



testo 445

The ideal service instrument for HVAC systems

► Measures ► Saves ► Prints ► PC analysis

°C

%RH

td

g/kg

m/s

m³/h

hPa

ppm
CO₂

ppm
CO



The ideal service instrument for HVAC systems



Measuring °C, %RH, m/s in a duct



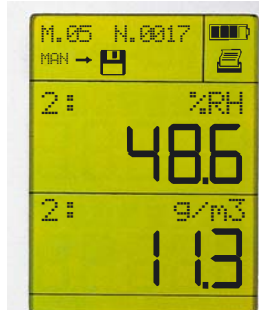
Measuring volume flow in a duct outlet



Measuring differential pressure when changing a filter



Monitoring indoor air quality with a CO₂ probe



Automatic calculation of different humidity parameters in the instrument

- Dew point
- Absolute humidity
- Degree of humidity
- Enthalpy

Automatic mean calculation and volume flow measurement

Volume flow measurement for approval tests on HVAC systems in accordance with EN 12599 can be completed using a mean calculation function specially adapted to this requirement.

Quick and easy data management

Saves data with date, time and location in instrument. The duct cross-section is automatically allocated to the location.



Protection for your instrument

The **TopSafe** case protects your instrument from impact, dust and water. Ideal for tough industrial applications.

Convenient data analysis including special velocity log using Testo ComSoft 3



Integrated RS232 interface (electrically isolated)

Quick printout of data on location

testo 445		
Smith Ltd.		
08.12.1998 15:25:35		
Duct 1		
MEAN		
	1:m3/h	1:m/s
01	11284	4.91
02	11490	5.00
03	11835	5.15
04	11031	4.80
MAX	11835	5.15
MIN	11031	4.80
MEAN	11410	4.96
INFO:		
0:	100.0	cm

Non-contact transmission of measurement logs via infrared

Measures up to 6 parameters simultaneously

Mains connection and battery recharging in instrument

Displays 2 parameters

4 line display

Prints at the touch of a button

Saves up to 3000 readings

Selects up to 99 locations

Easy operation with cursor

HOLD/ MAX values/ MIN values/ Mean calculation – multi-point – timed

Combined vane/ temperature probe





The ideal service instrument for HVAC systems

See our special probe brochure for more probes. Please order overleaf!

The introductory set for velocity measurement in ducts



m/s
m³/h

SET 1

Set 1 includes:

testo 445 with TopSafe,
battery and instruction manual

Vane probe Ø 16 mm with telescope
for HVAC ducts

Transport case for measuring instrument, TopSafe, probes
and the Testo log printer

Measuring range	Part no.	
	0563.4451	
	0563.4450	
0.6 to 40 m/s	0628.0005	
	0516.0445	

Supplement the set which is right for you with the accessories needed:

- to print data
- for power supply
- additional accessories

SET 2

The introductory set for measurements in HVAC ducts



°C
m/s
m³/h
%RH

Set 2 includes:

testo 445 with TopSafe,
battery and instruction manual

Quick-action **hot wire probe** with telescope
for HVAC ducts and for measuring
extraction power with funnel (see Accessories)

Humidity/temperature probe (plug-in) for HVAC meas.
incl. determination of physical variables in the Mollier diagram

Connection cable for humidity/temperature probes

Transport case for instrument, TopSafe, probes and printer

We recommend: 9V rechargeable battery (instead of battery)
and plug-in mains unit

Set 3 is like Set 2 except for the hot wire probe:

Vane probe Ø 16 mm with telescope
for HVAC ducts

Measuring range	Part no.	
	0563.4452	
	0563.4450	
0 to 20 m/s -20 to +70 °C	0635.1041	
0 to 100 %RH -20 to +70 °C	0636.9740	
	0430.0143	
	0516.0445	
	0563.4453	
0.6 to 40 m/s	0628.0005	

