

Service on air conditioning units

Do you manage to get home by 5pm every day?



Axel Rieple,
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Probably not, because your job expects above-average dedication. You also need partners who won't let you down. We are leading the way with our quality service.

Check it out for yourself.

Do you need an accessory, do you have a question about measuring or do you need a replacement instrument? – Testo Service employees are at your service when you need them. Good to know when the situation requires.

All parameters required by air conditioning units in one instrument: m^3/h , m/s , CO_2 , %RH, $^{\circ}C$, hPa, Lux

Practical user profiles directly on function button, e.g. duct measurement with area input and mean calculation

Wireless temperature and humidity measurement over a distance of up to 20 m without obstructions

High quality documentation makes you a pro



testo 435 - The new all-rounder

The all-rounder

testo 435 is the new multi-function measuring instrument which analyses Indoor Air Quality to tune air conditioning systems. The new IAQ probe measures Indoor Air Quality using the parameters CO₂, % relative humidity and ambient air temperature. Absolute pressure is also available. The degree of turbulence probe is used to achieve an objective assessment of ambient air flow. The new Lux probe measures light conditions in the workplace and the repetition frequency of monitors. The surface probe and air moisture probe are used to show where dewpoint has been exceeded and mould has developed. The heat transfer coefficient (U-value) is measured using the U-value temperature

probe and a radio probe. Temperature and humidity measurement are built-in in the new thermal probe. In this way, flow speed, volume flow, air humidity and air temperature can be measured in one procedure. Different measurement principles (hot wire, vane and Pitot tube measurement) can be used depending on flow speed and application.

Improved user comfort thanks to user profiles

testo 435 is easy to operate. User profiles for typical applications such as duct measurement and IAQ measurement are stored in the instrument making time-consuming programming in the instrument no longer necessary.

Reliable measurement data

documentation

Measurement logs provide the customer with data from duct, long-term and degree of turbulence measurements. The company logo can be included on the form. Readings can be printed cyclically in testo 435-1 and -3 on your Testo printer.

Radio probes for temperature and humidity

You have the option of transmitting readings wirelessly via radio from the probe to measuring instrument over a distance of up to 20 m (without obstructions). The lack of cable means more convenience and it cannot get dirty or damaged.

The right instrument for every application

The new testo 435 is available in four versions. Depending on the application, you can choose from versions with built-in differential pressure measurement as well as versions with additional instrument functions such as instrument memory, PC software and an extended range of probes.

Common product advantages: testo 435

- **Wide selection of probes:**
 - IAQ probe for assessing ambient air quality based on CO₂, air temperature, ambient air moisture and absolute pressure
 - Thermal probes with built-in temperature and air moisture measurement
 - Vane and hot wire probes
 - Radio probes for temperature
- **Easy operation with user profiles**
- **Printout on Testo printer**

Additional benefits of the versions

- **Built-in differential pressure measurement (435-3/-4, cannot be upgraded)**
 - for flow measurement using Pitot tubes
 - for monitoring filters
- **Increased instrument functions (435-2/-4, cannot be upgraded)**
 - Instrument store for 10,000 readings
 - PC software for analysing, filing and documenting measurement data
 - Radio probe also for humidity
 - Lux probe connection possible
 - Comfort level probe connection possible
 - U-value probe connection possible

testo 435-1	testo 435-2	testo 435-3	testo 435-4
	● Extended instrument functions	● Built-in differential pressure measurement	● Built-in differential pressure measurement
testo 435-1, multi-functional meas. instr., for A/C, ventilation and Indoor Air Quality, with battery and calibration protocol	testo 435-2, multi-functional measuring instrument for A/C, ventilation and Indoor Air Quality with readings memory, PC software and USB data transmission cable, incl. battery and calibration protocol	testo 435-3, multi-functional measuring instrument with built-in differential pressure measurement for air conditioning, ventilation and Indoor Air Quality, with battery and calibration protocol	testo 435-4, multi-functional meas. instr. with built-in differential pressure measurement for A/C, ventilation and Indoor Air Quality with readings memory, PC software and USB data transmission cable, with battery and calibration protocol
Part no. 0560 4351	Part no. 0563 4352	Part no. 0560 4353	Part no. 0563 4354

Technical data	435-1/-2/-3/-4		435-3/-4	435-2/-4	435-1/-2/-3/-4
Probe type	NTC	Type K (NiCr-Ni)	Differential pressure probe, internal	Lux	Oper. temp. -20 to +50 °C
Meas. range	-50 to +150 °C	-200 to +1370 °C	0 to +25 hPa	0 to +100000 Lux	Storage temp. -30 to +70 °C
Accuracy ±1 digit	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-50 to -25.1 °C) ±0.4 °C (+75 to +99.9 °C) ±0.5% of mv (remaining range)	±0.3 °C (-60 to +60 °C) ±(0.2 °C +0.3% of mv) (remaining range)	±0.02 hPa (0 to +2 hPa) 1% of mv (remaining range)	See probe data	Battery life 200 h (typical vane measurement)
Resolution	0.1 °C	0.1 °C	0.01 hPa	1 Lux / 0.1 Hz	Dimensions 225 x 74 x 46 mm
Overload			200 hPa		

