



# P14 FemtoCap

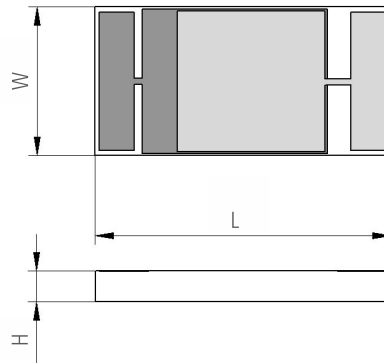
## Capacitive Humidity Sensor

### Optimal for automotive and white good applications

#### Benefits & Characteristics

- High chemical resistance
- Wide temperature range
- Resistance to condensation
- Fast recovery time
- Very low drift
- Excellent price-performance ratio
- Solderable and bondable (fully automated assembly)
- Customer-specific sensor available upon request

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



1) For actual size, see dimensions

#### Technical Data

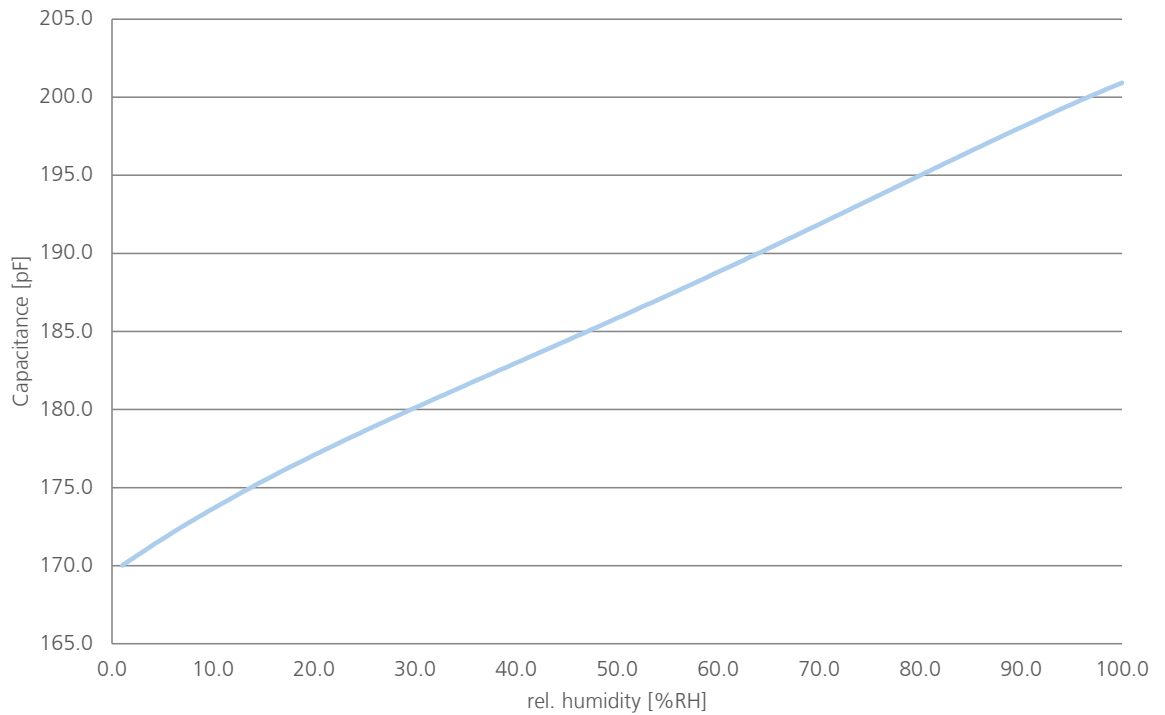
Dimensions (L x W x H in mm):	4 x 2 x 0.4
Operating humidity range:	0 % RH to 100 % RH (maximal dew point +85 °C)
Operating temperature range:	-50 °C to +150 °C
Capacitance (C <sub>30</sub> ):*	180 pF ±50 pF (at 30 % RH and +23 °C)
Sensitivity (at C <sub>30</sub> = 180 pF):	0.3 pF/% RH (15 % RH to 90 % RH)
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> :	< 3 s (50 % RH to 0 % RH at +23 °C)
Temperature dependence (typical):	$\Delta \% RH = (B1 \times \% RH + B2) \times T [^\circ C] + (B3 \times \% RH + B4)$ 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:	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



## Order Information - SMD

Order code	P14 FemtoCap-G (180pF ±50pF) 040.00111
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