

testo 650

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

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

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

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

Useful instrument functions:

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

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

Part no.
0563 6501

Reference humidity measuring instrument with psychrometric chart and aw value measurement

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



Attachable printer
Readings can be printed in seconds on site

Clear graphics display

Data communication with PC

3 user defined function buttons

Saves or prints at the touch of a button

Easy operation with cursor

Power connection/fast recharging

2 user-defined probe sockets



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testo 650
Recommended sets and accessories

Accessories	Part no.	Calibration Certificates	Part no.
Update from testo 650 to testo 400		Calibration certificates/temperature	
Velocity module, incl. volume flow, degree of turbulence... upgrade via service (updates testo 650 to testo 400)	0450 4003	ISO calibration certificate/temperature for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
Accessories for measuring instrument		ISO calibration certificate/temperature Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C	0520 0021
Rech. batt. set for instr. (2 rech. 2.4V/1100mAh) selected for quick recharging in instrument	0554 0196	ISO calibration certificate/temperature meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug) for mains operation and battery recharging	0554 1084	DKD calibration certificate/temperature meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
Lithium battery, button cell, type CR 2032, Spare Li cell to save RAM data, when changing battery and rech. battery	0515 0028	DKD calibration certificate/temperature contact surface temperature probes; calibration points +100°C; +200°C; +300°C	0520 0271
Printer and Accessories		Calibration certificates/humidity	
Attachable printer (securely attached) including 1 roll of thermal paper and batteries	0554 0570	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
Testo fast printer with wireless infrared interface, 1 roll thermal paper and 4 AA batteries	0554 0549	ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries	0554 1775	ISO calibration certificate dewpoint two adjustment points -10/-40 °Ctd at 6 bar	0520 0136
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	ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
Spare thermal paper for printer (6 rolls)	0554 0569	ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
Spare thermal paper for printer (6 rolls) measurement data documentation legible for up to 10 years	0554 0568	DKD calibration certificate/humidity electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
Label thermal paper (Testo patent) for testo 575 printer (6 rolls), can be applied directly	0554 0561	DKD calibration certificate/humidity cal. points freely selectable from 5 to 95%RH at +25°C or -18°C to +70°C	0520 0216
SoftCase for instrument and printer		DKD calibration certificate/humidity saturated saline solutions; calibration point 11.3%RH	0520 0213
SoftCase (protects instrument from impact) with carrier strap, magnetic holder and probe holder	0516 0401	DKD calibration certificate/humidity saturated saline solutions; calibration point 75.3%RH	0520 0283
SoftCase for attachable printer (protects printer from dirt/impact) protects from impact and falls	0516 0411	Calibration certificates/pressure	
Software and Accessories		ISO calibration certificate/pressure differential pressure, accuracy > 0.6 (% of full-scale value)	0520 0005
ComSoft 3 - Professional with data management incl. database, analysis and graphics function, data analysis, trend curve	0554 0830	DKD calibration certificate/pressure differential pressure, accuracy > 0.6 (% of full-scale value)	0520 0225
RS232 cable connects instrument to PC (1.8 m) for data transfer	0409 0178	ISO calibration certificate/pressure differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
Ethernet adapter, RS232 - Ethernet incl. software driver, mains unit facilitates data communication in network	0554 1711	DKD calibration certificate/pressure differential pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0215
System case		ISO calibration certificate/absolute pressure, 5 measurement points distributed over meas. range absolute pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0125
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	DKD calibration certificate/pressure absolute pressure, accuracy 0.1 to 0.6 (% of full-scale value)	0520 0212
System case (aluminium) for measuring instrument, probes and accessories probes in lid make it easy to find parts in case	0516 0410		

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

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

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

Probe type			
Meas. range	0 to +500 ppm CO	0 to +1 Vol. % CO ₂ 0 to +10000 ppm CO ₂	
Accuracy ±1 digit	±5% of mv (0 to +500 ppm CO)	See probe data	
Resolution			

