

1 Description

For years, Testo has been the first choice when it comes to high-quality humidity measurement transmitters for drying processes and critical ambient conditions. With the testo 6621, this expertise in sensors and electronics has also been made available for classical climate applications - with professional solutions for indoor rooms and ventilation ducts, whose design also appeals to architects.

The measurement transmitter testo 6621 allows the permanent monitoring and regulation of air conditioning systems. Its attractive design makes it adaptable to almost any surroundings. The measurement transmitter versions with a display also allow the person present to record the ambient climatic conditions. Thanks to the combination with the P2A software, further transmitters or replacements can be configured by taking over the profiles.

Operators, facility managers, but also plant engineers have recognized that without long-term stability, not only are undesired ambient conditions the result. Operating costs have also been proven to increase if humidity measurement goes out of control. The measurement transmitter testo 6621 offers an easy, low-cost and long-term possibility of permanently lowering costs.

Übersicht Produktfamilie testo 6621



Wall version with display Duct version with display
Wall version without display Duct version without display

Identification code for product and configuration

A01	Wall
A02	Duct
A03	Wall with external probe

2 Application

The air conditioning measurement transmitter testo 6621 was specially designed for use in air conditioning technology. This includes the regulation and monitoring of climate in buildings, e.g. in office buildings, museums, hotels, hospitals, as well as storage and production conditions.

The product is in the lower price range and is equipped with the features important for the application range as well as some new, bonus features:

- an attractive, simple design, ideally suited for use in public view.
- the reliable, tested Testo humidity sensor.
- fast and easy on site adjustment with Testo hand-held instruments (types testo 400 and testo 650).
- easy-to-use software P2A for parameterization or adjustment.

The product is not suited for high humidity drying process (relative air humidity continuously above 90 %). Please see the hygrottest versions for this.

		testo 6621-A01 and A03 (with ext. probe)-wall versions	testo 6621-A02- duct version
General	Housing	ABS and nickel-plated ABS	ABS and nickel-plated ABS
	Dimensions	81x81x26 mm	81x81x42 mm, probe see illustration
	Weight	80 g	160 g
	Cable screw fittings	None (cable entry through rear wall or break-out opening on underside)	1xM16x1.5
	Protection class	IP 30	IP 65
	EMC	Acc. to EG-guideline 89/336/EEC	
	Application temperature	-20 to +70 °C (-4 to +158 °F); with display: 0 to +50 °C (32 to +122 °F)	
	Storage temperature	-40 to +70 °C (-40 to +158 °F)	
	Measurement parameters	Humidity: %RH; temperature: °C / °F	
	Display	2-line LCD (optional); humidity resolution: 0.1 %RH, temperature resolution: 0.1 °C / 0.1 °F; refresh rate 1/s	
	Measuring medium	Uncontaminated air (filtered air in air conditioning systems and air conditioned rooms); max. 1 bar positive pressure	
	Measuring rate	1/s	
	Reaction time	Reaction time t ₉₀ : <15s at 2m/s. In calibration / adjustment, note: In static air, the reaction time can be considerably longer.	
Sensor	Humidity	Testo humidity sensor	
	Reaction time w/o protection filter	Diagram	
	Temperature	NTC	
	Replaceability humidity sensor	A01(by Testo service), A02 and A03 (possible by customer, see Replacement Sensor), subsequent 2-point adjustment required	
Measuring range	Humidity	0 to 100 %RH (not for high humidity processes)	
	Temperature	0 to +60 °C (32 to +140 °F)	-20 to +70 °C (-4 to +158 °F)
Measurement inaccuracy	Humidity	±2.5% (0 to 90 %RH), ±4% (90 to 100 %RH) Temperature coefficient: 0.05 % / K (Distance from 25 °C)	
	Temperature	±0.5 °C / 0.9 °F	-20 to +70 °C (-4 to +158 °F)
Analog outputs	Current outputs	- 4 to 20 mA (2-wire) only for duct version A02 and wall version A03	
	Voltage outputs	0 to 1 V (4-wire) / 0 to 5 V (4-wire) / 0 to 10 V (4-wire) (not A03)	
	Resolution	<5 µA (4 to 20 mA) / 250 µV (0 to 1 V) / 1.25 mV (0 to 5 V) / 2.5 mV (0 to 10 V)	
	Accuracy current	0.05 mA	
	Accuracy voltage	0 to 1 VDC ±2.5 mV; 0 to 5 VDC ±12.5 mV; 0 to 10 V ±25 mV	
	Digital output	Mini-DIN	
	Voltage supply	At current output: 24 VDC ±10 % / at voltage output: 20 to 30 VDC / VAC	
Current supply	2-wire current 4 to 20 mA	DC 20 V / 20 mA, 24 V / 20 mA, 30 V / 20 mA	
	4-wire voltage, 0 to 10 V	DC 24 V / 7 mA, 30 V / 7 mA, 20 V / 20 mA AC 24 V / 22 mA, 30 V / 28 mA	

A2 4 Electrical connection

4.1 Wiring



Attention! When installing the cable, ensure that there is a spatial separation between the signal line and any interference from foreign power lines.

