



testo 435

# Multifunction HVAC and IAQ Meter

NEW!

The newest technology for temperature, humidity, air flow and more!



cfm

fpm

$\Delta P$

CO<sub>2</sub>

%RH

°F

Lux



## All the right parameters for HVAC and IAQ

The testo 435 is perfect for monitoring, analyzing and diagnosing indoor air quality problems in the office, in the warehouse, or on the production floor, in restaurants or schools... anywhere you need to take important IAQ measurements.

You can easily pinpoint and troubleshoot problems with HVAC systems and see the results of corrections immediately. Commissioning, validating, benchmarking, or simply adjusting HVAC systems are all easy with the testo 435.

A new IAQ probe measures CO<sub>2</sub>, relative humidity, room air temperature and absolute pressure for evaluating indoor air quality. In addition the 435 can calculate absolute

pressure, draft, lux and surface temperature. Determining volume flow, is easy with a wide selection of thermal probes, vane probes and Pitot tubes.

## The right probe for every application

The testo 435 is designed to accept a variety of probes depending upon your application. The extraordinary selection makes it possible to measure everything from IAQ to velocity.

For basic HVAC checks, temperature and humidity measurements have been integrated in the new thermal probe, for measurements in ducts. Flow speed, volume flow, air humidity and air temperature can easily be measured in one sequence.

The vane probe with a diameter of 2.4 in. is suited for integrated measurements at registers. For duct measurements, a 0.6 in. vane probe with a broad range, 118 to 8000 fpm is available. The Pitot tube is ideal for higher air

velocities. A 10"H2O differential pressure probe is integrated into the testo 435-3 and testo 435-4 for this purpose.

For important IAQ measurements the unique IAQ probe measures CO<sub>2</sub>, relative humidity and room air temperature in order to evaluate room air quality plus absolute pressure.

The degree of air velocity or draftiness in any room can easily be determined with the turbulence probe. Determine the true illumination (lux) of those low-lit areas that affect working conditions daily.

Surface temperature measurements of motors, cooling coils, heat exchangers, etc. are easily performed with the cross-band probe. Its unique design reaches the actual surface temperature in just a few seconds.





## Wireless probes for temperature and humidity

Wireless probes offer many advantages over traditional cable or integrated probes. Measurements up to 65 ft. from the meter are possible. There is no risk of damaging or tangling wires or cables. With the testo 435 up to three wireless probes can be read and displayed at once for temperature and humidity measurements. The optional wireless module can be installed by the user at any time.





## Designed for the way you work

The testo 435 was designed from the ground up to provide easy-to-follow menus and a large, clear display. For measurements at different locations, the 435-2 and 435-4 can assign measured values to user-defined and named locations in the memory.

### Programmed functions

Important measurements such as mean calculations (both "timed" and multi-point"), and area inputs for volume flow calculations, are directly accessed by the three function buttons. Any area input (circle or rectangle) can be stored in memory or modified at point of use. Five pre-determined shapes are accessible via the

function buttons.

Long-term IAQ measurements of indoor air parameters are simple via the function buttons. Different measurement programs can be pre-set in memory and called up as needed.

## Precision instrument, rugged design

You want your instrument to be accurate and dependable. The testo 435 was designed and built as a precise and rugged instrument with an IP54 protection rating. The rubberized case material provides shock and impact protection. The large, back-lit display is recessed to provide added protection. An integrated loop on the top is available for a carry strap. Plus, integrated magnets on the instrument back provide secure hands-free operation. The testo 435 delivers laboratory-level accuracy, with toolbox toughness and versatility.





## Superior data communication and documentation

The testo 435 offers several options for viewing, managing, printing and analyzing data.

The simplest option is to print out data with date and time for convenient and fast documentation on-site with the optional testo infrared printer.

With the 435-2 and 435-4 measure and store up to 10,000 readings then analyze them via Testo's ComSoft3 Compact Software (included). Easily display your data in graphs or tables, or export the data to a spreadsheet for further analyses.

In addition the testo 435 can perform timed interval printing from 1 minute to 24 hours using its user-specified "Cycle printing" function for longterm monitoring.