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

Oper. temp.	0 to +50 °C	Memory space: 500,000 readings Other features: Automatic recognition of all connected probes Power supply: Battery/rech. batt., alternatively 8V mains unit Battery life in continuous operation with 2 thermocouple probes
Storage temp.	-25 to +60 °C	
Display	LCD, 4 lines	
Battery type	1,5 V AA	
Battery life	18 h	
PC	RS232 interface	
Weight	500 g	
Material/Housing	ABS	
Warranty	3 years	
Memory	45000	

testo 650
Suitable probes at a glance

Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Thermocouple, made of fibre-glass insulated thermal pipes, pack of 5	<p>2000 mm Please order adapter 0600 1693</p>	-200 to +400 °C	Class 1*	5 s	0644 1109
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C	<p>150 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required</p>	-200 to +300 °C	Class 2*	3 s	0604 0194
Super quick-action surface probe, probe tip at 90° angle, with sprung thermocouple strip	<p>100 mm 50 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required</p>	-200 to +300 °C	Class 2*	3 s	0604 0994
Robust surface probe	<p>150 mm 0.4 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required</p>	-200 to +600 °C	Class 1*	25 s	0604 9993
Robust surface probe with sprung thermocouple strip for high temperature range up to +700°C	<p>200 mm 0.15 mm Conn.: Fixed cable, coiled 0.3 to 1 m</p>	-200 to +700 °C	Class 2*	3 s	0600 0394
Roller surface probe for measurements on rollers and rotating drums, max. circumferential velocity 18 to 400m/min	<p>274 mm 0.33 mm Conn.: Fixed cable, coiled 0.3 to 1 m</p>	-50 to +240 °C	Class 2*		0600 5093
Magnetic probe, adhesive power approx. 20 N, with magnets, for measurements on metal surfaces	<p>35 mm 0.20 mm Conn.: Fixed cable 1.5 m</p>	-50 to +170 °C	Class 2*		0600 4793
Magnetic probe, adhesive power approx. 10 N, with magnets, for higher temperatures, measures on metal surfaces	<p>75 mm 0.21 mm Conn.: Fixed cable 1.5 m</p>	-50 to +400 °C	Class 2*		0600 4893
Miniature surface probe for measurements on electronic components, small motors...	<p>270 mm 0.5 mm Conn.: Fixed cable 1.5 m</p>	-200 to +400 °C	Class 2*	3 s	0600 1494
Adhesive thermocouple, pack of 2, carrier material: aluminium foil Is fixed at the measuring point using conventional adhesives or silicone heat paste 0554 0004	<p>Diameter extension 2 x 0.2 mm, 0.1 mm thick</p>	-200 to +200 °C	Class 1*		0644 1607
Fast response immersion/penetration probe	<p>150 mm 0.3 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required</p>	-200 to +400 °C	Class 1*	3 s	0604 0293
Super quick-action immersion/penetration probe for measurements in liquids	<p>150 mm 0.15 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required</p>	-200 to +600 °C	Class 1*	1 s	0604 0493
Super quick-action immersion/penetration probe for high temperatures	<p>470 mm 0.15 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required</p>	-200 to +1100 °C	Class 1*	1 s	0604 0593
Super quick-action immersion/penetration probe for measurements in gases and liquids with a low-mass tip	<p>150 mm 0.14 mm 20 mm 0.5 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required</p>	-200 to +600 °C	Class 1*	1 s	0604 9794
Robust immersion/penetration probe made of V4A stainless steel, waterproof and oven-proof, e.g. for the food sector	<p>150 mm 0.35 mm 0.3 mm Conn.: Fixed cable 1.5 m</p>	-200 to +400 °C	Class 1*	3 s	0600 2593
Smelting probe for measurements in non-ferrous melting baths, with exchangeable measuring tip Measurement tip lifetime: up to 500 measurements in aluminium smelter	<p>1100 mm 0.65 mm Conn.: Fixed cable 1.5 m</p>	-200 to +1250 °C	Class 1*	60 s	0600 5993
Pipe wrap probe for pipes with diameter of up to 2", for flow/return temp. meas. in hydronic systems	<p>15 mm Conn.: Fixed cable 1.5 m</p>	-60 to +130 °C	Class 2*	5 s	0600 4593
Spare meas. head for pipe wrap probe, TC Type K	<p>35 mm</p>	-60 to +130 °C	Class 2*	5 s	0602 0092



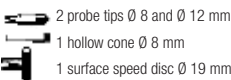



* According to standard EN 60751, the accuracy of Classes 1/2 refers to -40 to +1000/+1200 °C.

