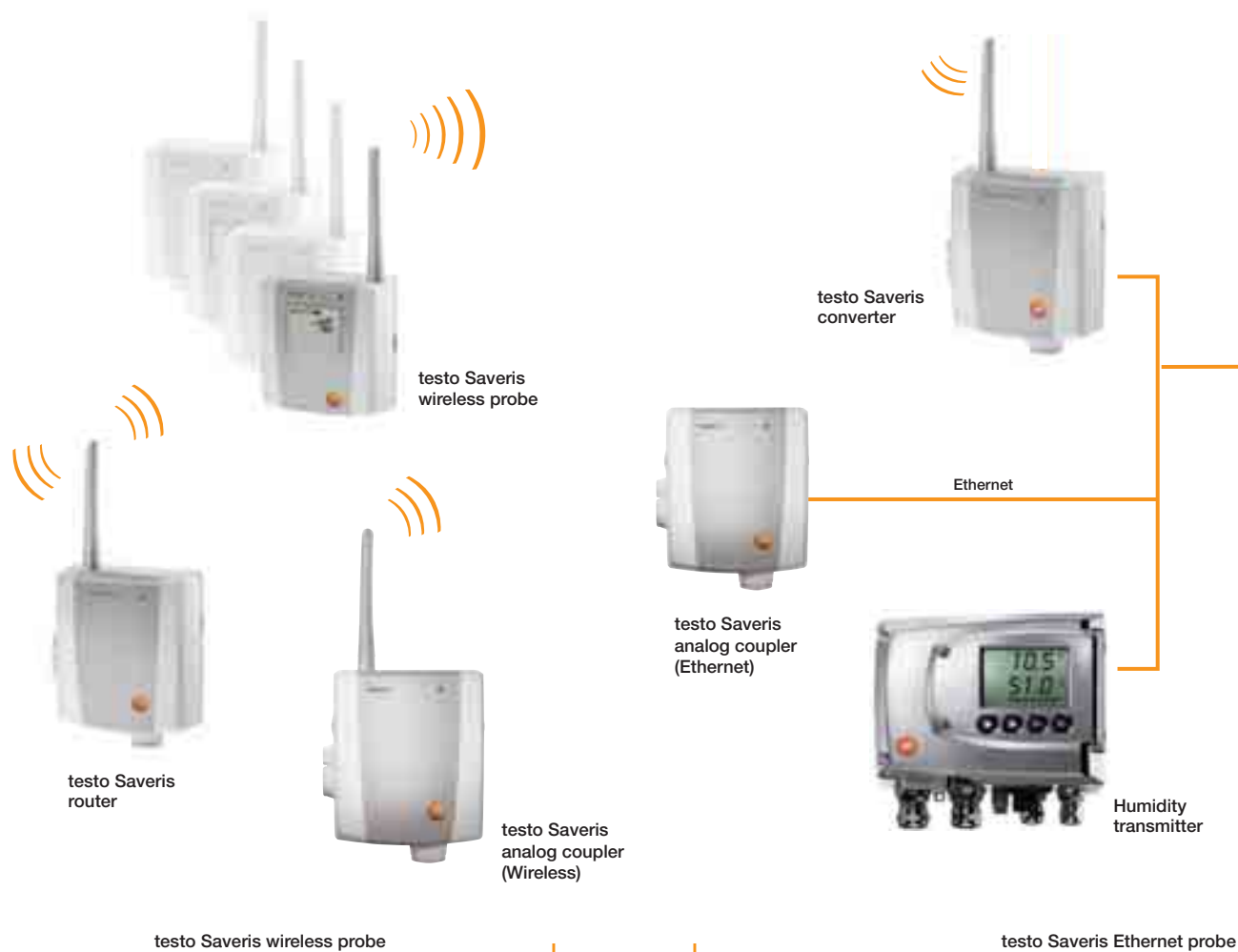
testo Saveris radio probe

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.

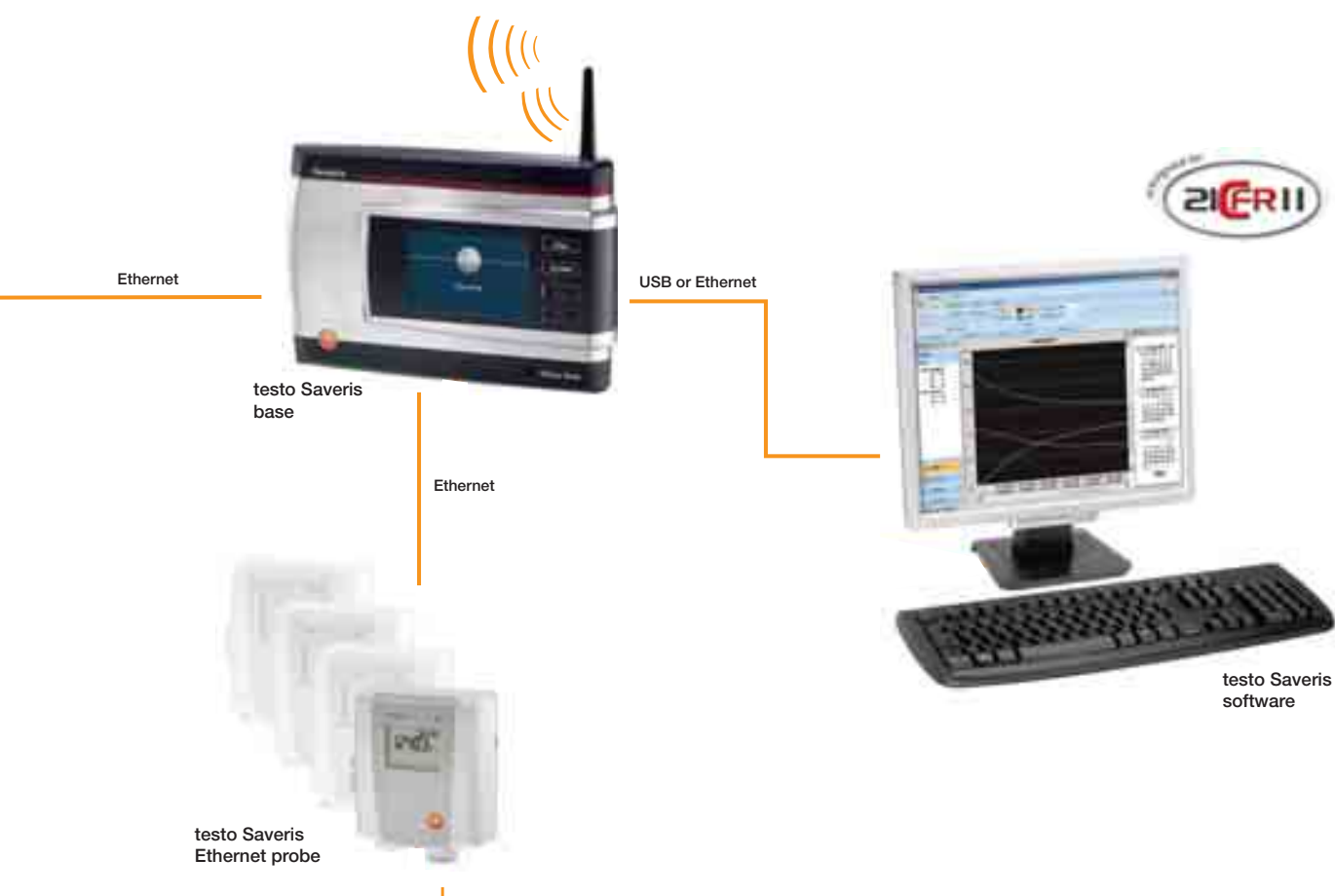
testo Saveris™ System overview

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





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

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

testo Saveris™ Components: Radio probes



Radio

°C / °F and %RH				mA and V			
<div><div>%RH</div><div>NTC</div></div> <div>external</div> <div></div> <div>Saveris H2D</div> <div>Wireless humidity probe</div>		<div><div>%RH</div><div>NTC</div></div> <div>internal</div> <div></div> <div>Saveris H3</div> <div>Humidity radio probe</div>		<div><div>%RH</div><div>NTC</div></div> <div>external</div> <div></div> <div>Saveris H4D</div> <div>Wireless probe with 1 external humidity probe connection</div>		<div><div>mA</div><div>V</div></div> <div>internal</div> <div></div> <div>Saveris U1</div> <div>Wireless probe with current/voltage output</div>	
		NTC		Humidity sensor		1 channel: current/voltage input	
		-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	
		±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	
		0.1 °C		0.1 °C / 0.1 °C td			
NTC		Humidity sensor		NTC		Humidity sensor	
-20 to +50 °C		0 to +100 %RH*		-20 to +70 °C		0 to +100 %RH*	
±0.5 °C		to 90 %RH: ±2 %RH > 90 %RH: ±3 %RH		±0.2 °C		see probes	
0.1 °C		0.1% / 0.1 °C td		0.1 °C		0.1% / 0.1 °C td	
non-exchangeable stump probe				1 x external humidity probe mini DIN socket		2 or 4-wire current/voltage output	
						Service interface mini DIN for adjustment	
85 x 100 x 38 mm		80 x 85 x 38 mm				Approx. 85 x 100 x 38 mm	
Approx. 256 g		Approx. 245 g				Approx. 240 g	
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	
Plastic							
IP54		IP42		IP54			
868 MHz / 2.4 GHz							
Standard 15 min, 1 min to 24 h can be set							
-20 to +50 °C							
-40 to +55 °C							
LCD, 2 lines; 7-segment with symbols						(no display)	
approx. 300 m free field at a frequency of 868 MHz, approx. 100 m free field at a frequency of 2.4 GHz							
included							

*not for continuous high-humidity applications

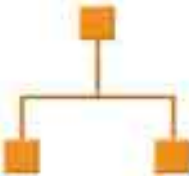



Ordering data Wireless probes	Part no.		Part no.	
	Version without display		Version with display	
	868 MHz	2.4 GHz	868 MHz	2.4 GHz
Saveris H3Wireless probe with internal humidity sensor	0572 6110	0572 6150	0572 6120	0572 6160
Saveris H2D Wireless probe with external humidity sensor 2%RH, radio frequency 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

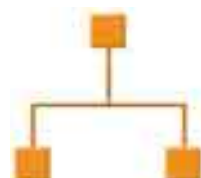
The existing LAN infrastructure can be used through the Ethernet probe. This allows the data transfer from the probe to the base, even over long distances. Ethernet probes have a display.

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

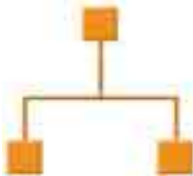




Ordering data Ethernet probes	Part no.
Saveris T1E Ethernet probe with 1 external probe connection NTC	0572 1191
Saveris T4 E 4-channel Ethernet probe with 4 external TC probe connections (With display)	0572 9194
Saveris Pt E Ethernet probe with external Pt100 probe connection (With display)	0572 7191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

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





testo Saveris™ Components: Ethernet probes



Ethernet

		°C / °F and %RH						mA and V	
		%RH NTC		%RH NTC		%RH NTC		mA V	
		external		external		external		internal	
									
Ethernet		Saveris H1E Humidity Ethernet probe 1%		Saveris H2 E Humidity Ethernet probe 2 %		Saveris H4E Ethernet probe with external humidity probe connection		Saveris U1E Ethernet probe with current/voltage	
Internal sensor	Probe type							1 channel: current/voltage	
	Meas. range							2-wire: 4 to 20 mA, 4-wire: 0/4 to 20 mA, 0 to 1/5/10V, load: max. 160 Ω at 24 V DC	
	Accuracy							Current ±0,03 mA / 0.75 µA Voltage 0 to 1 V ±1.5 mV / 39 µV Voltage 0 to 5 V ±7.5 mV / 0.17 mV Voltage 0 to 10 V ±15 mV / 0.34 mV ±0.02% of. m.v./K deviating from nominal temperature 22 °C	
	Resolution								
External probe	Probe type	NTC	Humidity sensor	NTC	Humidity sensor	NTC	Humidity sensor		
	Meas. range (Instrument)	-20 to +70 °C	0 to 100 %RH*	-20 to +70 °C	0 to 100 %RH*	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



Temperature/Humidity

Base	Part no.
Saveris base, radio frequency 868 MHz	0572 0120
Saveris base, radio frequency 868 MHz, GSM module integrated (for SMS alarm)	0572 0121
Saveris base, radio frequency 2.4 GHz	0572 0160
Saveris base, radio frequency 2.4 GHz, GSM module integrated (for SMS alarm)	0572 0161
No mains units or aerials with magnetic base are contained in this ordering data.	
Power supply	Part no.
Battery for radio probe (4 AA alkali manganese mignon batteries)	0515 0414
Battery for radio probe for use below -10 °C (4 Energizer L91 Photo lithium)	0515 0572
100-240 V AC / 6.3 V DC international mains unit for mains operation or battery charging in instrument	0554 1096
Mains unit (top-hat rail mounting) 90 to 264 VAC/24 VDC (2.5 A)	0554 1749
Mains unit (desk-top) 110 to 240 VAC/24 VDC (350mA)	0554 1748
Other features	Part no.
Magnetic foot aerial (dualband) with 3 m cable, for base with GSM module (not suitable for USA, Canada, Chile, Argentina, Mexico)	0554 0524
Magnetic foot aerial (quadband) for base with GSM module	0554 0525
Alarm module (visual + acoustic), can be connected to base alarm relay, Ø 70 x 164 mm, 24 V AC/DC / 320 mA, perm. light: red, perm. tone: buzzer approx. 2.4 kHz (Mains unit 0554 1749 required)	0572 9999 ID-Nr. 0699 6111/1
Programming adapter (from mini-DIN to USB) for Ethernet probe and converter (necessary if no DHCP server available)	0440 6723

Saveris router	Part no.
Saveris router, 868 MHz, radio transmission medium	0572 0119
Saveris router, 2.4 GHz, radio transmission medium	0572 0159
Saveris converter	Part no.
Saveris converter, 868 MHz, converts the radio transmission medium to Ethernet	0572 0118
Saveris converter, 2.4 GHz, converts the radio transmission medium to Ethernet	0572 0158
No mains units are contained in this ordering data.	
Software	Part no.
SBE software, incl. USB connecting cable base-PC	0572 0180
PROF software, incl. USB connecting cable base-PC	0572 0181
CFR software, incl. Ethernet connection cable PC to Base	0572 0182
Saveris adjustment software incl. connection cable for wireless and Ethernet probes	0572 0183
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



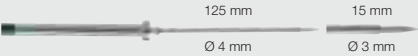
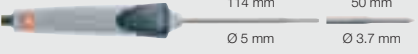
Technical data	
	Saveris-Base
Memory	40,000 values per channel (total max. 10,160,000 values)
Dimensions	225 x 150 x 49 mm
Weight	Approx. 1510 g
Protection class	IP42
Material/Housing	Diecast zinc / plastic
Radio frequency	868 MHz / 2.4 GHz
Power supply (absolutely necessary)	6.3 V DC mains unit; alternatively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

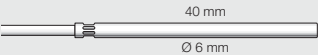
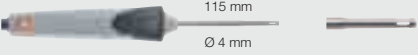
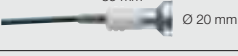
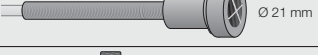

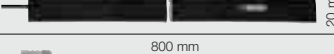
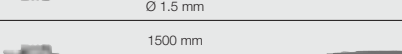
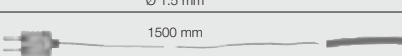
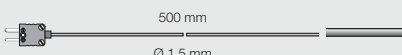
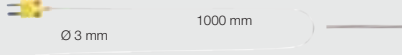



Technical data		
	Saveris router	Saveris converter
Dimensions	Approx. 85 x 100 x 38 mm	Approx. 85 x 100 x 35 mm
Weight	Approx. 180 g	Approx. 190 g
Power supply	6.3 V DC mains unit; alternatively via 24 V AC/DC plug-in/screw terminals, power consumption < 0.5 W	6.3 V DC mains unit; alternatively via 24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


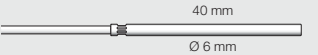
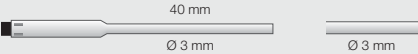
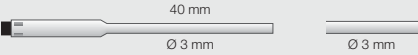

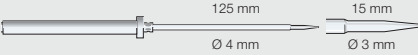
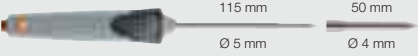
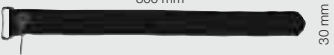


testo Saveris™ Accessories: External temperature probes

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 Ø 3 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	 395 mm 20 mm	-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 mm	-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



Documentation and alarms

During production and quality assurance, temperatures and humidity values must be recorded in many applications using a monitoring system:

- Heating cabinets
- Refrigerators
- Conditioning chambers/cabinet
- Storage climate
- Production climate...

When limit values are exceeded, an alarm should be issued; in addition the data should be safely stored and centrally compiled into reports for evaluations and proof. testo Saveris is ideally suited for these requirements.



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.