### Every testo 435 offers:

- **WIDE SELECTION OF PROBES:**
  - Four function IAQ probe ( temp. RH, CO2, and absolute pressure)
  - Thermal probe with integrated temperature and humidity measurement
  - Wireless temperature probes
  - Flow measurements with both vane and thermal probes
  - IP54 protection class
- **TIME SAVING PROGRAMMED FUNCTIONS**
- **PRINTING TO THE TEST IR PRINTER**

### PLUS ADVANCED FEATURES:

- **INTERGRATED DIFFERENTIAL PRESSURE MEASUREMENT (435-3/-4)**
  - for flow measurement
  - for monitoring HVAC filters, etc.
- **ADDITIONAL FUNCTIONS (435-2/-4)**
  - Data recording for up to 10,000 readings
  - PC software for analyzing, archiving and documenting data
  - Wireless or cable humidity probes
  - Light (Lux) probe (optional)
  - Comfort level probe (optional)

#### testo 435-1

##### STANDARD

testo 435-1, multifunction meter for A/C, ventilation and IAQ, with battery and calibration document

Part no. 0560 4351

#### testo 435-2

##### STANDARD WITH

##### EXTRA FUNCTIONS

testo 435-2, multifunction meter for A/C, ventilation and IAQ with memory, PC software and USB cable, incl. battery and calibration document

Part no. 0563 4352

#### testo 435-3

##### STANDARD WITH

##### DIFFERENTIAL PRESSURE

testo 435-3, multifunction meter with built-in differential pressure measurement for A/C, ventilation and IAQ, with battery and calibration document

Part no. 0560 4353

#### testo 435-4

##### STANDARD WITH

##### EXTRA FUNCTIONS DIFFERENTIAL PRESSURE

testo 435-4, multifunction meter with built-in differential pressure measurement for A/C, ventilation and IAQ with memory, PC software and USB cable, with battery and calibration document

Part no. 0563 4354

# Probes

435-1/-2/-3/-4				
Multifunction probes	Illustration	Meas. range	Accuracy	Part no.
IAQ probe (CO <sub>2</sub> , humidity, temperature and barometric)		32 to +122 °F 0 to +100 %RH 0 to +10000 ppm CO <sub>2</sub> +240 to +460 °H2O	±0.5 °F ±2 %RH (+2 to +98 %RH) ±(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> ) ±2 °H2O	0632 1535
Thermal velocity probe with built-in temperature and humidity measurement, dia. 0.5in, with telescopic handle (max. 29in.)		-4 to +158 °F 0 to +100 %RH 0 to +4000 fpm	±0.5 °F ±2 %RH (+2 to +98 %RH) ±(6 fpm +4% of rdg.)	0635 1535
Flow probe	Illustration	Meas. range	Accuracy	Part no.
Vane measurement probe, 0.6in. diameter, with telescopic handle max. 35 in.		+118 to +8000	±(40 fpm +1.5% of rdg)	0635 9535
Vane measurement probe, 2.4 in. diameter, with telescopic handle (max. 36 in.)		+50 to +4000 fpm	±(20 fpm +1.5% of rdg.)	0635 9335
Hot wire probe for fpm and °F, probe head dia. .30 in., with telescopic handle (32 in.)		0 to +4000 fpm	±(6 fpm +5% of rdg.)	0635 1025
Absolute pressure probes	Illustration	Meas. range	Accuracy	Part no.
Absolute pressure probe 800"H2O		0 to +800"H2O	±2"H2O	0638 1835
Air probes	Illustration	Meas. range	Accuracy	Sec Part no.
Efficient, rugged NTC air probe	 4.5 in. 2 in. Ø 0.20 in. Ø .16 in.	-58 to +302 °F	±0.5% of rdg (+212 to +302 °F) ±0.4 °F (-13 to +167 °F) ±0.7 °F (remaining range)	60 s 0613 1712
Surface probes	Illustration	Meas. range	Accuracy	Sec Part no.
Fast-action surface probe with spring thermocouple, for uneven surfaces, short-term range to +932°F, T/C Type K	 4.5 in. Ø 0.20 in. Ø 0.5 in.	-76 to +572 °F	Class 2	3 s 0602 0393
Pipe wrap probe for pipe diameter 0.20 to 2.6 in. with replaceable measuring head, short-term range to +536°F, T/C Type K		-76 to +270 °F	Class 2	5 s 0602 4592
Clamp probe for measurements on pipes, pipe diameter 0.6 to 1"), short-term range up to +266°F		-58 to +212 °F	Class 2	5 s 0602 4692
Immers./penetr. probes	Illustration	Meas. range	Accuracy	Sec Part no.
Waterproof immersion/penetration probe, T/C Type K	 4.5 in. 2 in. Ø 0.2 in. Ø 0.15 in.	-76 to +750 °F	Class 2	7 s 0602 1293
435-2/-4				
IAQ probes	Illustration	Meas. range	Accuracy	Part no.
Comfort level probe for turbulence measurement with telescopic handle (max. 32 in) and stand, meets DIN 1946 Part 2 requirements		0 to +120 °F 0 to +1000 fpm	±0.5 °F ±(6 fpm +4% of rdg)	0628 0109
Lux probe, for measuring light intensity			Accuracy to DIN 5032, Part 6: f1 = 6% = V(Lambda) adjustment f2 = 5% = cos-like weighting	0635 0545
Humidity probes	Illustration	Meas. range	Accuracy	Part no.
Humidity/temperature probe	 Ø 0.5 in.	-4 to +160 °F 0 to +100 %RH	±0.5 °F ±2 %RH (+2 to +98 %RH)	0636 9735
435-3/-4				
Prandtl's Stainless Steel Pitot tubes	Illustration	Oper. temp.	Part no.	
Pitot tube, 14 in. long	 14 in. Ø 0.3 in.	32 to +1112 °F	0635 2145	
Pitot tube, 20 in. long,	 20 in. Ø 0.3 in.	32 to +1112 °F	0635 2045	
Pitot tube, 40 in. long, measures velocity together with pressure probes 0638 1347	 1000 mm Ø 0.3 in.	32 to +1112 °F	0635 2345	


