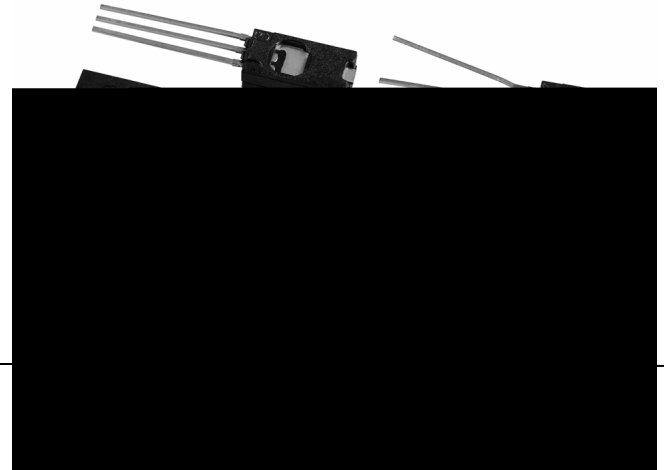


HH-4010/4020/4021 Series

Humidity Sensors



DESCRIPTION

The HH-4010/4020/4021 Series Humidity Sensors are 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 near linear voltage output. With a typical current draw of only 200 μ A, the HH-4010/4020/4021 Series is often ideally suited for low drain, battery operated systems.

Tight sensor interchangeability reduces or eliminates OEM production calibration costs. Individual sensor calibration data is available.

The HH-4010/4020/4021 Series delivers instrumentation-quality RH (Relative Humidity) sensing performance in a competitively priced, solderable SIP (Single In-line Package).

The HH-4010 is an uncovered integrated humidity sensor, the HH-4020 is a covered integrated circuit humidity sensor, and the HH-4021 is a covered, condensation-resistant, integrated circuit humidity sensor. All three products are available in two lead space configurations.

The RH sensor is a laser trimmed, thermoset polymer capacitive sensing element with on-chip integrated signal conditioning.

The sensing element's multilayer construction provides excellent resistance to most application hazards such as wetting, dust, dirt, oils and common environmental chemicals. Both products are available in two lead spacing configurations, as well as with or without calibration and data printouts.

FEATURES

- Molded thermoset plastic housing
- Near linear voltage output vs %RH
- Laser trimmed interchangeability
- Low power design
- Enhanced accuracy
- Fast response time
- Stable, low drift performance
- Chemically resistant

POTENTIAL APPLICATIONS

- Refrigeration equipment
- HVAC (Heating, Ventilation and Air Conditioning) equipment
- Medical equipment
- Drying
- Metrology
- Battery-powered systems
- OEM assemblies

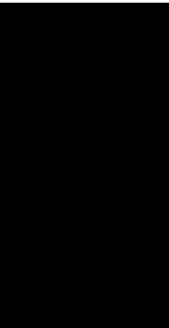


HIH-4010/4020/4021 Series

TABLE 1. PERFORMANCE SPECIFICATIONS (At 5 Vdc supply and 25 °C [77 °F] unless otherwise noted.)

Parameter	Minimum	Typical	Maximum	Unit	Specific Note
Interchangeability (first order curve)	–	–	–	–	–
0% RH to 59% RH	-5	–	5	% RH	–
–					

| |



Humidity Sensors

FIGURE 1. OPERATING ENVIRONMENT (Non-condensing environment for HIH-4010 and HIH-4020 catalog listings only.)