Probes Type K (NiCr-Ni)	Illustration	Meas. range	Accuracy	t99	Part no.
Plug-in measuring tip, 750mm long, flexible, for high temperatures, outer casing: stainless steel 1.4541	750 mm Ø 3 mm Please order handle with Part no. 0600 5593	-200 to +900 °C	Class 1*	4 s	0600 5393
Plug-in measuring tip, 1200 mm long, flexible, for high temperatures, outer casing: stainless steel 1.4541	1200 mm Ø 3 mm Please order handle with Part no. 0600 5593	-200 to +900 °C	Class 1*	4 s	0600 5493
Plug-in measuring tip, 550mm long, flexible, for high temperatures, outer casing: Inconel 2.4816	550 mm Ø 3 mm Please order handle with Part no. 0600 5593	-200 to +1100 °C	Class 1*	4 s	0600 5793
Plug-in measuring tip, 1030mm long, flexible, for high temperatures, outer casing: Inconel 2.4816	1030 mm Ø 3 mm Please order handle with Part no. 0600 5593	-200 to +1100 °C	Class 1*	4 s	0600 5893
Probes Pt100	Illustration	Meas. range	Accuracy	t99	Part no.
Standard air probe	150 mm Ø 3 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	-200...+600 °C	Class A**	75 s	0604 9773
Precision air probe	150 mm Ø 3 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	-100 to +400 °C	1/10 Class B (0 to 100°C) 1/5 Class B (rem. range) to EN 60751**	75 s	0628 0017
Robust surface probe	150 mm Ø 4 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	-50 to +400 °C	Class B**	40 s	0604 9973
Velcro probe for pipes with diameter of max. 75 mm	280 mm Conn.: Fixed cable 1.6 m	-50 to +150 °C	Class B**	40 s	0628 0019
Standard immersion/penetration probe	200 mm Ø 3 mm Stainless Steel Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	-200 to +400 °C	Class A**	20 s	0604 0273
Standard immersion/penetration probe	200 mm Ø 3 mm Nickel Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	-200 to +600 °C	Class A**	20 s	0604 0274
Highly accurate immersion/penetration probe incl. certificate	295 mm Ø 4 mm Stainless Steel Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	-40 to +300 °C	±0.05 °C (+0.01 to +100 °C) ±(0.05 °C ±0.05% of mv) (-40 to 0 °C) ±(0.05 °C ±0.05% of mv) (+100.01 to +300 °C)	60 s	0614 0240
Highly accurate immersion/penetration probe	200 mm Ø 3 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	-100 to +400 °C	1/10 Class B (0 to 100°C) 1/5 Class B (rem. range) to EN 60751**	30 s	0628 0015
Flexible precision immersion probe, cable heat-proof up to +300°C	1000 mm Ø 3.5 mm 50 mm Ø 6 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	-100 to +265 °C	1/10 Class B (0 to 100°C) 1/5 Class B (rem. range) to EN 60751**	80 s	0628 0016
Robust immersion/penetration probe with sharpened measuring tip, waterproof and oven-proof	150 mm Ø 3.5 mm Ø 3 mm Conn.: Fixed cable 1.5 m	-200 to +400 °C	Class A**	30 s	0604 2573
Probes NTC	Illustration	Meas. range	Accuracy	t99	Part no.
Highly accurate air probe for air and gas temperature measurements with bare, mechanically protected sensor	150 mm Ø 9 mm Conn.: Fixed cable 1.6 m	-40 to +130 °C	To UNI curve	60 s	0610 9714
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




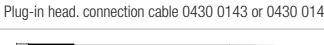

*According to standard EN 60584-2, the accuracy of Class 1 refers to -40 to +1000 °C.

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


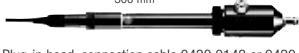
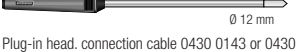


testo 650
Suitable probes at a glance

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



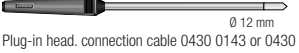


Accessories	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument, PUR coating material	0430 0145
Extension cable, 5 m long, between plug-in head cable and instrument,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


Humidity probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.	£
Standard ambient air probe up to +70°C	 Ø 12 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9740	
Duct humidity/temperature probe, can be connected to telescopic handle 0430 9715	 180 mm Ø 12 mm Conn.: Fixed cable	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9715	
Thin humidity probe incl. 4 attachable protection caps for ambient air measurements, measurements in exhaust air ducts and equilibrium moisture measurements	 250 mm Ø 4 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	15 s	0636 2130	
Highly accurate reference humidity/temp. probe	 Ø 21 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±1 %RH (+10 to +90 %RH)* ±2 %RH (remaining range) * ±0.2 °C (+10 to +40 °C) ±0.4 °C (remaining range)	12 s	0636 9741	
Humidity/temperature probe	 Ø 21 mm Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	0... +100 %RH -20 to +70 °C	±2 %RH (+2... +98 %RH) ±0.4 °C (+0.1 to +50 °C) ±0.5 °C (-20 to 0 °C) ±0.5 °C (+50.1 to +70 °C)	12 s	0636 9742	




