

# VAC measuring instrument

**testo 445 – The service instrument for ventilation and air conditioning systems**

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Point and timed mean value calculation

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Direct display of the volume flow

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Automatic allocation of duct cross-section area to measurement site (max. 99 measurement sites)

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Internal measurement value store (3000 measurement values)

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PC software for the analysis, archiving and documentation of the measurement values (option)

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Measurement of up to 6 measurement parameters simultaneously

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°C

%RH

m/s

hPa

ppm  
CO<sub>2</sub>

ppm  
CO

This service instrument is a real multi-talent: the testo 445 has two probe inputs for the connection of a broad range of probes for measurements on ventilation/air conditioning systems. The instrument records flow velocity values in a duct, at a duct outlet or on extraction systems. In addition to this, the allrounder measures or calculates the parameters volume flow, Indoor Air Quality, temperature, relative humidity, dewpoint, absolute humidity, degree of humidity, enthalpy, pressure and CO.

At the simple press of a button, the testo 445 displays the last measurement value measured as well as minimum, maximum and mean values. In addition to this, measurement data can be stored according to measurement site and analyzed on a PC, or documented on site with the Testo fast printer.

# Technical data

## testo 445

testo 445, VAC measuring instrument, incl. battery and calibration protocol

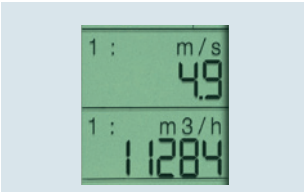
Part no. 0560 4450



### General technical data

|                       |                  |
|-----------------------|------------------|
| Operating temperature | 0 to +50 °C      |
| Storage temperature   | -20 to +70 °C    |
| Display               | LCD, 4 lines     |
| Battery type          | 9V block battery |
| Battery life          | 45 h             |
| PC                    | RS232 interface  |
| Weight                | 255 g            |
| Housing material      | ABS              |
| Memory                | 3000             |
| Dimensions            | 215 x 68 x 47 mm |

Battery life: 6-45 h (depending on probe)  
Mains conn. and batt. rech. in instr.  
Calculated humidity parameters: td, g/m³, g/kg pressure-compensated, J/g  
Calculated volume flow: m³/h (e.g. 0 to 99999 m³/h), m³/min, m³/s, l/s, cfm  
Calculated velocity values (density-compensated): 0 to 100 m/s; 0 to 99999 m³/h  
Humidity measurement: Measuring range -50 to 180 °C; See Probes for accuracy  
Accuracy of Type K, J: Additional error via operation temperature 0.2 °C (adjustment point)



Display of 2 measurement parameters



Simultaneous measurement of up to 6 parameters

## Technical data / Accessories

| Sensor type               | Measuring range                 | Accuracy $\pm 1$ digit                                                                                                                                                                      | Resolution                                                                                                          |
|---------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Type K (NiCr-Ni)          | -200 to +1370 °C                | $\pm 0.5\%$ of m.v. (-200 to -60.1 °C)<br>$\pm 0.5\%$ of m.v. (+60.1 to +1370 °C)<br>$\pm 0.3$ °C (-60 to +60 °C)                                                                           | 0.1 °C (-200 to +1370 °C)                                                                                           |
| Type J (Fe-CuNi)          | -200 to +1000 °C                | $\pm 0.5\%$ of m.v. (-200 to -60.1 °C)<br>$\pm 0.5\%$ of m.v. (+60.1 to +1000 °C)<br>$\pm 0.3$ °C (-60 to +60 °C)                                                                           | 0.1 °C (-200 to +1000 °C)                                                                                           |
| NTC                       | -50 to +150 °C                  | $\pm 0.5\%$ of m.v. (+100 to +150 °C)<br>$\pm 0.2$ °C (-25 to +74.9 °C)<br>$\pm 0.4$ °C (-50 to -25.1 °C)<br>$\pm 0.4$ °C (+75 to +99.9 °C)                                                 | 0.1 °C (-50 to +150 °C)                                                                                             |
| Testo humid. sensor, cap. | 0 to +100 %RH                   | See probe data                                                                                                                                                                              | 0.1 %RH (0 to +100 %RH)                                                                                             |
| Vane                      | 0 to +60 m/s                    | See probe data                                                                                                                                                                              | 0.01 m/s (0 to +60 m/s)                                                                                             |
| Thermal                   | 0 to +20 m/s                    | See probe data                                                                                                                                                                              | 0.01 m/s (0 to +10 m/s)<br>0.1 m/s (+10.1 to +20 m/s)                                                               |
| Pressure                  | See pressure probes             | $\pm 0.1\%$ of m.v.                                                                                                                                                                         | 0.001 hPa (Sonde 0638 1345)<br>0.001 hPa (Sonde 0638 1445)<br>0.01 hPa (Sonde 0638 1545)<br>1 hPa (Sonde 0638 1645) |
| CO <sub>2</sub> probe     | 0 to +1 Vol. % CO <sub>2</sub>  | See probe data                                                                                                                                                                              | 0 Vol. % CO <sub>2</sub> (0 to +1 Vol. % CO <sub>2</sub> )                                                          |
| CO <sub>2</sub> probe     | 0 to +10000 ppm CO <sub>2</sub> | $\pm (100 \text{ ppm CO}_2 + 3\% \text{ of m.v.}) (+5000 \text{ to } +10000 \text{ ppm CO}_2)$<br>$\pm (500 \text{ ppm CO}_2 + 2\% \text{ of m.v.}) (0 \text{ to } +5000 \text{ ppm CO}_2)$ | 1 ppm CO <sub>2</sub> (0 to +10000 ppm CO <sub>2</sub> )                                                            |
| CO probe                  | 0 to +500 ppm CO                | $\pm 5\%$ of m.v. (+100 to +500 ppm CO)<br>$\pm 5$ ppm CO (0 to +100 ppm CO)                                                                                                                | 1 ppm CO (0 to +500 ppm CO)                                                                                         |

