Innovative Sensor Technology
physical. chemical. biological.

P14 Rapid-2

Capacitive Humidity Sensor

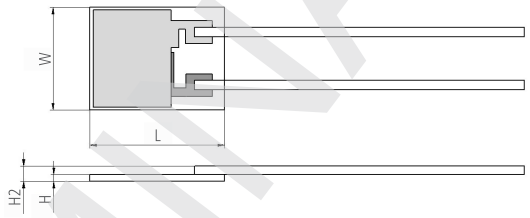
New version with outstanding response time – Optimal for weather balloons and radiosondes

Benefits & Characteristics

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

Illustration[1)]

Wired



1) For actual size, see dimensions

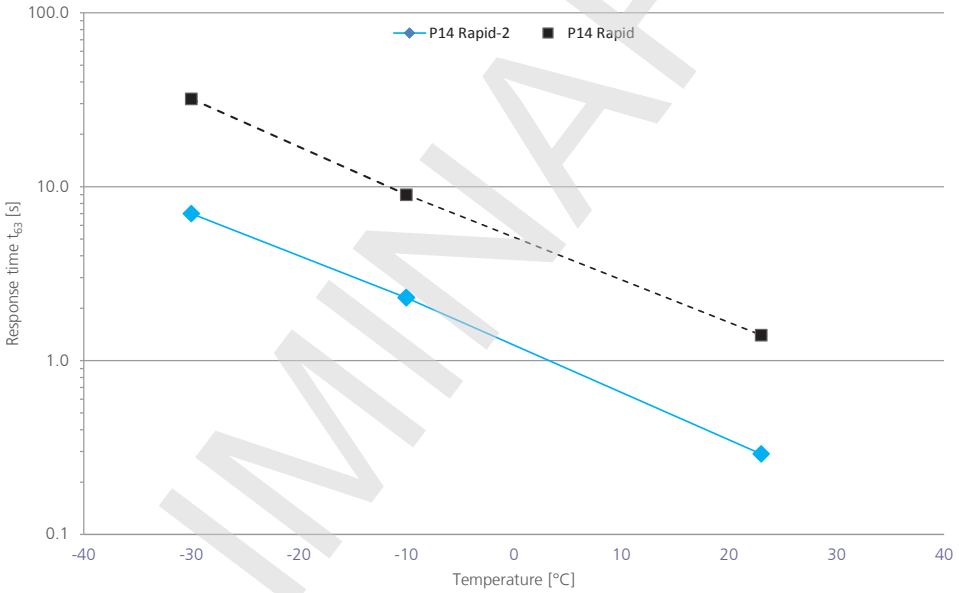
Technical Data - Preliminary

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_{30}):*	650 pF ±150 pF
Typical sensitivity (C_{30} = 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_{63}:[2)]	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):	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
Connection:*	Au/Cu-wire, Ø 0.4 mm

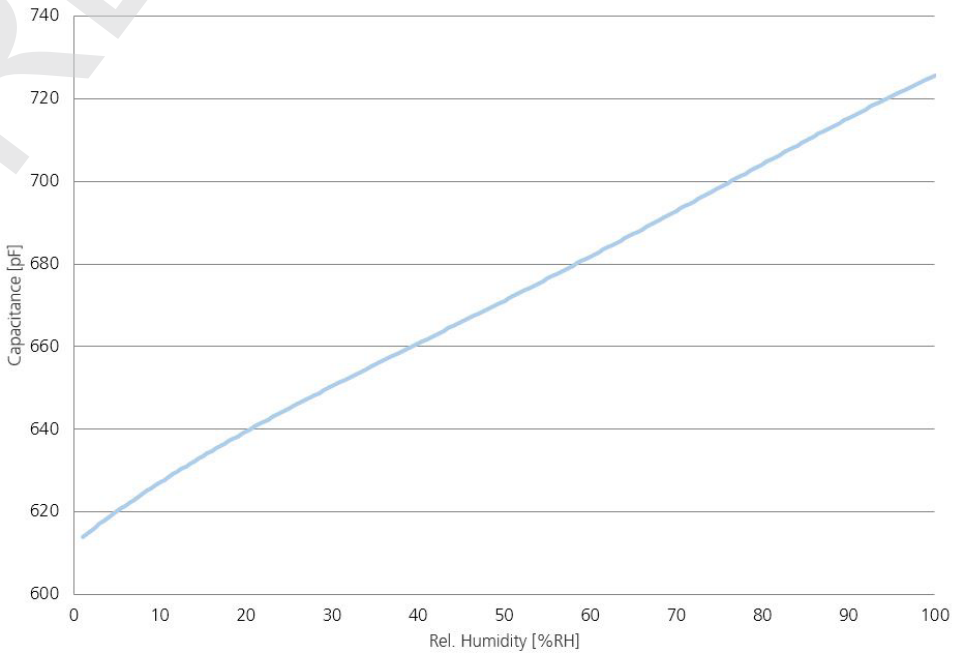
* Customer-specific alternatives available

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

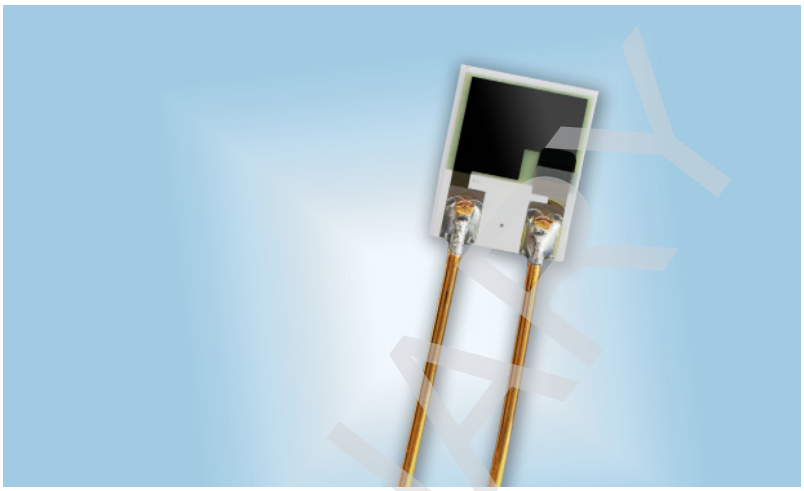
Response Time (typical)



Characteristic Curve (typical)



Product Photo



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

	P14 Rapid-2 (650±150 pF)
Order code	104932
Former order code	*340.00073*

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