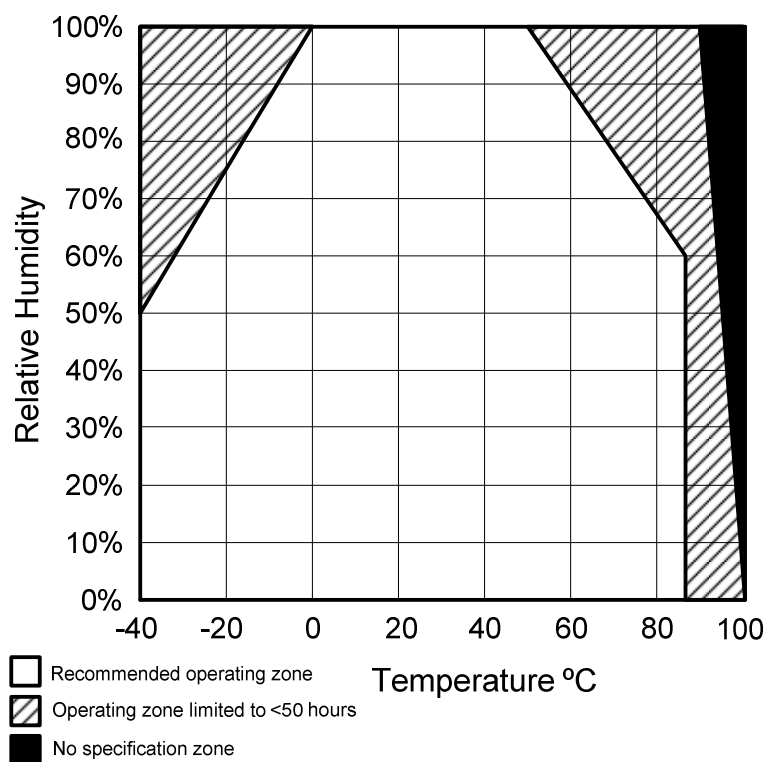
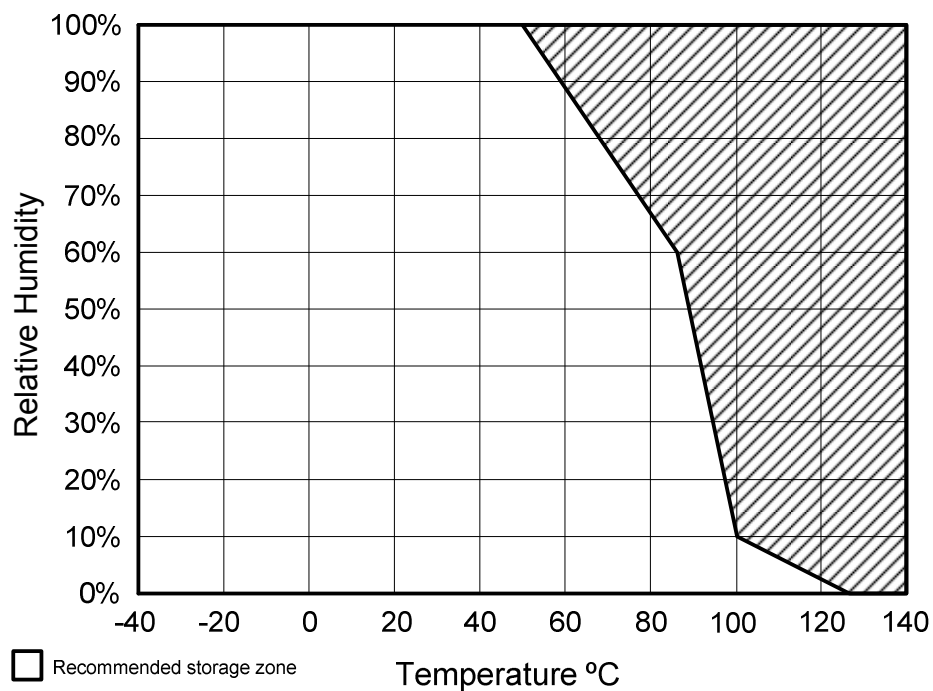


FIGURE 2. STORAGE ENVIRONMENT (Non-condensing environment for HIH-4010 and HIH-4020 catalog listings only.)





HIH-4010/4020/4021 Series

FIGURE 3. TYPICAL OUTPUT VOLTAGE VS RELATIVE HUMIDITY (At 25 °C and 5 V.)