### Transport and Protection

### Part no.

|                                                                                                                                                 |           |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--|
| System case (plastic) for measuring instrument, probes and accessories<br>probes in lid make it easy to find parts in case (540 x 440 x 130 mm) | 0516 0400 |  |
| TopSafe (indestructible protection case), with bench stand and belt clip                                                                        | 0516 0440 |  |

### Printer and Accessories

|                                                                                                                                                                                                                                                                              |           |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--|
| Testo fast printer IrDA with wireless infrared interface; 1 roll thermal paper; 4 AA batteries                                                                                                                                                                               | 0554 0549 |  |
| 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), permanent ink measurement data documentation legible for up to 10 years                                                                                                                                                           | 0554 0568 |  |

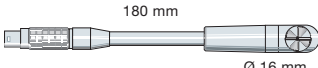
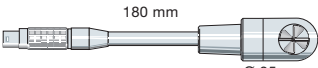
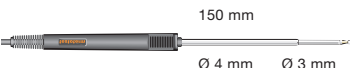
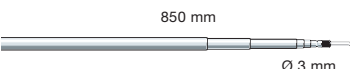
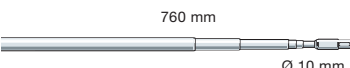
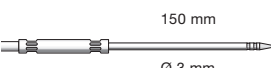
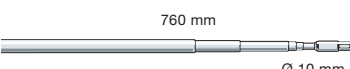
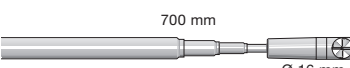
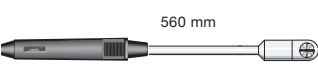
### Software and Accessories

|                                                                 |           |  |
|-----------------------------------------------------------------|-----------|--|
| ComSoft Professional Pro software incl. data archiving          | 0554 1704 |  |
| RS232 cable connects instrument to PC (1.8 m) for data transfer | 0409 0178 |  |