## Option: Wireless

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


### Wireless module (optional)

Country version	Radio freq.	Part no.
Wireless module for instrument, 915.00 MHz FSK, approved for USA and Canada	915.00 MHz FSK	0554 0190

### Pre-assembled: Wireless handles with probe head

Wireless handles with probe head for surface measurement	Meas. range	Accuracy	Resolution	sec
<b>Wireless handle for plug-in probe heads with T/C probe head for surface measurement</b> 	-58 to +660 °F Short-term to +932 °F	Wireless handle: ±(0.9 °F +0.3% of rdg) (-40 to +932 °F) ±(1.3 °F +0.5% of rdg) (remaining range) T/C probe head: Class 2	0.1 °F (-58 to +390 °F) 1.0 °F (remaining range)	5 s
Country version	Wireless freq.	Part no.		
Wireless handle for plug-in probe heads, incl. T/C adapter, approved for USA and Canada	915.00 MHz FSK	0554 0191		
T/C probe head for surface measurement, attachable to radio handle, T/C Type K		0602 0394		

435-2/-4

Wireless probes incl. humidity probe head	Meas. range	Accuracy	Resolution
<b>Wireless handle for plug-in probe heads with humidity probe head</b> 	0 to +100 %RH -4 to +160 °F	±2 %RH (+2 to +98 %RH) ±0.9 °F	0.1 %RH 0.1 °F
Country version	Radio freq.	Part no.	
Wireless handle for plug-in probe heads, incl. T/C adapter, approved for USA and Canada	915.00 MHz FSK	0554 0191	
Humidity probe head, attachable to wireless handle		0636 9736	

### Wireless probes: General technical data

Wireless handle		Measuring rate	0.5 s or 10 s, adjustable on handle	Transmission	
Battery type	2 AAA batteries			Oper. temp.	RF direct
Battery life	215 h (meas. rate 0.5 s) 6 months (meas. rate 10 s)	Radio coverage	-4 to +122 °F		
			Storage temp.	-40 to +160 °F	