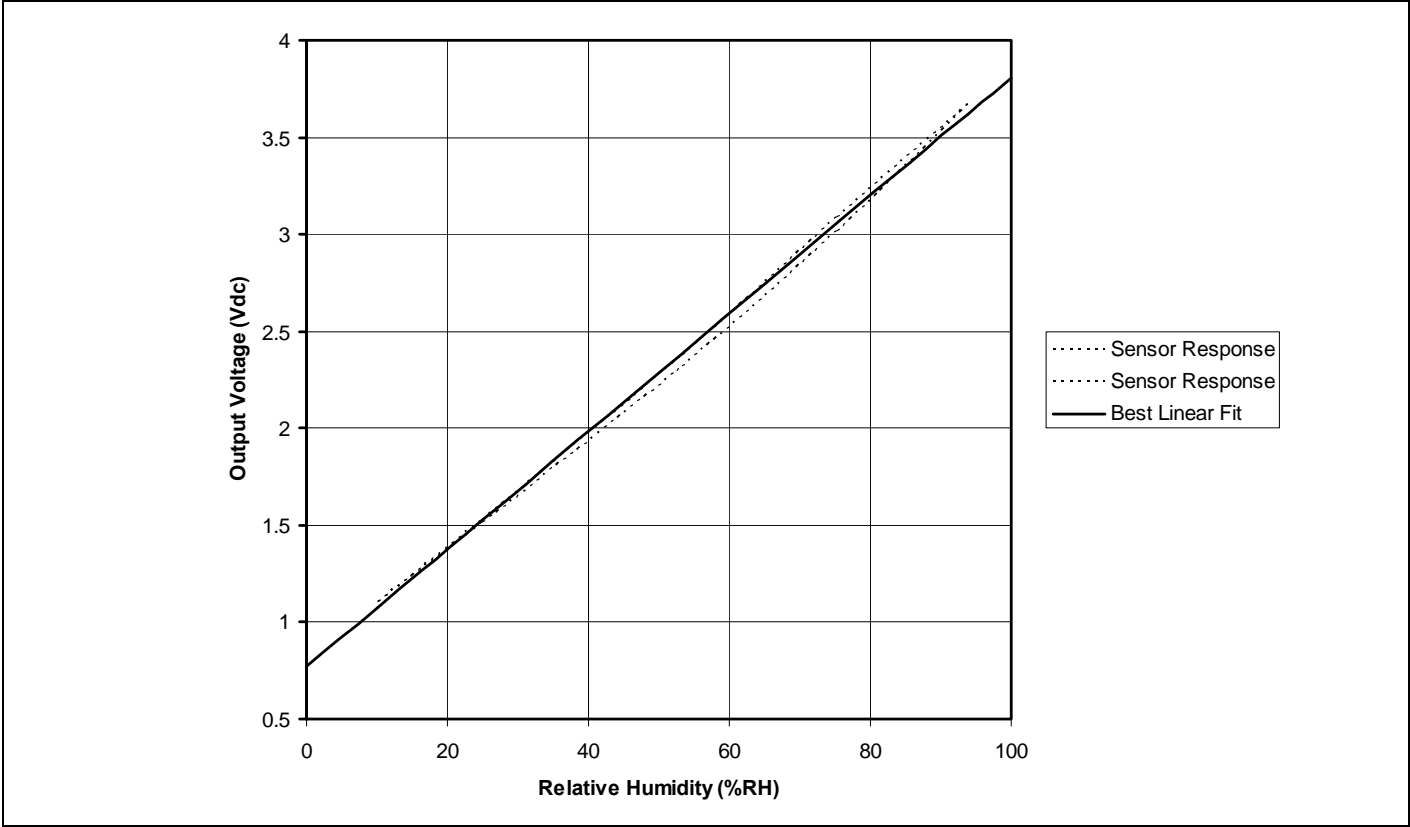
