

# P14 2FW Thermo

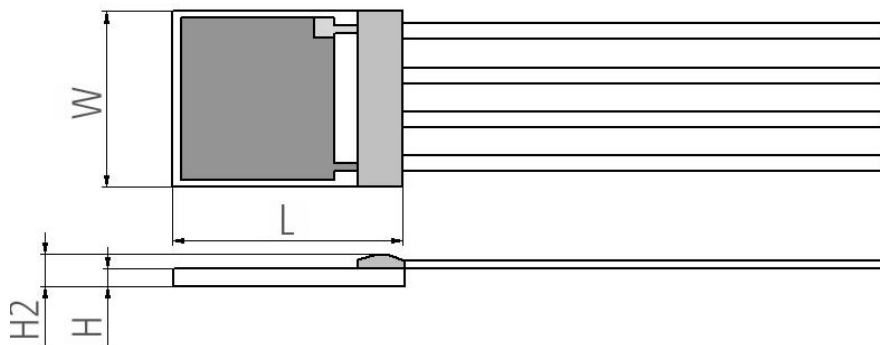
## Capacitive Humidity Sensor Optimal for dew point applications

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



<sup>1)</sup> for actual size see dimensions in order information

## Technical data

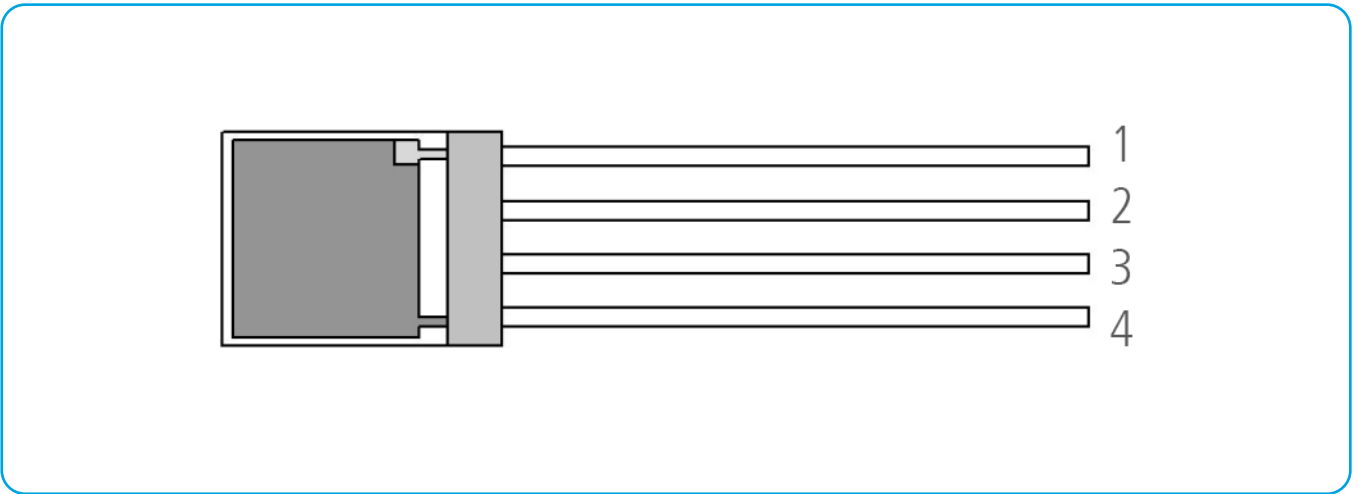
	Dimensions (L x W x H/H2 in mm):	5.0 x 3.8 x 0.4 / 0.8	
	Operating humidity range:	0 % RH to 100 % RH (maximal dew point +85 °C)	
	Operating temperature range:	-50 °C to +150 °C	
	Heater / temperature sensor:*	Pt100	
	Heater/temperature sensor accuracy:	IEC 60751 F0.3 (class B)	
	Capacitance (C <sub>30</sub> ):*	150 pF ±50 pF (at 30 % RH and +23 °C)	
	Typical sensitivity (at C <sub>30</sub> = 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 <sub>63</sub> :	< 6 s (50 % RH to 0 % RH at +23 °C)	
	Temperature dependence (nominal):	$\Delta \% \text{ RH} = (B1 \times \% \text{ RH} + B2) \times T [^\circ\text{C}] + (B3 \times \% \text{ RH} + B4)$ 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 <sub>pp</sub> 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

