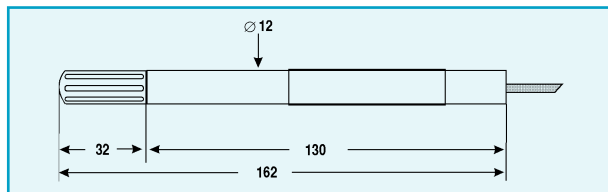


# AIR HUMIDITY

## Capacitive Humidity Sensor Type FHA6461



- ▶ Handy sensor with knurled gripping surface
- ▶ Suitable for control measurements in climatology
- ▶ Sensor usable in the range  $-20 \dots 80^{\circ}\text{C}$  /  $5 \dots 98\%$  r.H.

### Accessories:

Protective cap SK1 with replacem. filter	Order No. ZB9600SK1
Protective cap SK2 with dust-proof filter	Order No. ZB9600SK2
Protective cap SK5, sintered bronze	Order No. ZB9600SK5
Dust-proof filter SF1 for SK1 (5 pieces)	Order No. ZB9600SF1
Extension cable, 2m long	Order No. ZA9060VK2
Extension cable, 4m long	Order No. ZA9060VK4

### Types:

Length 162mm

**Order No. FHA6461**

### Technical Data:

#### Humidity Measuring Circuit

Measuring range:	5 ... 98% r.H. (0 ... 100% r.H. full range)
Sensor:	capacitive
Accuracy:	$\pm 2\%$ r.H. at nominal temperature
Reproducibility:	$< 1\%$ r.H. at nominal temperature
Nominal temperature:	$25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Sensor operating pressure:	0.04 ... 20bar
Response time $T_{90}$ :	approx. 10s (without filter) at 5m/s

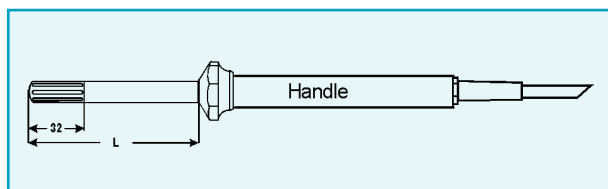
#### Temperature Measuring Circuit

Sensor:	NTC type N
Accuracy:	$-20 \dots 0^{\circ}\text{C}$ : $\pm 0.4^{\circ}\text{C}$ $0 \dots 70^{\circ}\text{C}$ : $\pm 0.1^{\circ}\text{C}$ $70 \dots 80^{\circ}\text{C}$ : $\pm 0.6^{\circ}\text{C}$
Reproducibility:	$0.1^{\circ}\text{C}$

#### Mechanical Construction

Sensor tube:	aluminium, 162mm long, 12mm $\varnothing$
Protective cap:	SK2, plastic with dust-proof filter
Sensor handle:	knurled gripping surface
Cable:	1.5m long, ALMEMO® connector

## Capacitive Humidity Sensor Type FHA6461x



- ▶ Handy sensor with plain handle, suitable for conduit mount.
- ▶ Suitable for control measurements in climatology
- ▶ Sensor usable in the range  $-20 \dots 80^{\circ}\text{C}$  /  $5 \dots 98\%$  r.H.

### Accessories:

Movable aluminium screw connection with Teflon sealing ring	Order No. ZB9600KV
Protective cap SK1 with replacem. filter	Order No. ZB9600SK1
Protective cap SK2 with dust-proof filter	Order No. ZB9600SK2
Protective cap SK5, sintered bronze	Order No. ZB9600SK5
Dust-proof filter SF1 for SK1 (5 pieces)	Order No. ZB9600SF1
Extension cable, 2m long	Order No. ZA9060VK2
Extension cable, 4m long	Order No. ZA9060VK4

### Types:

Length L = 122mm  
Length L = 262mm  
Length L = 522mm

**Order No. FHA64611**  
**Order No. FHA64612**  
**Order No. FHA64613**

### Technical Data:

#### Humidity Measuring Circuit

Measuring range:	5 ... 98% r.H. (0 ... 100% r.H. full range)
Sensor:	capacitive
Accuracy:	$\pm 2\%$ r.H. at nominal temperature
Reproducibility:	$< 1\%$ r.H. at nominal temperature
Nominal temperature:	$25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Sensor operating pressure:	0.04 ... 20 bar
Response time $T_{90}$ :	approx. 10s (without filter) at 5m/s