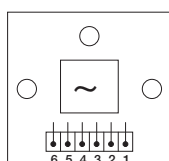
If interference is to be expected, use a shielded and/or twisted cable. The shield must be earthed. Recommended: 8-core cable with close-mesh shield, core cross-section 0.25 to 0.5 mm².

If overloads are to be expected, install overload protection devices.

4.1.1 Wiring 4-wire

A01 wall version

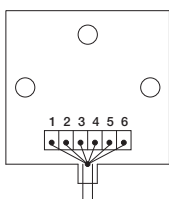
Voltage output (4-wire):
0 to 1 V / 0 to 5 V / 0 to 10 V
U = 20 to 30 VDC/AC



1	+ U
2	- U
3	+ RH
4	- RH
5	+ T
6	- T

A02 duct version

Voltage output (4-wire):
0 to 1 V / 0 to 5 V / 0 to 10 V
U = 20 to 30 VAC/DC

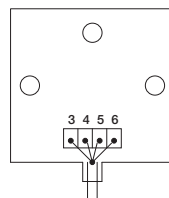


1	+ U
2	- U
3	+ RH
4	- RH
5	+ T
6	- T

4.1.2 Wiring 2-wire

A02 duct version and A03 wall version with external probe

Current output (2-wire): 4 to 20 mA, max. load
500 Ω

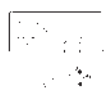


3/5	+ U
4/6	- U
3	+ RH
4	- RH
5	+ T
6	- T

4.1.3 Wiring 3-wire technology

A01 wall version

Connection of 2 channels (temperature and humidity) and current supply.



1	+ U
2	- U
3	+ RH
4	- RH
5	+ T
6	- T

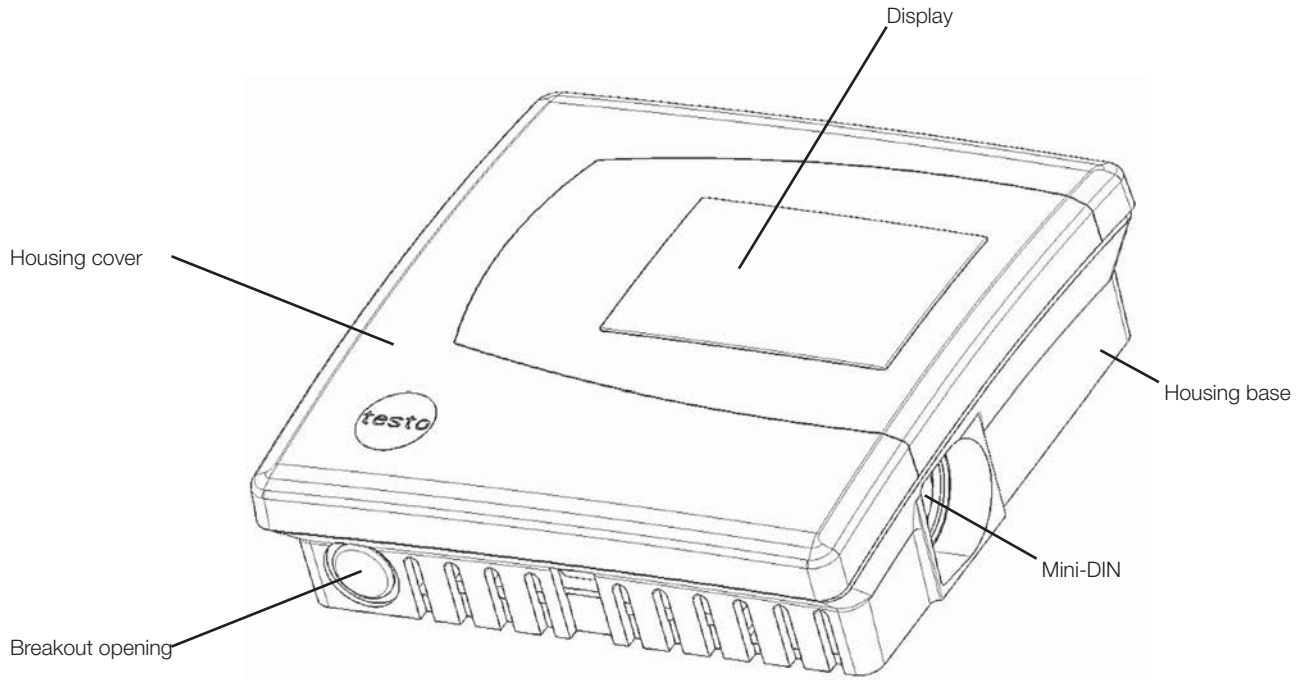
A02 duct version

Connection of 2 channels (temperature and humidity) and current supply.



