



# P14 Rapid-2\_5

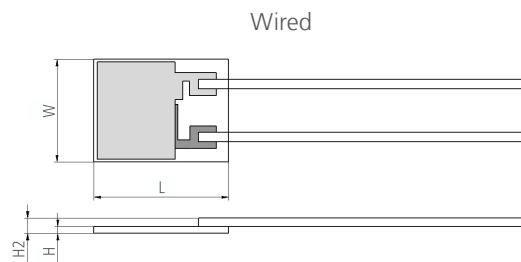
## Capacitive Humidity Sensor

### New version with outstanding response time – Optimal for weather balloons and radiosondes

#### Benefits & Characteristics

- Extraordinary fast response time: 3 x faster than P14 Rapid
- Fast recovery time after condensation
- Temperature shock resistant
- High humidity stability
- Wide temperature range

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



1) For actual size, see dimensions

#### Technical Data - Preliminary

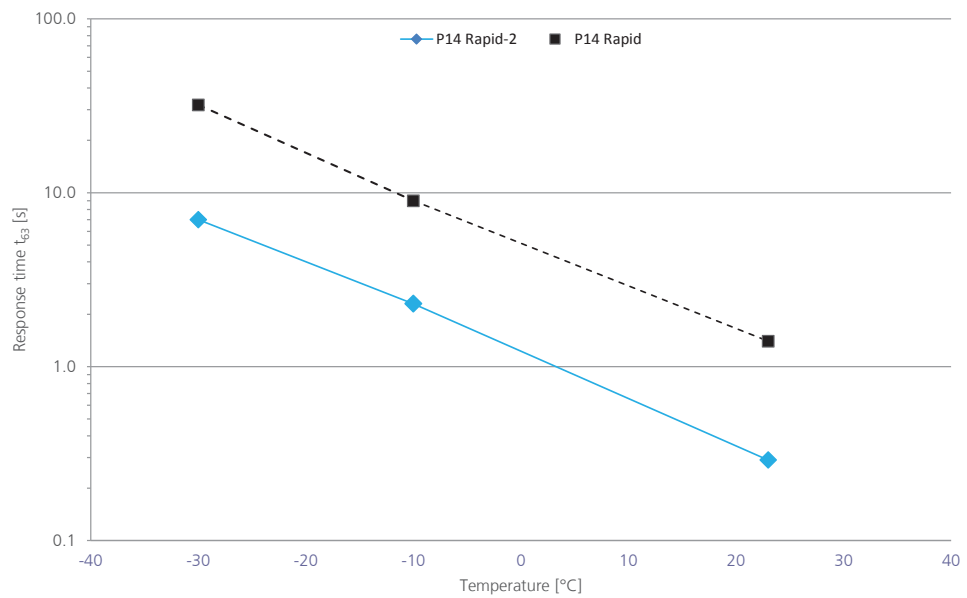
Dimensions (L x W x H / H2 in mm):	5.0 x 3.81 x 0.4 / 0.8
Capacitance at 30 % RH and +23 °C (C <sub>30</sub> ):*	650 pF ±150 pF
Typical sensitivity (C <sub>30</sub> = 650 pF, 15 % RH to 90 % RH):	1.1 pF/% RH
Operating humidity range:	0 % RH to 100 % RH (maximal dew point: +85 °C)
Operating temperature range:	-80 °C to +150 °C
Loss factor:	< 0.05 (at 23 °C, at 10 kHz, at 15 % RH to 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> : <sup>2)</sup>	0.3 s ± 0.2 s (50 % RH to 0 % RH at +23 °C)
2) The response time is often measured for increasing humidity steps, whereas physics predicts that decreasing humidity leads to generally far longer response times for capacitive humidity sensors. IST thus measures response times always for decreasing humidity values, since this is the worst case.	
Temperature dependence (nominal):	$\Delta \% RH = (B1 \times \% RH + B2) \times T [^{\circ}C] + (B3 \times \% RH + B4)$ $B1 = 0.0014 [1/^{\circ}C]$ $B2 = 0.1325 [\% RH/^{\circ}C]$ $B3 = -0.0317$ $B4 = -3.0876 [\% RH]$
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