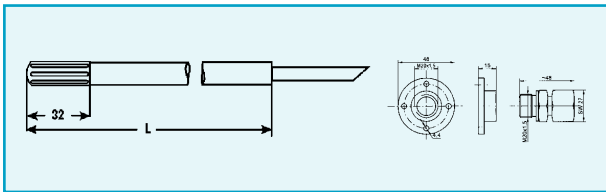
#### Temperature Measuring Circuit

Sensor:	NTC type N
Accuracy:	$-20 \dots 0^{\circ}\text{C}$ : $\pm 0.4^{\circ}\text{C}$ $0 \dots 70^{\circ}\text{C}$ : $\pm 0.1^{\circ}\text{C}$ $70 \dots 80^{\circ}\text{C}$ : $\pm 0.6^{\circ}\text{C}$
Reproducibility:	$0.1^{\circ}\text{C}$

#### Mechanical Construction

Sensor tube:	aluminium, 12mm $\varnothing$
Protective cap:	SK2, plastic with dust-proof filter
Sensor handle:	polished
Cable:	1.5m long, ALMEMO® connector

## Capacitive Humidity Sensor Type FHA6462x



- ▶ Handy sensor with polished handle, suited f. conduit mount.
- ▶ Suitable for control measurements in climatology.
- ▶ Sensor usable in the range  $-20 \dots 80^{\circ}\text{C}$  /  $5 \dots 98\%$  r.H.

### Accessories:

Movable aluminium screw connection with Teflon sealing ring	Order No. ZB9600KV
Connecting flange for screw connection, Hole Circle 38mm $\varnothing$	Order No. ZB9600F
Protective cap SK1 with replacem. filter	Order No. ZB9600SK1
Protective cap SK2 with dust-proof filter	Order No. ZB9600SK2
Protective cap SK5, sintered bronze	Order No. ZB9600SK5
Dust-proof filter SF1 for SK1 (5 pieces)	Order No. ZB9600SF1
Extension cable, 2m long	Order No. ZA9060VK2
Extension cable, 4m long	Order No. ZA9060VK4

### Types:

Length L = 132mm	<b>Order No. FHA64621</b>
Length L = 272mm	<b>Order No. FHA64622</b>
Length L = 532mm	<b>Order No. FHA64623</b>

## Technical Data:

### Humidity Measuring Circuit

Measuring range:	5 ... 98% r.H. (0 ... 100% r.H. full range)
Sensor:	capacitive
Accuracy:	$\pm 2\%$ r.H. at nominal temperature
Reproducibility:	$< 1\%$ r.H. at nominal temperature
Nominal temperature:	$25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Sensor operating pressure:	0.04 ... 20bar
Response time $T_{90}$ :	approx. 10s (without filter) at 5m/s

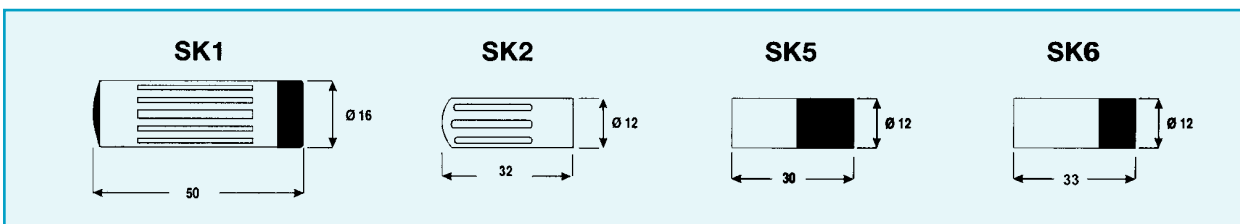
### Temperature Measuring Circuit

Sensor:	NTC type N
Accuracy:	$-20 \dots 0^{\circ}\text{C}$ : $\pm 0.4^{\circ}\text{C}$ $0 \dots 70^{\circ}\text{C}$ : $\pm 0.1^{\circ}\text{C}$ $70 \dots 80^{\circ}\text{C}$ : $\pm 0.6^{\circ}\text{C}$
Reproducibility:	$0.1^{\circ}\text{C}$

### Mechanical Construction

Sensor tube:	aluminium, 12mm $\varnothing$
Protective cap:	SK2, plastic with dust-proof filter
Sensor handle:	polished
Cable:	1.5m long, ALMEMO <sup>®</sup> connector

