HUMIDITY

TEMPERATURE

FLOW

CONDUCTIVITY

P14-W

Capacitive Humidity Sensor

Optimal for various humidity applications

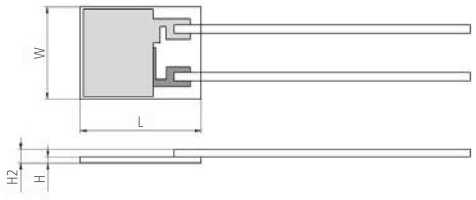
INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

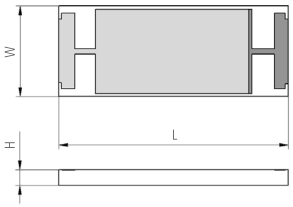
- High chemical resistance
- Wide temperature range
- Resistance to condensation
- Fast recovery time
- Very low drift
- High humidity stability
- Customer specific sensor available upon request

Illustration[1)]

Wired



SMD



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_{30}):*	150 pF ±50 pF	180 pF ±50 pF
Sensitivity at C_{30} = 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_{63}:	< 5 s (50 % RH to 0 % RH at +23 °C)	
Temperature dependence (nominal):	Δ % RH = (B1 x % RH + B2) x T [°C] + (B3 x % 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_{pp} 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.

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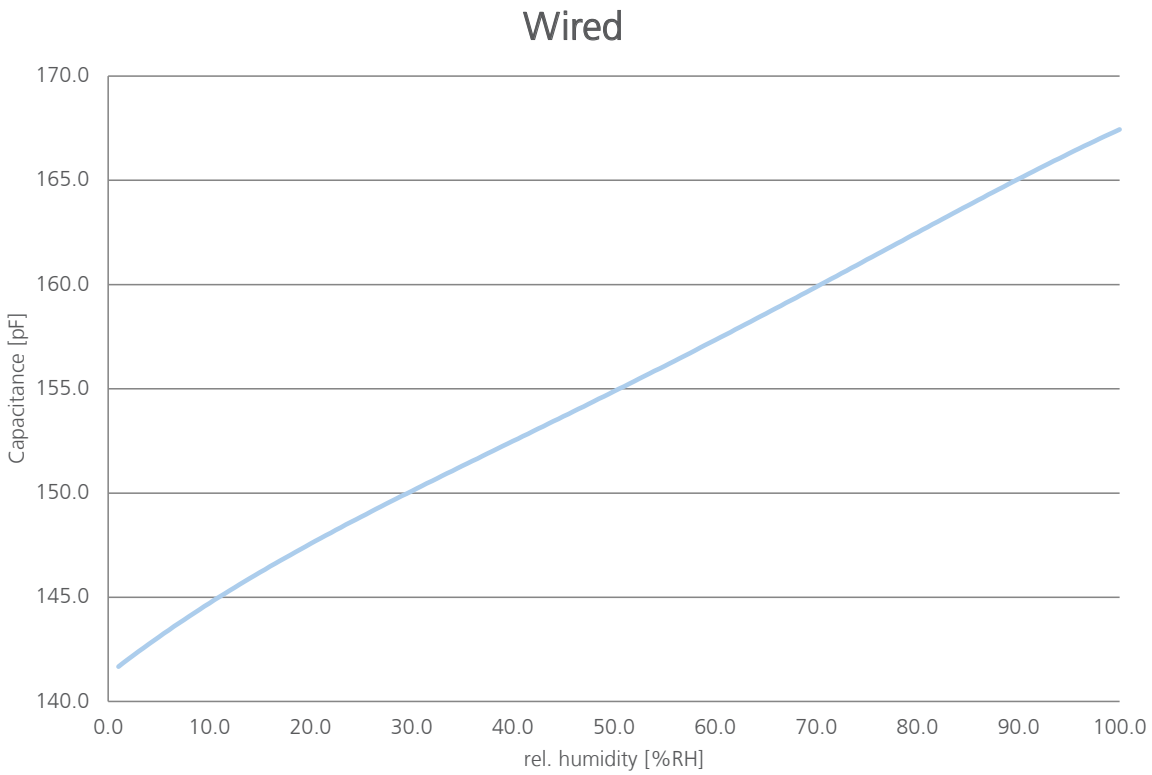
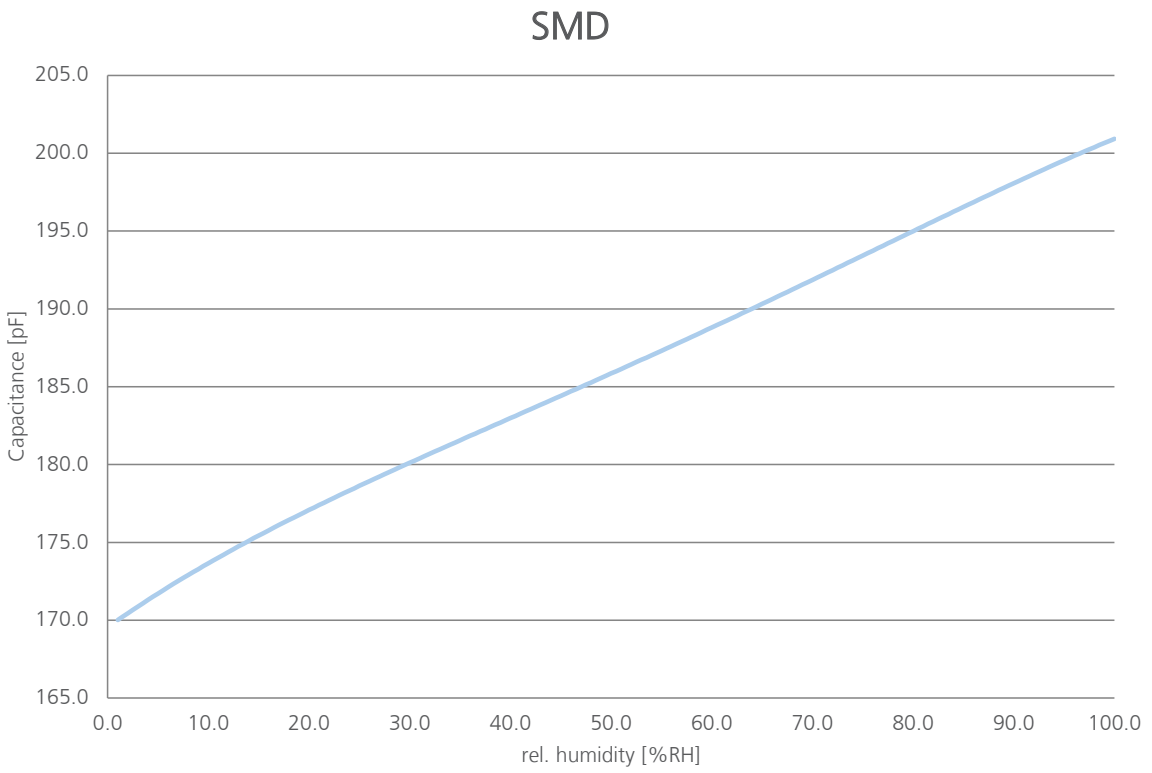
Characteristic Curve





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

	P14 (150pF ±50pF)
Order code	040.00191

Order Information - SMD

	P14 SMD-G (180pF ±50pF)
Order code	040.00109

Order Information - Au/Cu-wire, Ø 0.4 mm, 10 mm

	P14-W (150pF ±50pF)
Order code	040.00174

Order Information - Cu/Ag-wire, 18 mm, AWG26, PTFE, insulated 8 mm

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

INNOVATIVE SENSOR TECHNOLOGY
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