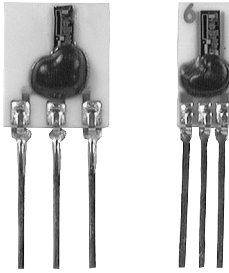


Humidity Sensors

Relative Humidity

HIH Series



FEATURES

- Linear voltage output vs %RH
- Laser trimmed interchangeability
- Low power design
- High accuracy
- Fast response time
- Stable, low drift performance
- Chemically resistant

TYPICAL APPLICATIONS

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

GENERAL INFORMATION

The HIH-3605 monolithic IC (Integrated Circuit) humidity sensor is designed specifically for high volume OEM (Original Equipment Manufacturer) users. Direct input to a controller or other device is made possible by this sensor's linear voltage output. With a typical current draw of only 200 μ A, the HIH-3605 is ideally suited for low drain, battery powered systems.

The HIH-3605 delivers instrumentation quality RH sensing performance in a low cost, solderable SIP (Single In-line Package). Available in two lead spacing configurations, the RH sensor is a laser trimmed thermoset polymer capacitive sensing element with on-chip integrated signal conditioning.

ORDER GUIDE

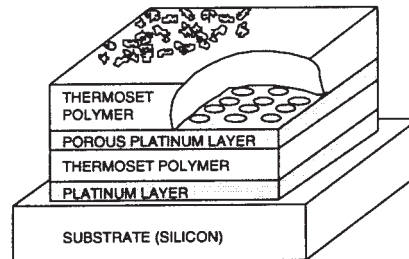
| Catalog Listing | Description |
|-----------------|--|
| HIH-3605-A | Integrated circuit humidity sensor, 0.100 in. lead pitch SIP |
| HIH-3605-A-CP | Integrated circuit humidity sensor, 0.100 in. lead pitch SIP with calibration and data printout |
| HIH-3605-B | Integrated circuit humidity sensor, 0.050 in. lead pitch SIP |
| HIH-3605-B-CP | Integrated circuit humidity sensor, 0.050 in. lead pitch SIP with calibration and data printout. |

NIST CALIBRATION

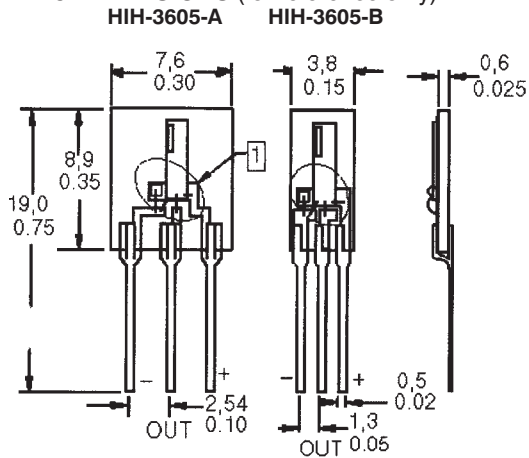
HIH-3605 sensors may be ordered with a NIST calibration and sensor specific data printout. Append "-CP" to the model number to order.

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)



1 Protective Sealant

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.

Humidity

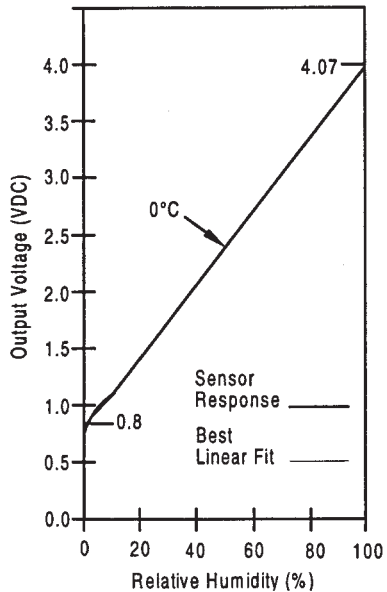
PERFORMANCE SPECIFICATIONS

| Parameter | Conditions |
|-----------------------------|--|
| 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 typical |
| RH Linearity | ±0.5% RH typical |
| RH Hysteresis | ±1.2% of RH span maximum |
| RH Repeatability | ±0.5% RH |
| RH Response Time, 1/e | 15 sec in slowly moving air at 25°C |
| RH Stability | ±1% RH typical at 50% RH in 5 years |
| Power Requirements | |
| Voltage Supply | 4 to 5.8 VDC, sensor calibrated at 5 VDC |
| Current Supply | 200 μA at 5 VDC, 2 mA typical at 9 VDC |
| Voltage Output | 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.) |
| V _{supply} = 5 VDC | 0.8 to 3.9 VDC output @ 25°C typical |
| Drive Limits | Push/pull symmetric; 50 μA typical, 20 μA minimum, 100 μA maximum Turn-on ≤0.1 second |
| Temp. Compensation | True RH = (Sensor RH)/(1.093-0.0012T), T in °F True RH = (Sensor RH)/(1.0546-0.00216T), T in °C |
| Effect @ 0% RH | ±0.007% RH/°C (negligible) |
| Effect @ 100% RH | -0.22% RH/°C (<1% RH effect typical in occupied space systems above 15°C (59°F)) |
| Humidity Range | |
| Operating | 0 to 100% RH, non-condensing ⁽¹⁾ |
| Storage | 0 to 90% RH, non-condensing |
| Temperature Range | |
| Operating | -40° to 85°C (-40° to 185°F) |
| Storage | -51° to 125°C (-60° to 257°F) |
| Package ⁽²⁾ | Three pin solderable ceramic SIP |
| Handling | Static sensitive diode protected to 15 kV maximum |

Notes:

1. Extended exposure to ≥90% RH causes a reversible shift of 3% RH.
2. This sensor is light sensitive. For best results, shield the sensor from bright light.

OUTPUT VOLTAGE VS RELATIVE HUMIDITY (at 0°C)



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

