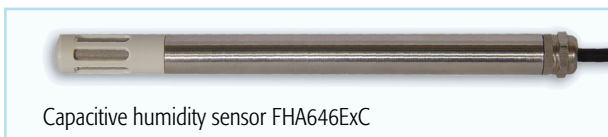# HUMIDITY

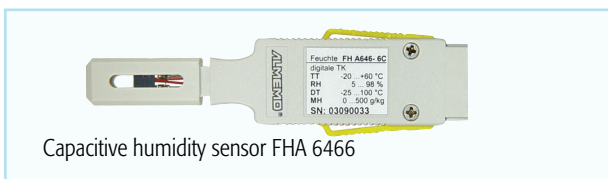## Capacitive humidity sensor
FHA 646 E1C / E2C / E3C / E1 / -6

Capacitive humidity sensor FHA646ExC

▶ Sturdy sensor for test measurements and stationary applications up to +80 °C
▶ Sensor tube made of stainless steel
▶ Splash-protected screw-fit cable gland
▶ Active compensation of humidity measurement by means of the integrated temperature sensor (new measuring range for all ALMEMO® devices with effect from 2003)
▶ Wide operating temperature range
▶ *New* Option for FHA646ExC
Sensor coating : Heavily polluted and / or corrosive environments may damage the humidity sensor and cause drift in the measured values. The coating that completely covers the probe head (temperature / humidity sensor element) minimizes the adverse effects of dirty media and much improves long-term stability. Delivery includes protective cap SK6 PTFE sinter filter (instead of standard protective cap SK7 metal-mesh filter)
Order no. OA9646SC

Capacitive humidity sensor FHA 646 E1

▶ Handy sensor for test measurements and stationary applications up to +60 °C
▶ Sensor tube made of plastic

Capacitive humidity sensor FHA 6466

▶ Compact sensor integrated in ALMEMO® connector

Accessories

Protective caps, brackets for wall mounting, movable screw fitting and connection flange see page 09.05
Extension cable, 2 meters   Order no. ZA9060VK2
Extension cable, 4 meters   Order no. ZA9060VK4
Intelligent ALMEMO® extension cable, 10 meters long   Order no. ZA9090VKC10
Other lengths 20, 30, 50, 100 meters see page 07.03

Technical data

Operative range

FHA 646 E1, FHA 6466	-20 to +60 °C, 5 to 98 % RH
FHA646 E1C/ E2C/ E3C	−20 to +80 °C/ 5 to 98 % RH

Humidity measuring circuit

Measuring range	0 to 100 % RH
Sensor	capacitive
Accuracy	±2% RH in the range <90% RH at nominal temperature
Reproducibility	<1% RH at nominal temperature
Nominal temperature	25 ±3 °C
Sensor operating pressure	Atmospheric pressure
Response time T_{90}	approx. 10 seconds (without filter) at 5 m/s

Temperature measuring circuit

Sensor	NTC type N
Accuracy	-20 to 0 °C ±0.4 °C
	0 to +70 °C ±0.1 °C
	+70 to +80 °C ±0.6 °C
Reproducibility	0.1 °C

Mechanical design

FHA646Ex

Sensor tube	Diameter 12 mm
FHA 646 E1C	Stainless steel 160 mm long
FHA 646 E2C	Stainless steel 270 mm long
FHA 646 E3C	Stainless steel 530 mm long
FHA 646 E1	Plastic 155 mm long
Protective cap	SK7, metal-mesh filter
Screw-fit cable gland	splash-protected (FHA646xC only)
Cable	1.5 meters long with ALMEMO® connector, longer ALMEMO® cable (up to 30 meters) available on request

FHA 6466 Slotted case	directly on connector (without cable), plastic 30 x 11 x 7.6 mm without filter

Variants including manufacturer's test certificate

Humidity sensor -20 to +80 °C with stainless steel tube 160 mm, cable 1.5 meters	**Order no. FHA646E1C**
Humidity sensor -20 to +80 °C with stainless steel tube 270 mm, cable 1.5 meters	**Order no. FHA646E2C**
Humidity sensor -20 to +80 °C with stainless steel tube 530 mm, cable 1.5 meters	**Order no. FHA646E3C**
Humidity sensor -20 to +60 °C with plastic tube 155 mm, cable 1.5 meters	**Order no. FHA646E1**
Humidity sensor -20 to +60 °C directly on connector (without cable)	**Order no. FHA6466**

HUMIDITY

Protective caps for capacitive humidity sensors FHA 646 E1 / ExC and MH8D 461 Kx

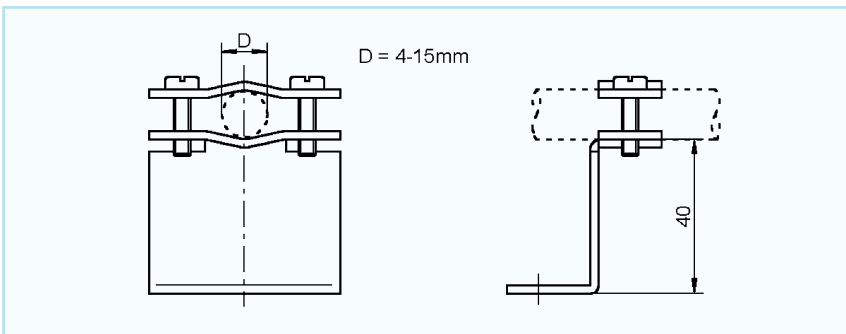| SK7	SK6	SK8

Dimensions : length approx. 33 mm, diameter 12 mm

Types :

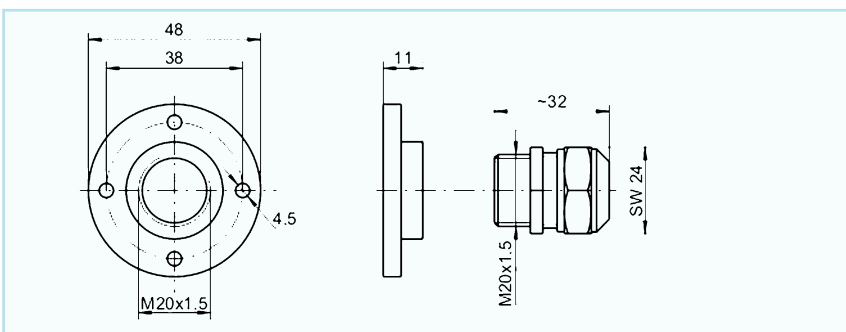|	Designation	Pore-size	Maximum temperature	Typical Application	Type
SK7	Metal-mesh filter in PC-housing	100 µm	120°C	Universal, for medium, contamination, also high humidity	**Order no. ZB9600SK7**
SK6	PTFE-Sinterfilter	50 µm	180°C	High chemical resistance	**Order no. ZB9600SK6**
SK8	Stainless steel sinter filter	10 µm	180°C	For severe mechanical stress, heavy contamination, strong air flow	**Order no. ZB9600SK8**

Brackets for wall mounting

D = 4-15mm

40

Brackets for wall mounting, distance from wall approx. 40 mm   Order no. : ZB9600W

Movable screw fitting for sensor tube diameter 12 mm

48
38
11
~32
4.5
SW 24
M20x1.5
M20x1.5

Movable brass screw connection with plastic sealing ring   Order no. : ZB9600KV20
Connecting flange for screw connection, hole circle 38 mm Ø   Order no. : ZB9600F20

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