# Accessories

| Additional accessories and spare parts                                                                                                  |           | Part no. |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|
| 9V rech. battery for instrument, instead of battery                                                                                     | 0515 0025 |          |
| Desk-top power supply with international connection options                                                                             | 0554 1143 |          |
| Professional telescopic handle for plug-in vane probes, max. 1 m long                                                                   | 0430 0941 |          |
| Handle for plug-in vane probes                                                                                                          | 0430 3545 |          |
| Extension cable, 5 m long, between plug-in head cable and instrument, PUR coating material                                              | 0409 0063 |          |
| Connection hose; silicone; length 5 m; max. load 700 hPa (mbar)                                                                         | 0554 0440 |          |
| Silicone heat paste (14g), Tmax = +260°C, improves heat transfer in surface probes                                                      | 0554 0004 |          |
| 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 |          |
| Adapter to connect NiCr-Ni thermocouples and probes with open wire ends                                                                 | 0600 1693 |          |
| Control and adjustment set for Testo humidity probes, salt solution with 11.3% RH and 75.3% RH, incl. adapter for Testo humidity probes | 0554 0660 |          |
| testo saline solution pot for checking humidity probes, 33 %RH                                                                          | 0554 0636 |          |
| <b>Calibration Certificates</b>                                                                                                         |           |          |
| ISO calibration certificate velocity<br>hot wire, vane anemometer, Pitot tube; calibration points 1; 2; 5; 10 m/s                       | 0520 0004 |          |
| ISO calibration certificate velocity<br>hot wire, vane anemometer, Pitot tube; calibration points 5; 10; 15; 20 m/s                     | 0520 0034 |          |
| DAkkS calibration certificate velocity<br>hot wire, vane anemometer; calibration points 0.5; 1; 2; 5; 10 m/s                            | 0520 0244 |          |
| DAkkS calibration certificate/velocity<br>hot wire, vane anemometer, Pitot tube; calibration points 2; 5; 10; 15; 20 m/s                | 0520 0204 |          |
| ISO calibration certificate humidity<br>Calibration points 11.3 %RH and 75.3 %RH at +25 °C                                              | 0520 0006 |          |
| ISO calibration certificate/humidity<br>saturated saline solutions: calibration point 11.3%RH                                           | 0520 0013 |          |
| ISO calibration certificate/humidity<br>saturated saline solutions, calibration point 75.3%RH                                           | 0520 0083 |          |
| DAkkS calibration certificate/humidity<br>electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C                       | 0520 0206 |          |

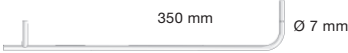
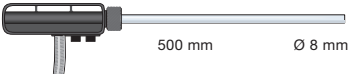
# Probes

| Probe type                                                                                                                                                 | Dimensions<br>Probe shaft/probe shaft tip                                           | Measuring<br>range                                    | Accuracy                                                                                                                                                            | Part no.  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Flow velocity probes</b>                                                                                                                                |                                                                                     |                                                       |                                                                                                                                                                     |           |
| Vane/temperature probe, Ø 16 mm, attachable to 0430 3545 handle or 0430 0941 telescopic handle                                                             |    | +0.6 to +60 m/s<br>-30 to +140 °C                     | $\pm(0.2 \text{ m/s} + 1\% \text{ of m.v.}) (+0.6 \text{ to } +40 \text{ m/s})$<br>$\pm(0.2 \text{ m/s} + 2\% \text{ of m.v.}) (+40.1 \text{ to } +50 \text{ m/s})$ | 0635 9540 |
| Vane/temperature probe, Ø 25 mm, can be attached to 0430 3545 handle or 0430 0941 telescopic handle                                                        |    | +0.6 to +40 m/s<br>-30 to +140 °C                     | $\pm(0.2 \text{ m/s} \pm 1\% \text{ of m.v.}) (+0.6 \text{ to } +40 \text{ m/s})$                                                                                   | 0635 9640 |
| Bendable vane probe (can be bent by 90°), Ø 60 mm, attachable to handle 0430 3545 or telescopic handle 0430 0941, for meas. on ventilation outlets         |    | +0.25 to +20 m/s<br>Operating temperature 0 to +60 °C | $\pm(0.1 \text{ m/s} \pm 1.5\% \text{ of m.v.}) (+0.25 \text{ to } +20 \text{ m/s})$                                                                                | 0635 9440 |
| Bendable vane probe (can be bent by 90°), Ø 100 mm, attachable to handle 0430 3545 or telescopic handle 0430 0941, for measurements on ventilation outlets |    | +0.1 to +15 m/s<br>Operating temperature 0 to +60 °C  | $\pm(0.1 \text{ m/s} \pm 1.5\% \text{ of m.v.}) (+0.1 \text{ to } +15 \text{ m/s})$                                                                                 | 0635 9340 |
| Affordable, robust hot bulb probe, Ø 3 mm, for measurements in the lower velocity range, with handle                                                       |   | 0 to +10 m/s<br>-20 to +70 °C                         | $\pm(0.03 \text{ m/s} \pm 5\% \text{ of m.v.}) (0 \text{ to } +10 \text{ m/s})$                                                                                     | 0635 1549 |
| Robust hot bulb probe, Ø 3 mm, with handle and telescopic handle for measurements in the lower velocity range                                              |  | 0 to +10 m/s<br>-20 to +70 °C                         | $\pm(0.03 \text{ m/s} \pm 5\% \text{ of m.v.}) (0 \text{ to } +10 \text{ m/s})$                                                                                     | 0635 1049 |
| Quick-action hot wire probe, Ø 10 mm, with telescopic handle, for measurements in the lower velocity range with direction recognition                      |  | 0 to +20 m/s<br>-20 to +70 °C                         | $\pm(0.03 \text{ m/s} \pm 4\% \text{ of m.v.}) (0 \text{ to } +20 \text{ m/s})$                                                                                     | 0635 1041 |
| Robust hot bulb probe, Ø 3 mm, for measurements in the lower velocity range, 2m cable (PVC)                                                                |  | 0 to +10 m/s<br>-20 to +70 °C                         | $\pm(0.03 \text{ m/s} \pm 5\% \text{ of m.v.}) (0 \text{ to } +10 \text{ m/s})$                                                                                     | 0628 0035 |
| Thermal anemometer probe, Ø 10 mm, w. telescopic handle, measures air flow in lab fume cupboards to DIN EN 14175                                           |  | 0 to +5 m/s<br>0 to +50 °C                            | $\pm(0.02 \text{ m/s} \pm 5\% \text{ of m.v.}) (0 \text{ to } +5 \text{ m/s})$                                                                                      | 0635 1047 |
| Vane probe, Ø 16 mm, with telescopic handle, Tmax +60°C                                                                                                    |  | +0.6 to +40 m/s                                       | $\pm(0.2 \text{ m/s} \pm 1.5\% \text{ of m.v.}) (+0.6 \text{ to } +40 \text{ m/s})$                                                                                 | 0628 0005 |
| High temperature vane probe, Ø 25 mm, with handle for continuous measurements up to +350°C                                                                 |  | +0.6 to +20 m/s<br>-40 to +350 °C                     | $\pm(0.3 \text{ m/s} \pm 1\% \text{ of fsv}) (+0.6 \text{ to } +20 \text{ m/s})$                                                                                    | 0635 6045 |