Recording of series of measurements

- in Research & Development
- in Production & Quality assurance

Jan Konietzny, Head of Department for
Product Development, Irmischer Automobilbau GmbH & Co. KG



"With testo Saveris, I have the perfect overview over all temperature and humidity data in processes and in the environment. This saves valuable time."



testostor 171-8, the high temperature logger with heat protection

testostor 171-8

testostor 171-8, a compact data logger with 4 external thermocouple connections. The data logger is equipped for two different types of thermocouple:

- Type K (NiCr-Ni), quick-action probes for measurements from -200 to +1000°C

- Type T (Cu-CuNi), fast, accurate probes for measurements from -50 to +350°C

When the heat-proof case is used, the data logger can handle processes with an operating temperature of up to +200°C

- 4 channel: 4 x external °C
- Large memory for up to 55,000 readings
- Connection to all Testo thermocouple probes (Type K/T) possible with thermocouple plug



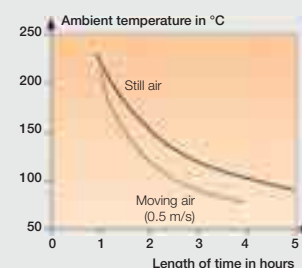
Convenient data analysis with ComSoft3, presentation as a graph or table



Monitors temperatures in a hardening furnace



Heat-proof case, aluminium full metal housing (anodized), 269 x 160 x 90 mm



The diagram shows how long testostor 171-8 in a heat-proof case can be subjected to a certain ambient temperature before the maximum inner temperature of +70°C is reached.

testostor 171-8

4 x external °C

testostor 171-8, temperature measurement data storage device, 4-channel, incl. starter magnet, battery and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0577 1718

Temperature probes (thermocouples)	Illustration	Meas. range	Accuracy	t99	Part no.
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
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
Immersion tip, flexible, TC Type K		-200 to +1000 °C	Class 1	5 s	0602 5792
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

Possibility of connecting all Testo thermocouple probes (Type K/T) with thermocouple plug

Accessories / Technical data testostor 171-8

Accessories, Transport and Protection		Part no.
Heat-proof case with heat-proof insert, rubber seal, 4 clamp screw connections for thermocouples with diameter of 1.5 mm, protects testostor 171-8 from hot environment, dimensions 260 x 160 x 90 mm		0553 1701
Transport case (plastic) for measurement data storage instruments (max. 6 off) and accessories, for safe transport		0516 0117
Holder with lock for data logger, theft-proof		0554 1782
Extension cable, 5m, for thermocouple probe Type K		0554 0592
Spare battery for testostor 171, quick and easy battery replacement		0515 0018
Software and Accessories		
ComSoft 3 - Professional with data management, incl. database, analysis and graphics function, data analysis, trend curve		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
Interface, attachable to testostor 171 data logger		0554 1781
Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit, facilitates data communication in network		0554 1711
Calibration Certificates		
ISO calibration cert./temperature, temperature data logger; calibration points selectable from -196 to +1260°C		0520 0141
ISO calibration certificate/temperature, temp. data logger; calibration points -8°C; 0°C; +40°C per channel/instrument		0520 0171
DKD calibration certificate/temperature, data logger, transmitter, probe without display; cal. points freely selectable from -196 to +1000°C		0520 0281

Technical data		
Probe type	Type K (NiCr-Ni)	Type T (Cu-CuNi)
Meas. range	-200 to +1000 °C	-50 to +350 °C
Accuracy ±1 digit	±(0.4 °C ±0.2% of mv)	±(0.4 °C ±0.2% of mv)
Resolution	0.1 °C (-200 to +249.9 °C) 1 °C (+250 to +1000 °C)	0.1 °C (-50 to +249.9 °C) 1 °C (+250 to +350 °C)
Oper. temp.	0 to +70 °C	
Storage temp.	-40 to +85 °C	
Battery type	Lithium battery	
Material/Housing	Aluminium, anodized	
Protection class	IP42	
Memory	55000	
Weight	305 g	
Dimensions	131 x 68 x 26 mm	
Warranty	2 years	
Measuring rate: 2s to 24h, selectable		
Battery life: up to 5 years		
Software: Menu-driven from Microsoft Windows 95 / NT 4 Servicepack 4 / ME / 2000 / XP / Vista		

Heat-proof case		
When the heat-proof case is used, the data logger can handle processes with an operating temperature of up to +200°C	Dimensions	260 x 160 x 90 mm
	Material/Housing	Aluminium, anodized
	Warranty	2 years

Recommended Set: testostor 171-8

testostor 171-8, temperature measurement data storage device, 4-channel, incl. starter magnet, battery and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0577 1718
4 x Immersion tip, flexible, TC Type K	0602 5792
ComSoft 3 - Professional with data management	0554 0830
Interface, attachable to testostor 171 data logger	0554 1781
Transport case (plastic) for measurement data storage instruments (max. 6 off) and accessories	0516 0117



testo 175-T3, records high temperatures with 2 external thermocouples

testo 175-T3

The 175-T3 temperature data logger logs temperature at 2 different points simultaneously over a period of several days, weeks or even 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

- 2-channel: external °C
- Specially suited to measuring low and high temperatures
- Data analysis in table or graphics form, with email function
- Alarm message, reliable transmission of alarm value limits

Ordering data accessories see p. 57

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 measurement 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



Data transfer to PC or notebook by attachable interface (optional)



Fast measurement of high temperatures, e.g. in a hardening furnace

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

testo 177-T4, professional long-term monitoring with 4 external thermocouples

testo 177-T4

The professional data logger testo 177-T4 with up to 4 external temperature probe connections is used for simultaneous data recording at different locations. With the testo 177-T4, refrigerated and deep-freeze rooms can be monitored non-stop and the data archived on a PC.

- 4-channel: external °C
- Specially for use in high and low temperatures
- Read out data without interrupting the measurement series
- Data analysis in table or graphics form, with email function
- Memory for up to 48,000 readings

testo 177-T4

4 x external °C

testo 177-T4, temperature data logger, 4 channels, with 4 probe inputs, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1774

Ordering data accessories see p. 57

Technical data

Chann. external (var.)	4		
Probe type	Type T (Cu-CuNi)	Type K (NiCr-Ni)	Type J (Fe-CuNi)
Meas. range	-200 to +400 °C	-200 to +1000 °C	-100 to +750 °C
Accuracy ±1 digit	±0.5% of mv (+70.1 to +1000 °C) ±1.5% of mv (-200 to -100.1 °C) ±0.3 °C (-100 to +70 °C)		
Resolution	0.1 °C		
Memory	48000	Measuring rate	2 s to 24 h
Oper. temp.	0 to +70 °C	Protection class	IP43
Storage temp.	-40 to +85 °C	Weight	129 g
Battery type	Lithium battery	Dimensions	103 x 64 x 33 mm
Battery life	5 years at meas. cycle 15 min (-10 to +50 °C)		
Analysis software	MS Windows 95b / 98 / ME / NT4-Sp4 / 2000 / XP / Vista		



Collect data on site, upload to PC and analyze



Alarm message, reliable forwarding of limits exceeded

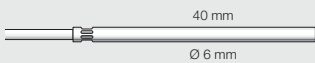

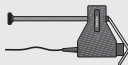
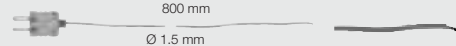

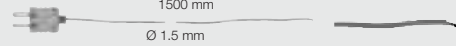
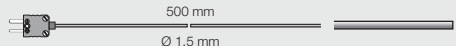
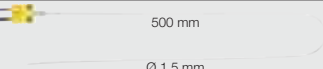
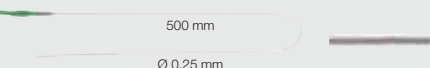

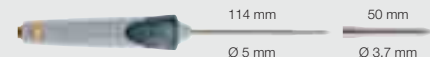
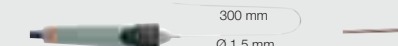
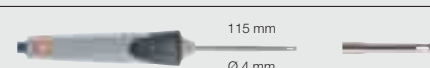


Temperature recording in computer systems

Recommended Set: Set for monitoring technical systems

testo 177-T4, temperature data logger, 4 channels, with 4 probe inputs, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1774
Lock for wall holder for testo 175/177 data loggers	0554 1755
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K	0602 4592
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K	0602 4592
testo 580 data collector set with RS232, readout holders included	0554 1778
Set ComSoft 4 - Basic with USB interface, Basic software with diagram and table function, incl. desk-top holders, PC connection cable	0554 1767

Suitable probes for testo 175-T3 / testo 177-T4

Temperature probes (thermocouples)	Illustration	Meas. range	Accuracy	t ₉₉	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, T _{max} +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
Immersion tip, flexible, TC Type K		-200 to +40 °C	Class 3	5 s	0602 5793
Flexible, low-mass immersion measurement tip, ideal for measurements in small volumes such as petri dishes, or for surface measurements (e.g. attached with adhesive tape), TC Type K		-200 to +1000 °C Conn.: 2 m, FEP insulated thermal wire, temperature proof up to 200 °C, oval wire with dimensions: 2.2 mm x 1.4 mm	Class 1	1 s	0602 0493
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 immersion/penetration probe, TC Type K		-60 to +400 °C	Class 2	7 s	0602 1293 Conn.: Fixed cable
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
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.





testo 175, current/voltage data logger

testo 175-S1

Easy and highly affordable logging of current and voltage in industrial processes. testo 175-S1 can be connected, for example, to the supply line of a transmitter to log and monitor current signals.



- 1-channel: External current/voltage (mA/V)
- User-friendly operation, convenient analysis
- Non-volatile memory for secure data, even if the battery is empty
- On-site: Use testo 580 to collect data and transfer to your PC for analysis

testo 175-S2

The testo 175 current/voltage data logger shows the scaled signal from the transmitter directly on the display. Scaling is via ComSoft. The display supplies a fast overview on site of the current reading, the last value saved, Min/Max values and the number of values exceeded.



On-site: fast documentation on the infrared printer, 6 lines/second



testo 175-S2 with display: Direct display of the scaled signal



Recording the current of a measurement transmitter with testo 175-S1 (without display)

testo 175-S1

External V/mA

testo 175-S1, current/voltage data logger, 1 channel, with external terminal block, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1759

testo 175-S2

External V/mA

testo 175-S2, current/voltage datalogger with display, 1 channel, with external terminal block, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately

Part no. 0563 1761

Recommended Set: testo 175-S1, Starter set with fast-action printer

testo 175-S1, current/voltage data logger, 1 channel, with external terminal block, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1759
Lock for wall holder for testo 175/177 data loggers	0554 1755
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries	0554 1775
ComSoft 3 Set - Basic with USB interface	0554 1766

Recommended Set: testo 175-S2, starter set with limit signal output

testo 175-S2, current/voltage datalogger with display, 1 channel, with external terminal block, wall holder and calibration protocol; calibration certificates (ISO/DKD) must be ordered separately	0563 1761
testo 581 alarm signal output, floating, for testo 175/177	0554 1769
Lock for wall holder for testo 175/177 data loggers	0554 1755
ComSoft 3 Set - Basic with USB interface	0554 1766

Technical data		
Ext. chann. (fixed)		1
Meas. range	0 to +1 V 0 to +10 V	0 to +20 mA +4 to +20 mA
Accuracy ±1 digit	±0.002 V (0 to +1 V) ±0.02 V (+1 to +10 V)	±0.05 mA (0 to +20 mA) ±0.05 mA (+4 to +20 mA)
Resolution	0.001 V (0 to +1 V) 0.01 V (+1 to +10 V)	0.01 mA (0 to +20 mA) 0.01 mA (+4 to +20 mA)
Memory	16000	
Oper. temp.	-10 to +50 °C	
Storage temp.	-40 to +70 °C	
Battery type	Lithium battery	
Weight	80 g	
Dimensions	82 x 52 x 30 mm	
Battery life: 2.5 years with measuring cycle of 15 min (-10 to +50 °C)		
Measuring cycle: 1 s to 24 h		
Software: Microsoft Windows 95b / 98 / ME / 2000 / XP / Vista		

Ordering data accessories see p. 57

Accessories for testo 175 and 177

testo 575 fast printer

- 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



Fast printout and logger rebooting with testo 575

Part no. 0554 1775

testo 580 data collector

- 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



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

RS232 Version

Part no. 0554 1778

USB version

Part no. 0554 1764

testo 581 alarm signal output

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



Alarm signal output for reliable notification of limits exceeded

Part no. 0554 1769

Ethernet adapter

- Fast transfer of readings
- Use of an existing network without additional wiring
- Long transfer stretches
- Identification of measuring instruments in a network system
- In combination with ComSoft 3



Readout of measurement data stored in the logger via the PC network with the ethernet adapter

Part no. 0554 1711

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), 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	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-S1/175-S2	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
Software and Accessories	Part no.
For testo 175 ComSoft 3 Set - Basic with RS232 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 3 Set - Basic with RS232 interface, Basic software with diagram and table function, incl. desk-top holder, PC connection cable	0554 1774
For testo 177: Set ComSoft 4 - 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	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/electrical, calibration in measurement ranges 0 to 20 mA; 4 to 20 mA; 0 to 1 V; 0 to 10 V	0520 1000

Overview: Temperature pro data logger in robust housing testostor 171

Type name	testostor 171-0	Ex 171-0	testostor 171-4	testostor 171-1	testostor 171-8
Description	Internal °C NTC	Internal °C NTC with Ex approval	4 x external °C NTC	Internal °C NTC + external °C NTC or %RH/°C	High temperature data logger 4 x external °C T/C
Illustration	<p>All data loggers can be validated¹</p>				
Sensor	NTC	NTC	NTC	NTC (Temperature probe) NTC (Combi-probe °C/%RH)	Type K (NiCr-Ni) Type T (Cu-CuNi)
Meas. range	-35 to +70 °C	-35 to +70 °C	-50 to +120 °C	-50 to +120 °C (ext.) -35 to +70 °C (int.) 0 to +100 %RH	-200 to +1000 °C Type K -50 to +350 °C Type T
Resolution	0.1 °C	0.1 °C	0.1 °C	0.1 °C 0.1 %RH	0.1 °C (-200 to +249.9 °C) 1 °C (+250 to +1000 °C) Type K 0.1 °C (-50 to +249.9 °C) 1 °C (+250 to +350 °C) Type T
Accuracy ±1 digit	±0.5 °C (-35 to +39.9 °C) ±0.6 °C (+40 to +70 °C)	±0.5 °C (-35 to +39.9 °C) ±0.6 °C (+40 to +70 °C)	±0.2 °C (-34.9 to +39.9 °C) ±0.4 °C (+40 to +120 °C) ±0.6 °C (-50 to -35 °C)	±0.2 °C (-35 to +39.9 °C) ±0.4 °C (+40 to +70 °C) (int.) ±0.2 °C (-34.9 to +39.9 °C) ±0.4 °C (+40 to +120 °C) ±0.6 °C (-50 to -35 °C) (ext.) ±2 %RH (+2 to +98 %RH)	±(0.4 °C ±0.2% of mv)
Memory	55000	55000	55000	55000	55000
Oper. temp.	-35 to +70 °C	-35 to +70 °C	-35 to +70 °C	-35 to +70 °C	0 to +70 °C
Storage temp.	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
Battery type	Lithium battery	Lithium battery	Lithium battery	Lithium battery	Lithium battery
Battery life	> 5 years*	> 5 years*	> 5 years*	> 5 years*	> 5 years*
Dimensions	131 x 68 x 26 mm	131 x 68 x 26 mm	131 x 68 x 26 mm	131 x 68 x 26 mm	131 x 68 x 26 mm
Weight	305 g	305 g	305 g	305 g	305 g
Protection class	IP68	IP68	IP65	IP65	IP42
Warranty	2 years	2 years	2 years	2 years	2 years
Part no.	0577 1719	0577 1730	0577 1714	0577 1715	0577 1718

*at a measuring rate of 15 mins. (-10 to +50 °C)

Detailed information on all data loggers can be found in the brochure:
"Measurement Solutions for Climate Applications in Industry"

Overview: Temperature compact/pro data logger testo 175/177

Type name	testo 175-T1	testo 175-T2	testo 175-T3	testo 175-S1	testo 175-S2
Description	1 channel temperature logger with internal sensor	2 channel temperature logger with internal sensor and external probe socket	2-channel temperature logger for external thermocouples	1 channel current/voltage logger, e.g. 4 to 20 mA	1 channel current/voltage logger with display
Illustration					
Sensor	NTC (internal)	NTC (internal + external)	Type T (Cu-CuNi) or Type K (NiCr-Ni)	Probe: Built-in screwed contact socket	Probe: Built-in screwed contact socket
Meas. range	-35 to +70 °C	-35 to +70 °C (int.) -40 to +120 °C (ext.)	-50 to +1000 °C (Type K) -50 to +400 °C (Type T)	0 to 1 V / 0 to 10 V 0 to 20 mA / 4 to 20 mA	0 to 1 V / 0 to 10 V 0 to 20 mA / 4 to 20 mA
Resolution	0.1 °C (-20 to +70 °C) 0.3 °C (-35 to -20.1 °C)	0.1 °C (-20 to +70 °C) (int.) 0.1 °C (-25 to +70 °C) (ext.) 0.3 °C (remaining range)	0.1 °C	1 mV (0 to 1 mV) 10 mV (1 to 10 mV) 0.01 mA (0 to 20mA)	1 mV (0 to 1 mV) 10 mV (1 to 10 mV) 0.01 mA (0 to 20mA)
Accuracy ±1 digit	System internal ±0.5 °C (-20 to +70 °C) ±1 °C (-35 to -20.1 °C)	System internal ±0.5 °C (-20 to +70 °C) ±1 °C (remaining range) Instrument external ±0.3 °C (-25 to +70 °C) ±0.5 °C (remaining range)	Instrument without probes Type K: ±0.7% of mv (+70.1 to +1000 °C) ±0.5 °C (-50 to +70 °C) Type T: ±0.7% of mv (+70.1 to +400 °C) ±0.5 °C (-50 to +70 °C)	System ± 2 mV (0 to 1 V) ± 20 mV (1 to 10 V) ± 0.05 mA (0 to 20 mA)	System ± 2 mV (0 to 1 V) ± 20 mV (1 to 10 V) ± 0.05 mA (0 to 20 mA)
Memory	7800	16000	16000	16000	16000
Oper. temp.	-35 to +70 °C	-35 to +70 °C	0 to +70 °C	-10 to +50 °C	-10 to +50 °C
Battery life	> 2.5 years*	> 2.5 years*	> 2.5 years*	> 2.5 years*	> 2.5 years*
Measuring rate	10 s ... 24 h	10 s to 24 h	10 s to 24 h	1 s to 24 h	1 s to 24 h
Protection class	IP68	IP68	IP54		
Part no.	0563 1754	0563 1755	0563 1756	0563 1759	0563 1761

Type name	testo 177-T1	testo 177-T2	testo 177-T3	testo 177-T4
Description	1 channel temperature logger with internal sensor for long-term monitoring	1 channel temperature logger with internal sensor for long-term monitoring	3 channel temperature logger with internal sensor, 2 external probe inputs and 1 event input	4 channel temperature logger for external thermocouples
Illustration				
Sensor	NTC (internal)	NTC (internal)	NTC (int. + ext.) Event logging e.g. door contact	T/C-Type K, T or J (4 x external)
Meas. range	-40 to +70 °C	-40 to +70 °C	-40 to +70 °C (int.) -40 to +120 °C (ext.)	Type K (NiCr-Ni): -200 to +1000 °C Type T (Cu-CuNi): -200 to +400 °C Type J (Fe-CuNi): -100 to +750 °C
Resolution	0.1 °C	0.1 °C	0.1 °C	0.1 °C
Accuracy ±1 digit	System internal ±0.4 °C (-25 to +70 °C) ±0.8 °C (-40 to -25.1 °C)	System internal ±0.4 °C (-25 to +70 °C) ±0.8 °C (-40 to -25.1 °C)	System internal ±0.4 °C (-25 to +70 °C) ±0.8 °C (-40 to -25.1 °C) Instrument external ±0.2 °C (-25 to +70 °C) ±0.4 °C (remaining range)	System ±0.5% of mv (+70.1 to +1000 °C) ±1.5% of mv (-200 to -100.1 °C) ±0.3 °C (-100 to +70 °C)
Memory	48000	48000	48000	48000
Oper. temp.	-40 to +70 °C	-40 to +70 °C	-40 to +70 °C (int.) -40 to +120 °C (ext.)	0 to +70 °C
Battery life	> 5 years*	> 5 years*	> 5 years*	> 5 years*
Measuring rate	2 s to 24 h	2 s to 24 h	2 s to 24 h	2 s to 24 h
Protection class	IP68	IP68	IP67	IP43
Part no.	0563 1771	0563 1772	0563 1773	0563 1774

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

testo 650, modular humidity measurement system

The right probe for every application

Probes at a glance

Fast reaction immersion/penetration probe for measuring liquids and foodstuffs



Highly accurate immersion/penetration probe with a system accuracy of 0.05 °C in the measuring range from 0 to 100 °C and a resolution of up to 0.001 °C



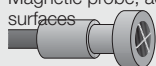
Fast reaction surface probe for measuring surface temperature



Precision air probe for measuring the air temperature



Magnetic probe, adhesive power approx. 10 N for measurements on metal surfaces



Globe thermometer to measure radiant heat



Current/voltage cable ($\pm V$, $\pm 10 V$, 20 mA) for example for checking stationary measurement transmitters



CO₂ probe for determining indoor air quality and monitoring the workplace



Mechanical rpm probes for measuring rpm with various probe tips



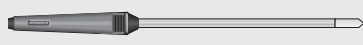
Highly accurate reference humidity/temperature probe for highest accuracy requirements 1 %RH



Pressure dewpoint probe for measuring the pressure dewpoint up to -60 °Ctpd in compressed air systems



Robust humidity probe for equilibrium moisture or duct measurements up to 180 °C



Flexible humidity probe with mini-module for measurements e.g. at material test benches



Sword probe for measuring humidity and temperature in stacked material



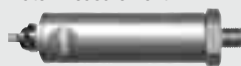
aw-value set: pressure-tight precision humidity probe for determining aw-value



Differential (100 hPa / 10 hPa / 100 hPa / 1000 hPa / 2000 hPa) and absolute pressure probes for pressure measurement



Refrigerant proof high-pressure probes for maintenance of refrigeration systems / water measurement



Temperature measurement

- DKD laboratory for temperature accredited by the PTB guarantees secure measurement values
- First DKD laboratory for surface temperature accredited by the PTB, developed together with the PTB and the University of Ilmenau
- Cross-band probe for fast surface measurements
- Customized temperature probes for your application
- System accuracy up to 0.05 °C with precision probe 0614 0240

Current-voltage measurement

- Additional connection of external measurement transmitters such as particle counters and pressure transmitters, and scaling in the instrument

CO and CO₂ measurement

- Long-term stable 2 beam method for measuring the reference and the measurement channel for CO₂

rpm measurement

- Mechanical rpm measurement from 20 to 20,000 rpm

Humidity measurement

- The first DKD laboratory for air humidity and dewpoint temperature accredited by the PTB guarantees secure measurement values
- Worldwide patented (capacitive) Testo humidity sensor
- Inter-laboratory tests in national and international institutes confirms a sensor accuracy of ± 1 %RH
- 2 years guaranteed long-term stability of the Testo humidity sensor under normal conditions
- Easy calibration or adjustment of the humidity probe (on site) with defined saline solutions (11.3 %RH, 33 %RH and 75.3 %RH)

Pressure measurement

- Very high accuracy in the lower measuring range (100 Pa) of $\pm (0.3 \text{ Pa} + 0.5 \text{ \% of reading})$
- Temperature-compensated pressure measurement

testo 650, modular humidity measurement system

testo 650

The precision reference class measuring instruments offer the professional user everything he needs to fulfil complex measurement tasks efficiently, securely and conveniently. testo 650 contains the basic parameters temperature, CO₂, rpm, current and voltage.