SET 3

The low cost professional set for measurements in HVAC ducts and duct outlets



°C
m/s
m³/h
%RH

Set 4 includes:

testo 445 with TopSafe,
battery and instruction manual

Vane probe Ø 16 mm with telescope
for VAC ducts

Vane probe Ø 60 mm for integrating
velocity measurement in a duct outlet

Humidity/temperature probe (plug-in)
for HVAC measurements incl. determination of physical
variables in the Mollier diagram

Connection cable for humidity/temperature probe

System case for measuring instrument, TopSafe, probes
and accessories

Measuring range	Part no.	
	0563.4454	
	0563.4450	
0.6 to 40 m/s	0628.0005	
0.25 to 20 m/s	0635.9449	
0 to 100 %RH -20 to +70 °C	0636.9740	
	0430.0143	
	0516.0445	

SET 4

The professional set for convenient monitoring of HVAC systems' parameters



°C
m/s
m³/h
%RH
mbar

Set 5 includes:

testo 445 with TopSafe,
battery and instruction manual

Bendable **vane probe**, Ø 100 mm (plug-in)
for integrating velocity measurement in a duct outlet

Combined **vane/temperature probe**, Ø 16 mm
(plug-in) for HVAC ducts

Telescope for plug-in vane/temperature probe L_{max} 1 m

Humidity/temperature probe (plug-in)
for HVAC measurements. Determination of physical
variables on the Mollier diagram

Surface temperature probe which measures
temperature in seconds

2 x **connection cables** for HVAC probes

Differential pressure probe for checking air filters and
for measuring velocity up to 100 m/s as well as high
temperatures and polluted air

Pitot tube, app. temp. up to +350 °C, 500 mm long, Ø 7 mm

Silicone hose to connect Pitot tube and pressure probe

Magnetic holder for pressure probe

System case for instrument, TopSafe, probes and accessories

Measuring range	Part no.	
	0563.4455	
	0563.4450	
0.2 to 15 m/s	0635.9340	
0.4 to 60 m/s -30 to +140 °C	0635.9540	
	0430.0941	
0 to 100 %RH -20 to +70 °C	0636.9740	
-200 to +300 °C short-term to +500 °C	0604.0194	
	0430.0143	
-0 to +100 hPa (ΔP)	0638.1545	
	0635.2045	
	0554.0440	
	0554.0225	
	0516.0400	

SET 5



The ideal service instrument for HVAC systems

Technical data

Probe connection

- Socket 1:**
- Thermal velocity probes
 - Vanes
 - Temperature probes
 - Differential pressure probes
 - Absolute pressure probes
 - CO₂ probe
 - CO probe

- Socket 2:**
- Combined probe for humidity and temperature
 - 3-function probe for humidity, temperature, velocity

Temperature measurement

NiCr-Ni

Measuring range: -200 to +1370 °C
Resolution: 0.1 °C
Accuracy of instrument*: $\pm 0.3^\circ\text{C}$ or $\pm 0.5\%$ of m.v. at +22 °C (the larger value applies)

Humidity measurement

Combined probe: capacitive sensor

Measuring range: 0 to 100 %RH
Resolution: 0.1 %RH
System accuracy**: Up to $\pm 1\%$

NTC sensor/Ni-10000 sensor

Measuring range: -50 to +120 °C/to +180 °C
Resolution: 0.1 °C
System accuracy**: Up to $\pm 0.4^\circ\text{C}$

Calculated humidity parameters:

td, g/m³, g/kg pressure-compensated, J/g

Velocity measurement

Thermal probes

Measuring range: 0 to 20 m/s
Resolution: 0.01 m/s (0 to 10 m/s)
0.1 m/s (remaining range)
System accuracy**: Up to 0.03 m/s, $\pm 3\%$ of measured value

Vanes

Measuring range: 0 to 60 m/s
Resolution: 0.01 m/s
System accuracy**: Up to 0.1 m/s, $\pm 1\%$ of measured value

Calculated volume flow: m³/h (e.g. 0 to 99999 m³/h), m³/min, m³/s, l/s, cfm

Pressure measurement

Differential pressure probe

Measuring range: -40 to +100 hPa (ΔP)
Resolution: 0.01 mbar
Accuracy of instrument*: 0.1 mbar (0 to 20 mbar)
1 % of measured value (remaining range)

Calculated velocity values (density compensated): 0 to 100 m/s
Calculated velocity flow values: m³/h, m³/min, m³/s, l/s, cfm

CO₂ measurement

Switchover in vol. %

Measuring range: 0 to 10000 ppm
0 to 1 vol. %
Resolution: 1 ppm
0.0001 vol. %
System accuracy**: ± 50 ppm $\pm 2\%$ of m.v. (0 to 5000 ppm)
 ± 100 ppm $\pm 3\%$ of m.v.

