

Specifications

Variant	☐ SH1, ☐ SH2, ☐ SH3
Measurement range	0...100 %rh
Temperature resistance FE09/X	-60...200 °C
Temperature resistance FE09.R/X	-40...110 °C
Basic capacity	SH1-115±15 pF, SH2 and SH3 -135±10 pF
Change in capacity	SH2 and SH3 - 0.3±0.05 pF/%rh SH1 - 0.27±0.08 pF/%rh
Permissible voltage	max. 3 V without DC
Measured frequency	5 kHz...200 kHz
Loss factor	<0.03 (at 10 kHz)
Response time	10 s
Hysteresis (MR 5...95%rh)	<1.5 %rh
Linearity (MR 5...95%rh)	<1.5 %rh
Long term stability	<1 %rh/a

Warranty and Support

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manufacturing date

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e-mail: support@comeco.org

QD-8.2.4-WC

Warranty

The items are consumable and are not offered with a warranty.

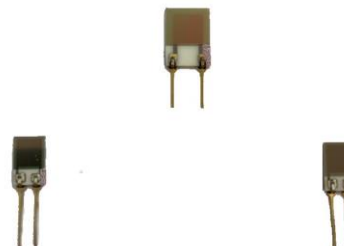
Technical support

In the unlikely event that you encounter a problem with your COMECO device, please call your local dealer or contact directly our support team.

HUMIDITY SENSING ELEMENTS, MODULES

Thin-film Humidity Sensing Element SH

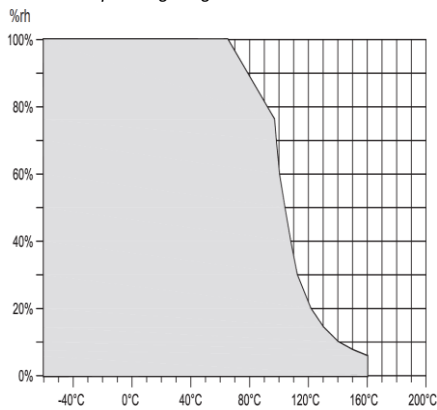
OPERATION MANUAL



Please read this Operation Manual before mounting and operating!
Save the Manual for future references!

Overview

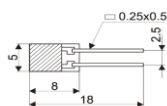
Operating range



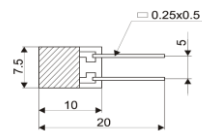
- *Low cost
- *Wide T/RH operating zone
- *Operating temperature up to 200 °C
- *Excellent sensibility
- *Very good dynamic properties
- *Short response time
- *Long-term stability

The SH relative humidity sensing element consists of a system of electrodes on a glass-ceramic substrate, covered by a humidity-sensitive polymer coating and a water-vapor permeable metallic membrane. This coating system represents a humidity-dependent capacitor. Utilizing the principal of capacitive measurement, SH measures relative humidity in air or other non-aggressive gases and gas mixtures with good long-term stability and linearity, small hysteresis, and excellent dynamic response.

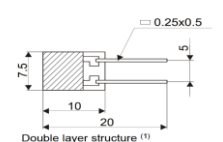
SH 1



SH 2



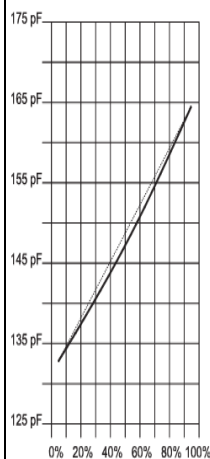
SH 3



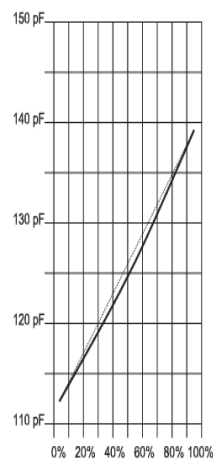
(1) Double layer structure makes the elements more resistant to external mechanical influences (variant '3').

Characteristics

SH 2, SH 3



SH 1



$$K = [A + a(T - 25)]. \sum b_i \cdot T_i$$

K = corrected value
 $a = 0.04$ (for $T \geq 25^\circ\text{C}$)
 A = Output signal (0...100%)
 $a = 0$ (for $T < 25^\circ\text{C}$)
 T = temperature ($^\circ\text{C}$)
 $b_0 = 0.98125$
 $b_1 = 6 \cdot 10^{-4}$
 $b_2 = 6 \cdot 10^{-6}$

Harmful Substance	Concentration
NH_3 (only for a short time)	100 ppm (2 x MAK)
H_2S	20 ppm (2 x MAK)
SO_2	3,7 ppm (10 x MIK)
NO_x	1,0 ppm (10 x MIK)
O_3	0,6 ppm (10 x MIK)
Cl_2	no influence

Application hints

- Do not contact the active surface of the element!
- Use low-voltage soldering iron with max. 240 °C temperature for max. 2 seconds! Remove all flux residues. The active surface must point downward during soldering. Provide good heat dissipation on sensor leads.
- The elements can be cleaned by air shower or distilled water.
- Note the working zone given in the table below!
- Contact COMECO for information about the permissible aggressive gas concentrations!

Temperature dependence

The following correction algorithm can be used to calculate the temperature-dependence of the humidity sensing elements.

Harmful substance test

No damage to the humidity sensing elements after 3 months' exposure