



HUMIDITY



TEMPERATURE



FLOW



CONDUCTIVITY

MK33-W

Capacitive Humidity Sensor

Optimal for oil measurement applications

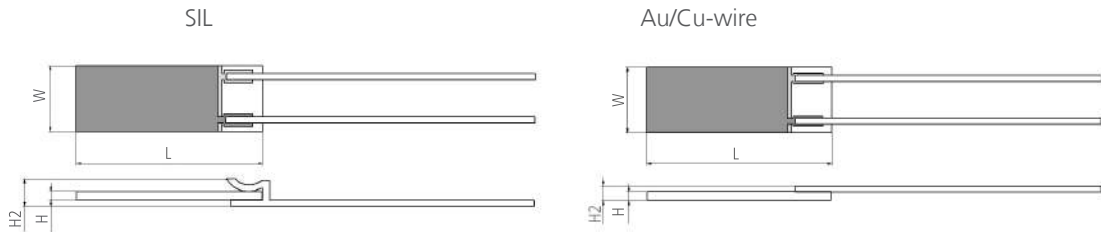


INNOVATIVE SENSOR TECHNOLOGY

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

Illustration¹⁾



1) For actual size, see dimensions

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) | |
| 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 (typical): | $\Delta \% RH = (B1 \times \% RH + B2) \times T [^\circ C] + (B3 \times \% RH + B4)$ B1 = 0.0011 [1/ °C] B2 = 0.0892 [% RH/ °C] B3 = -0.0268 B4 = -2.079 [% 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:* | CuP-SIL-wire post-plated with Sn, 10 mm or 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.



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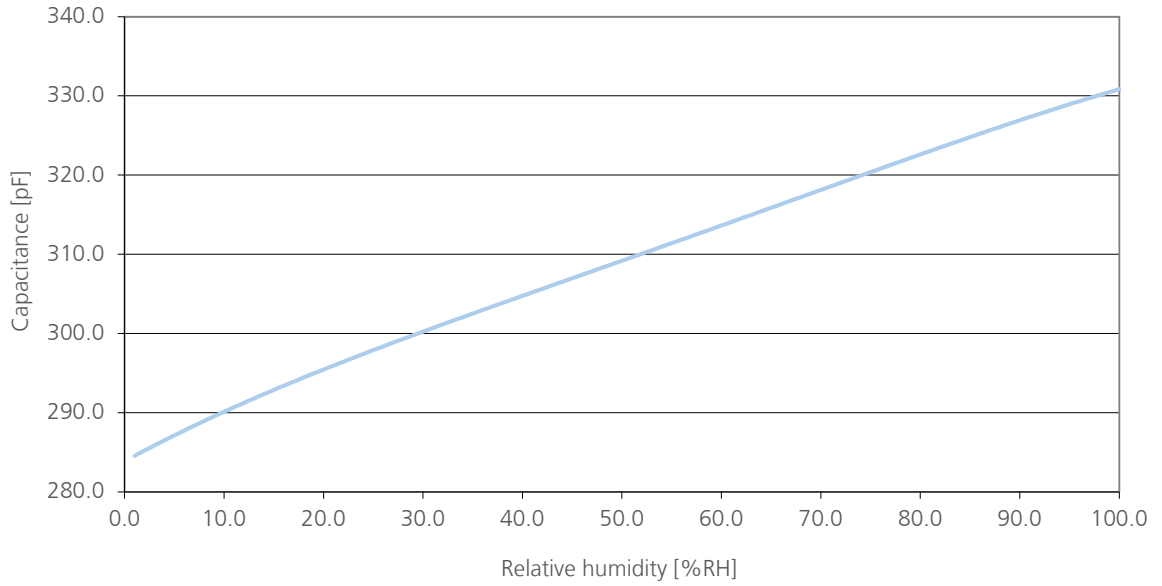
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Characteristic Curve



Order Information - SIL (CuP-SIL-wire post-plated with Sn, 10 mm)

| | |
|------------|---------------------------------|
| Order code | MK33 (300pF ±40pF) 040.00192 |
|------------|---------------------------------|

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

| | |
|------------|-----------------------------------|
| Order code | MK33-W (300pF ±40pF) 040.00180 |
|------------|-----------------------------------|



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