The testo 650 additionally has the possibility of measuring humidity and pressure. testo 650 can be retrofitted to the multi-function instrument testo 400 by update.

The instrument can thus keep pace with additional measuring tasks. Via a software update, the intelligent electronics furthermore allow it always to be at the cutting edge of technology.

Adaptive and updatable, extremely reliable and highest quality - these are the properties which give all users the certainty of being ready to face the future.

Useful instrument functions

- integrated measurement value store up to 500,000 readings
- all functions of the testo 950
- calculation of all parameters of the Mollier diagram
- relative humidity %RH, dewpoint and pressure dewpoint (td, tpd)
- absolute humidity, g/m³, psychrometric wet bulb temperature
- degree of humidity (g/kg), water vapour partial pressure in bar/hPa
- enthalpy kcal/kg
- aw.value measurement with trend display
- barometric air pressure



Attachable printer (optional)

Print readings in seconds on site (see p. 12)

Clear graphics display

3 user defined function buttons

Saves or prints at the touch of a button

Data communication by PC

User-friendly operation with cursor via menu structure (in detail see p. 12)

Mains connection/fast recharging

2 user-defined probe inputs

testo 650

testo 650, reference humidity meas. instr., readings memory included (up to 500,000 readings), battery, Li cell and calibration protocol

Applicable for:

- humidity/pressure
- temperature
- CO₂, rpm and current/voltage

Part no. 0563 6501



testo 650, modular humidity measuring system/ordering suggestion, testo 650

Important measurement parameters in humidity measurement automatically calculated in testo 650

Absolute humidity, g/m^3

The absolute humidity indicates how many grams of water are contained in a cubic metre of air or gas.

Relative humidity, %RH

The relative humidity is percentage which indicates how many percent of the maximum possible quantity of water vapour is present in the air at the moment. The maximum possible content is extremely dependent on temperature.

Psychrometer wet bulb temperature, $^{\circ}\text{C}$

Evaporation causes cooling. In a thermometer which is wrapped in a damp cloth, the temperature sinks as a result of evaporation. The evaporation is dependent on the ambient relative humidity and air flow. The temperature difference can be determined with a second, dry thermometer. Unit: [$^{\circ}\text{C}$, $^{\circ}\text{F}$]

Degree of humidity X

The degree of humidity X is defined as the mass ratio of water mass to air mass (dry glass). Unit: [g/kg]

Dewpoint, td

The dewpoint is a temperature value in $^{\circ}\text{C}$. As the temperature falls, the ability of the air or of gases to hold water is reduced. The dewpoint is the temperature at which the water condenses.

Water vapour partial pressure, pas

Proportion of the total pressure in a space which is determined by the water-vapour. Unit: [mbar, hPa]

Enthalpy, heat content, i

Heat content is the heat energy stored by the humid air. The energy is 0 at 0°C . Enthalpy is important for the calculation of cooling and heating performance. Particularly of interest here are differential measurements, e.g. before and behind heat exchangers.



Measuring instrument with plug-on printer



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



Pressure-tight precision probe for measuring the remaining moisture in compressed air systems, plastics driers...Advantage: display in g/kg, g/m^3 , pressure dew point

testo 650

testo 650, reference humidity meas. instr., readings memory included (up to 500,000 readings), battery, Li cell and calibration protocol

Part no. 0563 6501

Ordering suggestion:

The reference set for measuring trace moisture

testo 650, reference humidity meas. instr., readings memory included (up to 500,000 readings), battery, Li cell and calibration protocol	0563 6501
Precision pressure dew point probe for measurements in compressed air systems incl. cert. with test point -40°C tpd	0636 9841
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
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument	0430 0143
System case (plastic) for measuring instrument, probes and accessories	0516 0400

We recommend:

DKD calibration certificate/humidity – cal. points freely selectable from 5 to 95%RH at $+25^{\circ}\text{C}$ or -18°C to $+70^{\circ}\text{C}$	0520 0216	On request
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Ordering suggestion:

The precision set for air humidity measurement

testo 650, reference humidity meas. instr., readings memory included (up to 500,000 readings), battery, Li cell and calibration protocol	0563 6501
Highly accurate reference humidity/temp. probe	0636 9741
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
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument	0430 0143
System case (plastic) for measuring instrument, probes and accessories	0516 0400

We recommend:

DKD calibration certificate/humidity – cal. points freely selectable from 5 to 95%RH at $+25^{\circ}\text{C}$ or -18°C to $+70^{\circ}\text{C}$	0520 0216	On request
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Accessories, testo 650

ComSoft 3 Professional

see page 13



ComSoft 3 - Professional with data management

incl. database, analysis and graphics function,
data analysis, trend curve

Part no. 0554 0830

Ethernet adapter


Ethernet adapter, RS232 - Ethernet incl. software
driver, mains unit

facilitates data communication in network

Part no. 0554 1711

Attachable printer


Attachable printer (securely attached) including 1
roll of thermal paper and batteries

quickly prints readings on location

Part no. 0554 0570

Testo fast printer



with 1 roll thermal paper and 4 AA batteries

Testo fast printer Part no. 0554 0549

testo 575 fast printer Part no. 0554 1775

Part no. 0554 0549
Part no. 0554 1775

SoftCase


SoftCase for measuring instrument (impact protection)
incl. carrying strap, magnetic and probe holder

Part no. 0516 0401

SoftCase for attachable printer (protects printer
from dirt/impact)

Part no. 0516 0411

Part no. 0516 0401
Part no. 0516 0411

Update from testo 650 to testo 400	Part no.
Velocity module, incl. volume flow, degree of turbulence... , upgrade via service (updates testo 650 to testo 400)	0450 4003
Accessories for measuring instrument	Part no.
Rech. batt. set for instr. (2 rech. 2.4V/1100mAh) selected for quick recharging in instrument	0554 0196
Lithium battery, button cell, type CR 2032	0515 0028
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	0554 0549
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries infrared thermal line printer with graphics function	0554 1775
External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz	0554 0610
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls) measurement data documentation legible for up to 10 years	0554 0568
Label thermal paper (Testo patent) for testo 575 printer (6 rolls), can be applied directly	0554 0561
SoftCase for instrument and printer	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) protects from impact and falls	0516 0411
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
Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit, facilitates data communication in network	0554 1711
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





Calibration certificates and technical data, testo 650

Calibration certificates/temperature	Part no.
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature, Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C	0520 0021
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
DKD calibration certificate/temperature, meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
DKD calibration certificate/temperature, contact surface temperature probes; calibration points +100°C; +200°C; +300°C	0520 0271

Calibration certificates/humidity	Part no.
ISO calibration certificate/humidity, cal. points freely selectable from 5 to 95%RH at +15 to +35°C or at -18 to +80°C	0520 0106
ISO calibration certificate humidity, Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/pressure dew point, two adjustment points -10/-40 °C tpd at 6 bar	0520 0136
ISO calibration certificate/humidity, saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity, saturated saline solutions, calibration point 75.3%RH	0520 0083

DKD calibration certificate/humidity, electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
DKD calibration certificate/humidity, cal. points freely selectable from 5 to 95%RH at +25°C or -18°C to +70°C	0520 0216
DKD calibration certificate/humidity, saturated saline solutions; calibration point 11.3%RH	0520 0213
DKD calibration certificate/humidity, saturated saline solutions; calibration point 75.3%RH	0520 0283

Calibration certificates/pressure	Part no.
ISO calibration certificate/pressure differential pressure, accuracy > 0.6 (% of full-scale value)	0520 0005
DKD calibration certificate/pressure differential pressure, accuracy > 0.6 (% of full-scale value)	0520 0225
ISO calibration certificate/pressure differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
DKD calibration certificate/pressure differential pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0215
ISO calibration certificate/absolute pressure, 5 measurement points distributed over meas. range absolute pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0125
DKD calibration certificate/pressure absolute pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0212

Technical data			
Probe type	CO ₂ probe	CO probe	
Meas. range Temperature	0 to +1 Vol. % CO ₂ 0 to +10000 ppm CO ₂	0 to +500 ppm CO	
Accuracy ±1 digit	See probe data	±5% of mv (0 to +500 ppm CO)	
Probe type	Current measurement	Voltage measurement	
Meas. range Temperature	0 to +20 mA	0 to +10 V	
Accuracy ±1 digit	±0.04 mA (0 to +20 mA)	±0.01 V (0 to +10 V)	
Resolution	0.01 mA (0 to +20 mA)	0.01 V (0 to +10 V)	
Oper. temp.	0 to +50 °C		
Storage temp.	-25 to +60 °C	Weight	500 g
Display	LCD, 4 lines	PC	RS232 interface
Battery type	1,5 V AA	Material/Housing	ABS
Battery life	18 h	Warranty	3 years
Storage capacity:	1 MB, corresponds to approx. 500,000 readings		
Misc.:	Automatic recognition of all connected probes		
Current supply:	Battery/rech. battery, alternatively 8V mains unit battery life in permanent use with 2 TC probes: 18 h		

Technical data	
Probe type	Testo humid. sensor, cap.
Meas. range Temperature	0 to +100 %RH
Accuracy ±1 digit	See probe data
Resolution	0.1 %RH (0 to +100 %RH)

Probe type	Pressure	
Meas. range Temperature	0 to +2000 hPa	
Accuracy ±1 digit	Probe 0638 1347 Probe 0638 1447 Probe 0638 1547 Probe 0638 1647 Probe 0638 1747 Probe 0638 1847	Probe 0638 1741 Probe 0638 1841 Probe 0638 1941 Probe 0638 2041 Probe 0638 2141 ±0.2% of mv
Resolution	0.001 hPa (Probe 0638 1347) 0.001 hPa (Probe 0638 1447) 0.01 hPa (Probe 0638 1547) 0.1 hPa (Probe 0638 1647) 0.1 hPa (Probe 0638 1747)	0.1 hPa (Probe 0638 1847) 0.01 bar (Probe 0638 1741) 0.01 bar (Probe 0638 1841) 0.01 bar (Probe 0638 1941) 0.01 bar (Probe 0638 2041) 0.01 bar (Probe 0638 2141)

Probe type	aw value
Meas. range Temperature	0 to +1 aW
Accuracy ±1 digit	See probe data

Probe type	NTC
Meas. range Temperature	-40 to +150 °C
Accuracy ±1 digit	±0.2 °C (-10 to +50 °C) ±0.4 °C (-40 to -10.1 °C) ±0.4 °C (+50.1 to +150 °C)
Resolution	0.1 °C (-40 to +150 °C)

Probe type	Pt100
Meas. range Temperature	-200 to +800 °C
Accuracy ±1 digit	±0.1 °C (-49.9 to +99.9 °C) ±(0.1 °C + 0.1% of mv) remaining range
Resolution	0.01 °C (-99.9 to +300 °C) 0.1 °C (-200 to -100 °C) 0.1 °C (+300.1 to +800 °C)

Probe type	Mechanical
Meas. range	20 to 20000 rpm
Accuracy	±1 digit
Resolution	1 rpm

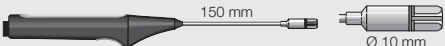
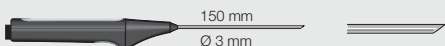
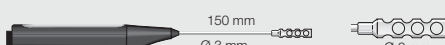
Probe type	Type K (NiCr-Ni)
Meas. range Temperature	-200 to +1370 °C
Accuracy ±1 digit	±(0.3 °C + 0.1% of mv)
Resolution	0.1 °C (-200 to +1370 °C)

Probe type	Type S (Pt10Rh-Pt)
Meas. range Temperature	0 to +1760 °C
Accuracy ±1 digit	±1 °C (0 to +1760 °C)
Resolution	1 °C (0 to +1760 °C)







Probe type	Type J (Fe-CuNi)
Meas. range Temperature	-200 to +1000 °C
Accuracy ±1 digit	±0.4 °C (-150 to +150 °C) ±1 °C (-200 to -150.1 °C) ±1 °C (+150.1 to +1000 °C)
Resolution	0.1 °C (-200 to +1000 °C)



Suitable probes at a glance, testo 650


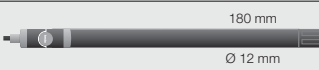
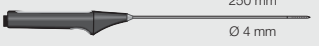

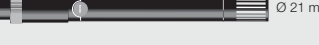
Temperature probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C		-200 to +300 °C	Class 2	3 s	0604 0194
Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required					
Fast response immersion/penetration probe		-200 to +400 °C	Class 1	3 s	0604 0293
Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required					
Standard air probe		-200... +600 °C	Class A	75 s	0604 9773
Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required					

FURTHER TEMPERATURE PROBES SEE PAGE 9 TO 11

More probes	Illustration	Meas. range	Accuracy	Part no.
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, 1.5 m
CO ₂ 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
Mechanical rpm probe with plug-in head		20 to 20000 rpm	±1 digit	0640 0340 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Included 2 probe tips Ø 8 and Ø 12 mm 1 hollow cone Ø 8 mm 1 surface speed disc Ø 19 mm to measure rotational speed: rpm = rotational speed in mm/s				
Current/voltage cable (±1 V, ±10 V, 20 mA)		0 to +1000 mV 0 to +10 V 0 to +20 mA	±1 mV (0 to +1000 mV) ±0.01 V (0 to +10 V) ±0.04 mA (0 to +20 mA)	0554 0007
4 to 20 mA interface for connection and intermittent power supply to transmitters (scaling via hand-held instrument), in robust metal housing with impact protection, incl. magnet for fast attachment		0/4 to 20 mA	±0.04 mA	0554 0528 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Channels: 1 channel, transmitter connection via terminal board Auxiliary energy output: 18V DC ± 20% max. connection load: 30 mA				

Accessories	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument, PUR coating material	0430 0145

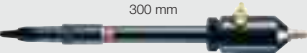
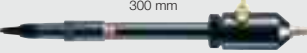
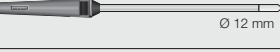
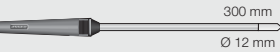



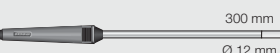







Accessories	Part no.
Extension cable, 5 m long, between plug-in head cable and instrument, PUR coating material	0409 0063
Telescopic handle, max. 1 m, for probe with plug-in head, cable: 2.5 m long, PUR coating material	0430 0144

Humidity probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Standard ambient air probe up to +70°C		0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9740 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Duct humidity/temperature probe, can be connected to telescopic handle 0430 9715		0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9715 Conn.: Fixed cable
Thin humidity probe incl. 4 attachable protection caps for ambient air measurements, measurements in exhaust air ducts and equilibrium moisture measurements		0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	15 s	0636 2130 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Highly accurate reference humidity/temp. probe		0 to +100 %RH -20 to +70 °C	±1 %RH (+10 to +90 %RH)* ±2 %RH (remaining range) ±0.2 °C (+10 to +40 °C) ±0.4 °C (remaining range)	12 s	0636 9741 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Humidity/temperature probe		0... +100 %RH -20 to +70 °C	±2 %RH (+2... +98 %RH) ±0.4 °C (+0.1 to +50 °C) ±0.5 °C (-20 to 0 °C) ±0.5 °C (+50.1 to +70 °C)	12 s	0636 9742 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required

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



Suitable probes at a glance, testo 650

Probes process humidity	Illustration	Meas. range	Accuracy	t99	Part no.
Standard pressure dew point probe for measurements in compressed air systems		0 to +100 %RH -30 to +50 °C tpd	±0.9 °C tpd (+0.1 to +50 °C tpd) ±1 °C tpd (-4.9 to 0 °C tpd) ±2 °C tpd (-9.9 to -5 °C tpd) ±3 °C tpd (-19.9 to -10 °C tpd) ±4 °C tpd (-30 to -20 °C tpd)	300 s	0636 9840 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Precision pressure dew point probe for measurements in compressed air systems incl. cert. with test point -40°C tpd		0 to +100 %RH -60 to +50 °C tpd	±0.8 °C tpd (-4.9 to +50 °C tpd) ±1 °C tpd (-9.9 to -5 °C tpd) ±2 °C tpd (-19.9 to -10 °C tpd) ±3 °C tpd (-29.9 to -20 °C tpd) ±4 °C tpd (-40 to -30 °C tpd)	300 s	0636 9841 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
High humidity level probe w/ heated sensor element, no humidity on sensor		0 to +100 %RH -20 to +85 °C	±2.5 %RH (0 to +100 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +100 °C)	30 s	0636 2142* Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Robust high temperature/humidity probe up to +180°C		0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (+0.1 to +50 °C) ±0.5 °C (remaining range)	30 s	0628 0021 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Flexible humidity probe (does not retain shape) for measurements in inaccessible places		0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (+0.1 to +50 °C) ±0.5 °C (+50.1 to +180 °C)	30 s	0628 0022 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Probes material and equilibrium moisture	Illustration	Meas. range	Accuracy	t99	Part no.
Flexible humidity probe with mini module for meas. e.g. on material testing rigs, module cable length 1500mm, probe tip 50x19x7mm		0 to +100 %RH -20 to +125 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	20 s	0628 0013 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Sword probe for measuring humidity and temperature in stacked material		0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	12 s	0636 0340 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Robust humidity probe e.g. for measuring equilibrium moisture or for measurements in exhaust ducts to +120°C		0 to +100 %RH -20 to +120 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	30 s	0636 2140 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Probes aw-value	Illustration	Meas. range	Accuracy	Part no.	
aw value set: pressure-tight precision humidity probe with certificate, measurement chamber and 5 sample bowls (plastic)	 Reproducibility of aw value ±0.003	0 to +1 aW 0 to +100 %RH -20 to +70 °C	±0.01 aW (+0.1 to +0.9 aW) ±0.5 °C (-10 to +50 °C) ±0.5 °C (remaining range) ±0.02 aW (+0.9 to +1 aW)	0628 0024	
Differential pressure probes	Illustration	Meas. range	Accuracy	Part no.	
Precision pressure probe, 100 Pa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and flow speeds (in combination with Pitot tube)		0 to +100 Pa	±(0.3 Pa ±0.5% of mv)	0638 1347 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	
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	0638 1447 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	
Pressure probe, 100 hPa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and flow speeds (in combination with Pitot tube)		0 to +100 hPa	±0.5% of mv (+20 to +100 hPa) ±0.1 hPa (0 to +20 hPa)	0638 1547 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	
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)	0638 1647 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	
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)	0638 1747 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	
Absolute pressure probe	Illustration	Meas. range	Accuracy	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)	0638 1847 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	

