Innovative Sensor Technology

physical. chemical. biological.

P14 2FW Thermo

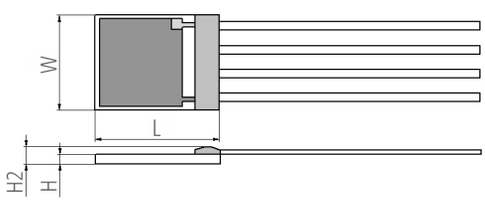
Capacitive Humidity Sensor

Optimal for dew point applications

Benefits & Characteristics

- Fast recovery time
- Temperature measurement on-chip
- Wide temperature range
- Condensation resistance
- High chemical resistance
- Heating of humidity sensor (humidity sensor and heater on one chip)
- Very low drift
- High humidity stability
- Customer-specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

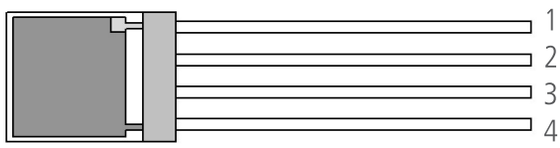
Technical Data

Dimensions (L x W x H / H2 in mm):	5.0 x 3.8 x 0.4 / 0.8
Operating humidity range:	0 % RH to 100 % RH (maximal dew point +85 °C)
Operating temperature range:	-50 °C to +150 °C
Heater/temperature sensor:*	Pt100
Heater/temperature sensor accuracy:	IEC 60751 F0.3 (class B)
Capacitance (C_{30}):*	150 pF ±50 pF (at 30 % RH and +23 °C)
Typical sensitivity (at C_{30} = 150 pF):	0.25 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_{63}:	< 6 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 range:	1 kHz to 100 kHz (recommended 10 kHz)
Maximal supply voltage:	< 12 V_{pp} AC
Signal form:	alternating signal without DC bias
Connection:*	Ni/Au-flat wire

* Customer-specific alternatives available

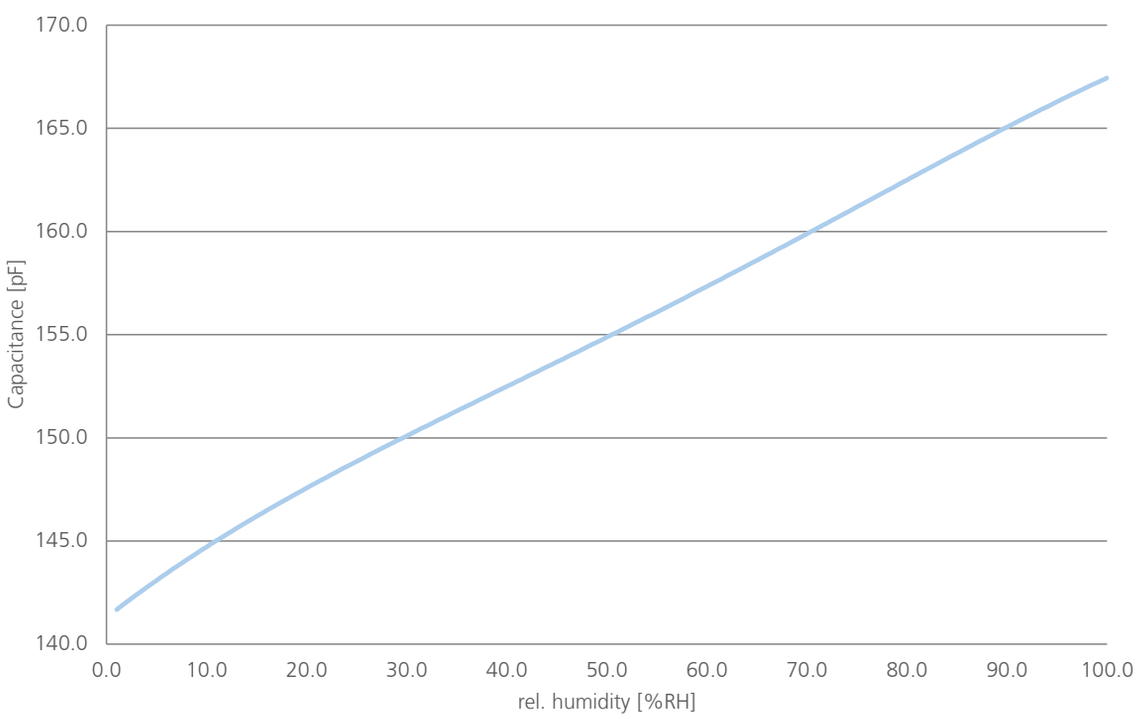
The calibration of the sensor must be done 5 days after soldering at the earliest.

Pin Assignment

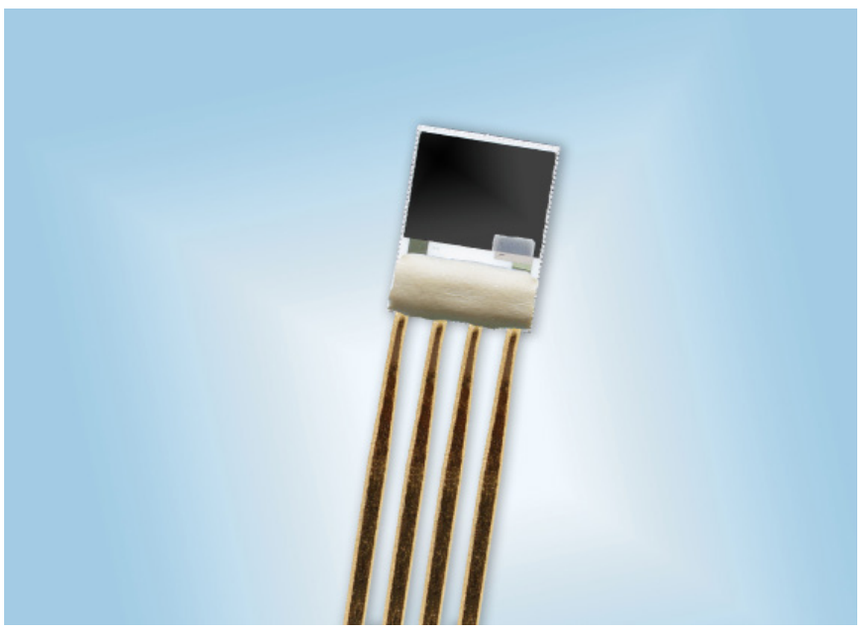


1	2	3	4
humidity sensor	temperature sensor	temperature sensor	humidity sensor

Characteristic Curve



Product Photo



Order Information - Ni/Au-flat wire

Nominal resistance: 100 Ω at 0 °C

	P14 2FW Thermo (P0K1)
Order code	103590
Former order code	*040.00229*

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