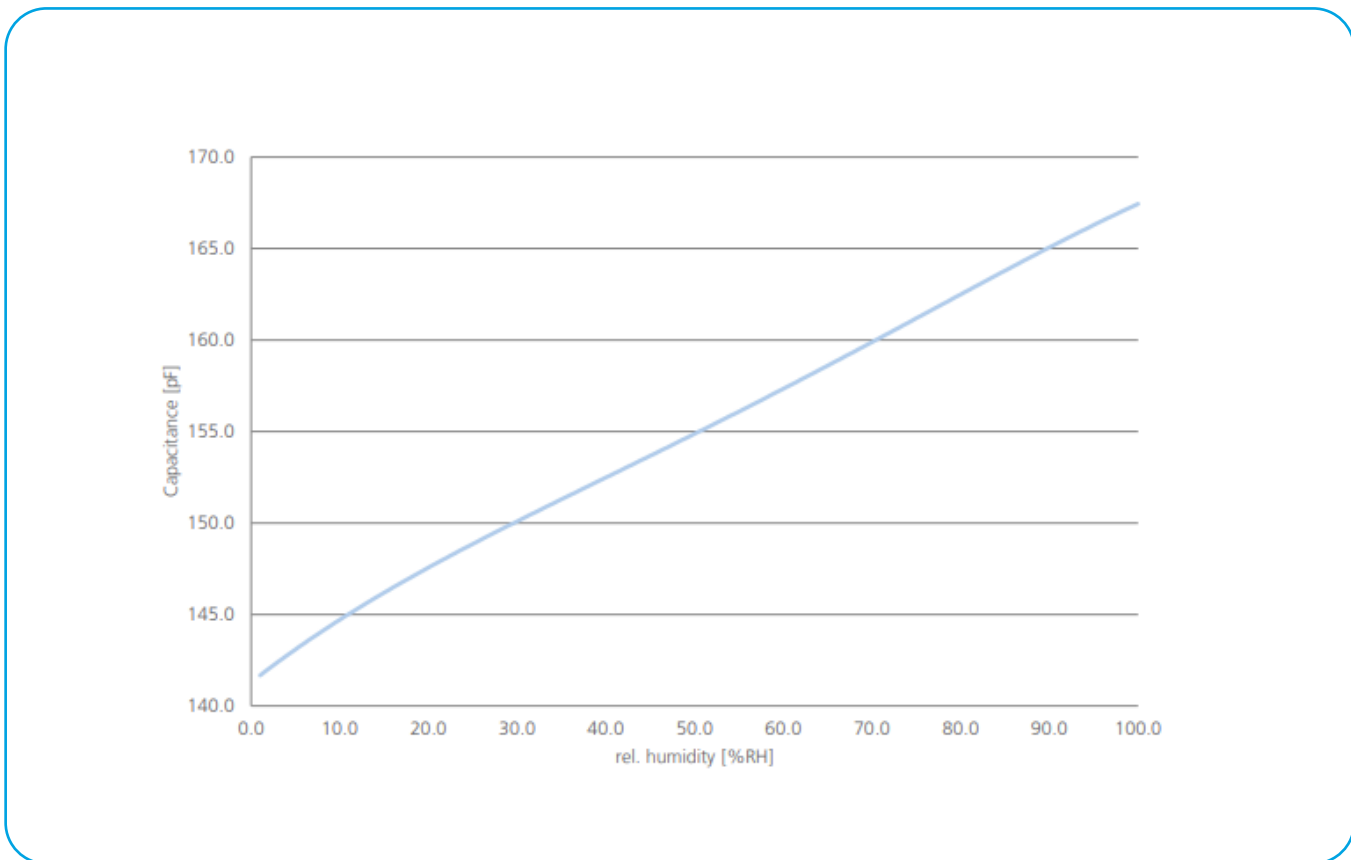


## Pin Assignment



1	2	3	4
Humidity Sensor	Temperature Sensor	Temperature sensor	Humidity Sensor

## Characteristic Curve





## Order Information - Ni/Au-flat wire

Product Title	P14 2FW Thermo (P0K1)
Order code	103590
Nominal resistance	100 $\Omega$ at 0 °C



Innovative Sensor Technology IST AG • Stegrütistrasse 14 • 9642 Ebnat-Kappel • Switzerland  
+41 71 992 01 00 • [info@ist-ag.com](mailto:info@ist-ag.com) • [www.ist-ag.com](http://www.ist-ag.com)

Technical specifications are subject to change without prior notice. The information contained in this data sheet has been carefully reviewed and is believed to be accurate; however, no liability is assumed for any errors or omissions. Continuous exposure to extreme operating conditions may impact product lifetime or reliability. The customer is solely responsible for assessing the suitability and fitness of the product for their specific application. This product is not designed, authorized, or warranted for use in life support or safety-critical applications. The customer agrees to hold the supplier harmless from any claims, damages, or liabilities arising from such use. No explicit or implied warranties, including but not limited to warranties of merchantability or fitness for a particular purpose, are provided. The material provided herein may not be reproduced, adapted, merged, translated, stored, or utilized in any form without prior written consent from the copyright holder. No transfer of any intellectual property rights is granted or implied. All rights reserved.