



# P-14

# Capacitive Humidity Sensor





## Product

The P-14 humidity sensor was specially developed to satisfy the wide range of applications in HVAC, tests and measurement, white goods and industrial field. By the consistent use of state-of-the-art production technologies and our extensive know-how in the field of high performance polymers, we have succeeded in producing a high quality sensor with an almost linear characteristic. The possibility of selecting the electrical connections provides users with ideal opportunities for implementing their own sensor design without limitation.

## Advantages

- High humidity stability
- Low drift
- Condensation resistant – fast recovering time after dewing, and at high dew point temperatures as well
- High chemical resistance
- Wide temperature operating range
- Various wired solutions available

## Technical Data

	Wired	SMD
		
Humidity Operating Range:	0 ... 100% RH	0 ... 100% RH
Operating Temperature Range:	-50 ... +150 °C	-50 ... +150 °C
Capacitance (C <sub>30</sub> ) (at 23 °C and 30% RH):	150 pF ± 50 pF	180 pF ± 50 pF
Sensitivity (15 ... 90% RH):	0.25 pF / % RH (at C <sub>30</sub> = 150 pF)	0.30 pF / % RH (at C <sub>30</sub> = 180 pF)
Loss Factor (at 23 °C, at 10 kHz, at 90% RH):	< 0.01	< 0.01
Linearity Error (15 ... 90% RH at 23 °C, after one-point calibration):	< 1.5% RH	< 1.5% RH
Hysteresis: 1 h, 20% RH bei 23 °C → 1 h, 85% RH bei 70 °C → 1 h, 20% RH bei 23 °C	< 1.5% RH	< 1.5% RH
Response Time t <sub>63</sub> (50% RH → 0% RH) at 23 °C:	< 5 s	< 5 s
Frequency Range:	1 ... 100 kHz (recommended 10 kHz)	1 ... 100 kHz (recommended 10 kHz)
Maximum Operating Voltage:	< 12 V <sub>pp</sub> AC	< 12 V <sub>pp</sub> AC
Signal Form:	alternating signal without DC bias	alternating signal without DC bias
Connectors:	Wires or customer specific	SMD



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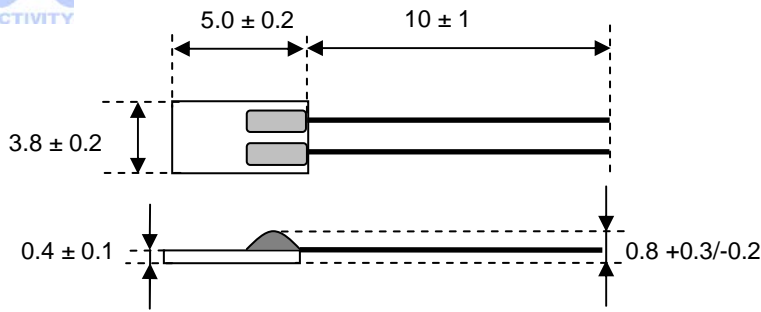


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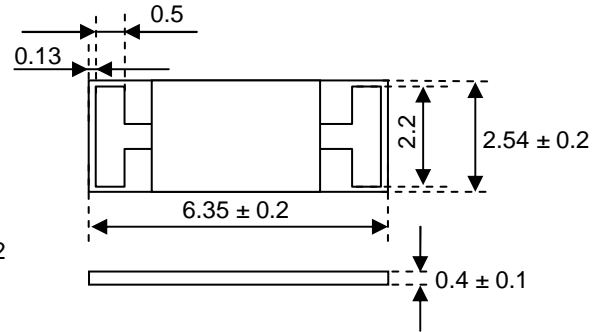
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## Construction Sizes