Suitable probes at a glance, testo 650

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

Accessories: Humidity probes	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument, PUR coating material	0430 0145
Extension cable, 5 m long, between plug-in head cable and instrument, PUR coating material	0409 0063
Telescopic handle, max. 1 m, for probe with plug-in head, cable: 2.5 m long, PUR coating material	0430 0144
Adapter for surface humidity measurement, for humidity probes Ø 12mm, locates damp spots on walls, for example	0628 0012
Cap for bore holes, for humidity probe Ø 12 mm, Measures equilibrium moisture in bore holes	0554 2140
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

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

Caps for humidity probes Ø 12m and 21mm	Part no.
① Metal protection cage, Ø 12 mm for humidity probes, material stainless steel V4A, fast adjustment time, robust and temperature-proof, application for flow velocities under 10 m/s	0554 0755
② Cap with wire mesh filter, Ø 12 mm	0554 0757
③ PTFE sintered filter, Ø 21 mm, PTFE. Not affected by condensation, water-repellent, resistant to corrosive substances. Applications: compressed air measurements, high humidity range (continuous measurements), high flow velocities	0554 0666

Covering caps for humidity probes Ø 5, 12 and 21 mm	Part no.
④ PTFE sintered filter, Ø 21 mm, PTFE. Not affected by condensation, water-repellent, resistant to corrosive substances. Applications: compressed air measurements, high humidity range (continuous measurements), high flow velocities	0554 0666
⑤ PTFE sintered filter, Ø 12 mm, PTFE. Not affected by condensation, water-repellent, resistant to corrosive substances. Applications: compressed air measurements, high humidity range (continuous measurements), high flow velocities	0554 0758
⑥ Stainless steel sintered cap, Ø 21 mm, made of stainless steel V2A. Highly robust, suitable for penetration, clean with compressed air, mechanical protection of sensor. Applications: high mechanical loads, high flow velocities.	0554 0640
⑦ Sintered stainless steel cap, Ø 12 mm, material stainless steel V2A. Very rugged, suitable for penetration, can be cleaned with compressed air, mechanical sensor protection. Applications: High mechanical loads, high flow velocities.	0554 0647
⑧ PTFE cap, Ø 5 mm, attachable, PTFE material, (5 off). Applications: dust protection, high humidity level measurements, high flow velocities	0554 1031



① Metal protection cage, Ø 12 mm, stainless steel V4A, for 0636 9740, 0636 9715



② Cap with wire mesh filter, Ø 12 mm, for humidity probes Ø 12 mm



③ Sintered PTFE filter, Ø 21 mm, PTFE, for humidity probes Ø 21 mm



④ Sintered PTFE filter, Ø 12 mm, PTFE for 0636 9740, 0636 9715



⑤ Sintered PTFE filter, Ø 12 mm, PTFE for 0636 2142



⑥ Sintered stainless steel cap, Ø 21 mm, stainless steel V2A, for humidity probes Ø 21 mm



⑦ Sintered stainless steel cap, Ø 12 mm, stainless steel V2A for 0636 9740, 0636 9715



⑧ PTFE cap, Ø 5 mm, PTFE for 0636 2130



testo 645, thermohygrometer

testo 645

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

Convenient data analysis on your PC with location name.

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

- Channel 1: Temperature probe Type K/J/S, NTC
- Channel 2: Combi-probe humidity/temperature or temperature probe Pt100
- Highly accurate humidity meas. to $\pm 1\%RH$
- Internal data memory
- Convenient data analysis
- TopSafe for tough applications


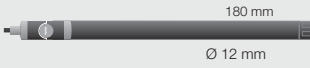
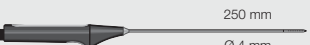



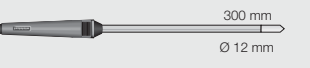
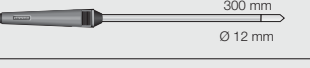
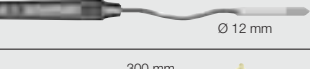
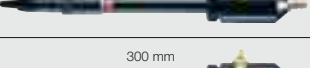
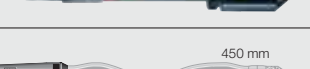

testo 645

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

Part no. 0563 6450



Humidity measurement up to $+180^\circ\text{C}$ in drying systems

Humidity probes	Illustration	Meas. range	Accuracy	t99	Part no.
Standard ambient air probe up to $+70^\circ\text{C}$	 Ø 12 mm	0 to $+100\%RH$ -20 to $+70^\circ\text{C}$	$\pm 2\%RH$ (+2 to $+98\%RH$) $\pm 0.4^\circ\text{C}$ (-10 to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (remaining range)	12 s	0636 9740 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Duct humidity/temperature probe, can be connected to telescopic handle 0430 9715	 180 mm Ø 12 mm	0 to $+100\%RH$ -20 to $+70^\circ\text{C}$	$\pm 2\%RH$ (+2 to $+98\%RH$) $\pm 0.4^\circ\text{C}$ (-10 to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (remaining range)	12 s	0636 9715 Conn.: Fixed cable, 3 m
Thin humidity probe incl. 4 attachable protection caps for ambient air measurements, measurements in exhaust air ducts and equilibrium moisture measurements	 250 mm Ø 4 mm	0 to $+100\%RH$ -20 to $+70^\circ\text{C}$	$\pm 2\%RH$ (+2 to $+98\%RH$) $\pm 0.4^\circ\text{C}$ (-10 to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (-20 to -10.1°C) $\pm 0.5^\circ\text{C}$ ($+50.1$ to $+70^\circ\text{C}$)	15 s	0636 2130 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Highly accurate reference humidity/temp. probe	 Ø 21 mm	0 to $+100\%RH$ -20 to $+70^\circ\text{C}$	$\pm 1\%RH$ ($+10$ to $+90\%RH$) $\pm 2\%RH$ (remaining range) $\pm 0.2^\circ\text{C}$ ($+10$ to $+40^\circ\text{C}$) $\pm 0.4^\circ\text{C}$ (remaining range)	12 s	0636 9741 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Flexible humidity probe with mini module for meas. e.g. on material testing rigs, module cable length 1500mm, probe tip 50x19x7mm		0 to $+100\%RH$ -20 to $+125^\circ\text{C}$	$\pm 2\%RH$ (+2 to $+98\%RH$) $\pm 0.4^\circ\text{C}$ (-10 to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (remaining range)	20 s	0628 0013 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Sword probe for measuring humidity and temperature in stacked material	 320 mm 18 mm x 5 mm	0 to $+100\%RH$ -20 to $+70^\circ\text{C}$	$\pm 2\%RH$ (+2 to $+98\%RH$) $\pm 0.4^\circ\text{C}$ (-10 to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (-20 to -10.1°C) $\pm 0.5^\circ\text{C}$ ($+50.1$ to $+70^\circ\text{C}$)	12 s	0636 0340 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
High humidity level probe w/ heated sensor element, no humidity on sensor	 300 mm Ø 12 mm	0 to $+100\%RH$ -20 to $+85^\circ\text{C}$	$\pm 2.5\%RH$ (0 to $+100\%RH$) $\pm 0.4^\circ\text{C}$ (-10 to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (-20 to -10.1°C) $\pm 0.5^\circ\text{C}$ ($+50.1$ to $+100^\circ\text{C}$)	30 s	0636 2142 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Robust high temperature/humidity probe up to $+180^\circ\text{C}$	 300 mm Ø 12 mm	0 to $+100\%RH$ -20 to $+180^\circ\text{C}$	$\pm 2\%RH$ (+2 to $+98\%RH$) $\pm 0.4^\circ\text{C}$ ($+0.1$ to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (remaining range)	30 s	0628 0021 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Flexible humidity probe (does not retain shape) for measurements in inaccessible places	 1500 mm Ø 12 mm	0 to $+100\%RH$ -20 to $+180^\circ\text{C}$	$\pm 2\%RH$ (+2 to $+98\%RH$) $\pm 0.4^\circ\text{C}$ ($+0.1$ to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (-20 to 0°C) $\pm 0.5^\circ\text{C}$ ($+50.1$ to $+180^\circ\text{C}$)	30 s	0628 0022 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Standard pressure dew point probe for measurements in compressed air systems	 300 mm	0 to $+100\%RH$ -30 to $+50^\circ\text{C tpd}$	$\pm 0.9^\circ\text{C tpd}$ ($+0.1$ to $+50^\circ\text{C tpd}$) $\pm 1^\circ\text{C tpd}$ (-4.9 to 0°C tpd) $\pm 2^\circ\text{C tpd}$ (-9.9 to -5°C tpd) $\pm 3^\circ\text{C tpd}$ (-19.9 to -10°C tpd) $\pm 4^\circ\text{C tpd}$ (-30 to -20°C tpd)	300 s	0636 9840 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Precision pressure dew point probe for measurements in compressed air systems incl. cert. with test point -40°C tpd	 300 mm	0 to $+100\%RH$ -60 to $+50^\circ\text{C tpd}$	$\pm 0.8^\circ\text{C tpd}$ (-4.9 to $+50^\circ\text{C tpd}$) $\pm 1^\circ\text{C tpd}$ (-9.9 to -5°C tpd) $\pm 2^\circ\text{C tpd}$ (-19.9 to -10°C tpd) $\pm 3^\circ\text{C tpd}$ (-29.9 to -20°C tpd) $\pm 4^\circ\text{C tpd}$ (-40 to -30°C tpd)	300 s	0636 9841 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required
Flexible humidity probe (retains shape) for measurements at inaccessible points	 450 mm Ø 14 mm	0 to $+100\%RH$ -20 to $+125^\circ\text{C}$	$\pm 2\%RH$ (+2 to $+98\%RH$) $\pm 0.4^\circ\text{C}$ (-10 to $+50^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (-20 to -10.1°C) $\pm 0.5^\circ\text{C}$ ($+50.1$ to $+125^\circ\text{C}$)	30 s	0628 0014 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required

The measuring instrument inside TopSafe is waterproof with this probe. Caps for humidity probes, see Ordering data for Accessories

* in the temperature range from $+10^\circ\text{C}$ to $+30^\circ\text{C}$

Further probes see testo 650 (humidity) and testo 950 (temperature)

Practical accessories and technical data, testo 645

Accessories Transport and protection	Part no.
Transport case (plastic) for measuring instrument, probes and accessories – now larger for safe and orderly storage	0516 0445
Further accessories and spare parts	Part no.
Desk-top power supply with international connection options	0554 1143
9V rech. battery for instrument instead of battery	0515 0025
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material	0430 0143
Extension cable, 5 m long, between plug-in head cable and instrument PUR coating material	0409 0063
Adapter for surface humidity measurement, for humidity probes Ø 12mm locates damp spots on walls, for example	0628 0012
Cap for bore holes, for humidity probe Ø 12 mm Measures equilibrium moisture in bore holes	0554 2140
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe	0554 0660
Sintered PTFE filter, Ø 12 mm, for corrosive media High humidity range (long-term measurements), high flow velocities.	0554 0756
Stainless steel sintered 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
Printer and Accessories	Part no.
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries infrared thermal line printer with graphics function	0554 1775
External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz	0554 0610
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls), measurement data documentation legible for up to 10 years	0554 0568
Label thermal paper (Testo patent) for testo 575 printer (6 rolls), can be applied directly	0554 0561
Software and Accessories	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
Calibration Certificates	Part no.
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

Technical data		
Probe type	Testo humid. sensor, cap.	NTC
Meas. range Temperature	0 to +100 %RH	-50 to +150 °C
Accuracy ±1 digit	See probe data	
Resolution	0.1 %RH (0 to +100 %RH)	0.1 °C (-50 to +150 °C)
Probe type	Pt100	Type K (NiCr-Ni)
Meas. range Temperature	-200 to +800 °C	-200 to +1370 °C
Accuracy ±1 digit at +22 °C	±0.1% of mv (+200.1 to +800 °C) ±0.2 °C (-200 to +200 °C)	±0.5% of mv (+60 to +1370 °C) ±0.3 °C (-200 to +59.9 °C)
Resolution	0.1 °C (-200 to +800 °C)	0.1 °C (-200 to +1370 °C)
Probe type	Type S (Pt10Rh-Pt)	Type J (Fe-CuNi)
Meas. range Temperature	-50 to +1700 °C	-40 to +750 °C

Technical data			
Oper. temp.	0 to +50 °C	Weight	255 g
Storage temp.	-20 to +70 °C	Dimensions	215 x 68 x 47 mm
Display	LCD, 4 lines	Material/Housing	ABS
Battery type	Alkali manganese	Warranty	2 years
Battery life	45 h		
Typical battery life: 9 V block (Al-Mn) 20-45 h With 9 V rech.battery, the number of hours is reduced by a factor of 5 Calculated humidity parameters: td, td, g/m³, g/kg, J/g (pressure compensated) Mains connection and battery charging in instrument			

testo 635, thermohygrometer, professional and reliable



The right probe for every application: relative humidity, equilibrium moisture, pressure dewpoint, surface temperature



Probe head on radio handle (optional) for wireless data transmission



PC software for archiving and documenting measurement data (included in delivery) testo 635-2



Measurement data printout on site on Testo fast printer



testo 635

The testo 635 offers the possibility of monitoring and analysing air humidity, material moisture and the pressure dewpoint in pressured air systems. The prerequisite for professional moisture measurement is a reliable and precise moisture sensor. The worldwide patented Testo humidity sensor guarantees accurate and long-term stable measurement results.

Versatility through radio probes

In addition to classical probes with a wire, wireless measurement up to 20 m (without obstruction) is possible. Damage to the wire or hindrance in usage are thus eliminated. A maximum of three radio probes can be recorded and displayed with testo 635. The radio probes are available for the measurement parameters temperature and moisture. The optional, easily attachable radio module is retrofittable at any time.

Designed for ease of use

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

testo 635-2 with store and software

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

Common advantages

- Connection of three radio probes
- Measurement of air humidity, material equilibrium moisture and pressure dewpoint
- Display of dewpoint distance, min., max. and mean values
- Backlit display

Additional advantages 635-1

- Cyclic printing of the readings on Testo fast printer, e.g. once per minute

Additional advantages 635-2

- Instrument store for 10,000 readings
- PC software for archiving and documenting measurement data
- Direct display of material moisture thanks to user-defined characteristic curves (Basis: material equilibrium moisture)
- Storage of single measurements or measurement series by location
- Fast access to the most important functions via user profiles



Cyclic printing of readings on the Testo fast printer, e.g. once per minute (with testo 635-1)



Monitoring pressure dewpoint

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), 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 Measuring instrument/probes	Part no.
Plug-in mains adapter, 5 VDC 500 mA with European adapter, 100-250 VAC, 50-60 Hz	0554 0447
Handle for attachable humidity probe head for connection to testo 635, incl. probe wire, for measurement / calibration of humidity probe head	0430 9735
testo saline pots for control and humidity adjustment of humidity probes, 11.3 %RH and 75.3 %RH with adapter for humidity probe	0554 0660
Sintered PTFE filter, Ø 12 mm, for corrosive media	0554 0756
Stainless steel sintered filter, pore size 100 µm, probe protection in dusty atmospheres or higher flow velocities	0554 0647
Adapter for surface humidity measurement, for humidity probes Ø 12mm	0628 0012
Cap for bore holes, for humidity probe Ø 12 mm	0554 2140
Adhesive material for fixing and sealing	0554 0761
Transport and protection	Part no.
Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm	0516 0035
Service case for measuring instrument, probe and accessories, dimensions 520 x 380 x 120 mm	0516 0435
Calibration Certificates	Part no.
ISO calibration certificate humidity, Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/humidity, cal. points freely selectable from 5 to 95%RH at +15 to +35°C or at -18 to +80°C	0520 0106
DKD calibration certificate/humidity, electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206

testo 635-1

testo 635-1, humidity/temperature measuring instrument, with battery and calibration protocol

Part no. 0560 6351


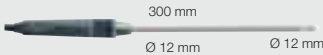







testo 635-2

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



Probes / Accessories, testo 635

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	t99	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 Conn.: Fixed cable
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 Conn.: Fixed cable
Absolute pressure probes	Illustration	Meas. range	Accuracy	Part no.	
Absolute pressure probe 2000 hPa		0 to +2000 hPa	±5 hPa	0638 1835	
Air probes	Illustration	Meas. range	Accuracy	t99	Part no.
Robust air probe, T/C Type K		-60 to +400 °C	Class 2	25 s	0602 1793 Conn.: Fixed cable
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
FURTHER TEMPERATURE PROBES SEE TESTO 922/925					

FURTHER TEMPERATURE PROBES SEE TESTO 922/925

Technical data

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

Technical data

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

Option: Radio, testo 635

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 TC probe heads with TC probe head for air/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) ±0.5 °C	0.1 %RH 0.1 °C



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

Radio handles, separate

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



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

Radio probes: General technical data

	Radio immersion/penetration probe, NTC		Radio handle
Battery type	2 x 3V button cell (CR 2032)	Battery type	2 AAA micro batteries
Battery life	150 h (meas. rate 0.5 s) 2 months (meas. rate 10 s)	Battery life	215 h (meas. rate 0.5 s) 6 months (meas. rate 10 s)
Measuring rate	0.5 s or 10 s, adjustable on handle	Oper. temp.	-20 to +50 °C
Radio coverage	Up to 20 m (without obstructions), Radio transmission Unidirectional	Storage temp.	-40 to +70 °C