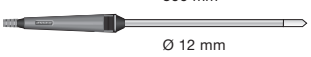
# Probes

| Probe type                                                                                                       | Dimensions<br>Probe shaft/probe shaft tip                                           | Measuring<br>range | Accuracy                                                                              | Part no.  |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------|-----------|
| <b>Pressure</b>                                                                                                  |                                                                                     |                    |                                                                                       |           |
| Precision pressure probe, 100 Pa, measures differential pressure and velocities (in combination with Pitot tube) |    | 0 to +100 Pa       | $\pm(0.3 \text{ Pa} + 0.5\% \text{ of m.v.})$ (0 to +100 Pa)                          | 0638 1345 |
| Pressure probe, 10 hPa, measures differential pressure and velocities (in combination with Pitot tube)           |    | 0 to +10 hPa       | $\pm 0.03 \text{ hPa}$ (0 to +10 hPa)                                                 | 0638 1445 |
| Pressure probe, 100 hPa, measures differential pressure and velocities (in combination with Pitot tube)          |    | 0 to +100 hPa      | $\pm 0.5\% \text{ of m.v.}$ (+20 to +100 hPa)<br>$\pm 0.1 \text{ hPa}$ (0 to +20 hPa) | 0638 1545 |
| Pressure probe, 2000 hPa, measures absolute pressure                                                             |  | 0 to +2000 hPa     | $\pm 5 \text{ hPa}$ (0 to +2000 hPa)                                                  | 0638 1645 |