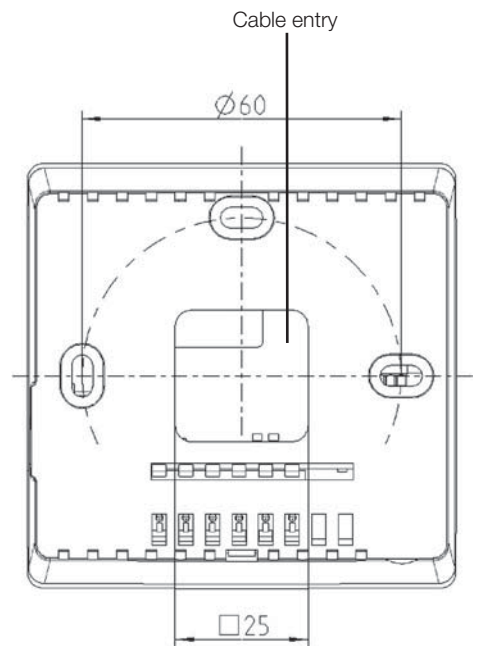
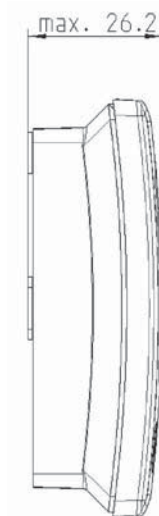
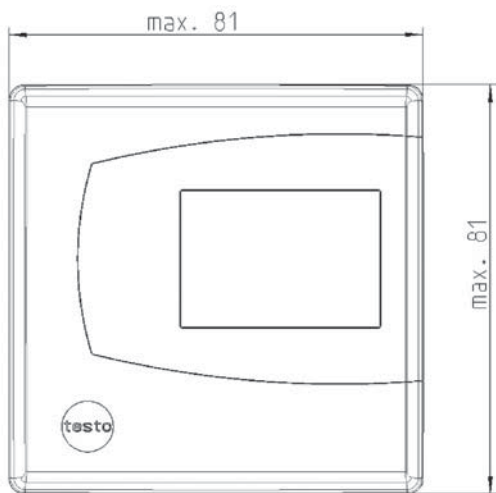
3/5	+ U
4/6	- U
3	+ RH
4	- RH
5	+ T
6	- T

