



# P14-W

## Capacitive Humidity Sensor

### Optimal for various humidity applications

#### Benefits & Characteristics

- High chemical resistance
- Wide temperature range
- Resistance to condensation
- Fast recovery time
- Very low drift
- High humidity stability
- Customer-specific sensor available upon request

#### Illustration<sup>1)</sup>



1) For actual size, see dimensions

#### Technical Data

	Wired	SMD
Dimensions (L x W x H / H2 in mm):	5 x 3.81 x 0.4 / 0.8	6.35 x 2.54 x 0.4
Capacitance at 30 % RH and +23 °C (C <sub>30</sub> ):*	150 pF ±50 pF	180 pF ±50 pF
Sensitivity at C <sub>30</sub> = 150 pF/ 180 pF (15 % RH to 90 % RH):	0.25 pF/% RH	0.3 pF/% RH
Operating humidity range:	0 % RH to 100 % RH (maximal dew point +85 °C)	
Operating temperature range:	-50 °C to +150 °C	
Loss factor:	< 0.01 (at +23 °C, at 10 kHz, at 90 % RH)	
Linearity error:	< 1.5 % RH (15 % RH to 90 % RH at +23 °C after one point calibration)	
Hysteresis:	< 1.5 % RH	
Response time t <sub>63</sub> :	< 5 s (50 % RH to 0 % RH at +23 °C)	
Temperature dependence (nominal):	$\Delta \% RH = (B1 \times \% RH + B2) \times T [^\circ C] + (B3 \times \% RH + B4)$ B1 = 0.0014 [1/°C]    B2 = 0.1325 [% RH/°C] B3 = -0.0317    B4 = -3.0876 [% RH]	
Measurement frequency:	1 kHz to 100 kHz (recommended 10 kHz)	
Maximal supply voltage:	< 12 V <sub>pp</sub> AC	
Signal form:	alternating signal without DC bias	
Connections:*	CuP-SIL-wire post-plated with Sn, 10 mm or Au/Cu-wire, Ø 0.4 mm, 10 mm, or SMD, automatic assembly compatible	

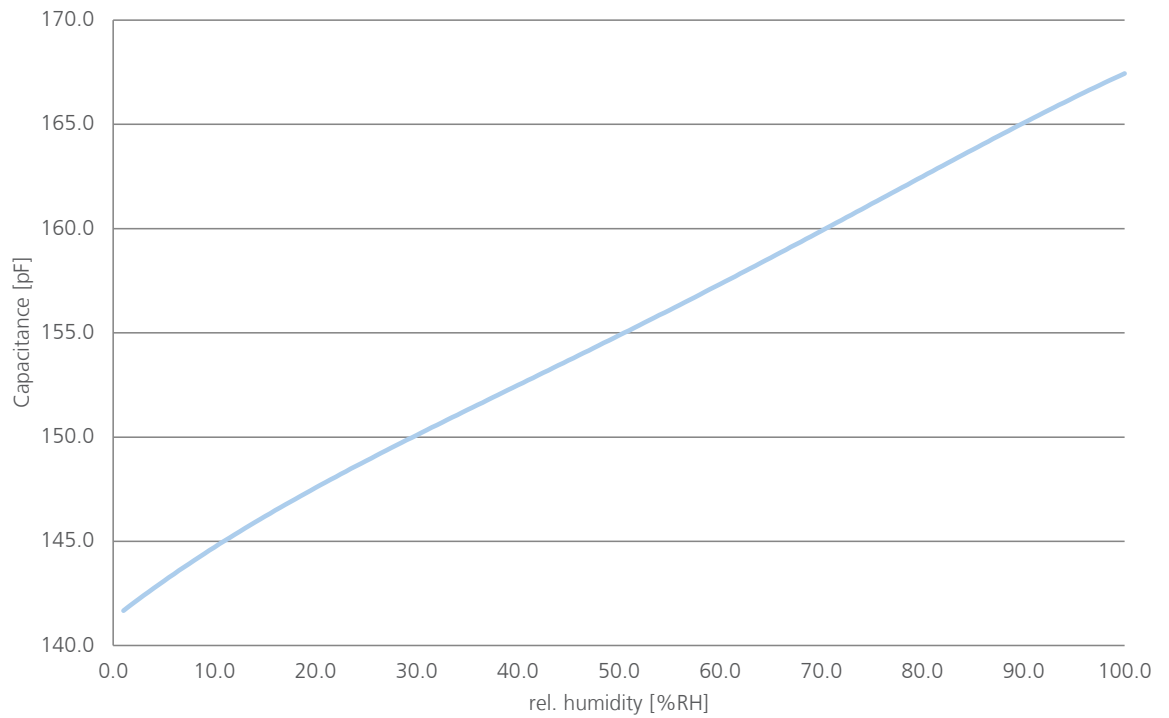
\* Customer-specific alternatives available



