

## testo 400

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

testo 400 includes the parameters temperature, CO<sub>2</sub>, rpm, current, voltage, relative humidity, pressure, velocity and volume flow.

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

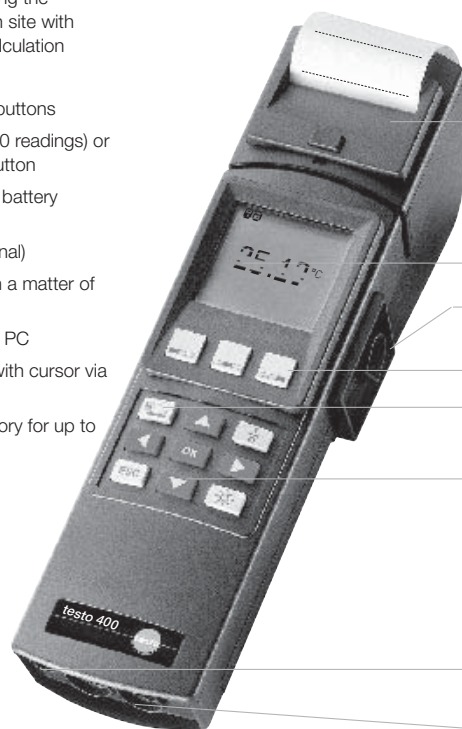
Upgradable and teachable, highly reliable and of the highest quality - they are the properties which guarantee that the customer is equipped for the future.

Useful instrument functions:

- System accuracy up to 0.05 °C and up to a resolution of 0.001 °C
- All functions of testo 650 and testo 950
- Input of cross-sections for volume flow calculation
- Absolute pressure compensation in thermal probes
- Density calculation for velocity measurement with reference to temperature, humidity and absolute pressure
- Turbulence degree measurement to EN 13779
- Assessment of volume flow measurements with calculation of total uncertainty of measurement in accordance with EN 12599 with VAC module

## The reference measuring instrument for A/C and ventilation systems

- VAC module for evaluating the measurement directly on site with integrated inaccuracy calculation
- Clear graphics display
- 3 user defined function buttons
- Save up to max. 500,000 readings) or print at the touch of a button
- Mains connection/quick battery recharge
- Attachable printer (optional)
- Prints readings on site in a matter of seconds
- Data communication via PC
- User friendly operation with cursor via menu structure
- Integrated reading memory for up to 500,000 readings



- Attachable printer Readings can be printed on-site in the matter of seconds
- Clear graphics display
- Data communication by PC, barcode reader
- 3 user-defined function buttons
- Saves or prints at the touch of a button
- Easy operation with cursor
- Power connection/quick battery recharge
- 2 user-defined probe sockets

<b>testo 400</b>	
<b>testo 400, multi-functional measuring instrument, incl. measurement value store up to 500,000 readings, VAC-module (determination of volume flow with error calculation), battery, Li-cell and calibration protocol</b>	
<b>Can be used for:</b>	
<ul style="list-style-type: none"> <li>• Velocity, volume flow</li> <li>• Humidity, pressure</li> <li>• Temperature</li> <li>• CO<sub>2</sub>, rpm and current/voltage</li> </ul>	
Part no.	
<b>0563 4001</b>	

Recommended set	
<b>Set for inspecting laboratory fume cupboards</b>	
- testo 400, multi-functional measuring instrument, incl. measurement value store up to 500,000 readings, VAC-module (determination of volume flow with error calculation), battery, Li-cell and calibration protocol (Part no. 0563 4001)	
- Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug) (Part no. 0554 1084)	
- Rech. batt. set for instr. (2 rech. 2.4V/1100mAh) (Part no. 0554 0196)	
- Thermal anemometer probe, Ø 10 mm, w. telescopic handle, measures air flow in lab fume cupboards to DIN EN 14175 (Part no. 0635 1047)	
- Standard ambient air probe up to +70°C (Part no. 0636 9740)	
- Pressure probe, 2000 hPa, measures absolute pressure, in robust metal housing with impact protection, incl. quick-closing coupling (M8 x 0.5), magnet for fast attachment (Part no. 0638 1847)	
- 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) (Part no. 0638 1347)	
- Cable, 1.5 m long, connects probe with plug-in head to meas. instrument (Part no. 0430 0143)	
- Comfort level probe for measuring degree of turbulence, with telescopic handle and stand. Fulfills EN 13779 requirements (Part no. 0628 0009)	
<b>We recommend:</b>	
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
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) protects from impact and falls	0516 0411
System case (aluminium) for measuring instrument, probes and accessories in lid make it easy to find parts in case	0516 0410
DAkkS calibration certificate/velocity for laboratory fume cupboard probe (Successor organization of the DKD)	
ISO calibration certificate/velocity for laboratory fume cupboard probe	