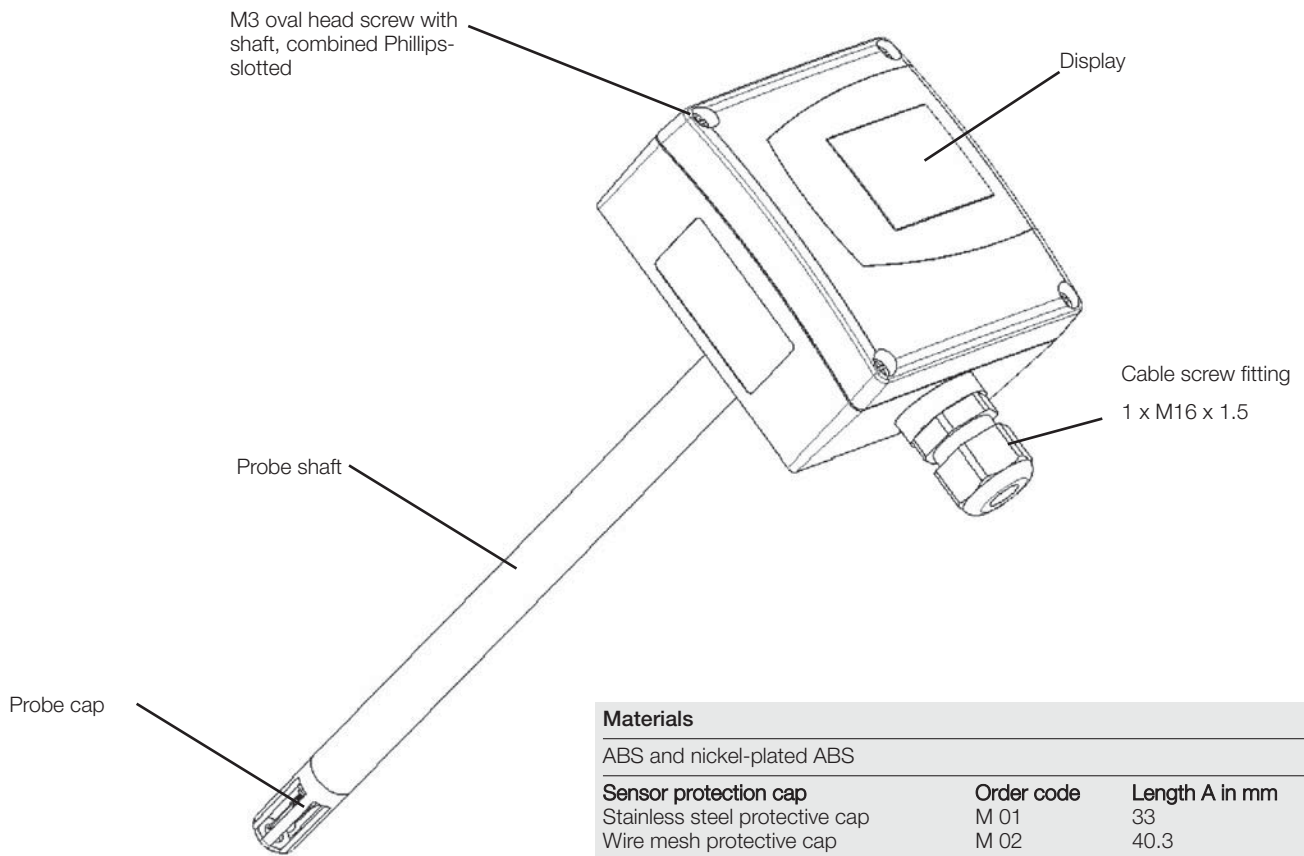
5.1 Wall version A01



Materials

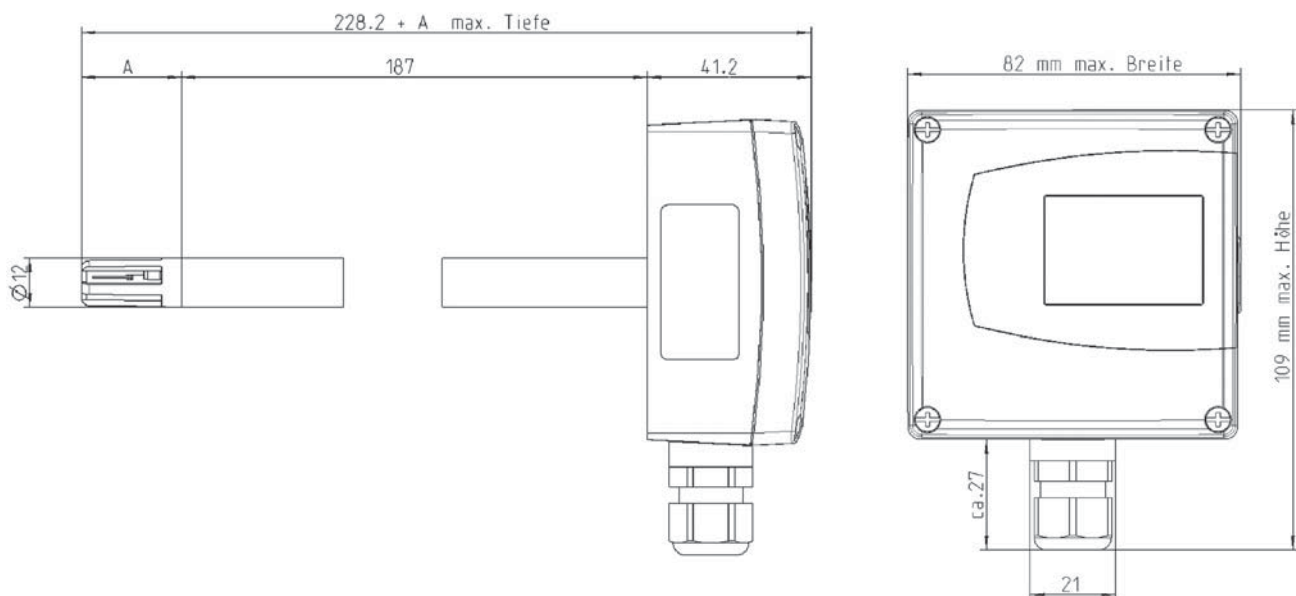
ABS and nickel-plated ABS



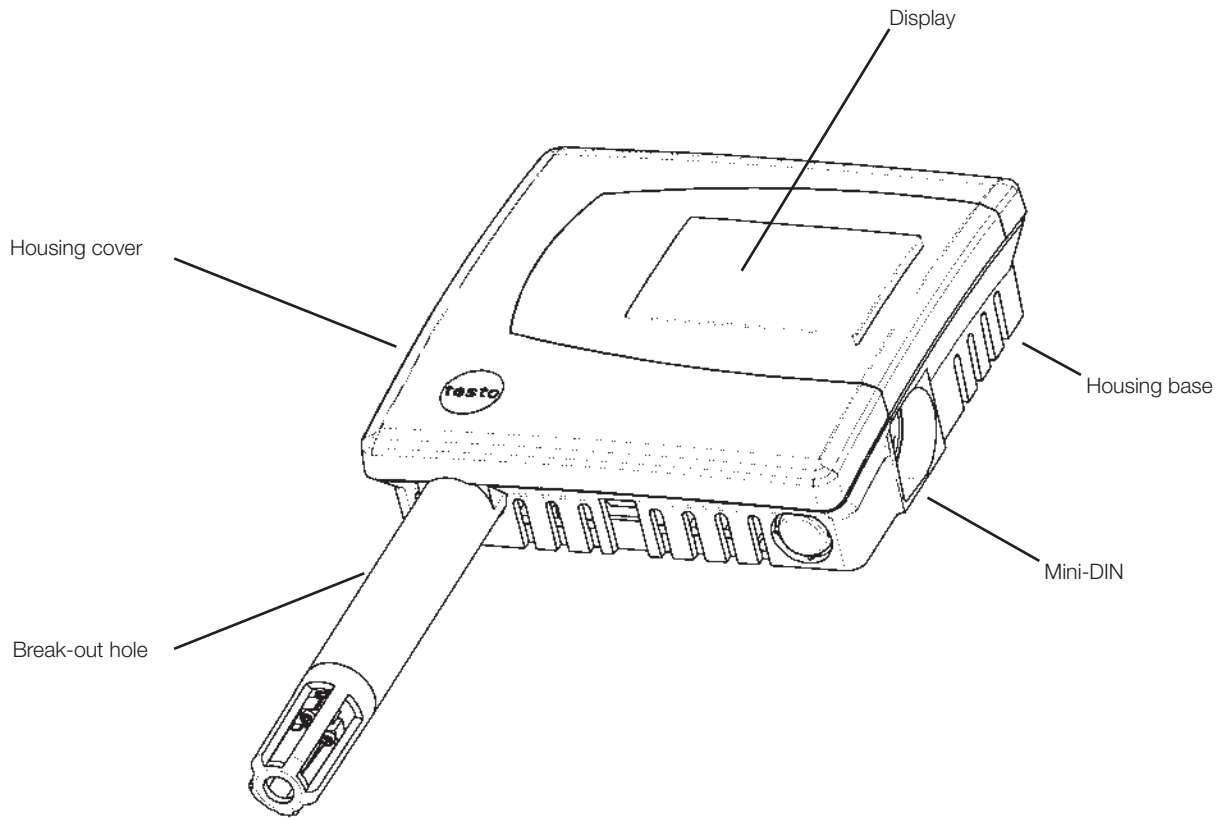
A2 5 Technical drawings
5.2 Duct version A02

Materials

ABS and nickel-plated ABS

Sensor protection cap	Order code	Length A in mm
Stainless steel protective cap	M 01	33
Wire mesh protective cap	M 02	40.3
PTFE protective cap	M 03	35
Metal protective cap (open)	M 04	35
Plastic protective cap (open)	M 05	25

