



MK33-W



Capacitive Humidity Sensor

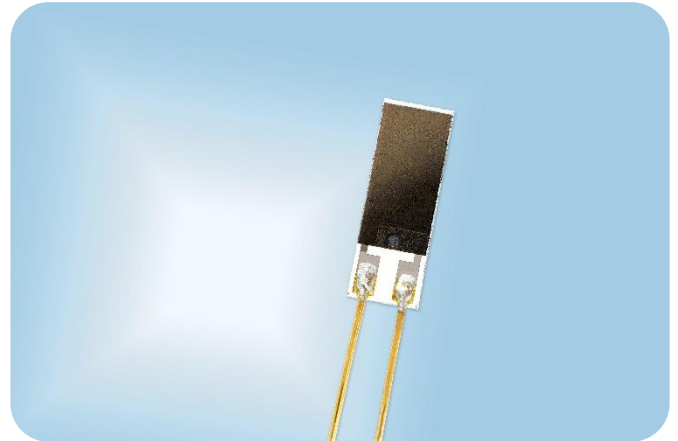


Optimal for oil measurement applications



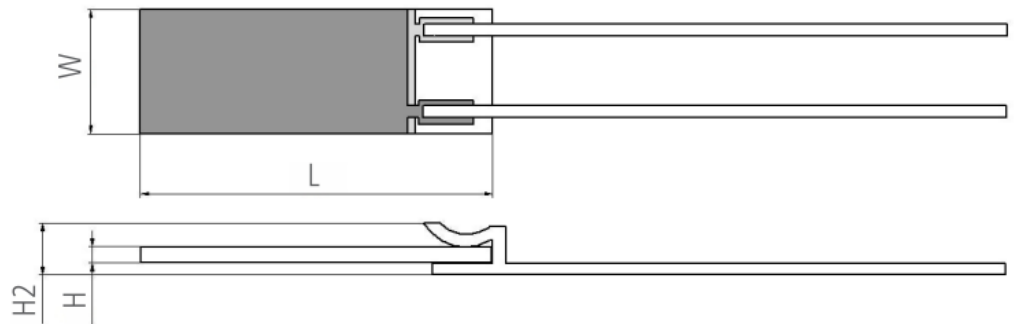
Benefits & characteristics

- High chemical resistance
- Wide temperature range
- Condensation resistant
- Fast recovery time
- Very low drift
- High humidity stability
- Suitable for extreme environments
- Customer-specific sensor available upon request

