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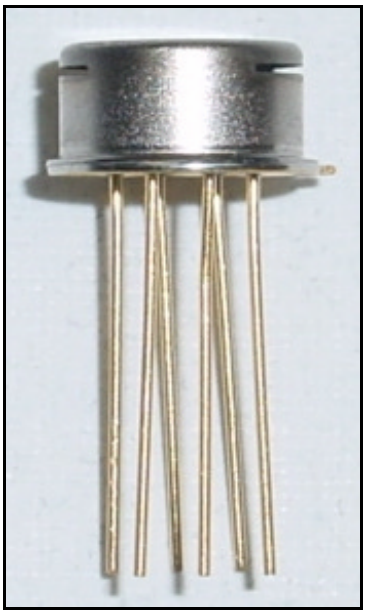
INDUSTRIAL & ENVIRONMENTAL SENSORS, INSTRUMENTS & CONTROLS SINCE 1969

IC HUMIDITY SENSORS - HC-700

SENSOR WITH INTEGRATED CIRCUIT PROVIDES LINEAR VOLTAGE OUTPUT

- **Hybrid Capacitive Humidity Sensor**
- **Slotted Nickel Plated TO-39 Package**
- **Good Environmental Resistance**
- **Linear DC Output Voltage**
- **Fast Response Time**
- **Chemically Resistant**
- **Low Current (200 mA max.)**
- **Stable, Low Drift Performance**



HUMIDITY SENSOR & SIGNAL CONDITIONER IN A MINI-PACKAGE

Model HC-700 humidity sensor is designed for OEMs that have requirements for miniature sensing elements that can be easily integrated into electronic products with a high degree of accuracy and repeatability.

The sensor utilizes a thin film polymer which varies in dielectric constant directly proportional to changes in the amount of water vapor at the sensor element. A CMOS signal conditioning circuit integrated in a monolithic design provides a linear voltage output over the full range of 0-100% RH. The accuracy is ±2% RH (5-95 %RH) with 0.5% repeatability and 5% interchangeability.

These sensors provide a 0.64 to 3.12 Vdc signal when 4 Vdc is supplied or 0.92 to 4.52 Vdc when 5.8 Vdc is supplied. Current consumption is 200µA max.

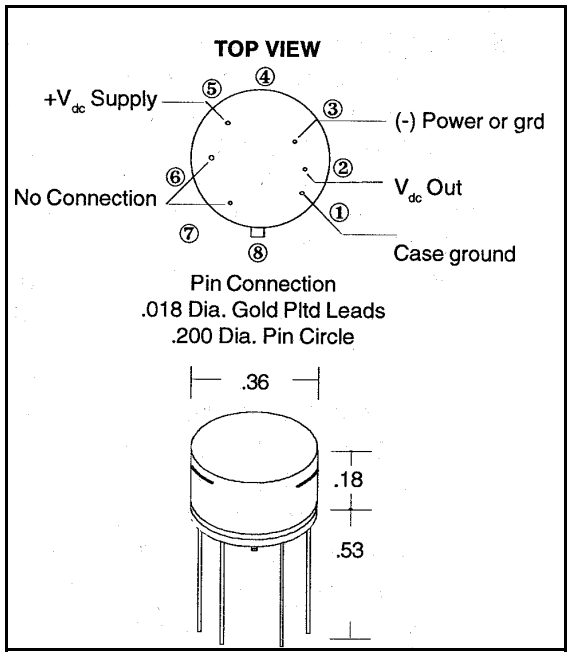
The model HC-700 is supplied in a TO-39 slotted nickel housing. Certification to NIST traceable standards is available.

HC-700 sensors have an operating temperature range of -40 to +185ºF. They are not affected by exposure to condensation and provide good resistance to chemical vapors such as organic solvents, chlorine, and ammonia.

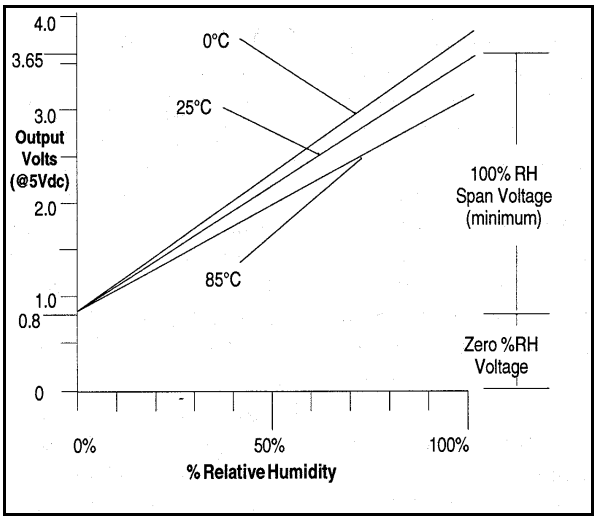
Applications include battery-powered applications, HVAC, refrigeration, industrial dryers, appliances, humidistats and weather telemetry.

SPECIFICATIONS: MODEL HC-700

Time Constant	30 Seconds in Slowly Moving Air @ 25ºC
Stability	± 1% RH Typ. at 50% RH In 5 Years
Total Accuracy	± 2% RH, 0-100% RH @ 25ºC
Interchangeability	± 5% RH up to 60% RH, ± 8% RH at 90% RH (Typ) No Calibration Required.
Operating Temperature	-40 to +85ºC (-40 to +185°F)
Hysteresis	± 1.2% of Span Maximum
Linearity	± 0.5% RH Typical
Repeatability	± 0.5% RH
Voltage Supply (Vps)	4.0– 5.8 Vdc regulated
Voltage Output	Vout = Vps (0.0062 (Sensor RH) + .16)
RH Out	%RH = (((6.3 x Vout) ÷ Vps) -1) x 25.6
Temperature Compensation	Corrected RH = %RH ÷ (1.0546 - 0.00216T) where T= ºC and %RH = Uncorrected % RH
Drive Capability	50µA Typical; 20 µA, minimum
Turn-on Time	< 0.1 Second
Current Requirement	2 mA max @ 5.8 Vdc
Handling/Installation	Electrostatic Sensitive. Protected to 15 KV Max. Shade from Intense Light



Temperature Compensation



NOTE: Voltage-out measurements must be taken with high impedance (=>10 MΩ) voltmeter.

ENGINEERING SUPPORT: OHMIC Instruments Co. designs and manufactures a full line of sensors, environmental and bio-medical instruments and controls. Many of our products are custom designed to meet specific requirements. Our engineers will be pleased to discuss your application.

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