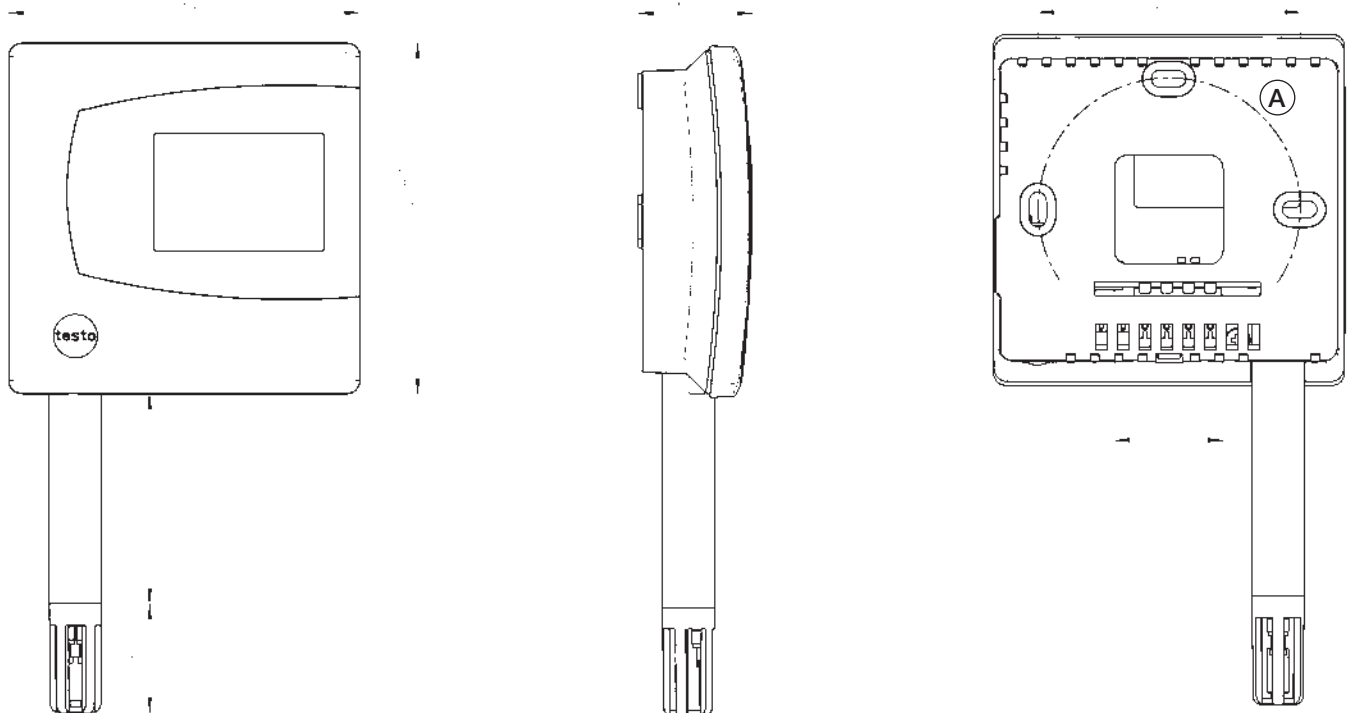


5.3 Wall version A03



Material

Nickel-plated ABS and ABS



A2 6 Installation

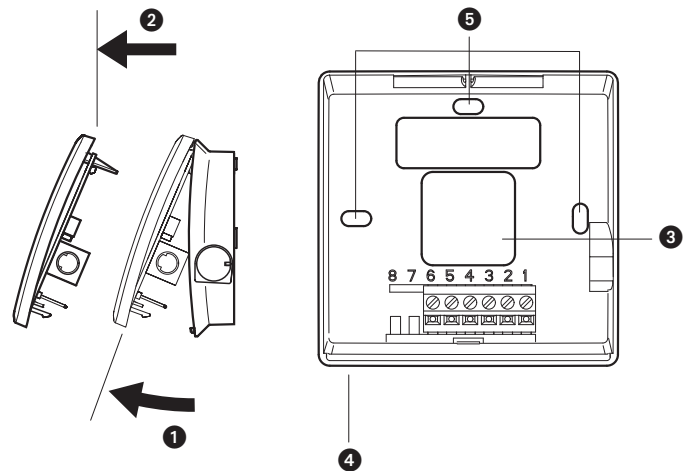
6.1 Installation A01 wall version and A03 wall version with external probe

Wall installation A01:

Please note, when installed on poorly insulated outer walls, humidity and temperature values are measured which do not correspond to the mean values in the room. Installation on well insulated outer walls or inner walls is recommended.

Note: for installation outdoors: protective roof against rain/sunshine!

- Open housing (ensure there is no plug in the Mini-DIN socket): lift housing cover (1) and remove (2).
- Insert cable into the housing from behind (3) or from below (4) (remove breakout opening from housing).
- Depending on the situation on site: attach the housing base using suitable screws (not included in delivery) through the oval holes.
- After wiring: replace housing cover.