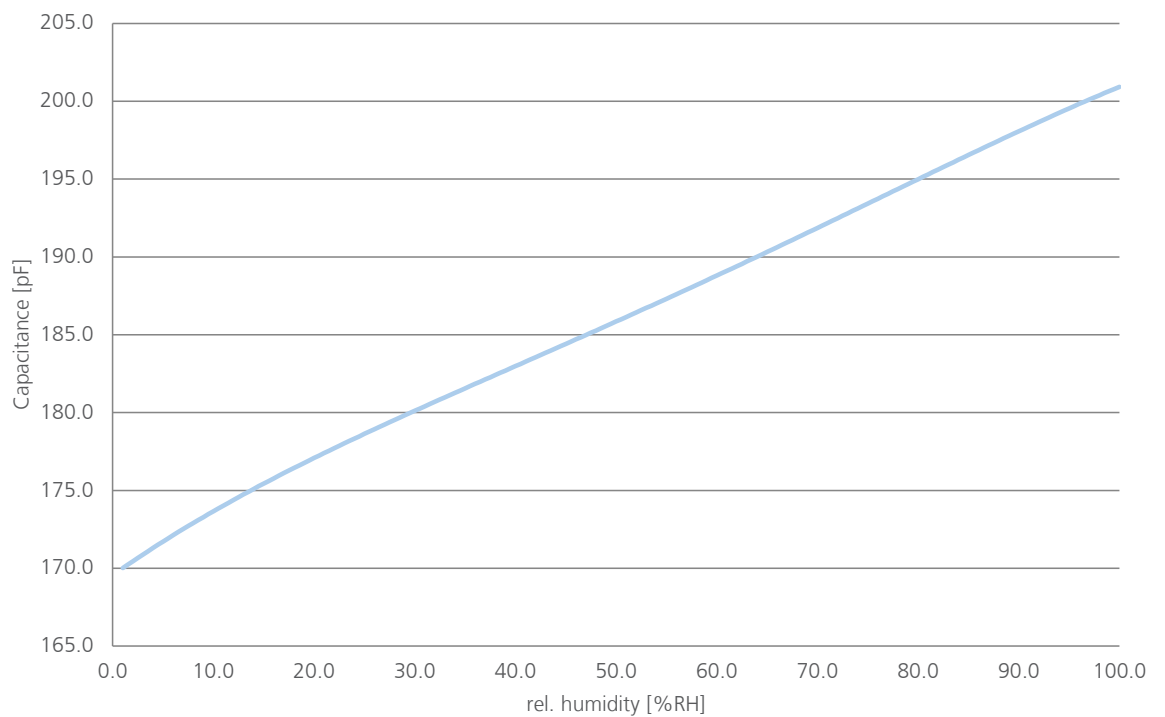
The calibration of the sensor must be done 5 days after soldering at the earliest.

## Characteristic Curve

### Wired



### SMD





Order Information - SIL (CuP-SIL-wire post-plated with Sn, 10 mm)

Order code	P14 (150pF ±50pF) 040.00191
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Order Information - SMD

Order code	P14 SMD-G (180pF ±50pF) 040.00109
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Order Information - Au/Cu-wire, Ø 0.4 mm, 10 mm

Order code	P14-W (150pF ±50pF) 040.00174
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Order Information - Cu/Ag-wire, 18 mm, AWG26, PTFE, insulated 8 mm

Order code	P14.S-W (150pF ±50pF) 040.00184
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