## Technical data

435-1/-2/-3/-4								435-3/-4	435-2/-4
Probe type	NTC (Air, humidity, multi-purpose probe)	Type K	Testo humid. sensor, cap.	Vane	Hot wire	CO <sub>2</sub> (IAQ probe)	Absolute pressure probe	Differential pressure probe, internal	Lux
Meas. range	-40 to +300 °F	-328 to +2498 °F	0 to +100 %RH	0 to +12000 fpm	0 to +4000 fpm	0 to +10000 ppm CO <sub>2</sub>	0 to +800 °H <sub>2</sub> O	0 to +10 °H <sub>2</sub> O	0 to +100000 Lux
Accuracy ±1 digit	±0.4 °F (-13 to +170 °F) ±0.7 °F (-40 to -13 °F) ±0.7 °F (+160 to +212 °F) ±0.5% of rdg (remaining range)	±0.5 °F (-76 to +140 °F) ±0.5% of rdg (remaining range)						±0.008 °H <sub>2</sub> O (0 to +0.8 °H <sub>2</sub> O) 1% of rdg (remaining range)	
Resolution	0.1 °F	0.1 °F	0.1 %RH	2 fpm (60 vane) 20 fpm (16 vane)	4 fpm	1 ppm CO <sub>2</sub>	0.04 °H <sub>2</sub> O	2 °H <sub>2</sub> O	1 Lux
Oper. temp.	-4 to +122 °F				Battery life	200 h (typical vane measurement)			
Storage temp.	-22 to +160 °F				Dimensions	8.9" x 3" x 1.8"			

## Ordering Information

Measuring Instrument	Part no.	Accessories	Part no.
testo 435-1, multifunction meter, for A/C, ventilation and IAQ, with battery and calibration document	0560 4351	testovent 410, volume flow funnel, Ø 13in./13 x 13 in., incl. case	0554 0410
testo 435-2, multifunction meter for A/C, ventilation and IAQ with memory, PC software and USB cable, incl. battery and calibration document	0563 4352	testovent 415, volume flow funnel, Ø 8in/7.5x17.5in., incl. case	0554 0415
testo 435-3, multifunction meter with built-in differential pressure measurement for A/C, ventilation and IAQ, with battery and calibration document	0560 4353	Connection hose, silicone, 16 ft. long, Max. load 280 "H2O	0554 0440
testo 435-4, multifunction meter with built-in differential pressure for A/C, ventilation and IAQ with memory, PC software and USB cable, plus battery and calibration document	0563 4354	Handle for plug-in humidity probe head for connection to testo 635 and testo 435, probe cable included, measures/calibrates humidity probe head	0430 9735
		Control and humidity adjustment set 11.3%RH/75.3%RH incl. adapter for humidity probes, Quick checks or calibration of humidity probe	0554 0660
		Teflon sintered filter, (dia. 0.5in.), high velocities	0554 0756
		Stainless steel sintered cap, (dia. 0.5in.), is screwed onto humidity probe, for high velocity speeds or in dirty air	0554 0647
Accessories	Part no.	Calibration Documents	Part no.
External recharger incl. 4 Ni-MH rechargeable batteries with built-in, international power supply - 100-240 V, 300 mA, 50/60 Hz, 12 VA/instrument	0554 0610	ISO calibration document/meter with surface probe; calibration points +140°F; +250°F; +360°F	0520 0071
Plug-in power supply for testo 735, testo 635, testo 435, 5 VDC 500 mA with European adapter	0554 0447	ISO calibration document/Humidity, Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +77°F	0520 0006
System case	Part no.	ISO calibration document/Pressure, Differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
Service case for meter and probes, (16 x 12 x 4 inches)	0516 0035	ISO calibration document/Velocity, Hot wire, vane anemometer; calibration points 100; 158; 200; 300 fpm	0520 0024
Service case for meter, probes and accessories, (19 x 17 x 4.3 inches)	0516 0135	ISO calibration document/Velocity, Hot wire, vane anemometer, Pitot tube; calibration points 200; 400; 1000; 2000 fpm	0520 0004
Printer and Accessories	Part no.	ISO calibration document/Velocity, Hot wire, vane anemometer, Pitot tube; calibration points 1000; 2000; 3000; 4000 fpm	0520 0034
Testo Infrared printer and infrared interface, 1 roll of thermal paper and 4 round cell batteries	0554 0547	ISO calibration document/Light, Lux probes; calibration points 500; 1000; 2000 Lux	0520 0010
Extra thermal printer paper (6 rolls), legible up to 10 years	0554 0568	ISO calibration document/CO2, CO2 probes; calibration points 0; 1000; 5000 ppm	0520 0033
Extra thermal printer paper (6 rolls)	0554 0569		

### Monitoring HVAC Air Flows

Easily determine volume flow, with a choice of thermal probes, vane probes and Pitot tubes.