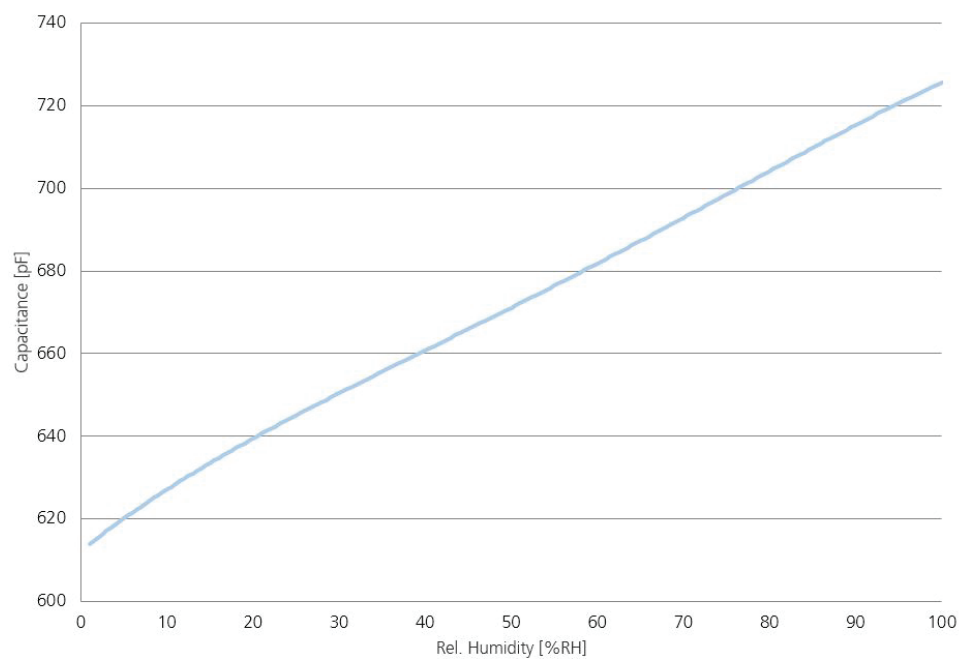
Connection:\* Au/Cu-wire, Ø 0.4 mm  
Packaging: packed in a blister of 5 pcs  
\* Customer-specific alternatives available

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

### Response Time (typical)

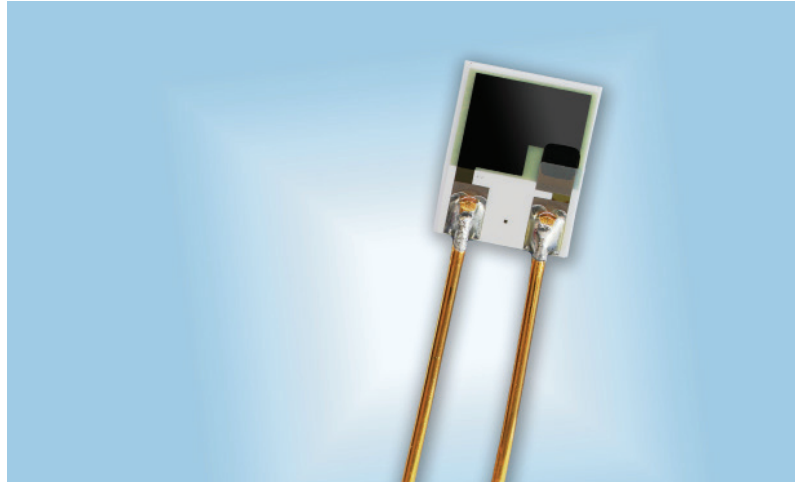


### Characteristic Curve (typical)





## Product Photo



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

Order code	P14 Rapid-2_5 (650±150 pF)
Mouser Product number	153415
	916-15345



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