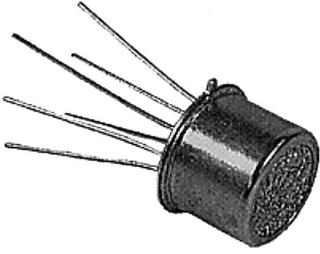


Humidity Sensors

Relative Humidity

HIH Series



FEATURES

- Linear voltage output vs %RH
- Laser trimmed interchangeability
- High accuracy, fast response
- Chemically resistant
- Stable, low drift performance
- Built-in static protection
- Ideal for dew point and absolute moisture measurements
- TO-39 housing

TYPICAL APPLICATIONS

- Refrigeration
- Drying
- Meteorology
- Battery-powered systems
- OEM assemblies

GENERAL INFORMATION

HIH-3602-A and HIH-3602-C Relative Humidity (RH) sensors combine both relative humidity and temperature sensing in a TO-5 housing with a hydrophobic sintered stainless steel filter

The laser trimmed thermoset polymer capacitive sensing elements have on-chip integrated signal conditioning. The temperature sensor is thermally connected with the RH sensor making the HIH-3602-A/C ideal for measuring dew point and other absolute moisture terms. Factory calibration data supplied with each sensor allows individually matched downstream electronics and $\pm 2\%$ RH total accuracy.

ORDER GUIDE

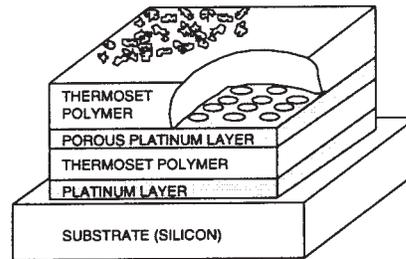
Catalog Listing	Description
HIH-3602-A	Monolithic IC humidity sensor with integral thermistor in TO-5 can
HIH-3602-C	Monolithic IC humidity sensor with integral precision RTD in TO-5 can

NIST CALIBRATION

Each HIH-3602-A or HIH-3602-C sensor includes a sensor specific NIST calibration and data printout. Sensors are not individually serialized.

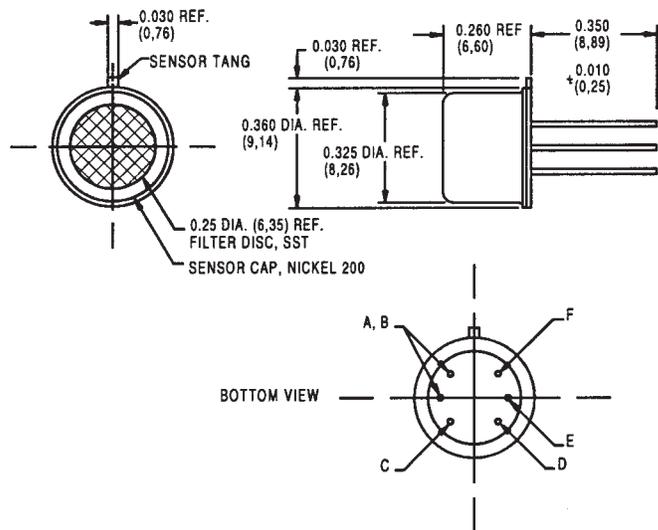
RH SENSOR CONSTRUCTION

Sensor construction consists of a planar capacitor with a second polymer layer to protect against dirt, dust, oils and other hazards.



MOUNTING DIMENSIONS (for reference only)

HIH-3602-A and HIH-3602-C



CAUTION

PRODUCT DAMAGE

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation, take normal ESD precautions when handling this product.

INTERNAL PIN CONNECTIONS

0.018 (0,46) dia. lead gold plated (6 places)	
A, B	(HIH-3602-A) Thermistor for temperature compensation
A, B	(HIH-3602-C) RTD for temperature compensation
C	+VDC supply
D	(-) Power or ground
E	VDC out
F	Case ground

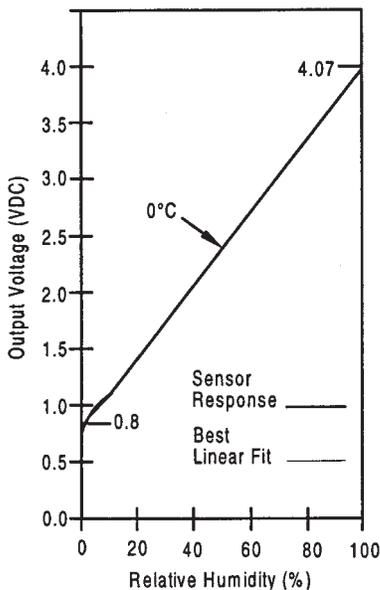
Humidity

PERFORMANCE SPECIFICATIONS

Catalog Listing	HIH-3602-A	HIH-3602-C
Temperature Sensor	R _b = 100 kΩ ±5% @ 25°C, NTC 0-50°C, β = 4143K, T = °K R(T) = R _b exp (β/T-β/298.15)	1000Ω ±0.2% @ 0°C Thin Film Platinum RTD alpha = 0.00375 Ω/Ω/°C
Temperature Accuracy	±3.0°C @ 25°C	±0.5°C @ 25°C
RH Accuracy ⁽¹⁾	±2% RH, 0-100% RH non-condensing, 25°C, V _{supply} = 5 VDC	
RH Interchangeability	±5% RH, 0-60% RH; ±8% @ 90% RH	
RH Linearity	±0.5% RH typical	
RH Hysteresis	±1.2% of RH span maximum	
RH Repeatability	±0.5% RH	
RH Response Time, 1/e	50 sec in slowly moving air at 25°C	
RH Stability	±1% RH typical at 50% RH in 5 years	
Power Requirements Voltage Supply Current Supply	4 to 5.8 VDC, sensor calibrated at 5 VDC 200 μA at 5 VDC	
Voltage Output V _{supply} = 5 VDC Drive Limits	V _{out} = V _{supply} (0.0062 (Sensor RH) + 0.16), typical @ 25°C (Data printout provides a similar, but sensor specific, equation at 25°C.) 0.8 to 3.9 VDC output @ 25°C typical Push/pull symmetric; 50 μA typical, 20 μA minimum, 100 μA maximum Turn-on ≤0.1 second	
Temp. Compensation Effect @ 0% RH Effect @ 100% RH	True RH = (Sensor RH)/(1.093-0.0012T), T in °F True RH = (Sensor RH)/(1.0546-0.00216T), T in °C ±0.007% RH/°C (negligible) -0.22% RH/°C (<1% RH effect typical in occupied space systems above 15°C (59°F))	
Humidity Range Operating Storage	0 to 100% RH, non-condensing ⁽¹⁾ 0 to 90% RH, non-condensing	
Temperature Range Operating Storage	-40° to 85°C (-40° to 185°F) -40° to 125°C (-40° to 275°F)	
Package	TO-5 with 60μ hydrophobic sintered stainless steel filter, resists condensation	
Handling	Static sensitive diode protected to 15 kV maximum	

1. Extended exposure to ≥90% RH causes a reversible shift of 3% RH.

OUTPUT VOLTAGE VS RELATIVE HUMIDITY (at 0°C)



OUTPUT VOLTAGE VS RELATIVE HUMIDITY (at 0°C, 25°C, and 85°C)

