Honeywell

## Temperature Probes

The Honeywell range of temperature probes provides reliable temperature detection through the conversion of temperature to a resistance value. Honeywell's probes are finished thermistor assemblies, complete with thermistor housing, extension leads, and often a connector. A variety of customized packages are available.

### Features

- Large variety of housing alloys available for immersion temperature sensor probes

### Benefits

- Multiple configurations allow sensors to be mounted, bolted, riveted, or attached adhesively
- Easy mounting with multiple configurations

### Applications

- Appliances
- Automotive
- Industrial
- Office automation/data processing
- Telecommunications

### Product Specifications

| Description | Operating Temperature Range °C [°F] | Encapsulation | Lead Material | Dissipation Constant (mW/°C) | Time Constant (s) | Resistance Range at 25°C (77°F) |
|---|---|---|---|---|---|---|
| Surface temperature sensor probes | -60 to +150 [-76 to +302] | Thermally conductive epoxy used to put discrete component into surface-style housing | Insulated lead wires and terminals when required, other options available | 3.3–12 (varies with size and housing) | 1–40 (application-dependent) | Per customer requirements |
| Air-gas temperature sensor probes | -60 to +150 [-76 to +302] | None, sensing element is exposed | Insulated lead wires and terminals when required, other options available | 0.1–3 (varies with size and housing) | 4–150 (application and design-dependent) | Per customer requirements |
| Immersion temperature sensor probes | -60 to +300 [-76 to +572] | NTC encapsulated in housing appropriate for the applications | Insulated lead wires and terminals when required, other options available | 5–10 (varies with size and housing) | 1–12 (design-dependent) | Per customer requirements |

Honeywell

## Precision and Commercial Thermostats

The Honeywell thermostat product line consists of standard pre-set temperature thermostats, Single-Pole, Single-Throw (SPST) hermetic and non-hermetic thermostats, subminiature thermostats, and thermal switches.

### Features

- Hermetic and non-hermetic devices
- Standard and custom-packaged options for design flexibility
- Automatic and manual reset options
- Variety of mounting brackets and terminal options

### Benefits

- Tight temperature tolerances and differentials available
- Products easily customized for specific application requirements
- Small package size ideal for applications where space is at a premium