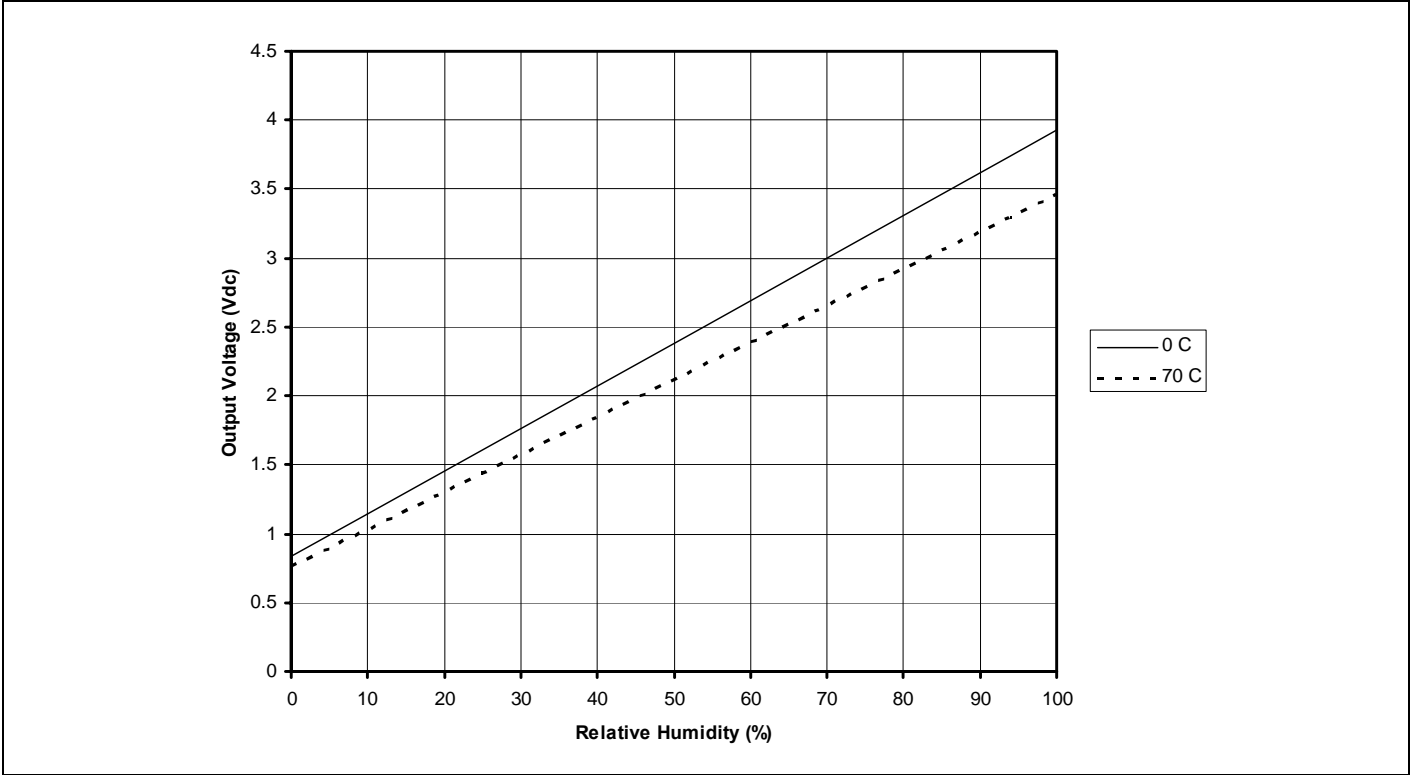