Overview: Pro humidity data logger testostor 171

Type	testostor 171-1	testostor 171-6	testostor 171-2	testostor 171-3	Ex 171-3
Description	Internal °C NTC + external °C NTC or %RH/°C	2 x external %RH / °C or °C, td	Internal: %RH, °C, td	Internal %RH / °C 20,000 readings	Internal %RH / °C with Ex approval
Illustration					
Measurement value sensor	NTC (Temperature probe) NTC (Combi-probe °C/%RH)	NTC (temperature probe) NTC (combi-probe °C/%RH)	NTC	NTC	NTC
Meas. range	0 to +100 %RH -35 to +70 °C (int.) -50 to +120 °C (ext.)	0 to +100 %RH -50 to +120 °C (ext.) -30 to +50 °C td	0 to +100 %RH -20 to +70 °C -20 to +70 °C td	0 to +100 %RH -10 to +50 °C	0 to +100 %RH -10 to +50 °C
Resolution	0.1 %RH 0.1 °C 0.1 °C	0.1 %RH 0.1 °C	0.1 %RH 0.1 °C	0.1 %RH 0.1 °C	0.1 %RH 0.1 °C
Accuracy ±1 digit	System ±2 %RH (+2 to +98 %RH) (int.) ±0.2 °C (-35 to +39.9 °C) ±0.4 °C (+40 to +70 °C) (ext.) ±0.2 °C (-34.9 to +39.9 °C) ±0.4 °C (+40 to +120 °C) ±0.6 °C (-50 to -35 °C)	System ±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.6 °C (-50 to -10.1 °C) ±0.6 °C (+50.1 to +120 °C)	System ±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	System ±3 %RH (+2 to +98 %RH) ±0.5 °C (-10 to +39.9 °C) ±0.6 °C (+40 to +50 °C)	System ±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C)
Memory	55000 Readings	55000 Readings	55000 Readings	20000 Readings	20000 Readings
Measuring rate	2 s to 24 h	2 s to 24 h	2 s to 24 h	2 s to 24 h	2 s to 24 h
Oper. temp.	-35 to +70 °C	-20 to +70 °C	-20 to +70 °C	-20 to +70 °C	-10 to +50 °C
Storage temp.	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
Battery type	Lithium battery	Lithium battery (2032)	Lithium battery (2032)	Lithium battery	Lithium battery
Battery life	up to 5 years	up to 5 years	up to 5 years	up to 5 years	up to 5 years
Dimensions	131 x 68 x 26 mm	131 x 68 x 26 mm	131 x 68 x 84 mm	131 x 68 x 84 mm	131 x 72 x 68 mm
Weight	305 g	305 g	320 g	320 g	320 g
Protection class	IP65	IP65	IP65	IP65	IP65
Warranty	2 years	2 years	2 years	2 years	2 years
Other features					
Part no.	0577 1715	0577 1716	0577 1712	0577 1713	0577 1733

Detailed information on all data loggers can be found in the brochure:

"Measurement Solutions for Climate Applications in Industry"

Overview: Temperature compact/pro humidity logger testo 175/177

Type	testo 175-H1	testo 175-H2	testo 177-H1
Description	2-channel humidity/temperature logger with internal sensors	2-channel humidity/temperature logger with internal sensors and display	4-channel humidity/temperature logger with internal sensors and external probe socket
Illustration			
Measurement value sensor	Testo humid. sensor, cap. NTC (internal)	Testo humid. sensor, cap. NTC (internal)	Testo humid. sensor, cap. NTC (internal) (external)
Meas. range	0 to +100 %RH -10 to +50 °C	0 to +100 %RH -20 to +70 °C	0 to +100 %RH -20 to +70 °C (int.) -40 to +120 °C (ext.) -40 to +70 °C td
Resolution	0.1 %RH 0.1 °C	0.1 %RH 0.1 °C	0.1 %RH 0.1 °C 0.1 °C 0.1 °C td
Accuracy ±1 digit	System ±3 %RH ±0.5 °C	System ±3 %RH ±0.5 °C	System ±2 %RH ±0.5 °C Instrument ±0.2 °C (-25 to +70 °C) ±0.4 °C (remaining range)
Memory	3700 Readings	16000 Readings	48000 Readings
Measuring rate	10 s to 24 h	10 s to 24 h	2 s to 24 h
Oper. temp.	-10 to +50 °C	-20 to +70 °C	-20 to +70 °C
Storage temp.	-40 to +70 °C	-40 to +85 °C	-40 to +85 °C
Battery type	Lithium battery	Lithium battery	Lithium battery
Battery life	>2.5 years*	>2.5 years*	>5 years*
Dimensions	82 x 52 x 30 mm	82 x 52 x 30 mm	103 x 64 x 33 mm
Weight	80 g	85 g	130 g
Protection class			IP54
Warranty	2 years	2 years	2 years
Other features			
Part no.	0563 1757	0563 1758	0563 1775

* at a measurement rate of 15 mins. (-10 to +50 °C)

Compact data logger testo 175



- Memory up to 3,700 measurement values
- Measurement rate 10 sec to 24 h freely selectable
- Battery life more than 2.5 years*

Pro data logger testo 177



- Memory up to 48,000 measurement values
- Measurement rate 2 sec to 24 h freely selectable
- Battery life more than 5 years*

Pro-data logger testostor 171



- Robust metal housing
- Large selection of probes
- Memory up to 55,000 readings
- Measurement rate freely selectable 2 s to 24 h

All data loggers can be validated



testo 521/526 reference pressure meters for all measurement ranges

testo 521

testo 521-1/-2 with internal sensor
0 to 100 hPa/0.1%/0.2%

The testo 521-1/-2 is designed for precise differential pressure measurements, for example on filters, checking ventilators and exhaust fans. Use the testo 521-1/-2 for Pitot tube measurements in the range 5 to 100 m/s.

testo 521-3 with internal sensor
0 to 2.5 hPa

The smallest differential pressures up to 2.5 hPa are measured with the testo 521-3. High accuracy and a resolution of 0.1 Pa make the instrument ideal for measurements in cleanrooms. For Pitot tube measurements in the range 1 to 20 m/s, you can measure precisely with the testo 521-3.

testo 526

testo 526-1 with internal sensor
0 to 2000 hPa / 0.1%

testo 526 is the ideal differential pressure meter for industrial applications. Processes can be accurately measured and monitored with an accuracy of 0.1% of the full-scale value.

testo 526-2 with highly accurate internal sensor
0 to 2000 hPa, 0.05%

testo 526 is the ideal differential pressure meter for sensitive industrial applications. Critical processes can be efficiently measured and monitored at an accuracy of up to 0.05% of the full-scale value.

Pressure test

Specially for leak tests on containers, uninterrupted recording is possible via the built-in test menu in testo 526-1 and testo 526-2. Subsequent processing of measurement data via software or printouts ensure that the pressure test is documented.

- Two user-defined probe inputs allow the connection of external probes for pressure, temperature, current/voltage

1 0 ... 100 hPa / ± 0.2 % of fsv

testo 521-1, differential pressure meter
0 to 100 hPa incl. battery and
calibration protocol

Part no. 0560 5210

2 0 to 100 hPa / ± 0.1 % of fsv

testo 521-2, differential pressure meter
0 to 100 hPa incl. battery and
calibration protocol

Part no. 0560 5211

3 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

4 0 to 2000 hPa / ± 0.1 % of fsv

testo 526-1, differential pressure meter
0 to 2000 hPa incl. fast coupling
connections, battery and calibration
protocol

Part no. 0560 5280

5 0 to 2000 hPa / ± 0.05 % of fsv

testo 526-2, differential pressure meter
0 to 2000 hPa incl. fast coupling
connections, battery and calibration
protocol

Part no. 0560 5281

Wide selection of probes

Wide selection of probes



testo 521 and 526 –
documentation at the
measurement site.
Individual measurement
protocols can be printed
out on the fast printer



Monitoring filters with an external 100 Pa probe



Store data by
measurement site and
analyze on a
PC/notebook



Checking measurement transmitters with 4 to 20 mA interface

Common advantages, testo 521/526

Advantages during measurement

- The brief text menu greatly facilitates navigation
- Two measurement channels are depicted in the large two line LCD display; use the arrow buttons to switch to the calculated parameters
- Initialisation of the relative and differential pressure probes is directly via the P=O button
- You can select from the following units when measuring pressure: mbar, hPa, bar, Pa, kPa, inH₂O, mmH₂O, torr and psi
- Button for Hold, Max, Min and Mean
- Fast measurement rate of 0.04 seconds is ideal for recognising pressure peaks
- Hands-free: Top-Safe (protection from impact) with carrier strap and magnetic plate as practical accessory for measuring instrument (optional)

Long-term monitoring made easy

- Measurement data can be saved separately or as a measurement series. The measurement rate (0.04 seconds, 1 second to 24 hours) and the number of values to be saved are freely selectable. The maximum memory size is 25,000 readings.
- The readings are saved under separate names for the sites (max. 99 sites) - with retracing guarantee.
- Online measurement for large quantities of data can be activated via PC.

Documentation on site

- Measurement protocols can be printed on site using the fast printer. No awkward cables required thanks to the infrared interface.
- Long-term legible thermal paper ensures that measurement data documentation can be stored for up to 10 years.

Wide selection of probes

The differential pressure sensor is built into testo 521 and testo 526. Up to two additional probes can be connected via user-defined probe sockets.

- Differential pressure probes to 2000 hPa
- Absolute pressure probes to 2000 hPa
- Relative pressure probes to 400 bar
- Temperature probes from -200 to +1250 °C
- Probes for measuring current/voltage

Inspection of transmitters with 4 to 20 mA interface

All transmitters or non-Testo probes (in 2 or 4 wire systems, 18 V) can be connected to the 4 to 20 mA interface. Scaling is carried out on the hand-held measuring instrument.

Major benefit: The transmitter connected does not need its own power; it is supplied by the testo 521 or testo 526 pressure meter.

Easy data management

- The saved measurement data can be easily analysed and processed using the software available.
- Readings are taken by the instrument and can be depicted online by the software.
- Pressure peaks can be protocolled online in cycles of 0.05 seconds in the Fast Measurement menu.














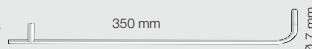
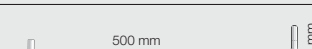


Since pressure peaks are usually unforeseen, a rule can be defined via the trigger function, which filters out pressure peaks and archives them separately for the user in corresponding register pages.

Recommended Set: testo 526 set – monitor pipeline pressure in a production process

testo 526-1, differential pressure meter 0 to 2000 hPa incl. fast coupling connections, battery and calibration protocol	0560 5280
Low pressure probe, refrigerant-proof stainless steel, up to 10 bar	0638 1741
Connection cable, 2.5 m long, for pressure probes 0638 1741/1841/1941/2041/2141	0409 0202
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



Probes / Accessories, testo 521/526

Differential pressure probe		Illustration	Meas. range	Accuracy	Conn.	Part no.	
Precision pressure probe, 100 Pa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and flow speeds (in combination with Pitot tube)			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, 100 hPa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and flow speeds (in combination with Pitot tube)			0 to +100 hPa	±0.5% of mv (+20 to +100 hPa) ±0.1 hPa (0 to +20 hPa)	Plug-in head, connection cable 0430 0143 or 0430 0145 required	0638 1547	
Pressure probe, 1000 hPa, measures differential pressure, in robust metal housing with impact protection, incl. quick-closing coupling (M8 x 0.5), magnet for fast attachment			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	
Relative pressure probe (media compatible)		Illustration	Overload	Meas. range	Accuracy	Conn.	Part no.
Low pressure probe, refrigerant-proof stainless steel, up to 10 bar	 screw-in thread 7/16" UNF	25 bar	-1 to +10 bar	±1% of fsv	Plug-in head, connection cable 0409 0202 required	0638 1741	
High pressure probe, refrigerant-proof stainless steel, up to 30 bar	 screw-in thread 7/16" UNF	120 bar	-1 to +30 bar	±1% of fsv	Plug-in head, connection cable 0409 0202 required	0638 1841	
High pressure probe, refrigerant-proof stainless steel, up to 40 bar	 screw-in thread 7/16" UNF	120 bar	-1 to +40 bar	±1% of fsv	Plug-in head, connection cable 0409 0202 required	0638 1941	
High pressure probe, refrigerant-proof stainless steel, up to 100 bar	 Screw-in thread 7/16" UNF	250 bar	-1 to +100 bar	±1% of fsv	Plug-in head, connection cable 0409 0202 required	0638 2041	
High pressure probe, refrigerant-proof stainless steel, up to 400 bar	 Screw-in thread 7/16" UNF	600 bar	-1 to +400 bar	±1% of fsv	Plug-in head, connection cable 0409 0202 required	0638 2141	
Current/voltage measurement		Illustration	Meas. range	Accuracy	Part no.		
Current/voltage cable (±1 V, ±10 V, 20 mA)		0 to +1000 mV 0 to +10 V 0 to +20 mA	±1 mV (0 to +1000 mV) ±0.01 V (0 to +10 V) ±0.04 mA (0 to +20 mA)	0554 0007			
4 to 20 mA interface for connection and intermittent power supply to transmitters (scaling via hand-held instrument), in robust metal housing with impact protection, incl. magnet for fast attachment			0/4 to 20 mA	±0.04 mA Channels: 1 channel, transmitter connection via terminal board Auxiliary energy output: 18V DC ± 20% max. connection load: 30 mA	0554 0528 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required		
Pitot tube		Illustration	Oper. temp.	Part no.			
Pitot tube, 350 mm long, Ø 7 mm, stainless steel, measures flow speed, In conjunction with 0638 1347 / 0638 1447 / 0638 1547 pressure probes or testo 521, with internal sensor		 350 mm Ø 7 mm	0 to +600 °C	0635 2145			
Pitot tube, length 500 mm, Ø 7 mm, stainless steel, for measuring flow velocity, in combination with pressureprobes 0638 1347 / 0638 1447 / 0638 1547 or testo 521 with internal sensor		 500 mm Ø 7 mm	0 to +600 °C	0635 2045			
Temperature probes		Illustration	Meas. range	Accuracy	t99	Part no.	
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	3 s	0604 0194 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required		
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 Conn.: Fixed cable		
FURTHER TEMPERATURE PROBES TC, NTC, SEE TESTO 950							

Accessories	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument, PUR coating material	0430 0145
Connection hose, silicone, 5m long, max. load 700 hPa (mbar)	0554 0440

Accessories	Part no.
Connection hose set, 2 x 1 m, coiled, incl. 1/8" screw connection, Pressure-tight up to 20 bar	0554 0441
Connection cable, 2.5 m long, for pressure probes 0638 1741/1841/1941/2041/2141	0409 0202

Accessories, testo 521/526

Further accessories and spare parts	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
Transport and protection	Part no.
TopSafe (protection case), incl. carrier strap, bench stand and magnet. Protects instrument from dust, impact, scratches	0516 0446
Transport case, for measuring instrument, probes, Prandtl Pitot tube, accessories	0516 0527
System case, For measuring instrument, probes, straight or Prandtl Pitot tube, accessories	0516 0526
Printer and Accessories	Part no.
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries, for printing out measurements on site	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), measurement data documentation legible for up to 10 years	0554 0568
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
Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit, facilitates data communication in network	0554 1711

Technical data	
Probe type	testo 521-1 Piezoresistive pressure sensor (integr. sensor)
Meas. range	0 ... 100 hPa
Accuracy ±1 digit	±0.2 % of fsv
Resolution	0.01 hPa
Static pressure	2000 hPa
Overload	300 hPa
Probe type	testo 521-2 Piezoresistive pressure sensor (integr. sensor)
Meas. range	0 to 100 hPa
Accuracy ±1 digit	±0.1 % of fsv
Resolution	0.01 hPa
Static pressure	0 to 2000 hPa
Overload	300 hPa
Probe type	testo 521-3 Piezoresistive pressure sensor (integr. sensor)
Meas. range	0 to 2.5 hPa
Accuracy ±1 digit	±0.5 Pa (0 to 20 Pa) ±0.5 Pa ±0.5% of mv (20.1 to 250 Pa)
Resolution	0.1 Pa
Static pressure	100 hPa
Overload	50 hPa
Probe type	testo 526-1 Piezoresistive pressure sensor (integr. sensor)
Meas. range	0 to 2000 hPa
Accuracy ±1 digit	±0.1 % of fsv
Resolution	0.1 hPa
Static pressure	2000 hPa
Overload	3000 hPa
Probe type	testo 526-2 Piezoresistive pressure sensor (integr. sensor)
Meas. range	0 to 2000 hPa
Accuracy ±1 digit	±0.05 % of fsv
Resolution	0.1 hPa
Static pressure	2000 hPa
Overload	3000 hPa

Calibration Certificates	Part no.
DKD calibration certificate/Pressure, Differential pressure, accuracy < 0.1 (% of full scale value)	0520 0205
DKD calibration certificate/pressure, differential pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0215
DKD calibration certificate/pressure, differential pressure, accuracy > 0.6 (% of full-scale value)	0520 0225
DKD calibration certificate/pressure, absolute pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0212
ISO calibration certificate/Pressure, Differential pressure, accuracy < 0.1 (% of full scale value)	0520 0035
ISO calibration certificate/pressure, differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
ISO calibration certificate/Pressure, Differential pressure, accuracy > 0.1 (% of fsv) for testo 521-3	0520 0405
ISO calibration certificate/absolute pressure, 5 measurement points distributed over meas. range, absolute pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0125
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature, Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C	0520 0021
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
DKD calibration certificate/temperature, meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
DKD calibration certificate/temperature, contact surface temperature probes; calibration points +100°C; +200°C; +300°C	0520 0271
ISO calibration certificate/electrical	0520 1000

Common data testo 521 / testo 526		
Probe type	Ceramic sensor for external relative pressure probes	
Meas. range	-1 to 400 bar	
Accuracy* ±1 digit	±0.2 % of mv	
Resolution	0.01 bar	
Temperature application range	-40 to +100 °C	
Temperature compensation	0 to +70 °C	
Probe type	Piezoresistive pressure sensor for external differential and absolute pressure probes	
Meas. range	0 to 2000 hPa	
Accuracy* ±1 digit	±0.1 % of mv	
Resolution	0.1 Pa (0638 1347) 0.001 hPa (0638 1447) 0.01 hPa (0638 1547) 0.1 hPa (0638 1647; 0638 1747; 0638 1847)	
Temperature application range	0 to +50 °C (compensated)	
Probe type	NTC	Type K (NiCr-Ni)
Meas. range	-40 to +150 °C	-200 to +1370 °C
Accuracy* ±1 digit	±0.2 °C (-10 to +50 °C) ±0.4 °C (remaining range)	±0.4 °C (-100 to +200 °C) ±1 °C (remaining range)
Resolution	0.1 °C	0.1 °C
Probe type	Current/voltage measurement	Current measurement
Meas. range	0 ... 10 V, 0 to 20 mA	0 to 20 mA
Accuracy* ±1 digit	±0.01 V, ±0.04 mA, Cable 0554 0007	Probe 0554 0528
Resolution	0.01 V, 0.01 mA	0.01 mA
Oper. temp.	0 to +50 °C	Weight 300 g
Storage temp.	-20 to +70 °C	Warranty 2 years
Power supply	Battery/rech. batt. (9 V block), mains unit 12 V	
Battery life	in continuous operation with internal pressure sensor: 30 h with alkali-manganese / 10 h with rech. batt. / 18 h with zinc carbon	
Conn.	Hose: inner Ø 4 mm, outer Ø 6 mm	
Display	LCD display with symbol, 7-segment display and dot matrix	
Refresh rate (display)	2x per second, in fast measurement 4x per second	
Dimensions	219 x 68 x 50 mm	
PC	RS232 interface	Material/Housing ABS
Memory	100 kB (corresponds to approx. 25,000 readings)	
Other features	Mains connection and battery charging in the instrument	

* Accuracies valid only for instruments without connected probe



testo 525, highly accurate pressure measuring instruments

testo 525

The highly accurate pressure gauge testo 525 offers all the functions expected by a professional in this class of instrument.

The temperature compensation ensures that temperature fluctuations have no influence on the measurement in testo 525. It allows measurements in the ranges of positive/negative pressure, differential and absolute pressure and is thus the optimum reference measuring instrument for calibrations.