## Protective Caps for Capacitive Humidity Sensors Type FHA6461..., FHA6462 ... and FHA6465 ...



### Accessories:

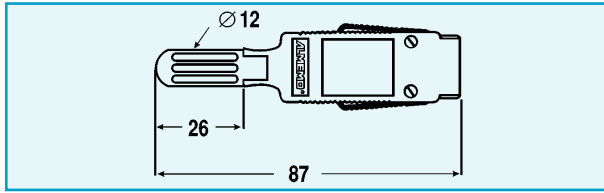
Dust-proof filter for protective cap SK1 (5 pieces)	Order No. ZB9600SF1
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### Types:


SK1 protective cap with filter (filter replaceable)	<b>Order No. ZB9600SK1</b>
SK2 protective cap with filter (filter not replaceable)	<b>Order No. ZB9600SK2</b>
SK5 protective cap made from sinter bronze (for high air speeds and high dust contents)	<b>Order No. ZB9600SK5</b>
SK6 Protective cap, in Teflon (for high air speeds and high chemical resistance)	<b>Order No. ZB9600SK6</b>

# AIR HUMIDITY

## Capacitive Humidity Sensor Type FHA6466



- ▶ Compact sensor integrated into ALMEMO® connector.
- ▶ Suitable for control and long term measurements in climatology.
- ▶ Sensor usable in the range  $-20 \dots 60^{\circ}\text{C}/5 \dots 98\% \text{ r.H.}$

 When connecting the humidity sensor on certain devices, other input sockets are partly covered. If these input sockets are also required, connecting cable ZA9060AK1 or sensor type FHA6461 (see page 09.04) should be used.

### Accessories:

Connecting cable, 0.2 m

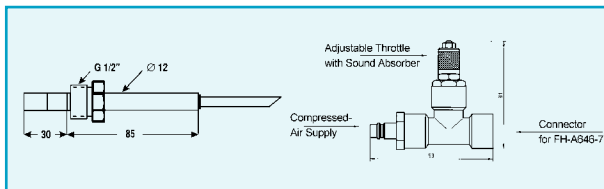
**Order no. ZA9060AK1**

### Types:

Length 87mm

**Order No. FHA6466**

## Pressure Sealed Humidity Sensor Type FHA6467



- ▶ Compact screwed sensor.
- ▶ For pressure lines up to 16bar.
- ▶ Sensor usable in the range  $-20 \dots 80^{\circ}\text{C}/5 \dots 98\% \text{ r.H.}$

### Accessories:

Fitting adapter for meas. compressed air Order No. ZB96467AP

Protective cap SK5, sintered bronze Order No. ZB9600SK5

Extension cable, 2m long Order No. ZA9060VK2

Extension cable, 4m long Order No. ZA9060VK4

### Types:

Length 115mm

**Order No. FHA6467**

## Technical Data:

### Humidity Measuring Circuit

Measuring range:	5 ... 98% r.H. (0 ... 100% r.H. full range)
Sensor:	capacitive
Accuracy:	$\pm 2\%$ r.H. at nominal temperature
Reproducibility:	$< 1\%$ r.H. at nominal temperature
Nominal temperature:	$25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Sensor operating pressure:	0.04 ... 20bar
Response time $T_{90}$ :	approx. 10s (without filter) at 5m/s

### Temperature Measuring Circuit

Sensor:	NTC type N
Accuracy:	$-20 \dots 0^{\circ}\text{C}: \pm 0.4^{\circ}\text{C}$ $0 \dots 70^{\circ}\text{C}: \pm 0.1^{\circ}\text{C}$ $70 \dots 80^{\circ}\text{C}: \pm 0.6^{\circ}\text{C}$
Reproducibility:	$0.1^{\circ}\text{C}$

## Technical Data:

### Humidity Measuring Circuit

Measuring range:	5 ... 98% r.H. (0 ... 100% r.H. full range)
Sensor:	capacitive
Accuracy:	$\pm 2\%$ r.H. at nominal temperature
Reproducibility:	$< 1\%$ r.H. at nominal temperature
Nominal temperature:	$25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Sensor operating pressure:	0.04 ... 20bar
Response time $T_{90}$ :	approx. 8s (without filter)