# Probes

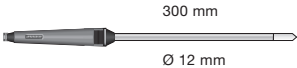
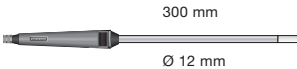
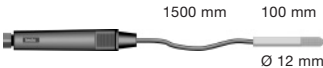
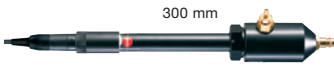
| Probe type                                                                                                                 | Dimensions<br>Probe shaft/probe shaft tip                                                         | Measuring<br>range                                  |  | Part no.  |
|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------|--|-----------|
| <b>Pitot tubes</b>                                                                                                         |                                                                                                   |                                                     |  |           |
| Pitot tube, 500 mm long, Ø 7 mm, stainless steel, for measuring flow velocity                                              |  500 mm Ø 7 mm   | Operating temperature<br>0 to +600 °C               |  | 0635 2045 |
| Pitot tube, 350 mm long, Ø 7 mm, stainless steel, for measuring flow velocity                                              |  350 mm Ø 7 mm   | Operating temperature<br>0 to +600 °C               |  | 0635 2145 |
| Pitot tube, 1000 mm long, stainless steel, for measuring flow velocity                                                     |  1000 mm Ø 7 mm  | Operating temperature<br>0 to +600 °C               |  | 0635 2345 |
| Pitot tube, stainless steel, 1000 mm long, measures velocity with temperature, for pressure probes 0638 1345/..1445/..1545 |  1000 mm Ø 8 mm  | Probe type<br>Type K<br>(NiCr-Ni)<br>-40 to +600 °C |  | 0635 2240 |
| Pitot tube, stainless steel, 500 mm long, measures velocity with temperature, for pressure probes 0638 1345/..1445/..1545  |  500 mm Ø 8 mm | Probe type<br>Type K<br>(NiCr-Ni)<br>-40 to +600 °C |  | 0635 2140 |

# Probes

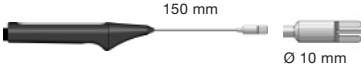
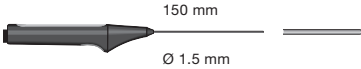
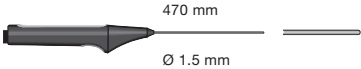
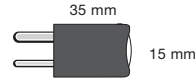
| Probe type                                                                                                                                                                                                                   | Dimensions<br>Probe shaft/probe shaft tip                                           | Measuring<br>range                                                  | Accuracy                                                                                                                                                       | t <sub>90</sub> | Part no.  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|
| <b>More probes</b>                                                                                                                                                                                                           |                                                                                     |                                                                     |                                                                                                                                                                |                 |           |
| 3-function probe for simultaneous measurement of temperature, humidity and velocity. With plug-in head, 0430 0143 connection cable required                                                                                  |    | 0 to +10 m/s<br>0 to +100 %RH<br>-20 to +70 °C                      | ±(0.03 m/s +5% of m.v.)(0 to 10 m/s)<br>±2 %RH (+2 to +98 %RH)<br>±0.4 °C (0 to +50 °C)<br>±0.5 °C (remaining range)                                           |                 | 0635 1540 |
| Comfort level probe for measuring degree of turbulence, with telescopic handle and stand. Fulfills EN 13779 requirements                                                                                                     |    | 0 to +5 m/s<br>0 to +50 °C                                          | ±(0.03 m/s +4% of m.v.) (0 to +5 m/s)<br>±0.3 °C (0 to +50 °C)                                                                                                 |                 | 0628 0009 |
| Ambient CO <sub>2</sub> probe, Plug-in head, connection cable 0430 0143 or 0430 0145 required                                                                                                                                |    | 0 ... +1 Vol. % CO <sub>2</sub><br>0 ... +10000 ppm CO <sub>2</sub> | ±(75 ppm CO <sub>2</sub> +3% of m.v.) (0 to +5000 ppm CO <sub>2</sub> )<br>±(150 ppm CO <sub>2</sub> +5% of m.v.) (+5001 to +10000 ppm CO <sub>2</sub> )       |                 | 0632 1240 |
| Ambient CO probe, for detecting CO in buildings and rooms; 0 to +500 ppm                                                                                                                                                     |    | 0 to +500 ppm CO                                                    | ±5% of m.v. (+100.1 to +500 ppm CO)<br>±5 ppm CO (0 to +100 ppm CO)                                                                                            |                 | 0632 3331 |
| <b>Humidity probes</b>                                                                                                                                                                                                       |                                                                                     |                                                                     |                                                                                                                                                                |                 |           |
| Standard ambient air probe up to +70°C, Plug-in head, connection cable 0430 0143 or 0430 0145 required                                                                                                                       |  | 0 to +100 %RH<br>-20 to +70 °C                                      | ±2 %RH (+2 to +98 %RH)<br>±0.4 °C (-10 to +50 °C)<br>±0.5 °C (remaining range)                                                                                 | 12 s            | 0636 9740 |
| Thin humidity probe incl. 4 attachable protection caps for ambient air measurements, measurements in exhaust air ducts and equilibrium moisture measurements, Plug-in head, connection cable 0430 0143 or 0430 0145 required |  | 0 to +100 %RH<br>-20 to +70 °C                                      | ±2 %RH (+2 to +98 %RH)<br>±0.4 °C (-10 to +50 °C)<br>±0.5 °C (-20 to -10.1 °C)<br>±0.5 °C (+50.1 to +70 °C)                                                    | 15 s            | 0636 2130 |
| Highly accurate reference humidity/temp. probe, Plug-in head, connection cable 0430 0143 or 0430 0145 required                                                                                                               |  | 0 to +100 %RH<br>-20 to +70 °C                                      | ±1 %RH (+10 to +90 %RH)*<br>±2 %RH (remaining range)<br>±0.2 °C (+10 to +40 °C)<br>±0.4 °C (remaining range)<br>* in the temperature range from +15°C to +30°C | 12 s            | 0636 9741 |
| High humidity level probe w/ heated sensor element, no humidity on sensor, Plug-in head, connection cable 0430 0143 or 0430 0145 required                                                                                    |  | 0 to +100 %RH<br>-20 to +85 °C                                      | ±2.5 %RH (0 to +100 %RH)<br>±0.4 °C (-10 to +50 °C)<br>±0.5 °C (-20 to -10.1 °C)<br>±0.5 °C (+50.1 to +100 °C)                                                 | 30 s            | 0636 2142 |



