

Application Note

Humidity and Temperature Wall Mount Transducers, SCT Series

Background

Honeywell Humidity and Temperature Wall Mount Transducers, SCT Series, are an ideal environmental solution for indoor applications such as building automation and HVAC systems in residential and office buildings. The SCT Series utilize Honeywell HumidCon™ humidity/temperature sensors to accurately and reliably sense humidity and temperature in the area to enhance user comfort.

The SCT Series offer a variety of options and features. The transducers can be equipped with or without a legible LCD display which shows the ambient temperature along with the relative humidity (RH) or dew point. The stylish cover trim is available in either silver or gold. Standard output of humidity and temperature is either 4 mA to 20 mA or 0 V to 10 V. The temperature output signal may also be configured with an NTC 10 kOhm, 20 kOhm or PT1000 sensor.

Solutions

INDUSTRIAL

The SCT Series Humidity and Temperature Wall Mount Transducers may potentially be used for climate monitoring and control in the following three potential applications:

Residential and Office Buildings Air-conditioning systems in buildings often control humidity and temperature. Significant energy goes into maintaining the proper relative humidity level to support occupancy comfort and optimum storage environments. An accurate temperature and humidity transducer can work in conjunction with heating and cooling systems to potentially reduce a building's energy consumption.

Production and Manufacturing Plants In order to manufacture highly precise products in an environment with stable temperature and humidity levels, many plant managers need temperature and humidity transducers with long-term reliability to monitor and provide feedback of the temperature and humidity data to the plant's control system.

Storerooms Humidity measurements in storerooms are important wherever there is a need to prevent condensation, corrosion, mold, warping or spoilage of products. This is relevant for foods, pharmaceuticals, chemicals, fuels, wood, paper and many other products that are often housed in storerooms. In these areas, temperature and humidity is monitored and the data is sent to the control system by the temperature and humidity transducer for adjustment. The transducer transmits separate RH and temperature signals for use in temperature, humidity, or enthalpy-based control applications.

Customer Benefits

| Feature | Benefit to Customer | Residential and Office Buildings | Production and Manufacturing Plants | Store-rooms |
|----------------------|---|----------------------------------|-------------------------------------|-------------|
| Enhanced stability | Temperature-compensated, stable Honeywell HumidCon™ sensor technology inside the transducer enables the customer to potentially reduce/eliminate transducer recalibration cost while supporting and optimizing system accuracy and uptime | ✓ | ✓ | ✓ |
| Enhanced reliability | Enhanced accuracy and sensitivity with minimal drift over time supports long term HVAC control system reliability and maximum uptime | | ✓ | |
| | The humidity sensor element's multilayer construction provides resistance to most application hazards such as dust, dirt, condensation, oils and common environmental chemicals | | | ✓ |
| Economical | Cost-effective, reliable and stable solution as compared to next best alternatives | ✓ | ✓ | |
| | Standardized industrial signal output 0 Vdc to 10 Vdc or 4 mA to 20 mA with wide span voltage supply | ✓ | | ✓ |
| Easy to design in | Standardized circuit components simplify replacement of existing units | ✓ | | ✓ |
| | Easy to view and retrieve relative humidity (RH), temperature and dew point data with standardized output options and a clearly legible LCD | ✓ | ✓ | |
| | On-board DIP switches allow the user to select the desired temperature measuring range | | | ✓ |
| | Proportional analog output of 0 Vdc to 10 Vdc or 4 mA to 20 mA with wide span voltage supply | | ✓ | |
| | Full 0 %RH to 100 %RH measurement range | | ✓ | |
| | Simplifies developing and troubleshooting the customer's integrated system due to an easy-to-read LCD | | | ✓ |
| | Easy to install and configure | | | ✓ |
| Attractive design | Complements the area in which the transducer is installed | ✓ | ✓ | ✓ |

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| SCT Series | Features |
|--|---|
|  | <ul style="list-style-type: none">• Enhanced accuracy:<ul style="list-style-type: none">- ± 4 %RH (10 %RH to 90 %RH at 25 °C), ± 5 %RH (10 %RH to 90 %RH at 5 °C to 50 °C)- Enables the customer to potentially reduce/eliminate transmitter recalibration cost and supports and optimizes system accuracy and uptime• Long-term stability:<ul style="list-style-type: none">- Humidity: ± 0.05 %RH typ. and ± 1.2 %RH max. drift over five years- True temperature-compensated humidity element enables customers to potentially reduce/eliminate the transmitter recalibration cost with enhanced stability over next best alternatives• Enhanced reliability: The humidity sensor element's multilayer construction provides resistance to most application hazards such as dust, dirt, condensation, oils and common environmental chemicals, enhancing reliability• Standard humidity output: 4 mA to 20 mA or 0 V to 10 V• Cost-effective• Choice of cover trim color (silver or gold)• Full 0 %RH to 100 %RH measurement range• Available with or without LCD display |

Find out more

To learn more about Honeywell's sensing and control products, call **1-800-537-6945**, visit **sensing.honeywell.com**, or e-mail inquiries to **info.sc@honeywell.com**

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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.