### Temperature Measuring Circuit

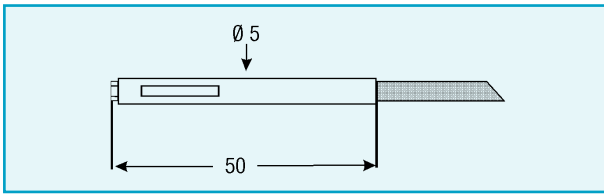
Sensor:	NTC type N
Accuracy:	$-20 \dots 0^{\circ}\text{C}: \pm 0.4^{\circ}\text{C}$ $0 \dots 70^{\circ}\text{C}: \pm 0.1^{\circ}\text{C}$ $70 \dots 80^{\circ}\text{C}: \pm 0.6^{\circ}\text{C}$
Reproducibility:	$0.1^{\circ}\text{C}$

### Mechanical Construction

Sensor tube:	total length 115mm, 12mm $\varnothing$
Installation:	screw thread G1/2", insertion depth 47mm
Protective cap:	SK5, sintered bronze
Sensor handle:	polished
Cable:	1.5m long, ALMEMO® connector

# AIR HUMIDITY

## Capacitive Humidity Sensor Type FHA646R



- ▶ Compact sensor with extremely small dimensions.
- ▶ Particularly suitable for measurements between PCBs, within housings, in walls, ceilings, and insulations used in structural engineering and protection of historic monuments.
- ▶ Sensor usable in the range  $-30 \dots 100^{\circ}\text{C}/5 \dots 98\% \text{ r.H.}$

### Accessories:

Extension cable, 2m long                      Order No. ZA9060VK2  
 Extension cable, 4m long                      Order No. ZA9060VK4

### Types:

Length 50mm                                      **Order No. FHA646R**

### Technical Data:

#### Humidity Measuring Circuit

Measuring range:	5 ... 98% r.H. (0 ... 100% r.H. full range)
Sensor:	capacitive
Accuracy:	$\pm 2\%$ r.H. at nominal temperature
Reproducibility:	$< 1\%$ r.H. at nominal temperature
Nominal temperature:	$25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Response time $T_{63}$ :	approx. 10s at 1m/s

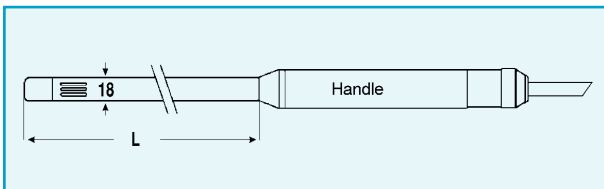
#### Temperature Measuring Circuit

Sensor:	NTC type N
Accuracy:	$-20 \dots 0^{\circ}\text{C}: \pm 0.4^{\circ}\text{C}$ $0 \dots 70^{\circ}\text{C}: \pm 0.1^{\circ}\text{C}$ $70 \dots 80^{\circ}\text{C}: \pm 0.6^{\circ}\text{C}$
Reproducibility:	$0.1^{\circ}\text{C}$

#### Mechanical Construction

Sensor tube:	nickel plated, 50mm long, 5mm $\varnothing$
Protective cap:	none
Sensor handle:	polished
Cable:	2m long, ALMEMO® connector

## Capacitive Humidity Sensor Type FHA636SRx



- ▶ Sword probe with handle.
- ▶ Suitable for measuring the equilibrium moisture content, e.g. in paper piles.
- ▶ Sensor usable in the range  $-20 \dots 60^{\circ}\text{C}/5 \dots 98\% \text{ r.H.}$

### Accessories:

Extension cable, 2m long                      Order No. ZA9060VK2  
 Extension cable, 4m long                      Order No. ZA9060VK4

### Types:

Length L = 280mm                              **Order No. FHA636SR1**  
 Length L = 420mm                              **Order No. FHA636SR2**

### Technical Data:

#### Humidity Measuring Circuit

Measuring range:	0 ... 100% r.H.
Sensor:	capacitive
Accuracy:	$\pm 1.5\%$ r.H. at nomin. temperature $\pm 2.5\%$ r.H. $< 10\%$ and $> 90\%$
Reproducibility:	0.5% r.H.
Nominal temperature:	$23^{\circ}\text{C} \pm 2^{\circ}\text{C}$
Response time $T_{63}$ :	15s without filter at 1m/s air speed

#### Temperature Measuring Circuit

Sensor:	Pt100, Class B
Accuracy:	$\pm 0.3\text{K}$ at nominal temperature
Reproducibility:	0.1K

#### Mechanical Data

Sensor sword:	aluminium, 18 x 4mm, tip 0.8mm rounded
Sensor handle:	plastic, 190mm long, operational from $-20$ to $60^{\circ}\text{C}$
Cable:	2m long, ALMEMO® connector