Technical data for thermal, vane and IAQ probes see probe data (next page)

Probes

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

IAQ probes	Illustration	Meas. range	Accuracy	Part no.	
IAQ probe to assess Indoor Air Quality, CO ₂ , humidity, temperature and absolute pressure measurement, with desk-top stand		0 to +50 °C 0 to +100 %RH 0 to +10000 ppm CO ₂ +600 to +1150 hPa	±0.3 °C ±2 %RH (+2 to +98 %RH) ±(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) ±3 hPa	0632 1535	
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 1235	
Flow velocity probes	Illustration	Meas. range	Accuracy	Part no.	
Thermal velocity probe with built-in temperature and humidity measurement, Ø 12 mm, with telescopic handle (max. 745 mm)		-20 to +70 °C 0 to +100 %RH 0 to +20 m/s	±0.3 °C ±2 %RH (+2 to +98 %RH) ±(0.03 m/s +4% of mv)	0635 1535	
Vane meas. probe, 16 mm diameter, with telescopic handle max. 890 mm, e.g. for meas. in ducts, can be used from 0 to +60 °C		Oper. temp. 0 to +60 °C +0.6 to +40 m/s	±(0.2 m/s +1.5% of mv)	0635 9535	
Vane meas. probe, 60 mm diameter, with telescopic handle max. 910 mm, e.g. for meas. at duct exit, can be used from 0 to +60 °C		Oper. temp. 0 to +60 °C +0.25 to +20 m/s	±(0.1 m/s +1.5% of mv)	0635 9335	
Hot wire probe for m/s and °C, Ø probe head 7.5 mm, with telescopic handle (max. 820 mm)		0 to +20 m/s -20 to +70 °C	±(0.03 m/s +5% of mv) ±0.3 °C (-20 to +70 °C)	0635 1025	
Funnel measurement	Illustration	Meas. range	Accuracy	Part no.	
Vane meas. probe, 100 mm diameter, for measurements with funnel set 0563 4170		+0.3 to +20 m/s 0 to +50 °C	±(0.1 m/s +1.5% of mv) ±0.5 °C	0635 9435	
Funnel set consisting of funnel for disc outlets (Ø 200 mm) and funnel for ventilator (330 x 330 mm) for in- and outgoing air				0563 4170	
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.
Efficient, robust NTC air probe	 115 mm 50 mm Ø 5 mm Ø 4 mm	-50 to +125 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (remaining range)	60 s	0613 1712
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
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
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
Immersion/penetr. probes	Illustration	Meas. range	Accuracy	t99	Part no.
Waterproof immersion/penetration probe, TC Type K	 114 mm 50 mm Ø 5 mm Ø 3.7 mm	-60 to +400 °C	Class 2	7 s	0602 1293

Probes / Option: Radio

435-2/-4

IAQ probes	Illustration	Meas. range	Accuracy	Part no.
Comfort level probe for degree of turbulence measurement with telescopic handle (max. 820 mm) and stand, meets EN 13779 requirements		0 to +50 °C 0 to +5 m/s	±0.3 °C ±(0.03 m/s +4% of mv)	0628 0109
Lux probe, for measuring light intensity		0 to 100.000 Lux 0 to 300 Hz	Accuracy Lux (acc. to DIN 5032). f1 = 6% = V(Lambda) adaptation f2 = 5% = cos like rating Class C Accuracy Hz: ±0.1% of f.v.	0635 0545
Humidity probes	Illustration	Meas. range	Accuracy	Part no.
Humidity/temperature probe		-20 to +70 °C 0 to +100 %RH	±0.3 °C ±2,5 %RH (+5 to +95 %RH)	0636 9735
Surface probes	Illustration	Meas. range	Accuracy	Part no.
Temperature probe to determine U-value, triple sensor system for measuring wall temperature, modelling clay included		-20 to +70 °C	Class 1 ±0.1 ±2% of mv*	0614 1635

*when used with an NTC or wireless humidity probe for measuring outside temperature and 20 K difference between the air inside and outside

435-3/-4

Prandtl's Pitot tubes	Illustration	Oper. temp.	Part no.
Pitot tube, 350 mm long, stainless steel, measures flow speed		-60 to +400 °C	0635 2145
Pitot tube, 500 mm long		0 to +600 °C	0635 2045
Pitot tube, 1000 mm long		0 to +600 °C	0635 2345