- Accurate internal pressure sensor
- 11 different meas. units to select from
- Measures leak rate (pressure drop over time)
- Min/Max value
- Hold button
- Data memory for single values or series of measurements
- Auto-Off/Low Bat display
- One touch zero

testo 525

testo 525, pressure gauges incl. battery and calibration protocol. Different instrument versions for every application, see below.



Absolute pressure measurement in an autoclave in medicine

testo 525 positive pressure meters (media-compatible)

Accuracy $\pm 0.2\%$ of fsv

Meas. range	Resolution	Overload	Part no.
0 to 30 bar	0.01 bar	70 bar	0560 5258
0 to +70 bar	0.01 bar	140 bar	0560 5259

testo 525 absolute pressure meters

Accuracy $\pm 0.2\%$ of fsv

Meas. range	Resolution	Overload	Part no.
0 to 1100 hPa	0.1 hPa	± 3000 hPa	0560 5256
0 to 2000 hPa	0.1 hPa	± 3000 hPa	0560 5257

Accuracy $\pm 0.1\%$ of fsv

Meas. range	Resolution	Overload	Part no.
0 to 1100 hPa	0.1 hPa	± 2000 hPa	0560 5266
0 to +2000 hPa	0.1 hPa	± 3000 hPa	0560 5267

Accuracy $\pm 0.05\%$ of fsv

Meas. range	Resolution	Overload	Part no.
0 to +2000 hPa	0.1 hPa	± 3000 hPa	0560 5273

Common data

Sensor	Piezoresistive pressure sensor
Measuring medium	All non-corrosive gases
Conn.	Hose 4 mm (up to 7 bar), NPT 1/8" (from 10 bar)
PC	RS232 interface
Display	LCD, 1 line
Storage interval	Manually, 1 second...60 min selectable
Memory	984
Oper. humidity	30 to 95 %RH
Oper. temp.	-5 to +50 °C
Storage temp.	-30 to +85 °C
Protection class	IP54
Battery type	9V block battery
Battery life	50 h
Dimensions	152 x 83 x 34 mm
Weight	270 g
Warranty	2 years
Other features	11 different measuring units can be set: bar, mbar, kPa, hPa, MPa, mmH ₂ O, mH ₂ O, mmHg, psi, inchH ₂ O, inchHg

Software for instrument control and measurement data management

Configuration settings in instrument

All of the important parameters in the instrument can be easily adapted on your PC using the PC software for testo 525; regardless of whether you wish to change a unit or measuring rate or wish to activate smoothing. No problem. Simply select the required value using the pull-down menu and it is transmitted to your instrument straightaway.

Readout memory

Data is transferred to a file on your hard disk, where it is permanently filed, when the „Readout memory“ button is pressed. The data can also be shown in a table. Important information such maximum/minimum and mean value appear in the top lines. The data can also be printed or transferred to Excel.

Online Measurement

All of the measurement data can be read straightaway from the graphic appearing in the initial screen. The data is automatically saved during online measurement.

High speed

testo 525 carries out 10/20 measurements per second. Fast measurement is necessary so that pressure drops can be recognised and recorded. In the case of high speed measurements, the user can select when the measurement is to be started.

The following can be selected:

immediately

Measurement starts running *ad hoc*

Overshooting

Measurement starts once a specific limit value is overshoot

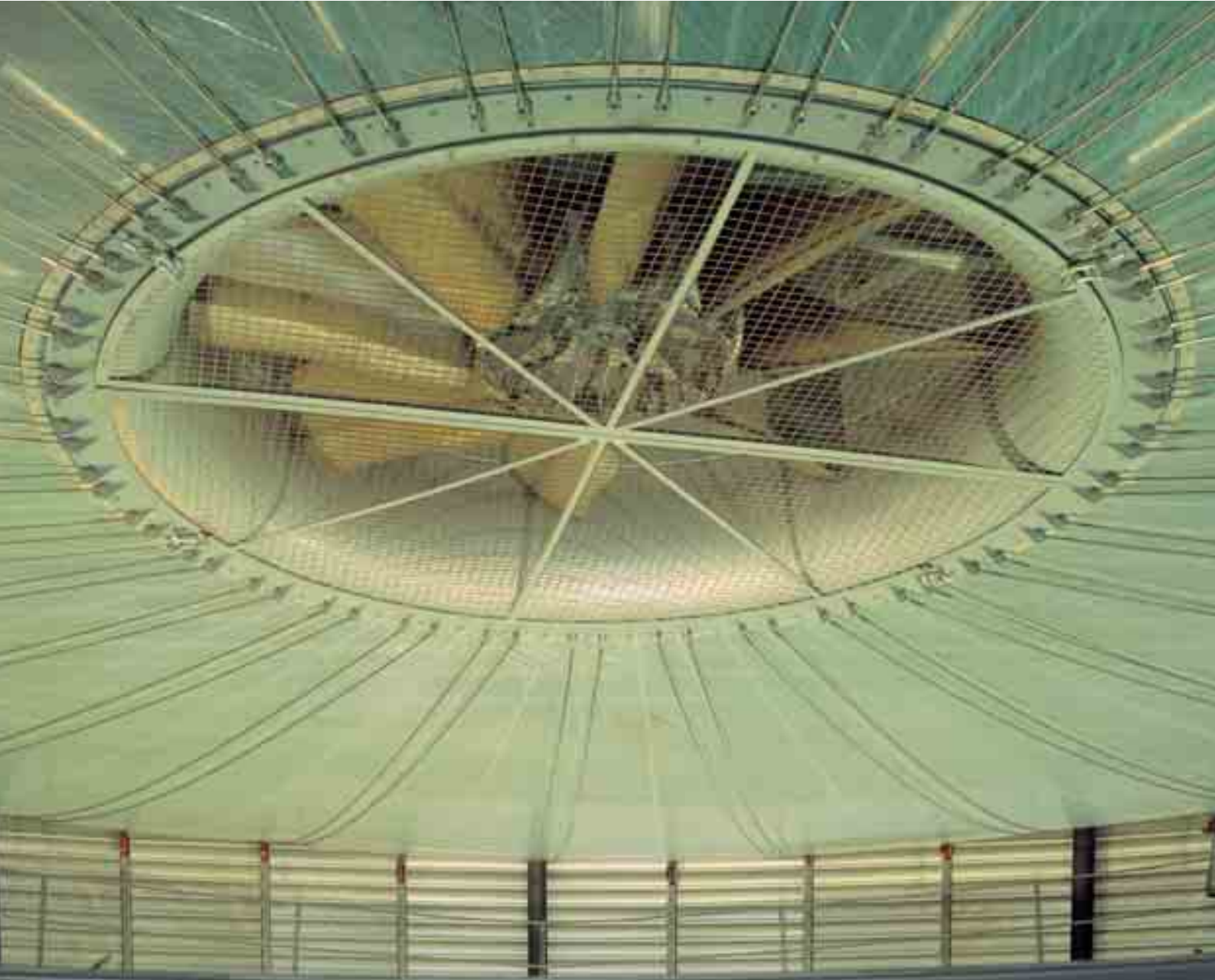
Undershooting

Measurement starts once a specific limit value is undershot.

A trigger mode can also be set up. If a limit value is exceeded, you can determine how long afterwards measurements can continue. Recording stops once the specified time has been reached. If the limit value is again exceeded, recording begins again. This mode is ideal for troubleshooting systems.

Accessories Transport and protection	Part no.
Case made of leather with shoulder strap, For secure storage of measuring instrument	0554 5251
Transport case (plastic) for measuring instrument and accessories, For safe transport	0516 5200
Software and accessories for testo 525	Part no.
Software set incl. RS232 data transfer cable, Software for instrument control and data management	0554 5256
Software, for instrument control and data management	0554 5255
Data transfer cable RS 232, Connects measuring instrument to PC for data transfer	0554 5250
Further accessories and spare parts	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
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	0554 0441
Adapter 1/8", for connection hoses	0554 5200
Calibration pump, negative pressure , Max. -700 hPa/mbar	0554 5253
Calibration pump, positive pressure , Max. 5 bar	0554 5252
Pressure transmitter 0 to 10 bar, to measure pressure in liquid substances	0554 5254
Calibration Certificates	Part no.
ISO calibration certificate/pressure, differential pressure; 5 points distributed over meas. range	0520 0005
DKD calibration certificate/pressure, diff. and pos. pressure; 11 measuring points distributed over the instr. meas. range	0520 0215
DKD calibration certificate/Pressure, Absolute pressure 11 points distributed over the whole measuring range (less than 0.1% of fsv)	0520 0222
ISO calibration certificate/pressure, differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
ISO calibration certificate/Pressure, Calibration points freely selectable from 0 to 70 bar absolute and 0 to 250 bar positive pressure	0520 0105





testo 460, non-contact rpm measurement

testo 460

testo 460 optically measures rpm, e.g. of ventilators and shafts. The measurement spot is displayed on the measurement object with an LED marking. Max./min. values are displayed directly at the press of a button. The backlit display allows the measurement values to be easily read out, even in unfavourable light conditions. testo 460 is very handy, small and easy to operate.

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



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



rpm measurement on shafts

testo 460

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

Part no. 0560 0460

Technical data	
Meas. range	100 to 29999 rpm
Accuracy ±1 digit	±(0.02 % of mv + 1 digito)
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 (incl. battery and protective cap)
Dimensions	119 x 46 x 25 mm (incl. protective cap)

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

testo 465, non-contact rpm measurement

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.

- Storage of mean/max/min value, last reading
- Measurement distance up to 600 mm
- Robust design on account of SoftCase (protective case)



Non-contact (optical) rpm measurement



rpm measurement on shafts

testo 465

testo 465, rpm measuring instrument set: Measuring instrument with SoftCase (protective case) in transport case (plastic), incl. reflectors, batteries and calibration protocol

Part no. 0563 0465

Technical data			
Probe type	Optically with mod. light beam		
Meas. range	+1 to +99999 rpm		
Accuracy ±1 digit	±0.02% of mv (+1 to +99999 rpm)		
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	144 x 58 x 20 mm
Storage temp.	-20 to +70 °C	Weight	145 g
Battery type	2 AA batteries or rech. battery		
Battery life	40 h		

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



testo 470/471, non-contact and mechanical rpm measurement

testo 470 / testo 471

Non-contact and mechanical

The optimum combination of optical and mechanical rpm measurement. By simply attaching an adapter for a measuring tip or surface speed disc, the optical measurement becomes a mechanical one.

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

testo 470

testo 470, rpm measuring instrument set: Instrument with SoftCase (protective case) in transport case, incl. adapter, probe tip, surface speed disc, reflectors, batteries and calibration protocol

Part no. 0563 0470

testo 471

Included in delivery: as testo 470, additionally: thread counter for measuring lengths and speeds of threads, wire or (glass) fibres

Part no. 0563 4710

Technical data

Probe type	Optically with mod. light beam	Mechanical
Meas. range	+1 to +99999 rpm	+1 to +19.999 rpm
Accuracy ±1 digit	±0.02% of mv	±0.02% of mv
Dimensions	175 x 60 x 28 mm	Weight 190 g
Speed: 0.10 to 33.3 m/s; 0.1 to 109 ft/s; 0.10 to 1.999 m/min; 0.40 to 6550 ft/min; 4.00 to 78.700 in/min		
Lengths: 0 to 99.999 m; 0 to 99.999 ft; 0 to 99.999 in		
Accuracy: (±1 digit/0.02 m/1.00 inch depending on resolution)		
Measuring wheels: 0.1m, 6" (included)		

Further technical data and ordering data as testo 465, see page 83



Non-contact (optical) rpm-measurement



Mechanical rpm-measurement

Mechanical rpm measurement on a roller



Mechanically with a thread counter, testo 471 only



Non-contact (optical)



Mechanically with a probe tip



Mechanically with a surface speed disc

Accessories Ordering data

Accessories Ordering data	Part no.
Measuring wheel 12"	0554 4755
ISO calibration certificate/rpm, optical and mechanical rpm measuring instruments; cal. points 500; 1000; 3000 rpm	0520 0012

testo 476, hand stroboscope, high luminosity

testo 476

The hand stroboscope testo 476 measures and checks rotation and vibration motion. It allows measurement during continuing operation. The stationary image allows the inspection and qualitative assessment of components in high frequency motion.

- High setting accuracy and stability thanks to dynamic setting dial
- Even higher light intensity with improved high-performance xenon flash lamp
- Powerful rechargeable battery pack for min. 2 hours' continuous operation without mains connection over the whole frequency range
- Trigger input for synchronizing flash sequence (long-term observation)
- Mains operation with simultaneous battery charging possible

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



Even higher light intensity of 800 Lux for optimum illumination



rpm measurement on shafts

Technical data

Meas. range	+30 to +12500 rpm
Accuracy ±1 digit	±0.01% of mv
Resolution	1 rpm
Dimensions	240 x 65 x 50 mm
Oper. temp.	0 to +40 °C
Weight	415 g
Illumination strength: 800 Lux at approx. 20 cm distance · flash energy: max. 170 mJ · operating time: 2h at 30 to 12500 rpm and 23 °C (typical)	

Accessories Ordering data

Accessories Ordering data	Part no.
ISO calibration certificate/rpm, optical and mechanical rpm measuring instruments; cal. points 500; 1000; 3000 rpm	0520 0012

testo 319, 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)

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

LED light, high contrast display

Inspects air duct, with gooseneck casing, middle flexibility

Checks insulations by using the stability of the Decabon tube

Accessories Ordering data	Part no.
Flexible push-on gooseneck tube,	0554 3196
Mirror attachment 45° angle	0554 3194
Bag for basic set testo 319, gooseneck tube, magnet and mirror attachment	0516 3192

Technical data	
No. of pixels:	6,000
Fibre-optic field of view:	50°
Angle of field of view:	45° +/- 5°
Min. focus distance:	15 mm (close)
Max. focus distance:	150 mm (light)
Operating and storage temperature:	-20° to + 60°C
Working temperature/Probe:	-20° to + 80°C
Probe diameter:	6.5 mm
Probe length:	1247 mm +/- 6
Max. bending radius:	50 mm
Light source:	LED 2 point light
Battery life:	Typically 50,000 h
Probe resistance:	Probe tip water-proof up to handle
	Short-term resistance to silicone oils, petrol and kerosene. Oils or petrol must be wiped off immediately after immersion
Housing:	Black
Battery type:	3 AA Mignon 1.5 V
Battery life:	4 h

Measurement technology for measuring rpm

The measurement procedures for measuring rpm can be divided into three main groups:

1. Mechanical rpm measurement

The recording of measurement values using a mechanical measurement sensor is the oldest method of rpm measurement.

The revolutions of the sensor are electronically evaluated in the instrument. This method is still often used today, especially for low revolutions of 20 to 20,000 rpm. The disadvantage of this method is the non-constant load during measurement, which are very dependent on the applied pressure. Mechanical rpm measurement can also not be applied on small measurement objects. At higher revolutions, „slip“ can occur.

2. Electrical method with the reflector method (optical rpm measurement)

The transfer of the rotation to the measuring instrument takes place via an infrared light beam which is transmitted by the instrument, and which is reflected by a reflector attached to the measurement object. It is important to ensure that the maximum distance between the reflector and the measuring instrument is not exceeded (distance max. = 350 mm).

This method is superior to mechanical rpm measurement, however it is not always possible to attach reflectors.

3. Recording of rpm using the stroboscopic measurement method

According to the stroboscopic principle, objects appear immobile to the observer if the frequency of the light flashes is synchronized with the revolutions (motion) of the object. The stroboscopic principle has several decisive advantages compared to other measurement methods with mechanical or optical measurement value recorders:

It allows the measurement of revolutions on very small objects or at inaccessible points. Reflectors do not need to be attached to the measurement object, production processes can continue to run without interruption. Measuring range: 30

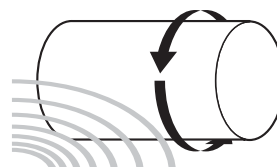
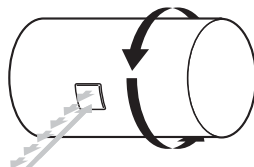
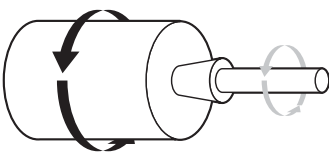
to 20,000 rpm. In addition to the determination of rpm, the recording of oscillation and the observation of movements are also possible with the stroboscopic measurement method, e.g. in moving membranes, loudspeakers etc.

Note:

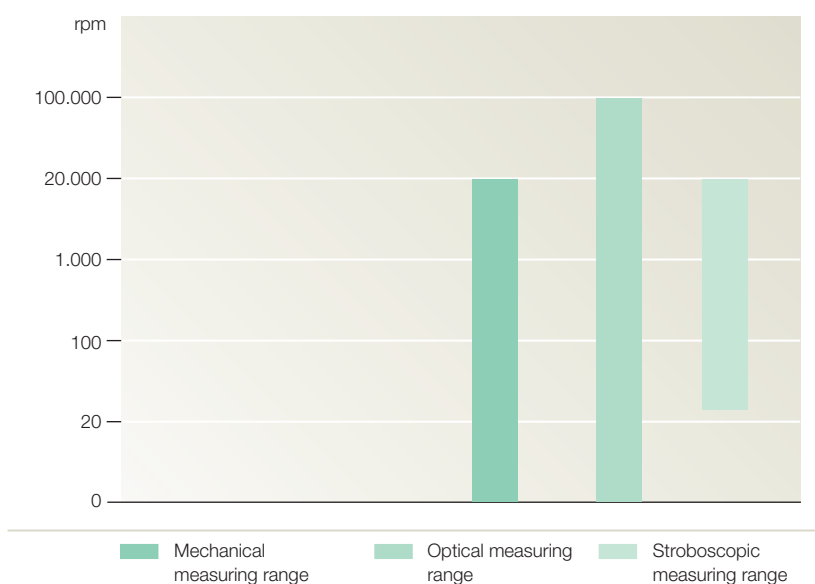
testo 465
measures optically

testo 470/471
includes mechanical and optical measurement methods

testo 476
measures stroboscopically



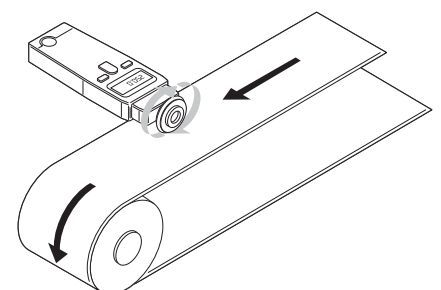
Measuring ranges of the different measurement methods



Speed and length measurement

Using a speed wheel and a suitable measuring instrument, speed and length measurements can also be carried out. The speed wheel is simply placed on the moving object (e.g. conveyor belt), the measurement value can be directly read off.

(Caution: do not apply too much pressure to the speed wheel, just press lightly.)



Measurement technology for measuring temperature

Sensor type selection

The probe type is determined by the measurement task. The selection of the most suitable temperature sensor is made according to the following criteria:

- Measurement range
- Accuracy
- Measurement site design
- Reaction time
- Durability

In order to be able to provide the right probe for your requirements, Testo offers a large selection of sensor elements and temperature measuring instruments:

- Thermocouples
- Resistance sensor (Pt100)
- Thermistors (NTC)

Thermocouples

Temperature measurement with thermocouples is based on the thermoelectric effect. Thermocouples consist of two wires spot-welded to each other and made of different metals or metal alloys. The basic values of the thermoelectric voltages and the permitted tolerances of thermocouples are defined in the norms IEC 584. The most common thermoelement is NiCr-Ni (type designation K).