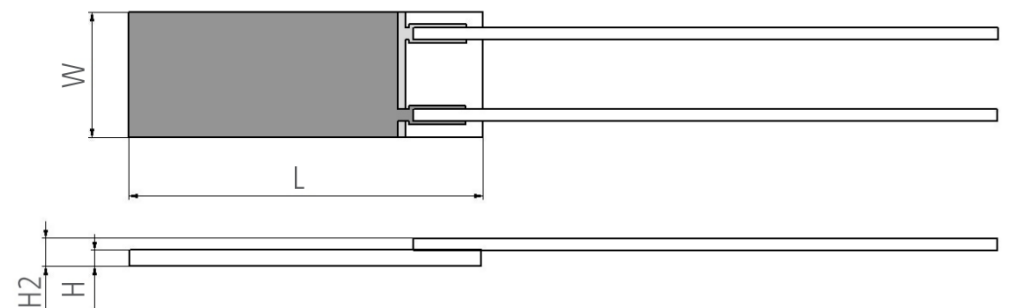


Illustration

SIL



Au/Cu-wire



For actual size see dimensions

L = length

W= width

H2= total height

H=substrate height



Technical data



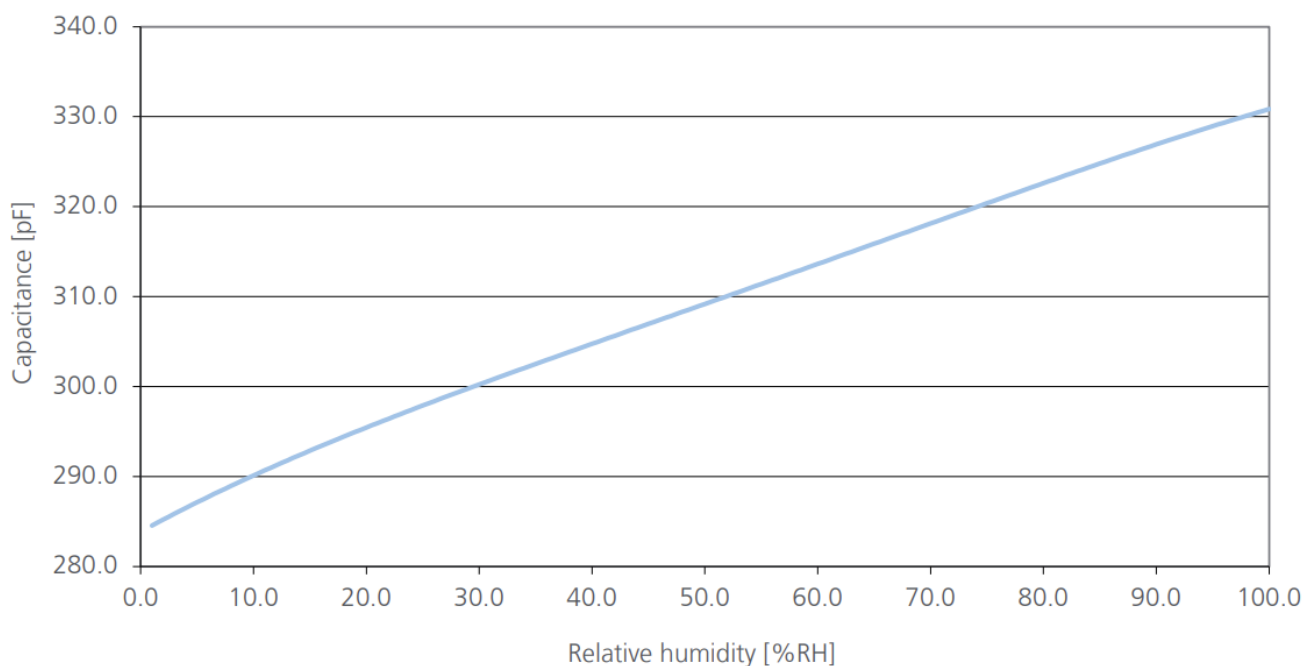
Dimensions (L x W x H/H2 in mm):	SIL	10.8 x 3.81 x 0.4 / 1.2
	Au/Cu wire	10.8 x 3.81 x 0.4 / 0.8
Operating humidity range	0 % RH to 100 % RH (maximal dew point +95 °C)	
Operating temperature range:	-40 °C to +190 °C	
Capacitance (C ₃₀):*	300 pF ±40 pF (at 30 % RH and +23 °C)	
Typical sensitivity (at C ₃₀ = 300 pF):	0.45 pF/% RH (15 % RH to 90 % RH)	
Loss factor:	< 0.01 (at +23 °C, at 10 kHz, at 90 % RH)	
Linearity error:	< 2 % RH (15 % RH to 90 % RH at +23 °C after one point calibration)	
Hysteresis:	< 2 % RH	
Response time t ₆₃ :	< 6 s (50 % RH to 0 % RH at +23 °C)	
Temperature dependence (nominal):	$\Delta \% \text{ RH} = (B1 \times \% \text{ RH} + B2) \times T [^{\circ}\text{C}] + (B3 \times \% \text{ RH} + B4)$ $B1 = 0.0011 [1/^{\circ}\text{C}] \quad B2 = 0.0892 [\% \text{ RH}/^{\circ}\text{C}]$ $B3 = -0.0268 \quad B4 = -2.079 [\% \text{ RH}]$	
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: *	CuP-SIL-wire post-plated with Sn, 10 mm or Au/Cu-wire, Ø 0.4 mm, 10 mm or Au/Cu-wire, Ø 0.4 mm, 12 mm, PTFE insulated, solder joints and pads covered with silicone globtop	

*Customer-specific alternatives available

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



Characteristic Curve



Order information

Order code	Product name (secondary reference)	
150474	MK33 (300pF $\pm$ 40pF)	With CuP-SIL wire post-plated with SN, 10 mm
150468	MK33-W (300pF $\pm$ 40pF)	Au/Cu-wire, $\varnothing$ 0.4 mm, 10 mm
151306	MK33-W HMN300- 40.1138.W.012.S	Au/Cu-wire, $\varnothing$ 0.4 mm, 12 mm PTFE insulated, solder joints and pads covered with silicone globtop

Related documents

Document	File name	
Application note Humidity sensors	AH_E	Available in Download-Section on www.ist-ag.com



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