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

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

Assembled for you: Radio handles with probe head

Radio handles with probe head for surface measurement	Meas. range	Accuracy	Resolution	t99
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		

435-2/-4

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) ±0.3 °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 probes: General technical data

	Radio immersion/penetration probe, NTC	Radio handle	Measuring rate	Radio transmission
Battery type	2 x 3V button cell (CR 2032)	2 AAA micro batteries	0.5 s or 10 s, adjustable on handle	Unidirectional
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 Storage temp. -40 to +70 °C
			Radio coverage	Protection class IP54

Accessories

Accessories for measuring instrument/probes	Part no.
Funnel set consisting of funnel for disc outlets (Ø 200 mm) and funnel for ventilator (330 x 330 mm) for in- and outgoing air	0563 4170
Plug-in mains adapter, 5 VDC 500 mA with European adapter	0554 0447
Connection hose, silicone, 5m long, max. load 700 hPa (mbar)	0554 0440
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
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
Teflon sintered filter, Ø 12 mm, for corrosive substances, high humidity range (long-term measurements), high velocities	0554 0756
Stainless steel sintered cap, Ø 12 mm, is screwed onto humidity probe, for measurements at high flow velocities or in contaminated air	0554 0647
Lithium battery button cell, CR2032 AA batteries for radio handle	0515 0028
Adhesive material for fixing and sealing	0554 0761

System case	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: 490 x 420 x 110 mm	0516 0135

Printer and Accessories	Part no.
Testo printer with wireless IRDA and infrared interface, 1 roll of thermal paper and 4 AA batteries, for printout of reading on site	0554 0547
Spare thermal paper for printer (6 rolls), permanent ink, 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

Calibration Certificates	Part no.
ISO calibration certificate/temperature, meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
ISO calibration certificate humidity, Calibration points 11.3 %RH and 75.3 %RH at +25°C	0520 0006
ISO calibration certificate/pressure, differential pressure, accuracy 0.1 to 0.6 (% of fsv)	0520 0025
ISO calibration certificate velocity, hot wire, vane anemometer; calibration points 0.5; 0.8; 1; 1.5 m/s	0520 0024
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/light, Calibration points 500; 1000; 2000 Lux	0520 0010
ISO calibration certificate/CO2, CO2 probes; calibration points 0; 1000; 5000 ppm	0520 0033



Measure U-value and flow using testo 435

Using testo 435-2 and testo 435-4, the U-value (the most important value when assessing heat in components, formerly known as K-value) and even the smallest air currents, such as at leaking windows, can be measured reliably.

Three temperature values are needed to calculate the U-value: outer temperature, surface temperature of the inner wall and the ambient air temperature. The outer temperature can be measured quickly and easily, with the window closed, using the new wireless probes. The probe is simply positioned outside and transmits the values wirelessly to the measuring instrument inside.

The two other temperatures required can be measured using only one probe; the new patented U-value probe. To measure the surface temperature, the three wires of the U-value probe are attached to the inner wall using modelling clay. The air temperature is measured by a sensor on the probe plug.

Once the three required temperatures are transmitted to testo 435, the instrument calculates the U-value and shows it directly in the display.

Detection of tiny air currents such as at leaking windows and sockets is also possible using testo 435 together with a thermal measurement probe. The accurate hot-wire probe reliably detects even the tiniest air flows.

Air temperature and air moisture can be measured using testo 435-2 and testo 435-4. With a securely attached probe or with a wireless probe.



Measuring the U-value at a wall in need of repair with a U-value and wireless temperature/humidity probe (also possible with a temperature probe)



Measuring flow at a leaking window

Recommended sets

	Part no.
testo 435-2, multi-functional measuring instrument for A/C, ventilation and Indoor Air Quality with readings memory, PC software and USB data transmission cable, incl. battery and calibration protocol	0563 4352
testo 435-4, multi-functional meas. instr. with built-in differential pressure measurement for A/C, ventilation and Indoor Air Quality with readings memory, PC software and USB data transmission cable, with battery and calibration protocol	0563 4354

Recommended set for measuring U-value

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 0554 0188

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 0613 1001

or alternatively

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 0554 0189

Humidity probe head, attachable to radio handle 0636 9736

Temperature probe to determine U-value, triple sensor system for measuring wall temperature, modelling clay included 0614 1635

Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm 0516 0035

Recommended set for measuring flow

Hot wire probe for m/s and °C, Ø probe head 7.5 mm, with telescopic handle (max. 820 mm) 0635 1025

Recommended set for temperature/humidity measurement

Humidity/temperature probe 0636 9735

or wireless with versatile handle and humidity probe head (See U-value measurement for Ordering data)