FIGURE 4. TYPICAL OUTPUT VOLTAGE (BFSL) VS RELATIVE HUMIDITY (At 0 °C, 70 °C and 5 V.)



Humidity Sensors

FIGURE 5. HIH-4010 MOUNTING DIMENSIONS (For reference only. mm/[in])

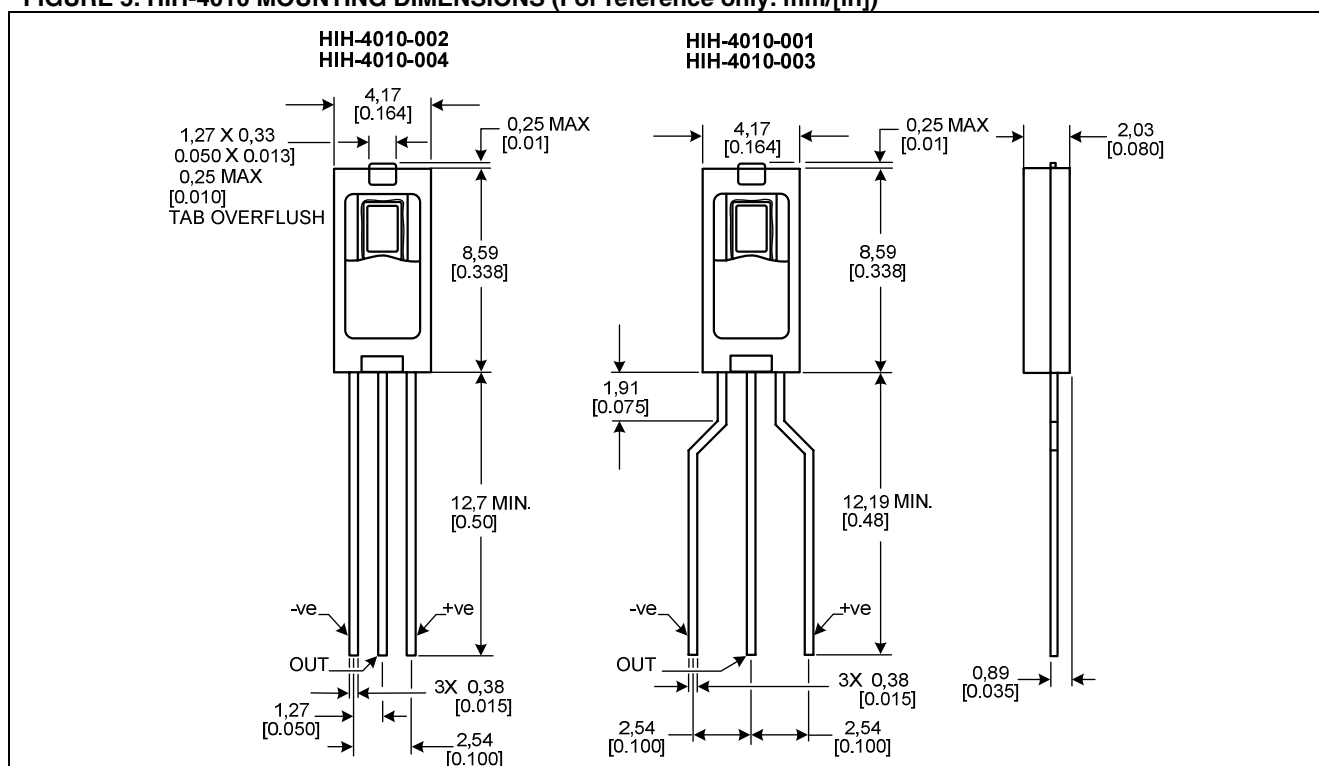
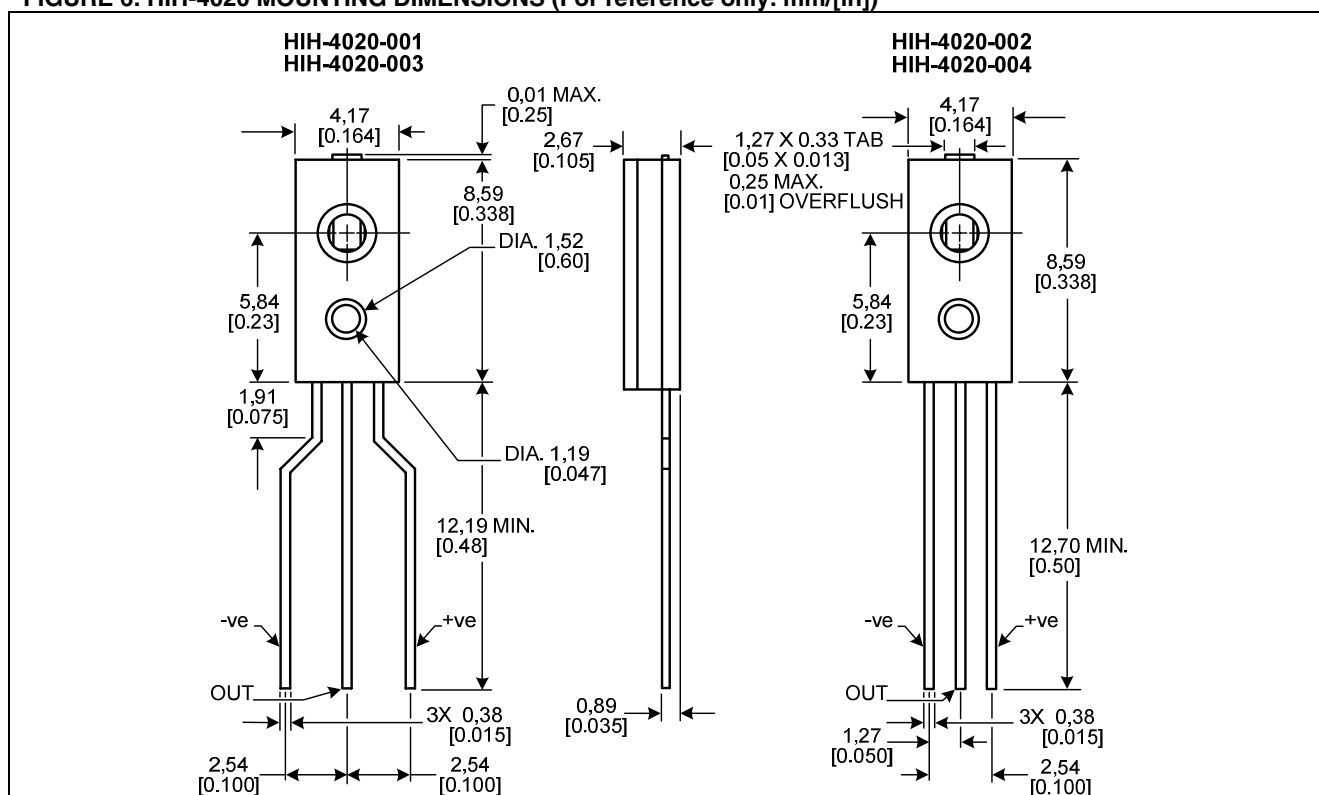
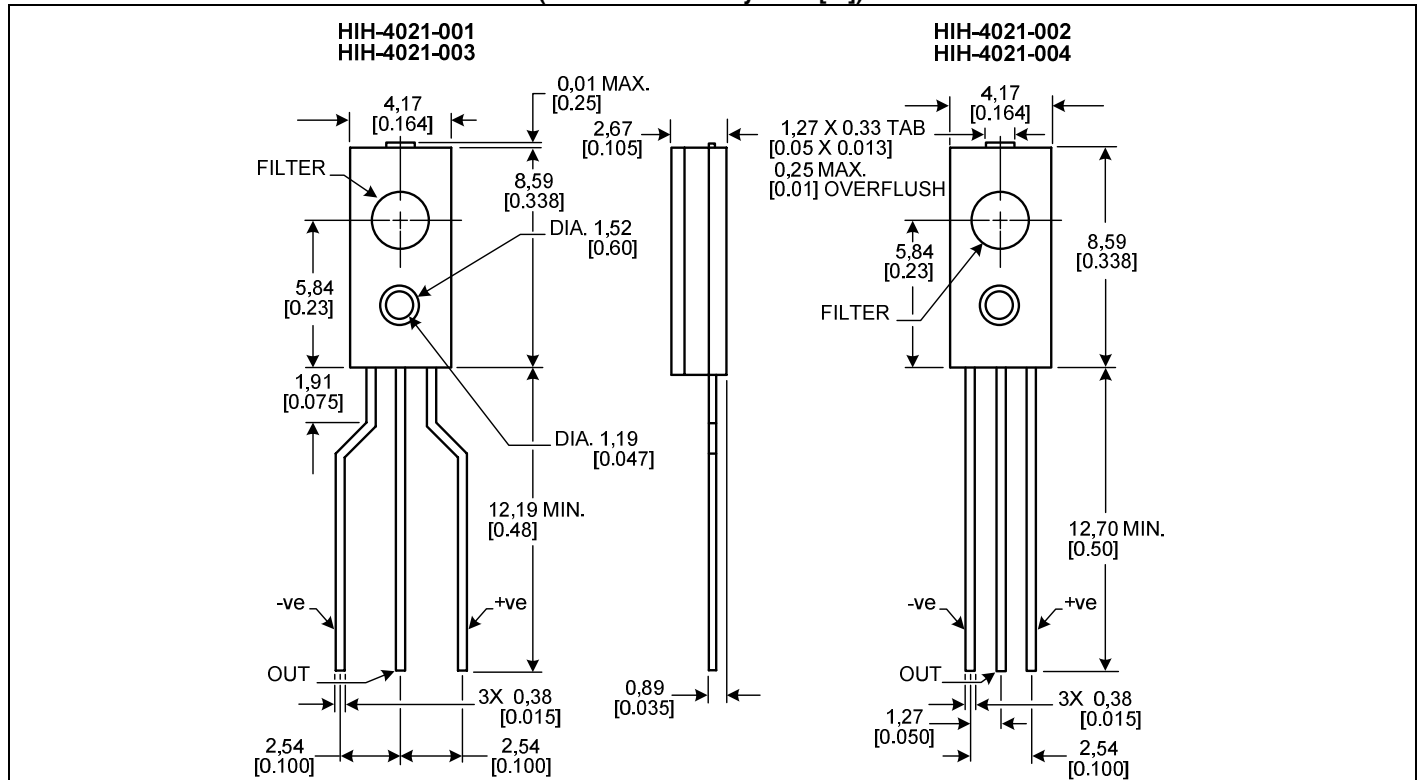