Resistance sensors (Pt100)

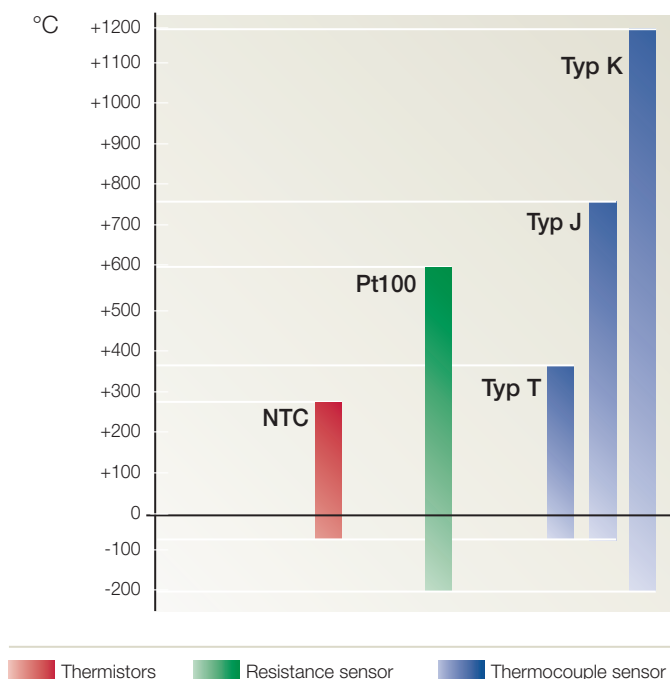
When measuring temperature with resistance sensors, use is made of the temperature sensitive resistance change in the platinum „resistance“.

The measurement resistance is supplied with a constant current and the voltage drop, which changes with the resistance value via the temperature, is measured. Basic values and tolerances for resistance thermometers are defined in the IEC 751.

Thermistors (NTC)

Temperature measurement with thermistors is also based on a temperature-dependent change of resistance in the sensor element. Contrary to resistance thermometers, thermistors have a negative temperature coefficient (resistance becomes smaller with increasing temperature). Characteristic curves and tolerances are not normed.

Temperature measurement thermocouples



Accuracy data

Measurement value sensor	Temperature range	Class	Permitted tolerances	
			fixed value	Referred to temperature
Thermocouple Typ K (NiCr-Ni)	-40 ... +1000 °C	1	±1.5 °C	±0.004 • Itl
	-40 ... +1200 °C	2	±2.5 °C	±0.0075 • Itl
	-200 ... +40 °C	3	±2.5 °C (-167 ... +40 °C)	±0.015 • Itl (-200 to -167.1 °C)
Typ T	-40 ... +350 °C	1	±0.5 °C	±0.001 • Itl
Typ J	-40 ... +750 °C	1	±1.5 °C	±0.004 • Itl
Pt100	-200 ... +600 °C	B	± (0.3 + 0.005 • Itl)	
	-200 ... +600 °C	A	± (0.15 + 0.002 • Itl)	
NTC (Standard)	-50 ... -25.1 °C	—	±0.4 °C	±0.5 % of full scale value
	-25 ... +74.9 °C		±0.2 °C	
	+75 ... +150 °C		±0.5 % of full scale value	
NTC (High temp.)	-30 ... -20.1 °C	—	±1 °C	±0.5 °C ±0.5 % of full scale value
	-20 ... 0 °C		±0.6 °C	
	+0.1 ... +75 °C		±0.5 °C	
	+75.1 ... +275 °C	— °C	±0.5 °C ±0.5 % of full scale value	

Itl = measurement temperature value

Data for thermocouples according to EN 60584-2 (formerly IEC 584-1).

Data for Pt100 according to EN 60751 (formerly IEC 751). No standardization exists for NTC sensors.

Measurement technology for measuring temperature

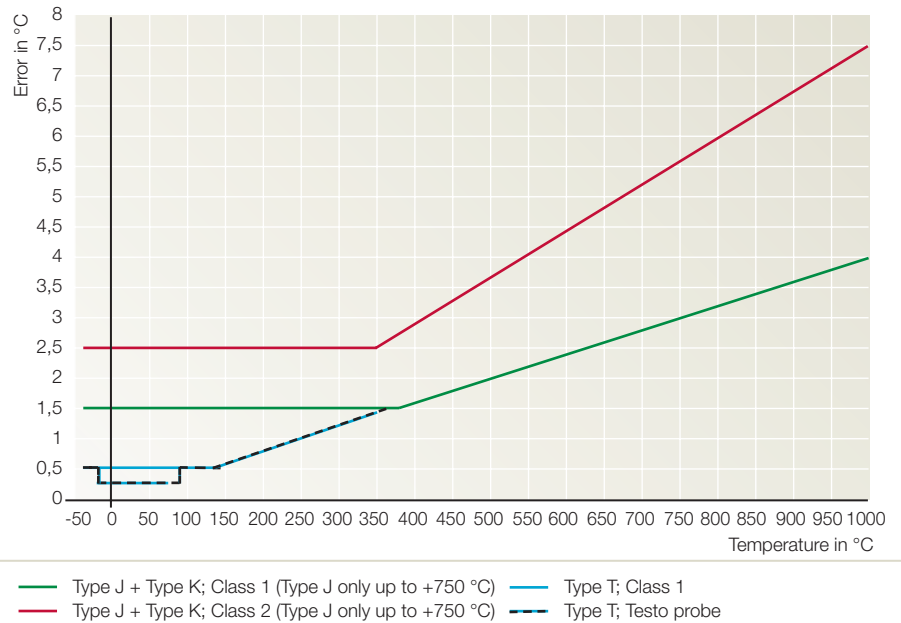
Accuracy thermocouples

Data for thermocouples to EN 60584-2 (formerly IEC 584-1). Two values are given, one fixed value in °C and one formula. The larger value always applies.

For thermocouples of Class 1, the accuracies are specified for the measuring range -40 to +1000°C.

For thermocouples of Class 2, the accuracies apply for the measuring range -40 to +1200 °C

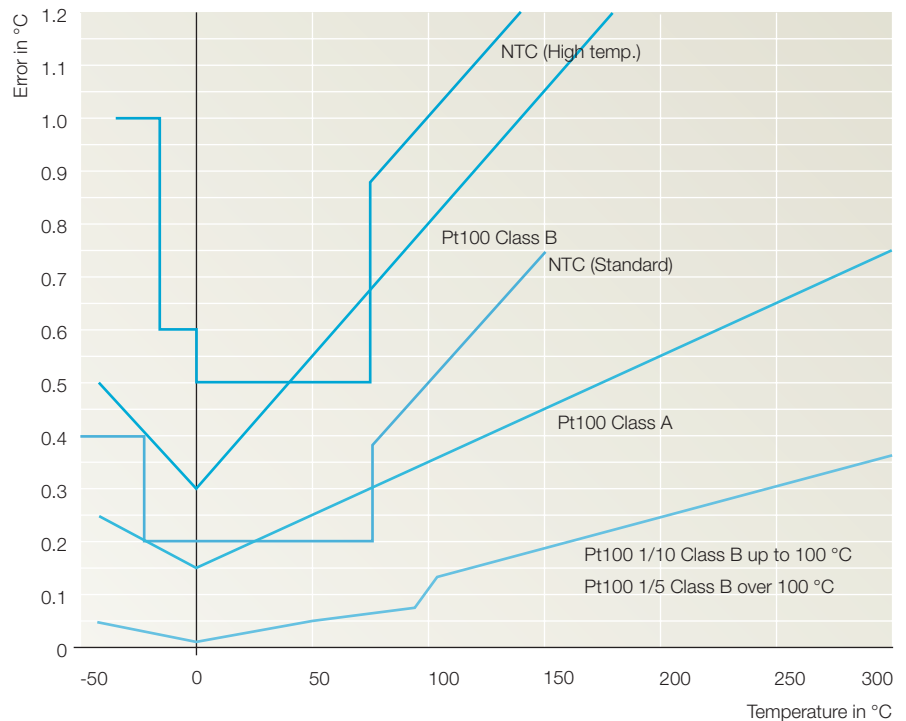
For thermocouples of Class 3, the accuracies apply for the measuring range -200 to +40.1 °C



Accuracies Pt100/NTC

Data for Pt100 according to EN 60751 (formerly IEC 751). No standardization exists for NTC measurement values sensors.

In addition to fast and reliable thermocouple probes, Pt100 probes according to EN 60751 (formerly IEC 751) or selected high-precision probes based on Pt100 with 1/10 DIN accuracy are also available. These would precision sensors are 10 times more accurate than „normal“ Pt100 sensors, which are already very accurate. Applied to Class B, whose error is $\pm 0.3 + 0.005 \times I$ temperature I, this means an error of only $\pm 0.03 + 0.0005 \times I$ temperature I.



Measurement technology for measuring temperature

Probe design selection

Reaction time

$$t_{99}\text{-Time} = \text{Time until probe shows 99\% of temperature change}$$

$$t_{99} = 4.6 \times t_{63} - \text{Time}$$

$$t_{99} = 2 \times t_{90} - \text{Time}$$

Immersion-penetration probe



Immersion probe (NiCr-Ni, Pt100, NTC) for measurements in liquids, but also for measurements in powdery substances or in air.



Penetration probes (NiCr-Ni, Pt100, NTC) for measurements in plastic or paste-like media.

Information

- The specified reaction time t_{99} is measured in moving liquid (water) at 60 °C.
- Generally, the thinner the probe, the faster it is and the shallower the necessary immersion depth into the measurement object.
- In order to be able to assume the real temperature of the measurement object, the probe must be immersed into the measurement object at least 10 x the diameter of the probe (better still 15 x diameter).
- However: The thinner the probe, the more carefully it has to be handled.
- Thermocouple probes can be manufactured with a very small diameter (0.25 mm) and are therefore ideal for fast measurements and measurements made on small objects.
- Resistance sensors can be manufactured at low cost with a diameter of 2 mm, but are usually more accurate than thermocouple probes.

Durability

The probe shaft of thermocouple probes is made of Inconel (2.4816). In all other designs, stainless steel V4A (1.4571) is used for the probe shaft. The high quality material used generally ensures sufficient resistance to corrosive substances. Testo offers glass-coated probes for applications in highly corrosive media.

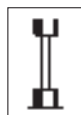
Air probes



(NiCr-Ni, Pt100, NTC)
In order to enable fast measurement, the sensor usually lies bare.

- The specified reaction time t_{99} is measured in a wind tunnel at 2 m/s and 60 °C.
- Immersion/penetration probes can also be used for air measurements. However, the reaction time is 40 to 60 times higher than the specified value which was measured in water.

Surface probes



Design in NiCr-Ni, Cu-CuNi; Pt100; NTC probes. With a widened measurement tip for measurements on smooth, flat surfaces. For optimum heat transfer we recommend silicone conductive paste (Tmax 260 °C)

Advantage:

- Robust design
- Higher sensor accuracy

Disadvantage:

- Long reaction time
- Requires exact handling

Only suitable for smooth surfaces and objects with a high heat capacity, e.g. large metal objects.



Design in NiCr-Ni probes

Our recommendation for fast measurements, also on rough surfaces: Use the patented cross-band measurement head with a sprung thermocouple band. The cross-band takes on the actual temperature of the measurement object in only a few seconds:

- Easy handling (without silicon heat conductive paste)
- Fast measurement result

Information

- The specified reaction times t_{99} are measured on polished steel or aluminium plates at 60 °C.
- The specified accuracies are sensor accuracies.
- The accuracy in your application is dependent on the surface texture (roughness), the material of the measurement object (heat capacity and heat transfer) as well as the sensor accuracy. Testo provides the corresponding calibration certificate for the deviations of the measurement system in your application. For this purpose, Testo uses a surface test rig developed in cooperation with the German Federal Physical and Technical Institute (PTB).

Infrared temperature measurement and its applications

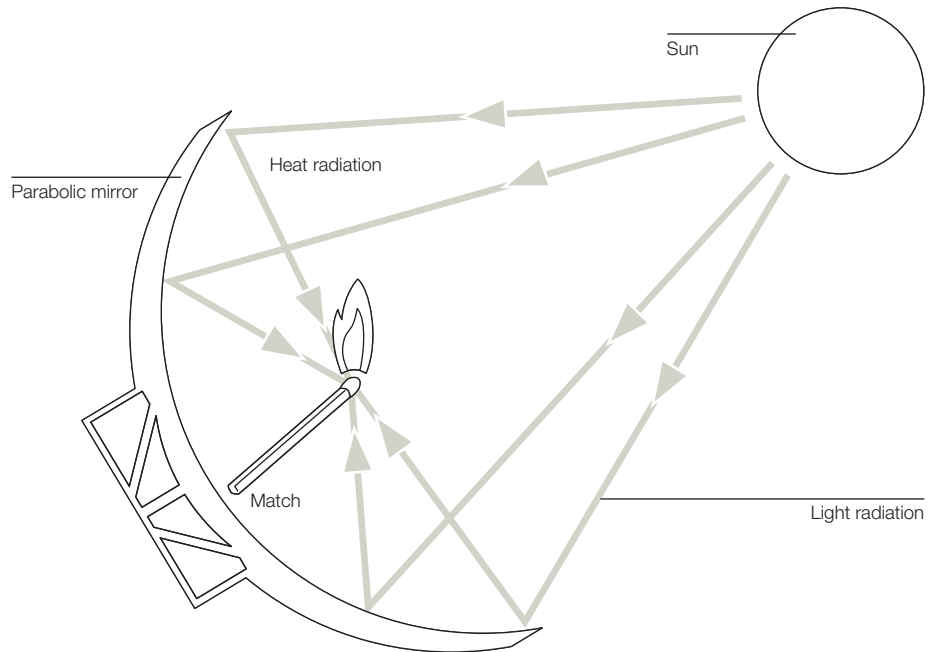
What is heat radiation?

Principles

It is a well-known fact in daily life that all bodies emit electromagnetic waves, or radiation, depending on their temperature. During dispersion of the radiation, energy is transported, a fact which means that radiation can be used to measure body temperature without contact. The radiated energy and its characteristic wavelengths are primarily dependent on the temperature of the radiating body. If, for example, you point a parabolic mirror with a match directly towards the sun, then it will ignite after a short period of time.

This is because of the heat radiation from the sun, which is concentrated by the parabolic mirror onto a point.

Examples of heat radiation



Advantages of IR measuring technology

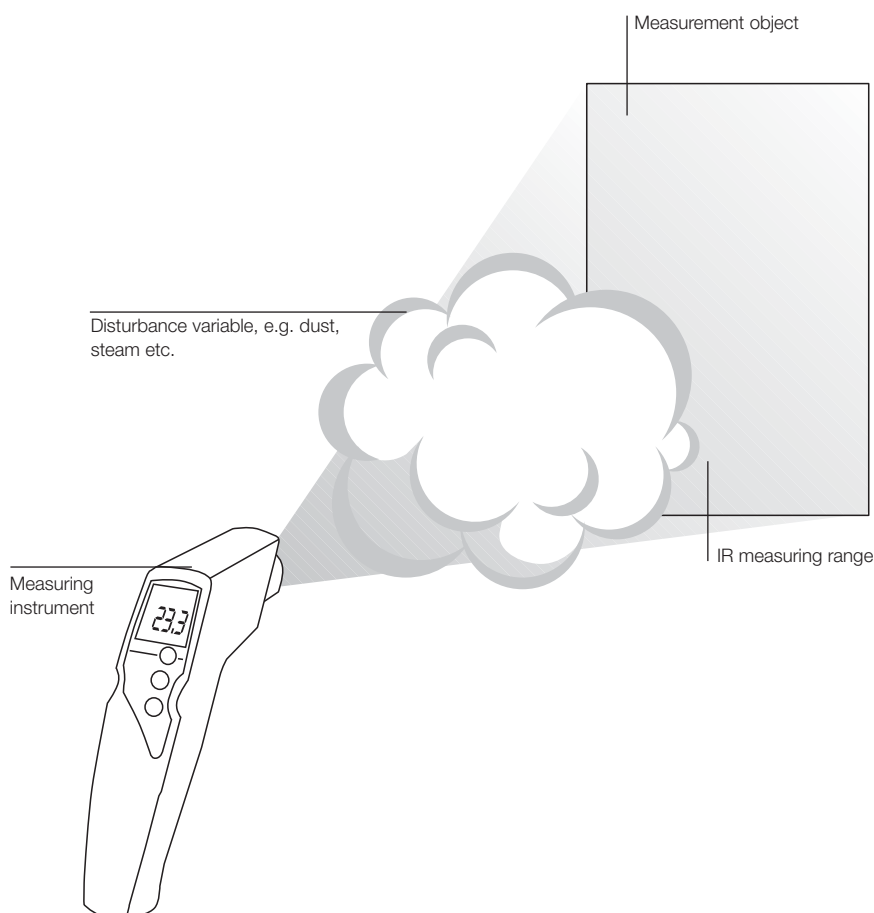
- > Infrared measuring technology enables simple temperature recording of fast, dynamic processes. This is assisted by the short reaction time of sensors and systems.
- > No influence on the object being measured means that measurements can be performed on sensitive surfaces and sterile products, just as well as measurements on hazardous points or points that are difficult to access.

Infrared thermometers are particularly suitable for:

- > Poor heat conductors, such as ceramics, rubber, plastics etc. A probe for contact measurement can only display the correct temperature if it can take on the temperature of the measured body. In the case of poor heat conductors, this is not usually the case and/or the response times are very long.
- > Determining the surface temperature of gears, housings and bearings in large and small motors.
- > Moving parts, e.g. running paper webs, running sheet metal tracks etc.
- > Parts which cannot be touched, e.g. freshly painted parts, sterile parts or for corrosive substances.
- > Measuring very small and very large areas.
- > Live parts, e.g. electrical components, conductor rails, transformers etc.
- > Small and low-mass parts from which a contact probe would remove too much heat thus resulting in incorrect readings.

Infrared temperature measurement and its applications

Applications and practical tips



Emissivity table of important materials

Material	Temperature	E
Aluminium, bright-rolled	170 °C	0,04
Cotton	20 °C	0.77
Concrete	25 °C	0.93
Ice, smooth	0 °C	0.97
Iron, polished	20 °C	0.24
Iron with cast skin	100 °C	0.80
Iron with rolled skin	20 °C	0.77
Gypsum	20 °C	0.90
Glass	90 °C	0.94
Rubber, hard	23 °C	0.94
Rubber, soft grey	23 °C	0.89
Wood	70 °C	0.94
Cork	20 °C	0.70
Heat sink, black anodised	50 °C	0.98
Copper, lightly tarnished	20 °C	0.04
Copper, oxidised	130 °C	0.76
Plastics (PE, PP, PVC)	20 °C	0.94
Brass, oxidised	200 °C	0.61
Paper	20 °C	0.97
Porcelain	20 °C	0.92
Black paint (matt)	80 °C	0.97
Steel (heat-treated surface)	200 °C	0.52
Steel, oxidised	200 °C	0.79
Clay, fired	70 °C	0.91
Transformer paint	70 °C	0.94
Brick, mortar, plaster	20 °C	0.93

Error sources with infrared measurement

In the case of non-contact temperature measurement, the composition of the transmission path between the instrument and the object being measured can also have an effect on the measured result.