### Applications

- Appliances
- Office automation
- Commercial aircraft
- Medical equipment

### Product Specifications

| Series | Description | Amperage (A) | Housing Material | Operating Temp. Range °C [°F] | Environmental Exposure Range °C [°F] | Dielectric Strength |
|---|---|---|---|---|---|---|
| 3450R/3450HR/3455R | Automatic reset | 15 resistive max. | Phenolic | +0 to +150 [+32 to +302] | +0 to +150 [+32 to +302] | NA |
| 3450RC/3450RCH/3455RC | Automatic reset | 15 resistive max. | Ceramic | 0 to +260 [+32 to +500] | -20 to +287 [0 to +550] | NA |
| 3450CM/3455RM | Manual reset | 15 resistive max. | Ceramic or phenolic | +52 to +232 [+125 to +450] (ceramic); +52 to +150 [+125 to +302] (phenolic) | +10 to +260 [+50 to +500] (ceramic); +10 to +150 [+50 to +302] (phenolic) | NA |
| 3455RBV | Overmolded automatic reset | 15 resistive max. | Ceramic, epoxy overmold | -12 to +105 [+10 to +221]; -18 to +121 [0 to +250] | +10 to +260 [+50 to +500] (ceramic); +10 to +150 [+50 to +302] (phenolic) | NA |
| 3450R/3450RC/3455R/ 3450RCH/3455RC | One shot 1/2 inch | 15 resistive max. | Ceramic or phenolic, with or without epoxy-sealed cap and terminals | +52 to +260 [+125 to +500] (ceramic); +52 to +150 [+125 to +302] (phenolic) | +18 to +287 [+64 to +550] (ceramic); +18 to +150 [+64 to +302] (phenolic) | NA |
| 3001 | Non-hermetic | 1–3 | Phenolic base with metal closure | -18 to +168 [0 to +335] | -18 to +177 [0 to +350] | MIL-STD 202, method 301, 1500 VAC 60 Hz terminal to case (2000 Vac 3004) |
| 3004 | Non-hermetic | 2–4 | Phenolic base with metal closure | -18 to +168 [0 to +335] | -18 to +177 [0 to +350] | MIL-STD 202, method 301, 1500 VAC 60 Hz terminal to case (2000 Vac 3004) |
| 3600 | Custom packaged | 1 resistive | Nickel | +40 to +120 [+104 to +248] | -50 to +150 [-58 to +302] | 500 VAC 60 Hz for one second terminal to case |
| 3601 | Custom packaged | 1 resistive | Nickel | +40 to +120 [+104 to +248] | -50 to +150 [-58 to +302] | 500 VAC 60 Hz for one second terminal to case |
| 3000 | Custom packaged | 7 resistive | Stainless steel or brass | -29 to +260 [-20 to +500] | -62 to +288 [-80 to +550] | MIL-STD 202, method 301, 1250 VAC 60 Hz terminal to case |
| 2450R/2450HR/2455R | Automatic reset | 15 resistive max. | Phenolic | +0 to +150 [+32 to +302] | +0 to +150 [+32 to +302] | NA |
| 2450RC/2450RCH/2455RC | Automatic reset | 15 resistive max. | Ceramic | 0 to +260 [+32 to +500] | -20 to +287 [-4 to +550] | NA |
| 2450CM/2455RM | Manual reset | 15 resistive max. | Ceramic or phenolic | +52 to +232 [+125 to +450] (ceramic); +52 to +150 [+125 to +302] (phenolic) | +10 to +260 [+50 to +500] (ceramic); +10 to +150 [+50 to +302] (phenolic) | NA |
| 2450A/2455RA | Heat detection | 15 resistive max. | Phenolic, epoxy-sealed cap and terminals | +47 to +107 [+117 to +225] | +0 to +150 [+32 to +302] | NA |
| 2455RBV | Overmolded automatic reset | 15 resistive max. | Ceramic or phenolic, epoxy overmold | -12 to +105 [+10 to +221] | -18 to +121 [0 to +250] | NA |
| 2450R/2450RCH/2455R/ 2455RC/2467RC/2467RCH | One shot 1/2 inch | 15 resistive max. | Ceramic or phenolic, with or without epoxy-sealed cap and terminals | +52 to +260 [+125 to +500] (ceramic); +52 to +150 [+125 to +302] (phenolic) | +18 to +316 [0 to +600] (ceramic); +18 to +150 [0 to +302] (phenolic) | NA |
| 2450R | Annular ring cap automatic reset | 15 resistive, 12 VDC | Phenolic, can be partially or totally sealed against water ingress | -10 to +55 [+14 to +131] | -40 to +130 [-40 to +266] | NA |
| 2450R/2455R | Protected | 15 resistive, 12 VDC | Brass, aluminum, stainless steel, and epoxy | +15 to +130 [+59 to +266] | -40 to +155 [-40 to +311] | NA |
| 2450R | Fully sealed | 15 resistive, 12 VDC | Phenolic housing, aluminum cap totally encapsulated in water-resistant epoxy | -10 to +55 [+14 to +131] | -40 to +130 [-40 to +266] | NA |

# Honeywell

## Humidity Sensors

Relative humidity/temperature and relative humidity sensors are configured with integrated circuitry to provide on-chip signal conditioning. Absorption-based humidity sensors provide both temperature and percent Relative Humidity (RH) outputs. On-chip signal processing ensures linear voltage output versus percent RH.