FIGURE 6. HIH-4020 MOUNTING DIMENSIONS (For reference only. mm/[in])



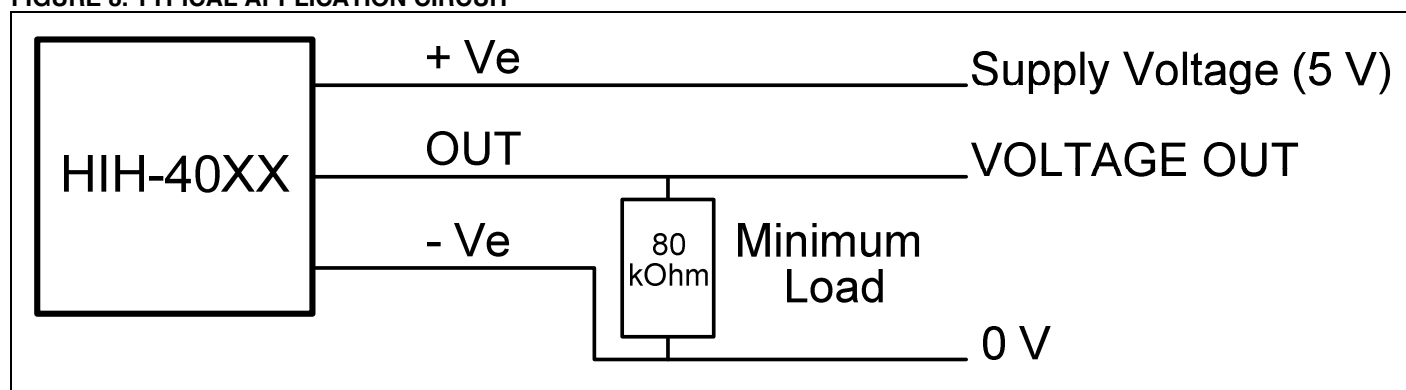
HIH-4010/4020/4021 Series

FIGURE 7. HIH-4021 MOUNTING DIMENSIONS (For reference only. mm/[in])



Humidity Sensors

FIGURE 8. TYPICAL APPLICATION CIRCUIT



ORDER GUIDE

Catalog Listing	Description
HIH-4010-001	Integrated circuit humidity sensor, 2,45 mm [0.100 in] lead pitch SIP
HIH-4010-002	Integrated circuit humidity sensor, 1.27 mm [0.050 in] lead pitch SIP
HIH-4010-003	Integrated circuit humidity sensor, 2,45 mm [0.100 in] lead pitch SIP, calibration and data printout
HIH-4010-004	Integrated circuit humidity sensor, 1.27 mm [0.050 in] lead pitch SIP, calibration and data printout
HIH-4020-001	Covered integrated circuit humidity sensor, 2,45 mm [0.100 in] lead pitch SIP
HIH-4020-002	Covered integrated circuit humidity sensor, 1.27 mm [0.050 in] lead pitch SIP
HIH-4020-003	Covered integrated circuit humidity sensor, 2,45 mm [0.100 in] lead pitch SIP, calibration and data printout
HIH-4020-004	Covered integrated circuit humidity sensor, 1.27 mm [0.050 in] lead pitch SIP, calibration and data printout
HIH-4021-001	Covered, filtered integrated circuit humidity sensor, 2,45 mm [0.100 in] lead pitch SIP
HIH-4021-002	Covered, filtered integrated circuit humidity sensor, 1.27 mm [0.050 in] lead pitch SIP
HIH-4021-003	Covered, filtered integrated circuit humidity sensor, 2,45 mm [0.100 in] lead pitch SIP, calibration and data printout
HIH-4021-004	Covered, filtered integrated circuit humidity sensor, 1.27 mm [0.050 in] lead pitch SIP, calibration and data printout

FURTHER HUMIDITY SENSOR INFORMATION

See the following associated literature at www.honeywell.com/sensing:

- Product installation instructions
- Application sheets:
 - Humidity Sensor Performance Characteristics
 - Humidity Sensor Theory and Behavior
 - Humidity Sensor Moisture and Psychrometrics
 - Thermoset Polymer-based Capacitive Sensors

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

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