**testo 400**
**Recommended Sets and Accessories**

Recommended set		Accessories	
<b>The pro set for assessing workplaces subjected to heat</b>		<b>Accessories for measuring instrument</b>	
<ul style="list-style-type: none"> <li>- testo 400, multi-functional measuring instrument, incl. measurement value store up to 500,000 readings, VAC-module (determination of volume flow with error calculation), battery, Li-cell and calibration protocol (Part no. 0563 4001)</li> <li>- Wet Bulb Globe temperature probe to assess workplaces subjected to heat, in accordance with ISO 7243 or DIN 33403, incl. WBGT case (Part no. 0635 8888)</li> <li>- Attachable printer (securely attached) including 1 roll of thermal paper and batteries (Part no. 0554 0570)</li> <li>- ISO calibration certificate/temperature (Part no. 0520 0181)</li> </ul>		Rech. batt. set for instr. (2 rech. 2.4V/1100mAh) selected for quick recharging in instrument 0554 0196 Mains unit 230 V/ 8 V/ 1 A, for instrument (European plug) for mains operation and battery recharging 0554 1084 Lithium battery button cellCR2032 mignon type battery for radio handle 0515 0028	
<b>We recommend:</b>		<b>Printer and Accessories</b>	
ISO calibration certificate/temperature for air/immersion probes, calibration points -8°C; 0°C; +40°C 0520 0181		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 0554 1775 infrared thermal line printer with graphics function External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz 0554 0610 Spare thermal paper for printer (6 rolls) 0554 0569 Spare thermal paper for printer (6 rolls), permanent ink measurement data documentation legible for up to 10 years 0554 0568 Label thermal paper (Testo patent) for testo 575 printer (6 rolls), can be applied directly 0554 0561	
<b>testo 400, the Pro set for comfort level meas. &amp; occupational safety/health</b>		<b>SoftCase for instrument and printer</b>	
<ul style="list-style-type: none"> <li>- testo 400, multi-functional measuring instrument, incl. measurement value store up to 500,000 readings, VAC-module (determination of volume flow with error calculation), battery, Li-cell and calibration protocol (Part no. 0563 4001)</li> <li>- Comfort level probe for measuring degree of turbulence, with telescopic handle and stand. Fulfills EN 13779 requirements (Part no. 0628 0009)</li> <li>- Attachable printer (securely attached) including 1 roll of thermal paper and batteries (Part no. 0554 0570)</li> </ul>		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	
<b>We recommend:</b>		<b>Software and Accessories</b>	
CO2 probe measures indoor air quality and monitors the workplace. With plug-in head, connection cable 0430 0143 or 0430 0145 required 0632 1240		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	
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material 0430 0143		<b>System case</b>	
Standard ambient air probe up to +70°C Measures all physical parameters in the psychrometric chart 0636 9740		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	
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500 °C 0604 0194			
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument PUR coating material 0430 0143			