Disturbance variables include, e.g.

Dust and dirt particles

Moisture (rain), steam, gases

- > Only measure if there are no disturbing variables

Incorrectly set, or too low emissivities can lead to significant errors.

- > Set emissivity using emissivity table or check via contact probe. A coating e.g. paint, oil or emission adhesive tape with a defined emissivity must be applied to the object being measured in the case of non-contact measurement on objects with low emissivity.

The measuring instrument is not yet acclimatized to the new temperature after a temperature change (cold junction). This can lead to significant errors.

- > If possible, store the instrument in the place where the measurement is to be performed. This will avoid the problem of adjustment time (but observe instrument operating temperature).

IR measurement is a purely optical measurement:

- > Clean lens is essential for accurate measurement.
- > Do not measure with fogged-up lens, e.g. due to steam

IR measurement is surface measurement

- > Always make sure that the surface is clean. If there is dirt, dust, grime etc. on the surface, only the top layer will be measured.
- > Do not measure at occlusions (e.g. in packaging)

Distance between IR measuring instrument and object being measured too far - measuring spot is bigger than object.

- > Keep distance between instrument and object being measured as small as possible.



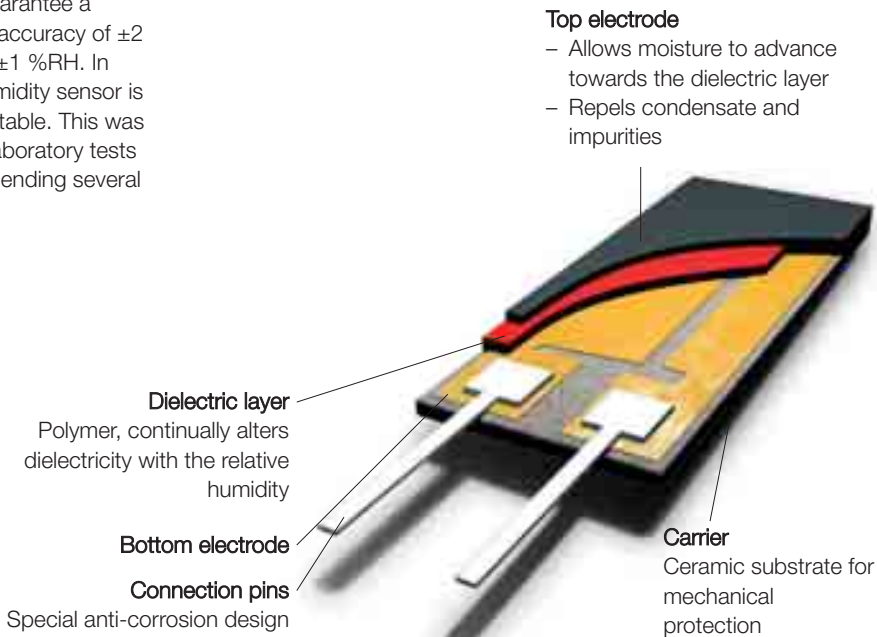
Measurement technology for measuring humidity

Testo humidity sensor

With its humidity sensor, developed more than ten years ago and since then continually improved, our attention was focussed from the start on two accuracy parameters, measurement uncertainty and long-term stability. The basic design was developed by Testo and has since been reverse engineered by several manufacturers: a polymer sensitive to humidity serves as a dielectric between two condenser electrodes. However, its distinctive feature is the way in which the individual layers lie perfectly on top of each other. This is particularly clear in the top electrode which has to carry out two tasks which, at first glance, appear to be contradictory: it must be permeable for the water vapour which is to be fed to the polymer dielectric. But it must also be leak-proof, smooth and capable of repelling condensate, oil and dirt particles in order to protect the sensor. This

combination has succeeded perfectly in Testo's humidity sensor thanks to extensive research. On account of this design and Testo's highly stable manufacturing and adjustment, it is possible to guarantee a measurement inaccuracy of $\pm 2\%$ RH or also of $\pm 1\%$ RH. In addition, the humidity sensor is also long-term stable. This was proven in inter-laboratory tests which involved sending several

Testo humidity sensors to a number of international calibration laboratories (PTB, NIST etc.) where the $\pm 1\%$ RH limit was not exceeded, without the need for readjustment.



International 5 year inter-laboratory tests on Testo's humidity sensor



Country	1 Germany	2 France	3 USA	4 Italy	5 England	6 Spain	7 Japan	8 Korea	9 China	10 Germany
Institute	PTB	CETIAT	NIST	IMG	NPL	INTA	JQA	KRISS	NRCCRM	PTB
Arrival	04/96	10/96	12/96	07/97	09/98	10/98	03/99	05/00	10/00	03/01
Departure	08/96	10/96	05/97	10/97	09/98	10/98	04/00	09/00	12/00	08/01

Measurement technology for measuring humidity

Testo humidity sensor

With the humidity sensor developed by Testo's own experts, the company has succeeded in considerably extending the areas of application for capacitive sensors.

- Use in temperatures up to +180 °C
- Dewpoint determination from -50 °C to +100 °C
- Long-term drift-free measurement under extreme conditions
- Very accurate in the high humidity range (>95 %RH)

The excellent properties of the Testo humidity sensor are:

- Accuracy
- Long-term stability
- Temperature stability
- Robustness

The technical data

Measuring range:
0 to 100 %RH

Temp. range:
-40 to +180 °C

Hysteresis
(3 h cycle 15...90...15 %RH):
< 1.0 %RH

Reaction time t90:
< 15 sec.

Temp. dependency:
0.03 %RH/°C

Dewpoint td:
-50 to +100 °C

Reproduceability:
< 0.03 %RH

Reference humidity probe for highest accuracy

- Accuracy: ± 1 %RH within 15-30 °C and 10-90 %RH, outside this range the accuracy ± 1 %RH + 0.03 %RH per degree of temperature difference from 25 °C applies.
- 2 years guaranteed long-term stability under normal conditions

Endurance test

More than 100 sensors were exposed to the stated test conditions. The sensors were measured before and after in a climate cabinet.

The arguments for the Testo humidity sensor

1. 24h in cooled (20 °C) flue gas at 90 %RH:
The flue gas from an oil burner ($O_2 = 5.9$ %, $CO = 70$ ppm, $NO_x = 50$ ppm, $SO_2 = 70$ ppm) was drawn out of the flue into a container with the sensors and automatically cooled
2. 2 h in the smoke from 3000 cigarettes/m³
3. 5 minutes in tap water
4. 12 months in a weather house, July '90 to July '91
5. 5 minutes immersion in isopropyl alcohol
6. 6 months in silica gel at 20 °C/0.1 %RH
7. 3 months at -25 °C/95 %RH
8. 3 months in 92 %RH (at 20 °C)
9. Shock test: 16 h at -20 °C
-> 10 mins boiling water
-> still wet in -20 °C for 1 h
-> convection oven at +125 °C for 3 h
-> shocked in ice water at +4 °C and left immersed for 5 mins
-> 5 mins heating at 125 °C

10. 9 months in a cheese factory: 7 °C/70 %RH
11. 9 months in a chicken coop: 15 °C/80 %RH
12. 9 months in a pigsty: 17 °C/70 %RH
13. 5 h in an convection oven: 150 °C/10 %RH
14. 30 days in high humidity: 20 °C/98 %RH
15. 7 days wood drying process: 20 to 80 °C/90 to 15 %RH

The display performance was not influenced by more than ± 1 %RH by the endurance tests

Applications

Over 100,000 Testo humidity sensors are in use world-wide, in portable hand instruments, in measurement storage instruments and in stationary measurement transmitters

- In the tobacco industry
- For monitoring the room climate in IT rooms
- For the storage of sensitive goods
- In garden centres and greenhouses
- In the food sector
- In wood production
- In the pharmaceutical industry
- In drying processes
- and... and... and...

Determination of dewpoint td:

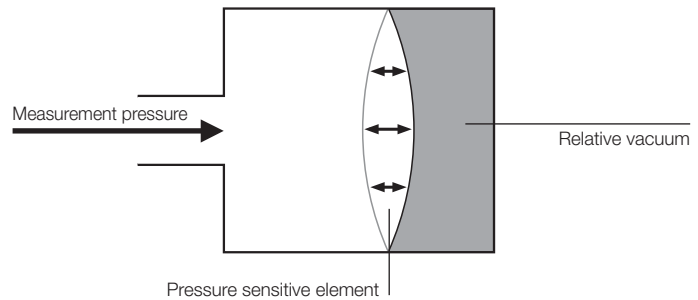
- In compressed air
- In CO_2
- In natural gas
- In O_2

Measurement technology for measuring pressure

Absolute pressure (P_{abs})

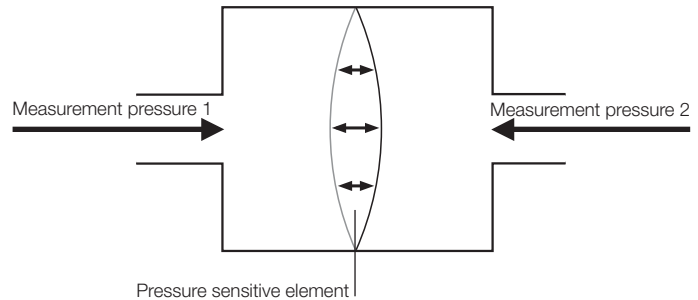
The pressure which applies to the airless space of the universe (zero pressure), is referred to as absolute pressure.

Absolute pressure is identified by the index "abs".



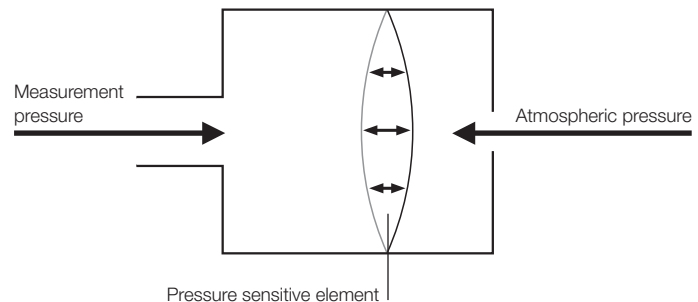
Differential pressure, pressure difference (Δp)

The difference between two pressures p_1 and p_2 is referred to as a pressure difference ($\Delta p = p_1 - p_2$). If the difference between two pressures represents the measurement parameter, it is referred to as differential pressure ($p_{1,2}$).



Atmospheric pressure difference, positive pressure

Atmospheric pressure difference (p_e) is the difference between an absolute pressure (p_{abs}) and the respective atmospheric pressure ($p_e = p_{abs} - p_{amb}$). This is simply referred to as positive pressure.



Atmospheric air pressure (P_{amb})

This is the most important pressure for life on earth. Atmospheric pressure is created by the weight of the atmosphere surrounding the earth. The atmosphere reaches an altitude height of approx. 500 km.

Pressure decreases constantly up to this altitude (absolute pressure $P_{abs} = \text{zero}$). Atmospheric air pressure is also influenced by fluctuations in the weather. The average P_{amb} at sea level is 1023.25 hectopascal (hPa) or

millibar (mbar/normal pressure according to DIN 1343). Typically this value can fluctuate by $\pm 5\%$ if there are low or high pressure weather areas.

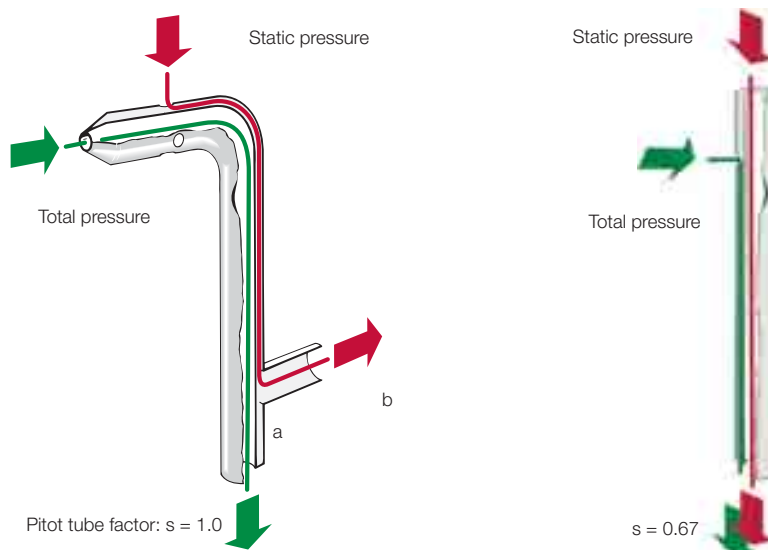
Conversion table for the most important pressure units

	Pa	hPa/mbar	kPa	MPa	bar	psi	mmH ₂ O	inH ₂ O	mmHg	inHg
Pa	1	100	1.000	1.000.000	100.000	6.895	9.807	249.1	133.3	3.386
hPa/mbar	0.01	1	10	10.000	1.000	68.948	0.09807	2.491	1.333	33.864
kPa	0.001	0.1	1	1.000	100	6.895	0.009807	0.2491	0.1333	3.386
MPa	0.000001	0.0001	0.001	1	0.1	0.006895	0.00009807	0.0002491	0.001333	0.003386
bar	0.00001	0.001	0.01	10	1	0.0689	0.0009807	0.002491	0.001333	0.0339
psi	0.0001451	0.0145	0.14505	145.05	14.505	1	0.001422	0.0361	0.0193	0.4912
mmH ₂ O	0.102	10.2	102	102.000	10.200	704.3	1	25.4	13.62	345.9
inH ₂ O	0.004016	0.4016	4.016	4.016	401.6	27.73	0.0394	1	0.5362	13.62
mmHg	0.007501	0.7501	7.501	7.501	750.1	51.71	0.0734	1.865	1	25.4
inHg	0.0002953	0.0295	0.2953	295.3	29.53	2.036	0.002891	0.0734	0.0394	1

Flow velocity using a Pitot tube

The Pitot tube

The total pressure is transferred to connection (a) of the pressure probe via the Pitot tube aperture. The purely static pressure is taken on via the lateral slots and passed on the the connection (b). The differential pressure resulting from this is the velocity-dependent dynamic pressure. This is evaluated and displayed. Similarly to thermal probes, the Pitot tube is more likely to react to turbulent flows than a vane probe. It is therefore important to ensure uninterrupted inflow and outflow stretches in Pitot tube measurement.



$$v = s \cdot \sqrt{\frac{2 \cdot p}{\rho}}$$

v = Flow velocity in m/s

s = Pitot tube factor

ρ = Air density in kg/m³

p = Differential pressure measured at the Pitot tube in Pascal

Absolute pressure correction for avoiding significant measurement errors

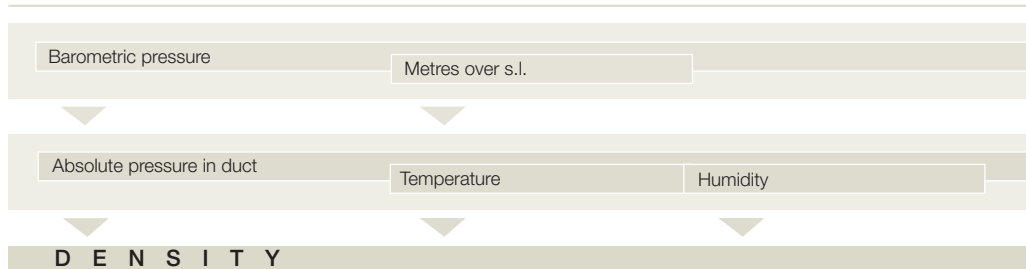
Measurement errors are often caused by calculating with a mean density of 1200 g/m³. When measuring outdoor air flows, the actual air density can deviate by up to ± 10% of the above value. This results in an inaccuracy of the air flow of up to ± 5%.

Here you can make use of the possibilities of testo 400/testo 521 via the configuration menu.

- Activate the automatic conversion of the Pitot tube pressure into the flow velocity.
- It is important that you first enter the correct air density or the absolute pressure, temperature

and humidity in the configuration menu. The testo 400/testo 521 automatically calculates the density on the basis of the measured values.

The density factors



Calibration Services / Certificates



Who needs DKD calibration certificates?

In Germany, laboratories have been working for approximately 30 years under the state-approved supervision of the German Calibration Service (DKD). The laboratories function in the name of the State in order to guarantee quality and efficiency in the measurement industry. DKD laboratories are therefore “semi-official” points which are monitored on a regular basis. The calibration results achieved in these laboratories have - in accordance with the German Federal Institute for Physics (PTB) – the highest reliability level and are legally recognised. They also apply internationally. DKD calibration certificates are for all users of measuring instruments requiring a particularly high efficiency level. For example, factory

measurement standards, with which other testing equipment is calibrated, is often “backed up” by a DKD calibration certificate. DKD calibration certificates are also required for measuring instruments in medical technology or the pharmaceutical industry.

DKD calibration certificates for:

- Factory measurement standards
- Pharmaceuticals
- Medical technology
- Specialists
- High accuracy

DKD calibration certificates are available in the following language versions:

- German, English, French
- German, Italian, Spanish

ISO calibration certificates

The QS systems in industrial companies have been ISO 9000:2000 certified since 1987. Nowadays, even services such as banks, insurance companies and hospitals cannot avoid this trend. Other sector-specific quality guidelines are GMP, FDA (pharmaceuticals / medical technology) and ISO TS 16949, QS 9000, VDA (vehicle industry)

The implementation and maintenance of testing equipment calibration and monitoring is required for all guidelines and standards. ISO calibration certificates are the lower-priced alternative to DKD calibration certificates.

Testo's ISO calibration certificates fulfil all the requirements of

- ISO 9000:2000
- ISO 10012-1
- GMP
- FDA
- QS 9000
- VDA
- ISO TS 16949
- HACCP

Notes



Notes

Notes



Testo: At your service!

Please send for more information:

Monitoring Instruments for Food Production, Transport and Storage
Measurement Engineering for Restaurants, Catering and Supermarkets
Measurement Engineering for Air Conditioning and Ventilation
Measurement Engineering for Heating and Installation
Measurement Solutions for Emissions, Service and Thermal Processes
Measurement Solutions for Refrigeration Technology
Stationary Measurement Solutions 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

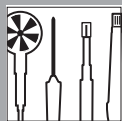
Measuring Instruments For Temperature
Measuring Instruments for Humidity
Measuring Instruments For Velocity
Measuring Instruments for Pressure and Refrigeration
Multi-Function Measuring Instruments
Measuring Instruments for Flue Gas and Emissions
Measuring Instruments for RPM, Analysis, Current/Voltage
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

Subject to change without notice.

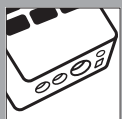
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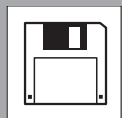
Icon explanation



Probe/sensor selection



Multi-channel measuring instrument (number of probe inputs >1)



Measurement data store integrated in the instrument



Backlit display



User-friendly operation thanks to menu-guided processes



SoftCase or TopSafe for protecting the instrument in rough field use



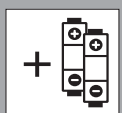
Impact-proof



Infrared printer
Reliable on-location paper documentation of measurement results



PC interface
for analysis of measurement data on the PC



Battery and rechargeable battery operation possible



Rech. battery can be charged in instrument



Radio probe connectable



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