

HYGROMER IN-1

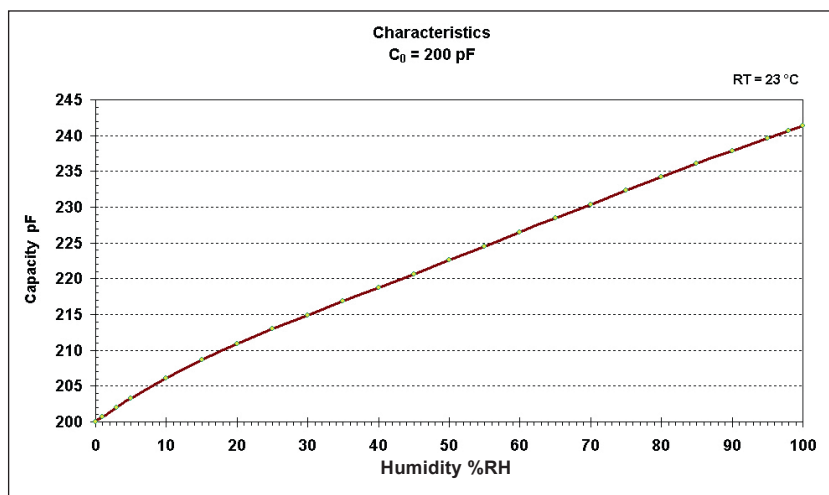
THE PERFECT SENSOR FOR INDUSTRIAL APPLICATIONS.

INNOVATION IN HUMIDITY MEASUREMENT

- Best long term stability
- Robust mechanical construction
- Response time <15 s
- 0...100 %RH
- -50...170 °C
- PTFE surface protection



HYGROMER IN-1



Characteristic polynomial

5th degree polynomial

$$Y = A_0 + A_1 \cdot x + A_2 \cdot x^2 + A_3 \cdot x^3 + A_4 \cdot x^4 + A_5 \cdot x^5$$

$$A_0 = 2.00000E+02$$

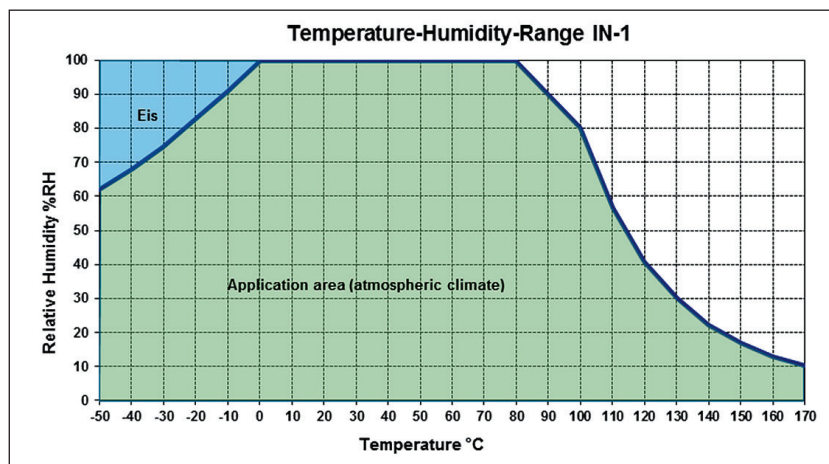
$$A_1 = 7.12550E-01$$

$$A_2 = -1.19025E-02$$

$$A_3 = 2.01789E-04$$

$$A_4 = -1.59209E-06$$

$$A_5 = 4.65615E-09$$



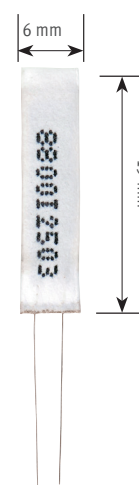
Specifications

Capacity:	220 pF ±50 pF
Humidity operating range:	0...100 %RH
Temperature operating range:	-50...170 °C
Accuracy at 23 °C at optimal characteristic curve:	±1.0 %RH
Hysteresis (4 hours each at 10 %RH - 90 %RH - 10 %RH):	<0.5 %RH
Response time τ_{63} :	<15 s (at 23 °C and 1 m/s)
Long-term stability:	<1 %RH / year
Uncompensated temperature deviation:	-0.15 %RH/°C (30...90 %RH)
Frequency range (without DC components):	5...50 kHz
Max. Voltage:	±12 VDC

The shown data are guide values. The resistance of the sensor strongly depends on the temperature and humidity conditions as well as on exposure duration to the pollutant. Allowed fault caused from the pollutant: ±2 %RH (10...90 %RH).

Pollutant	Formula	Max. Workplace Concentration		Allowed Concentration Continuous Operation	
		(ppm)	(mg/m³)	(ppm)	(mg/m³)
Acetic acid	CH ₃ COOH	10	25	800	2000
Acetone	CH ₃ COCH ₃	1000	2400	3300	8000
Ammonia	NH ₃	25	18	5500	4000
2-Butanone (MEK)	C ₂ H ₅ COCH ₃	200	590	3300	8000
Chlorine	Cl ₂	0.5	1.5	0.7	2
Ethanol	C ₂ H ₅ OH	1000	1900	3500	6000
Ethyl acetate	CH ₃ COOC ₂ H ₅	400	1400	4000	15000
Ethylene glycol	HOCH ₂ CH ₂ OH	100	260	1200	3000
Ethylene oxide	C ₂ H ₄ O	3		3	
Formaldehyde	HCHO	1	1.2	2400	3000
Hydrochloric acid	HCl	5	7	300	500
Hydrogen sulfide	H ₂ S	10	15	350	500
Isopropanol	(CH ₃) ₂ CHOH	400	980	4800	12000
Methanol	CH ₃ OH	200	260	3500	6000
Nitrogen oxides	NO _x	5	9	5	9
Ozone	O ₃	0.1	0.2	0.5	1
Petrol		300	1200		150000
Sulfur dioxide	SO ₂	5	13	5	13
Toluene / Xylene	C ₆ H ₅ CH ₃	100	380	1300	5000

Dimension



The data in this documentation result from experience and testing. Depending upon site conditions (temperature, dampness, pollutants etc.) the values can differ. A warranty claim cannot be derived from it.

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MEASUREMENT SOLUTIONS

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