### Features

- Near linear voltage output vs. %RH
- Laser-trimmed interchangeability
- High accuracy, fast response
- Chemically-resistant
- Low current draw

### Benefits

- Multi-layer construction provides excellent resistance to application hazards, such as wetting, dust, dirt, oils, and common environmental chemicals
- Tight sensor interchangeability reduces or eliminates OEM production calibration costs
- Factory calibration data supplied with each sensor allows individually matched downstream electronics

### Applications

- Medical equipment
- Drying
- Meteorology
- Battery-powered systems
- OEM assemblies

### Product Specifications

| Part Number | Series | Description | Package Style | Temperature Range °C [°F] | Accuracy (BFSL) (%) | RH Interchangeability | Repeatability (%) | RH Hysteresis (%RH) |
|---|---|---|---|---|---|---|---|---|
| HIH-4000-001 | HIH-4000 | Integrated circuit humidity sensor, 2.54 mm (0.100 inch) lead-pitch SIP | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4000-002 | HIH-4000 | Integrated circuit humidity sensor, 1.27 mm (0.050 inch) lead-pitch SIP | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4000-003 | HIH-4000 | Integrated circuit humidity sensor, 2.54 mm (0.100 inch) lead-pitch SIP, calibration and data printout | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4000-004 | HIH-4000 | Integrated circuit humidity sensor, 1.27 mm (0.050 inch) lead-pitch SIP, calibration and data printout | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4010-001 | HIH-4010 | Integrated circuit humidity sensor, 2.45 mm (0.100 inch) lead-pitch SIP | Solderable SIP | -40 to +85 [-40 to +185] | NA | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4010-002 | HIH-4010 | Integrated circuit humidity sensor, 1.27 mm (0.050 inch) lead-pitch SIP | Solderable SIP | -40 to +85 [-40 to +185] | NA | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4010-003 | HIH-4010 | Integrated circuit humidity sensor, 2.45 mm (0.100 inch) lead-pitch SIP, calibration and data printout | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4010-004 | HIH-4010 | Integrated circuit humidity sensor, 1.27 mm (0.050 inch) lead-pitch SIP, calibration and data printout | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4020-001 | HIH-4020 | Covered integrated circuit humidity sensor, 2.45 mm (0.100 inch) lead-pitch SIP | Solderable SIP | -40 to +85 [-40 to +185] | NA | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4020-002 | HIH-4020 | Covered integrated circuit humidity sensor, 1.27 mm (0.050 inch) lead-pitch SIP | Solderable SIP | -40 to +85 [-40 to +185] | NA | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4020-003 | HIH-4020 | Covered integrated circuit humidity sensor, 2.45 mm (0.100 inch) lead-pitch SIP, calibration and data printout | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4020-004 | HIH-4020 | Covered integrated circuit humidity sensor, 1.27 mm (0.050 inch) lead-pitch SIP, calibration and data printout | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4021-001 | HIH-4021 | Covered, filtered integrated circuit humidity sensor, 2.45 mm (0.100 inch) lead-pitch SIP | Solderable SIP | -40 to +85 [-40 to +185] | NA | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4021-002 | HIH-4021 | Covered, filtered integrated circuit humidity sensor, 1.27 mm (0.050 inch) lead-pitch SIP | Solderable SIP | -40 to +85 [-40 to +185] | NA | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4021-003 | HIH-4021 | Covered, filtered integrated circuit humidity sensor, 2.45 mm (0.100 inch) lead-pitch SIP, calibration and data printout | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4021-004 | HIH-4021 | Covered, filtered integrated circuit humidity sensor, 1.27 mm (0.050 inch) lead-pitch SIP, calibration and data printout | Solderable SIP | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4602-A | HIH-4602-A/C | Monolithic IC humidity sensor with integral thermistor | TO-5 can | -40 to +85 [-40 to +185] | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |
| HIH-4602-C | HIH-4602-A/C | Monolithic IC humidity sensor with integral precision RTD | TO-5 can | -40 to +85 (-40 to +185) | ±3.5 | ±5% RH at 0–59% RH; ±8% at 60–100% RH | ±0.5 | 3 |