CO measurement

Measuring range: 0 to 500 ppm

Warranty: Meas. instr. 2 years

Typical battery lifetimes:

Temperature/humidity probes, pressure probes, vane probes: 30 – 45 h
Thermal probes, CO₂ probe, 3-function probe: 6 – 12 h
Reduce the hour times by a factor of 5 if a 9 V rechargeable battery is used.

*Accuracy: ± 1 digit

**System accuracy: total accuracy of probe and measuring instrument.

Order our probe brochure for more information.

Set for monitoring indoor air quality

SET 6

You can order by fax, mail or telephone

Simply copy this page, fill out quantities required and return to us by fax or post. Don't forget your name and address.

Qty.	Recommended sets	Part no.	
	Introductory set to velocity measurement in ducts (Set 1)	0563.4451	
	Introductory set to HVAC measurement in ducts , using a hot wire probe (Set 2)	0563.4452	
	Introductory set to HVAC measurement in ducts , using a vane probe (Set 3)	0563.4453	
	Low cost professional set for HVAC measurement in ducts and in duct outlets (Set 4)	0563.4454	
	Professional set for convenient monitoring of HVAC systems (Set 5)	0563.4455	
	Set for checking air conditioning systems by monitoring indoor air quality (Set 6)	0563.4456	

Qty.	Ordering data for measuring instrument	Part no.	
	testo 445 , professional multi-function measuring instrument with TopSafe, with battery and calibration protocol	0563.4450	

Qty.	Calibration certificates for recommended sets	Part no.	
	ISO calibration certificate for velocity probe with instrument (calibration points 1/2/5/10 m/s)	0520.0004	
	ISO calibration certificates/Velocity hot wire, van anemometer, Pitot tube, calibration points 5/10/15/20 ms	0520.0034	
	DKD calibration certificates/Velocity hot wire, van anemometer, calibration points 0.5/1/2/5/10 m/s	0520.0244	
	DKD calibration certificates/Velocity hot wire, van anemometer, Pitot tube, calibration points 2/5/10/15/20 m/s	0520.0204	

Qty.	Accessories for printing and processing data	Part no.	
	Testo log printer with batteries and thermal paper, prints data with location, product names, date and time	0554.0545	
	Printer paper for Testo log printer (6 rolls)	0554.0569	
	ComSoft 3 for data management. Incl. data base, analysis and graphics function, data analysis, trend curve	0554.0830	
	RS232 cable connects measuring instrument to PC for data transmission	0409.0178	

Qty.	Accessories for power supply	Part no.	
	Plug-in mains unit for mains operation and to recharge rechargeable batteries in the instrument	0554.0088	
	9 V rechargeable battery , instead of battery	0515.0025	
	Battery recharger with 4 NC rechargeable batteries for the Testo log printer , battery is recharged externally	0554.0110	

Qty.	Accessories for velocity measurement	Part no.	
	Volume flow funnel for measuring the extraction power in ventilation units using the anemometer probe from Set 2 or the vane probe with \varnothing 16 mm from Sets 1, 4 and 5		
	a) testovent 410, \varnothing 340 mm/330 x 330 mm, Measuring range: 20 to 200 m ³ /h	0554.0410	
	b) testovent 415, \varnothing 210 mm/190 x 190 mm, Measuring range: 20 to 200 m ³ /h	0554.0415	

Subject to change without notice.

Please send me the following:

- ☐ Special probe brochure with detailed technical data on **testo 445**
- ☐ Detailed information on Testo Calibration Services

Name

Address

Company

Department

Date, Signature