# Probes

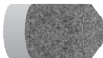
| Probe type                                                                                                                                                                          | Dimensions<br>Probe shaft/probe shaft tip                                           | Measuring<br>range                           | Accuracy                                                                                                                                                                                       | t <sub>90</sub> | Part no.  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|
| <b>Humidity probes</b>                                                                                                                                                              |                                                                                     |                                              |                                                                                                                                                                                                |                 |           |
| Robust humidity probe e.g. for measuring equilibrium moisture or for measurements in exhaust ducts to +120°C, Plug-in head. connection cable 0430 0143 or 0430 0145 required        |    | 0 to +100 %RH<br>-20 to +120 °C              | ±2 %RH (+2 to +98 %RH)<br>±0.4 °C (-10 to +50 °C)<br>±0.5 °C (remaining range)                                                                                                                 | 30 s            | 0636 2140 |
| Robust high temperature/humidity probe up to +180°C, Plug-in head. connection cable 0430 0143 or 0430 0145 required                                                                 |    | 0 to +100 %RH<br>-20 to +180 °C              | ±2 %RH (+2 to +98 %RH)<br>±0.4 °C (+0.1 to +50 °C)<br>±0.5 °C (remaining range)                                                                                                                | 30 s            | 0628 0021 |
| Flexible humidity probe (does not retain shape) for measurements in inaccessible places, Plug-in head. connection cable 0430 0143 or 0430 0145 required                             |    | 0 to +100 %RH<br>-20 to +180 °C              | ±2 %RH (+2 to +98 %RH)<br>±0.4 °C (+0.1 to +50 °C)<br>±0.5 °C (-20 to 0 °C)<br>±0.5 °C (+50.1 to +180 °C)                                                                                      | 30 s            | 0628 0022 |
| Standard pressure dewpoint probe for measurements in compressed air systems, Plug-in head. connection cable 0430 0143 or 0430 0145 required                                         |   | 0 to +100 %RH<br>-20 to +50 °C tpd           | ±0.9 °C tpd (+5 to +50 °C tpd)<br>±1 °C tpd (0 to +4.9 °C tpd)<br>±2 °C tpd (-5 to -0.1 °C tpd)<br>±3 °C tpd (-10 to -5.1 °C tpd)<br>±4 °C tpd (-20 to -10.1 °C tpd)                           |                 | 0636 9840 |
| Precision pressure dewpoint probe for measurements in compressed air systems incl. cert. with test point -40 °C tpd, Plug-in head. connection cable 0430 0143 or 0430 0145 required |  | 0 to +100 %RH<br>-40 to +50 °C tpd           | ±0.8 °C tpd (-4.9 to +50 °C tpd)<br>±1 °C tpd (-9.9 to -5 °C tpd)<br>±2 °C tpd (-19.9 to -10 °C tpd)<br>±3 °C tpd (-29.9 to -20 °C tpd)<br>±4 °C tpd (-40 to -30 °C tpd)                       |                 | 0636 9841 |
| Humidity/temperature probe, Plug-in head. connection cable 0430 0143 or 0430 0145 required                                                                                          |  | 0... +100 %RH<br>-20 to +70 °C               | ±2 %RH (+2... +98 %RH)<br>±0.4 °C (+0.1 to +50 °C)<br>±0.5 °C (-20 to 0 °C)<br>±0.5 °C (+50.1 to +70 °C)                                                                                       | 12 s            | 0636 9742 |
| <b>Probes aw value</b>                                                                                                                                                              |                                                                                     |                                              |                                                                                                                                                                                                |                 |           |
| 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<br>0 to +100 %RH<br>-20 to +70 °C | ±0.01 aW (+0.1 to +0.9 aW)<br>±0.02 aW (+0.9 to +1 aW)<br>±1 %RH (+10 to +90 %RH)<br>±2 %RH (0 to +10 %RH)<br>±2 %RH (+90 to +100 %RH)<br>±0.4 °C (-10 to +50 °C)<br>±0.5 °C (remaining range) |                 | 0628 0024 |
| Measuring chamber completely                                                                                                                                                        |                                                                                     |                                              |                                                                                                                                                                                                |                 | 0554 9860 |