Calibration Certificates	Part no.
<b>Calibration certificates/temperature</b>	
ISO calibration certificate/temperature for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature Meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C	0520 0021
ISO calibration certificate/temperature meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
DAkkS calibration certificate/temperature* meas. instr. with air/immersion probe; calibration points -20°C; 0°C; +60°C	0520 0211
DAkkS calibration certificate/temperature* contact surface temperature probes; calibration points +100°C; +200°C; +300°C	0520 0271
<b>Calibration certificates/humidity</b>	
ISO calibration certificate/humidity cal. points freely selectable from 5 to 95%RH at +15 to +35°C or at -18 to +80°C	0520 0106
ISO calibration certificate humidity Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate dewpoint two adjustment points -10/-40 °Ctd at 6 bar	0520 0136
ISO calibration certificate/humidity saturated saline solutions: calibration point 11.3%RH	0520 0013
ISO calibration certificate/humidity saturated saline solutions, calibration point 75.3%RH	0520 0083
DAkkS calibration certificate/humidity* electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0206
DAkkS calibration certificate/humidity* cal. points freely selectable from 5 to 95%RH at +25°C or -18°C to +70°C	0520 0216
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 11.3%RH	0520 0213
DAkkS calibration certificate/humidity* saturated saline solutions; calibration point 75.3%RH	0520 0283

Calibration Certificates	Part no.
<b>Calibration certificates/pressure</b>	
ISO calibration certificate/pressure differential pressure; 5 points distributed over meas. range	0520 0005
DAkkS calibration certificate/pressure* diff. and pos. pressure; 6 meas. points distributed over meas. range (>0.6% of fsv)	0520 0225
ISO calibration certificate/pressure differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
DAkkS calibration certificate/pressure* diff. and pos. pressure; 11 measuring points distributed over the instr. meas. range	0520 0215
ISO calibration certificate/absolute pressure, 5 measurement points distributed over meas. range absolute pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0125
DAkkS calibration certificate/pressure* absolute pressure; 11 measuring points distributed over meas. range	0520 0212
<b>Calibration certificates/velocity</b>	
ISO calibration certificate/velocity all velocity probes, calibration points selectable from 0.3 to 50 m/s at +25°C	0520 0104
ISO calibration certificate velocity hot wire, vane anemometer, Pitot tube; calibration points 1; 2; 5; 10 m/s	0520 0004
ISO calibration certificate/Velocity hot wire, vane anemometer, Pitot tube; calibration points 5; 10; 15; 20 m/s	0520 0034
ISO calibration certificate velocity hot wire, vane anemometer; calibration points 0.5; 0.8; 1; 1.5 m/s	0520 0024
DAkkS calibration certificate/velocity* hot wire, vane anemometer; calibration points 0.5; 1; 2; 5; 10 m/s	0520 0244
DAkkS calibration certificate/velocity* hot wire, vane anemometer, Pitot tube; calibration points 2; 5; 10; 15; 20 m/s	0520 0204
DAkkS calibration certificate/velocity* hot wire anemometer; calibration points 0.1; 0.2; 0.5; 0.8; 1 m/s	0520 0224