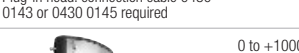


* in the temperature range from +15°C to +30°C

Probes Process humidity	Illustration	Meas. range	Accuracy	t99	Part no.	
Standard pressure dew point probe for measurements in compressed air systems	 300 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -30 to +50 °C tpd	±0.9 °C tpd (+0.1 to +50 °C tpd) ±1 °C tpd (-4.9 to 0 °C tpd) ±2 °C tpd (-9.9 to -5 °C tpd) ±3 °C tpd (-19.9 to -10 °C tpd) ±4 °C tpd (-30 to -20 °C tpd)	300 s	0636 9840	
Precision pressure dew point probe for measurements in compressed air systems incl. cert. with test point -40 °C tpd	 300 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -60 to +50 °C tpd	±0.8 °C tpd (-4.9 to +50 °C tpd) ±1 °C tpd (-9.9 to -5 °C tpd) ±2 °C tpd (-19.9 to -10 °C tpd) ±3 °C tpd (-29.9 to -20 °C tpd) ±4 °C tpd (-40 to -30 °C tpd)	300 s	0636 9841	
High humidity level probe w/ heated sensor element, no humidity on sensor	 300 mm Ø 12 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +85 °C	±2.5 %RH (0 to +100 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +100 °C)	30 s	0636 2142 *
Robust high temperature/humidity probe up to +180 °C	 300 mm Ø 12 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (+0.1 to +50 °C) ±0.5 °C (remaining range)	30 s	0628 0021
Flexible humidity probe (does not retain shape) for measurements in inaccessible places	 1500 mm 100 mm Ø 12 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (+0.1 to +50 °C) ±0.5 °C (-20 to 0 °C) ±0.5 °C (+50.1 to +180 °C)	30 s	0628 0022






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








Probes Material and equilibrium moisture	Illustration	Meas. range	Accuracy	t99	Part no.	
Flexible humidity probe with mini module for meas. e.g. on material testing rigs, module cable length 1500mm, probe tip 50x19x7mm	 Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +125 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	20 s	0628 0013
Sword probe for measuring humidity and temperature in stacked material	 320 mm 18 mm x 5 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	12 s	0636 0340
Robust humidity probe e.g. for measuring equilibrium moisture or for measurements in exhaust ducts to +120 °C	 300 mm Ø 12 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +120 °C	±2 %RH (+2 to +98 %RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	30 s	0636 2140
Material moisture probe	 1500 mm			Free scaling, reference measurement, no water level		0636 0365
Material/building moisture cable		0 to 100 k Ohm = 100 to 0 %		Display values in instrument display mean: 100 to 66 wet; 0 to 1 very dry		0636 0565

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

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

testo 650
Suitable probes at a glance

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

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

Accessories: Humidity probes	Part no.	Accessories: Pressure probes	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material	0430 0143	Connection cable, 2.5 m long, for pressure probes 0638 1741/1841/1941/2041/2141	0409 0202
Cable, 5 m long, connects probe with plug-in head to measuring instrument PUR coating material	0430 0145	Adapter for pressure probes, 1/2" outer thread, 1/4" inner thread for pressure probes 0638 1741/1841/1941/2041/2141	0699 3127
Extension cable, 5 m long, between plug-in head cable and instrument PUR coating material	0409 0063	Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material	0430 0143
Telescopic handle, max. 1 m, for probe with plug-in head cable: 2.5 m long, PUR coating material	0430 0144	Cable, 5 m long, connects probe with plug-in head to measuring instrument PUR coating material	0430 0145
Telescopic handle, 340 - 800 mm long, for 0636 9715 probe	0430 9715	Connection hose, silicone, 5m long max. load 700 hPa (mbar)	0554 0440
Adapter for surface humidity measurement, for humidity probes Ø 12mm locates damp spots on walls, for example	0628 0012	Connection hose set, 2 x 1 m, coiled, incl. 1/8" screw connection Pressure-tight up to 20 bar, for probe 0638 1647/1747/1847	0554 0441
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		