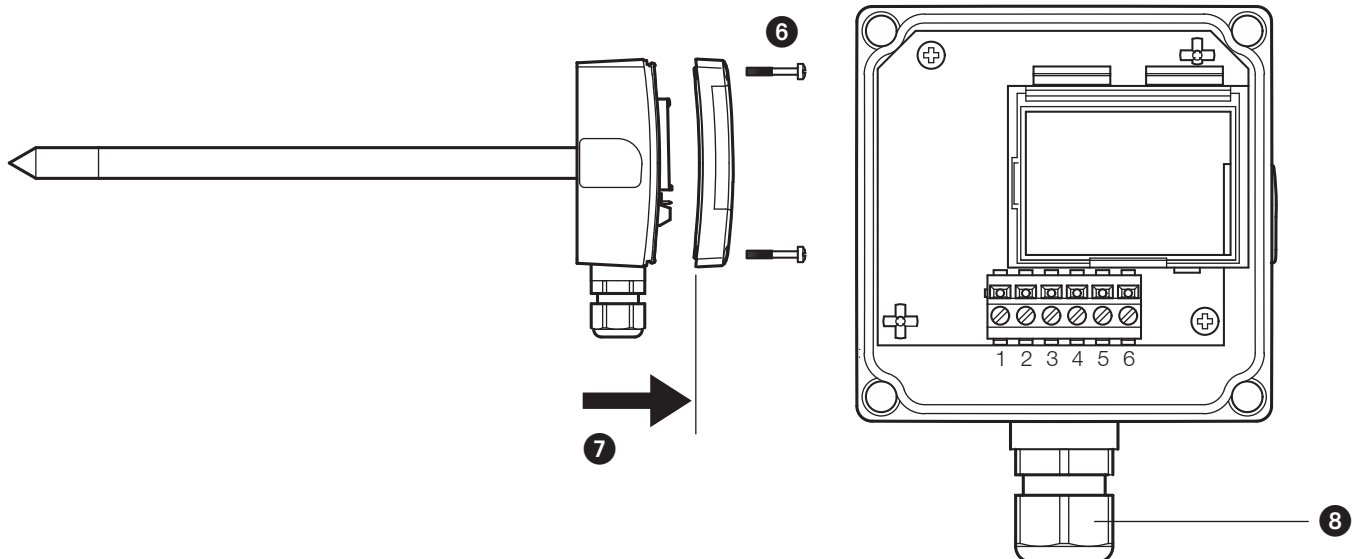


6.2 Installation A02 Duct version

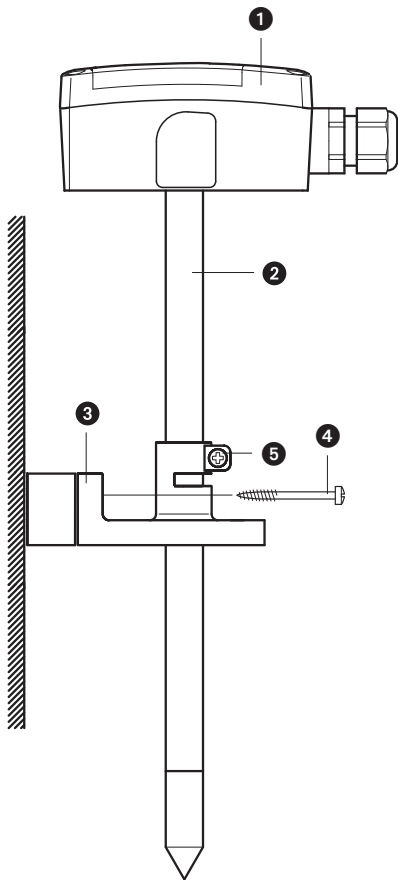
Duct installation A02:

- Install instrument according to the situation on site.

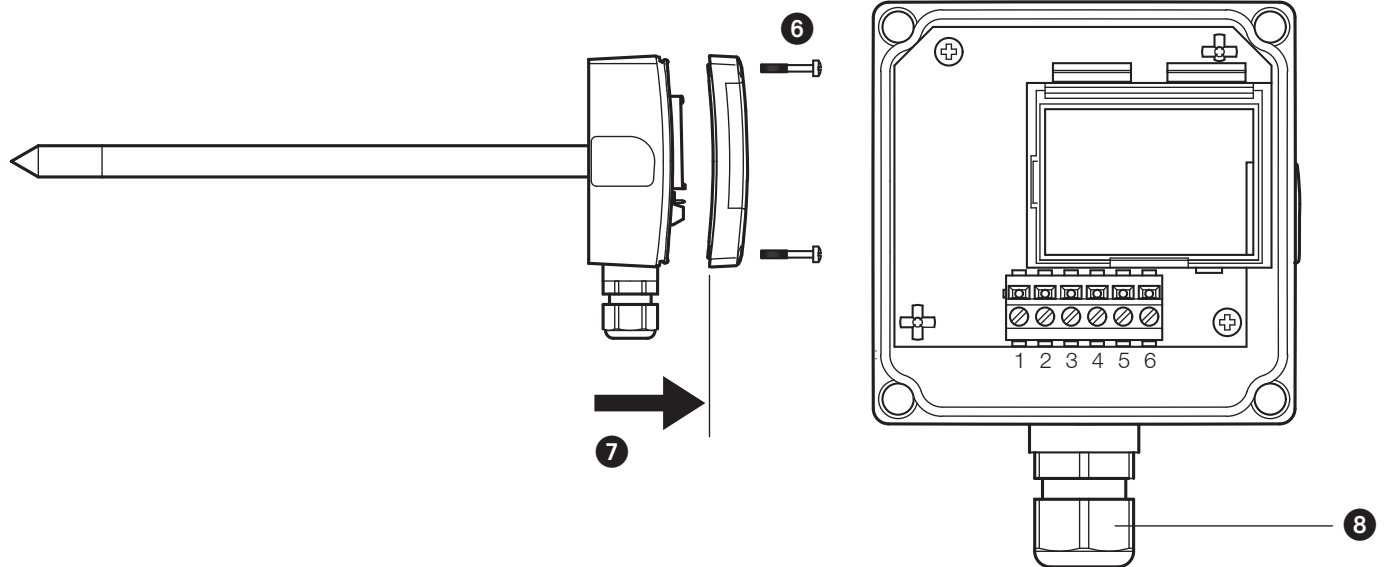
The following illustration shows an example of installation with the wall/duct holder (accessory 0554 6651) in a ventilation duct:



The following illustration shows an example of installation with the wall/duct holder (accessory 0554 6651) on a wall:



- 1** testo 6621-A02 (duct)
- 2** Probe shaft
- 3** Wall/duct holder (accessory 0554 6651), for wall mounting with distancing block
- 4** Installation screws (customer-specific, not include in delivery)
- 5** Locking screw for fixing the probe shaft.



- B** Open housing: unscrew the four screws in the housing cover (6) and remove the housing cover(7).
- C** Insert cable into the housing base through the cable screw fitting (8).
- D** After wiring (see above): close screw fitting to fix the cable in place (right-hand thread) and replace housing cover.

A2 7 Specifications

6.3 Replacing the humidity sensor

If permanent damage to the sensor has occurred due to corrosive media or mechanical influence, it is necessary to replace the humidity sensor of testo 6621. It depends on the instrument type whether this can be carried out by the customer, or whether the instrument must be sent in to Testo Service:

testo 6621 A01

Can be carried out only by Testo Service

testo 6621 A02 testo 6621 A03

Can be carried out by the customer. Order a spare sensor and replace on site (see above, replacement sensors). A 2-point adjustment must then be carried out.

7 Specifications

testo 6621

with a capacitive Testo humidity sensor for continuous humidity measurement, and an NTC sensor for fast and accurate measurement of temperature. In compact design - fully functional without separate analysis software.

Basic versions A01 Wall version A02 Duct version A03 Wall version with external prober	Measurement inaccuracy temperature: Temperature: ± 0.5 °C/0.9 °F
Measuring range: 0 %RH to 100 %RH A01: 0 to +60 °C (32 to +140 °F) A02: -20 to +70 °C (-4 to +158 °F)	Housing materials: ABS and nickle-plated ABS
Additional alternative measurement parameters: - Humidity, %RH - Temperature, °C/°F	Cable screw fitting: 6621-A02: 1 x M16 x 1.5
Application temp.: -20 to +70 °C (-4 to +158 °F) with display: 0 to +50 °C (32 to +122 °F)	Protection class: Protection class 6621-A01: IP30, Protection class 6621-A02, Rubber covering IP65
Signal output: Two analog output channels: 0 to 1V ± 2.5 mV (4-wire) / 0 to 5V ± 12.5 mV (4-wire) / 0 to 10V ± 25 mV (4-wire) / 4 to 20 mA ± 0.05 mA (2-wire) Digital output: Mini-DIN	Dimensions: Dimensions 6621-A01: 81 x 81 x 26 mm Dimensions 6621-A02: 81 x 81 x 42 mm, Probe see drawing
Optimum sensor protection with suitable filters: - Sintered stainless protective cap - Wire mesh protective cap - PTFE protective cap - Open metal protective cap	Interesting accessories: <ol style="list-style-type: none"> 1) Parameterization, adjustment and analysis software (P2A software incl. adapter cable USB to Mini-DIN) [Part no. 0554 6020] 2) testo 400, multi-function measuring instrument in cl. readings store up to 500.000 values, VAC module, battery, Li cell and calibration protocol [Order no. 0563 4001] Highly accurate reference humidity/temperature probe incl. calibration certificate [Order no. 0636 9741] Adjustment adapter for 1-point adjustment with testo 400/650 [Order no. 0554 6022] 3) Control and adjustment set for 2-point adjustment (11.3 % and 75.3 %RH), only for testo 6621 - A02 [Order no. 0554 0660] 4) Mains unit (desktop appliance), 90 to 264 VAC / 24 VDC (3A) [Order no. 0554 1748] 5) ISO calibration certificate at 11.3 % and 75.3 %RH [Order no. 0520 0076] DKD calibration certificate at 11.3 % and 75.3 %RH [Order no. 0520 0246]
Supply: - 2-wire(4 to 20 mA): 24 VDC ± 10 % - 4-wire (0 to 1 V / 0 to 5 V / 0 to 10 V): 20 to 30 VAC/VDC	
Display functions: - 2-line LCD (optional); - Humidity resolution: 0.1 %RH, Temperature resolution: 0.1 °C / 0.1 °F; - Refresh rate 1/s	
Measurement inaccuracy humidity: ± 2.5 %RH (0 to 90 %RH), ± 4 %RH(>90 to 100 %RH) Temperature coefficient: 0.05 %/K (Distance from 25 °C)	