\*Successor organization of the DKD

Probe examples testo 400	Illustration	Meas. range	Accuracy	Part no.
Globe thermometer to measure radiant heat	 Ø 150 mm Conn.: Fixed cable	0 to +120 °C	±0.5 °C (0 to +49.9 °C) ±1 °C (+50 to +120 °C)  Accuracy corresponds to ISO 7243, ISO 7726, DIN EN 27726, DIN 33403 requirements	0554 0670
Thermal anemometer probe, Ø 10 mm, w. telescopic handle, measures air flow in lab fume cupboards to DIN EN 14175	 760 mm Ø 10 mm	0 to +5 m/s 0 to +50 °C	±(0.02 m/s ±5% of mv) (0 to +5 m/s)	0635 1047
Ambient CO probe, for detecting CO in buildings and rooms	 Conn.: Fixed cable 1.5 m	0 to +500 ppm CO	±5% of mv (+100.1 to +500 ppm CO) ±5 ppm CO (0 to +100 ppm CO)	0632 3331
CO2 probe measures indoor air quality and monitors the workplace. With plug-in head, connection cable 0430 0143 or 0430 0145 required	 Conn.: Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +1 Vol. % CO <sub>2</sub> 0 to +10000 ppm CO <sub>2</sub>	±(50 ppm CO <sub>2</sub> ±2% of mv)(0 to +5000 ppm CO <sub>2</sub> ) ±(100 ppm CO <sub>2</sub> ±3% of mv)(+5001 to +10000 ppm CO <sub>2</sub> )	0632 1240
Standard ambient air probe up to +70°C	 Ø 12 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range) ±2 %RH (+2 to +98 %RH)	0636 9740
Duct humidity/temperature probe Telescopic handle 0430 9715, see Ordering data/Accessories	 180 mm Ø 12 mm Fixed cable	0 to +100 %RH -20 to +70 °C	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range) ±2 %RH (+2 to +98 %RH)	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	±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C) ±2 %RH (+2 to +98 %RH)	0636 2130
Highly accurate reference humidity/temp. probe	 Ø 21 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0 to +100 %RH -20 to +70 °C	±0.2 °C (+10 to +40 °C) ±0.4 °C (remaining range) ±1 %RH (+10 to +90 %RH)* ±2 %RH (remaining range)	0636 9741
Humidity/temperature probe	 Ø 21 mm Plug-in head, connection cable 0430 0143 or 0430 0145 required	0... +100 %RH -20 to +70 °C	±0.4 °C (+0.1 to +50 °C) ±0.5 °C (-20 to 0 °C) ±0.5 °C (+50.1 to +70 °C) ±2 %RH (+2... +98 %RH)	0636 9742
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)	0638 1347
Comfort level probe for measuring degree of turbulence, with telescopic handle and stand. Fulfills EN 13779 requirements	 890 mm Ø 90 mm	0 to +5 m/s 0 to +50 °C	±(0.03 m/s ±4% of mv) (0 to +5 m/s) ±0.3 °C (0 to +50 °C)	0628 0009
Wet Bulb Globe temperature probe to assess workplaces subjected to heat, in accordance with ISO 7243 or DIN 33403, incl. WBGT case	 Ø 150 mm	0 to +120 °C	In accordance with ISO 7243 or DIN 33403	0635 8888 ID No. 0699 4239/1

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

**testo 400**
**Technical data**

Technical data					
Probe type	Vane	Thermal	Testo humid. sensor, cap.	Pressure	aw value
Meas. range	0 to +60 m/s	0 to +20 m/s	0 to +100 %RH	0 to +2000 hPa	0 to +1 aW
Accuracy ±1 digit	See probe data for system accuracy	See probe data for system accuracy	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	0.01 m/s (for Ø 60/100 mm), 0.1 m/s (for rem. probes)	0.01 m/s (0 to +20 m/s)	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	Type K (NiCr-Ni)	Type S (Pt10Rh-Pt)	Type J (Fe-CuNi)
Meas. range	-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 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 (-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)	0.1 °C (-200 to +1370 °C)	1 °C (0 to +1760 °C)	0.1 °C (-200 to +1000 °C)

Probe type	CO2 probe	CO probe	Mechanical	Current/voltage measurement	Current/voltage measurement
Meas. range	0 to +1 Vol. % CO <sub>2</sub> 0 to +10000 ppm CO <sub>2</sub>	0 to +500 ppm CO	20 to 20000 rpm	0 to +20 mA (0554 0007) 0/4 to 20 mA (0554 0528)	0 to +10 V
Accuracy ±1 digit	See probe data	±5% of mv (0 to +500 ppm CO)	±1 digit	±0.04 mA (0 (0554 0007) to +20 mA)  See probe (0554 0528) data	±0.01 V (0 to +10 V)
Resolution			1 rpm	0.01 mA (0 to +20 mA)	0.01 V (0 to +10 V)

Oper. temp.	0 to +50 °C
Storage temp.	-25 to +60 °C
Display	LCD, 4 lines
Battery type	1,5 V AA
Battery life	18 h
PC	RS232 interface
Weight	500 g
Material/Housing	ABS
Warranty	3 years
Memory	500.000

Memory space: 1 MB corresponding to approx. 500,000 readings  
Other features: automatic probe recognition  
Power: Battery/rech. battery, alternatively 8 V mains unit  
Battery life in continuous operation with 2 T/C probes