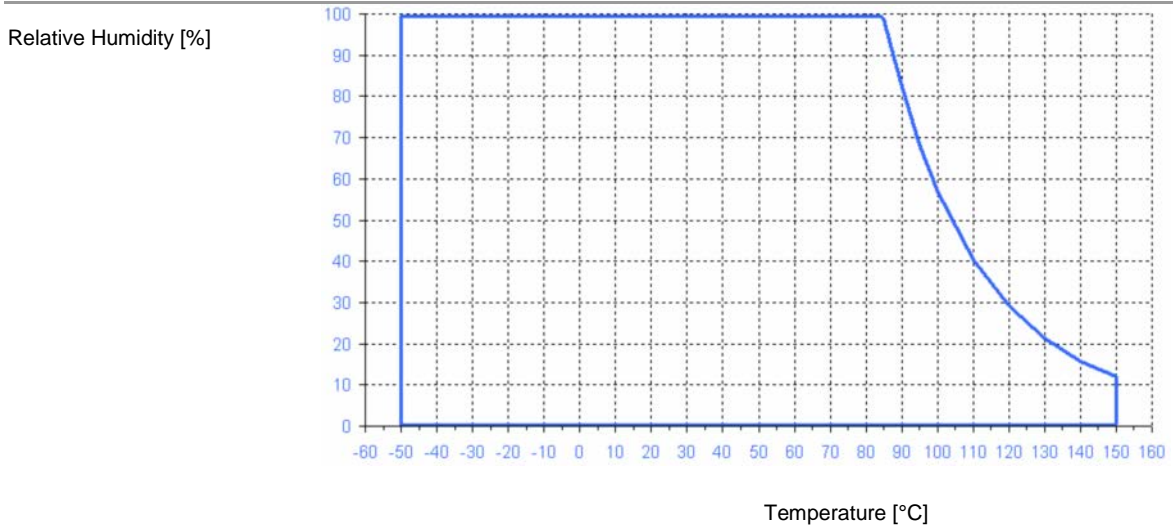
Wired (in mm)



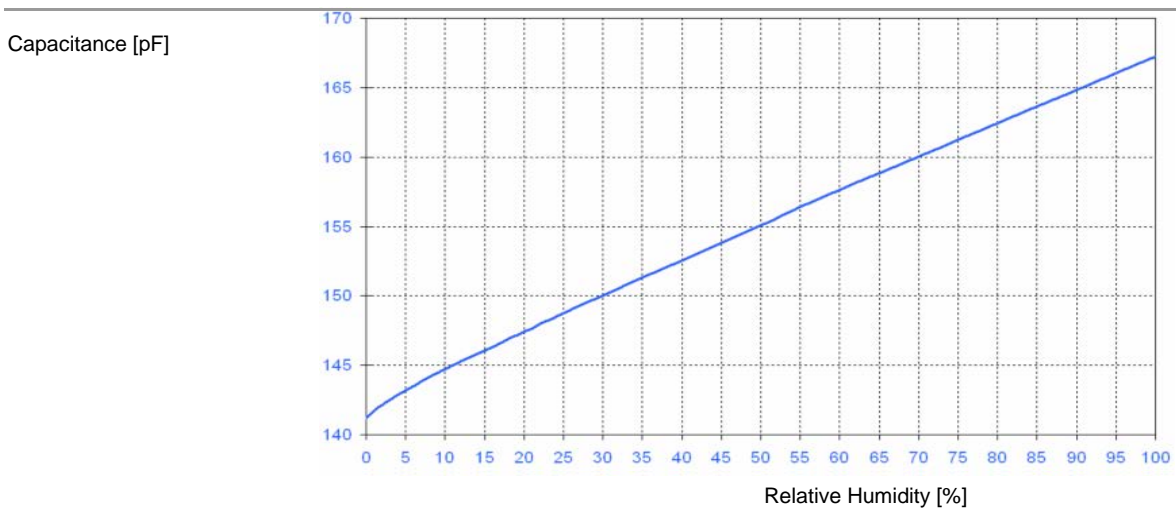
SMD (in mm)



## Allowed Humidity-Temperature Range, operating conditions at atmospheric pressure (1 bar)



## Sensor Characteristic



All mechanical dimensions are valid at 25°C ambient temperature, if not differently indicated. ■ All data except the mechanical dimensions only have information purposes and are not to be understood as assured characteristics. ■ Technical changes without previous announcement as well as mistakes reserve. ■ The information on this data sheet was examined carefully and will be accepted as correct. No liability in case of mistakes. ■ Load with extreme values during a longer period can affect the reliability. All rights reserved. The material contained herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner. Typing errors and mistakes are subject to change without notice. All rights reserved.



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