# Probes

| Probe type                                                                                                                                 | Dimensions<br>Probe shaft/probe shaft tip                                         | Measuring<br>range | Accuracy              | t <sub>99</sub> | Part no.  |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------|-----------------------|-----------------|-----------|
| <b>Type K (NiCr-Ni)</b>                                                                                                                    |                                                                                   |                    |                       |                 |           |
| Quick-action surface probe, Plug-in head. connection cable 0430 0143 or 0430 0145 required                                                 |  | -200 to +300 °C    | Class 2 <sup>1)</sup> | 3 s             | 0604 0194 |
| Super quick-action immersion/penetration probe for measurements in liquids, Plug-in head. connection cable 0430 0143 or 0430 0145 required |  | -200 to +600 °C    | Class 1 <sup>1)</sup> | 1 s             | 0604 0493 |
| Super quick-action immersion/penetration probe for high temperatures, Plug-in head. connection cable 0430 0143 or 0430 0145 required       |  | -200 to +1100 °C   | Class 1 <sup>1)</sup> | 1 s             | 0604 0593 |
| Spare meas. head for pipe wrap probe, TC Type K                                                                                            |  | -60 to +130 °C     | Class 2 <sup>1)</sup> | 5 s             | 0602 0092 |

1) According to standard EN 60584-2, the accuracy of Classes 1 / 2 refer to -40 to +1000/+1200 °C.

## Covering caps

|                                                                                                                                                                                       | Illustration                                                                                | For humidity probes                        | Part no.  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------|-----------|
| <b>Caps for humidity probes Ø 12mm and 21mm</b>                                                                                                                                       |                                                                                             |                                            |           |
| Metal protection cage, Ø 12 mm for humidity probes, for measurement in flow 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, for corrosive substances, high humidity range (long-term measurements), high velocities                                                                |  Ø 21 mm   | All humidity probes with Ø 21 mm           | 0554 0666 |
| Sintered PTFE filter, Ø 12 mm, for corrosive media, High humidity range (long-term measurements), high flow velocities.                                                               |  Ø 12 mm   | 0636 9769, 0636 9740, 0636 9715            | 0554 0756 |
| PTFE sintered filter, Ø 12 mm, for corrosive substances, high humidity range (non-stop measurements), high flow speeds                                                                |  Ø 12 mm | 0628 0021, 0628 0022, 0636 2140, 0636 2142 | 0554 0758 |
| Stainless steel sintered cap, Ø 21 mm, can be screwed onto humidity probe, protection in case of high mechanical load and high velocities                                             |  Ø 21 mm | All humidity probes Ø 21 mm                | 0554 0640 |
| Stainless steel sintered filter, pore size 100 µm, probe protection in dusty atmospheres or higher flow velocities, for measurements at higher flow velocities or in contaminated air |  Ø 12 mm | 0636 9740, 0636 9715                       | 0554 0641 |

