

Interactive Catalog Replaces Catalog Pages

Honeywell Sensing and Control has replaced the PDF product catalog with the new **Interactive Catalog**. The **Interactive Catalog** is a power search tool that makes it easier to find product information. It includes more installation, application, and technical information than ever before.



**Click this icon to try the new
Interactive Catalog.**

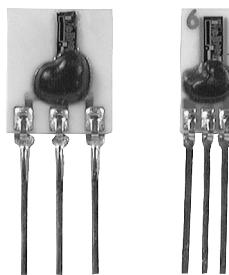
Sensing and Control

Honeywell Inc.

11 West Spring Street

Freeport, Illinois 61032





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.

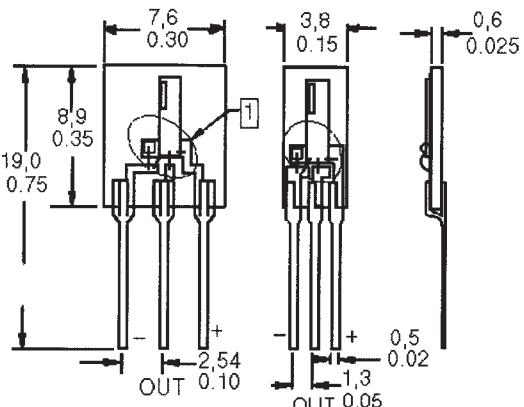
The HIH-3605 delivers instrumentation quality RH sensing performance in a low cost, solderable SIP (Single In-line Package). Available in two lead spacing configurations, the RH sensor is a laser trimmed thermoset polymer capacitive sensing element with on-chip integrated signal conditioning.

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.

MOUNTING DIMENSIONS (for reference only)

HIH-3605-A HIH-3605-B



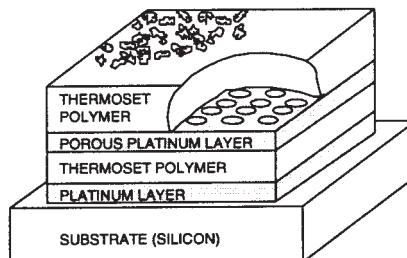
1 Protective Sealant

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.



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 Sensors

HIH Series

Relative Humidity

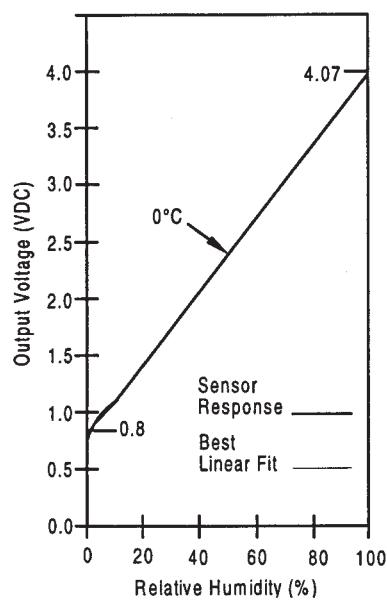
PERFORMANCE SPECIFICATIONS

Parameter	Conditions
RH Accuracy ⁽¹⁾	±2% RH, 0-100% RH non-condensing, 25°C, $V_{\text{supply}} = 5 \text{ VDC}$
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	$V_{\text{out}} = V_{\text{supply}} (0.0062 (\text{Sensor RH}) + 0.16)$, typical @ 25°C (Data printout provides a similar, but sensor specific, equation at 25°C.)
$V_{\text{supply}} = 5 \text{ VDC}$	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 = $(\text{Sensor RH})/(1.093-0.0012T)$, T in °F True RH = $(\text{Sensor RH})/(1.0546-0.00216T)$, 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)

