

USB TEMPERATURE AND RELATIVE HUMIDITY SENSOR WITH EXPOSED END

TRH200

DESCRIPTION

The TRH200 is designed for environmental temperature and humidity acquisition. Its exposed sensor allows for more precise temperature measurements of hard surfaces. Thanks to its factory-calibrated, linearized, and temperature-compensated digital sensor chip, the TRH200 is field interchangeable. With its precision electronics, minimal variations in temperature and humidity can be detected.

APPLICATIONS

- OEM
- Surface temperature measurement
- Server rooms
- Manufacturing
- Pre-certification
- LIMS integration
- Humidity control
- Scientific research
- Building automation
- Engineering and R&D
- Environmental chamber

INSTALLATION TIME

Less than 10 minutes

UNIQUE SERIAL NUMBER

Each unit is assigned a unique serial number, allowing for traceability and certification.

FREE DAQ SOFTWARE

Real-time data visualization and logging

DATA INTEGRATION

Command-line tools for direct data access and integration

OPTIONS

- Virtual COM Port (VCP) communication protocol
- 3-point user calibration mechanism

ALSO AVAILABLE

Traceability certificates

Warning: This product should not be used in applications where its failure may cause personal injury.

Note: While every effort has been made to ensure accuracy in this publication, no responsibility can be accepted for errors or omissions.

Note: Data may change without notification, and you are strongly advised to obtain copies of the most recently issued datasheet.

SPECIFICATIONS

| Parameter | Condition | Value | Units |
|--------------------------------------|-----------------------------|-----------|--------|
| Temperature | | | |
| Probe operating range ^[1] | – | -40 to 70 | °C |
| Accuracy | Typ., at 25°C | ±0.3 | °C |
| Accuracy | Max., -40 to 70°C | ±2 | °C |
| Resolution | Typ. | 0.01 | °C |
| Repeatability | Typ. | 0.1 | °C |
| Response time | t63% | 5 | s |
| Factory calibrated | Individually ^[2] | Yes | – |
| Long term drift | Normal condition | <0.05 | °C/yr |
| Relative humidity | | | |
| Probe operating range ^[3] | Non-condensing | 0 to 100 | %RH |
| Accuracy | Typ., 25°C, 20 to 80 %RH | ±2 | %RH |
| Accuracy | Max., 25°C, 0 to 100 %RH | ±4 | %RH |
| Resolution | Typ. | 0.01 | %RH |
| Temperature coefficient | 10°C to 60°C, 50 %RH | 0.05 | %RH/°C |
| Temperature coefficient | 10°C to 60°C, 90 %RH | 0.15 | %RH/°C |
| Repeatability | – | 0.2 | %RH |
| Hysteresis | – | ±1 | %RH |
| Factory calibrated | Individually ^[2] | Yes | – |
| Long term drift ^[5] | Normal condition | <0.5 | %RH/yr |

SPECIFICATIONS

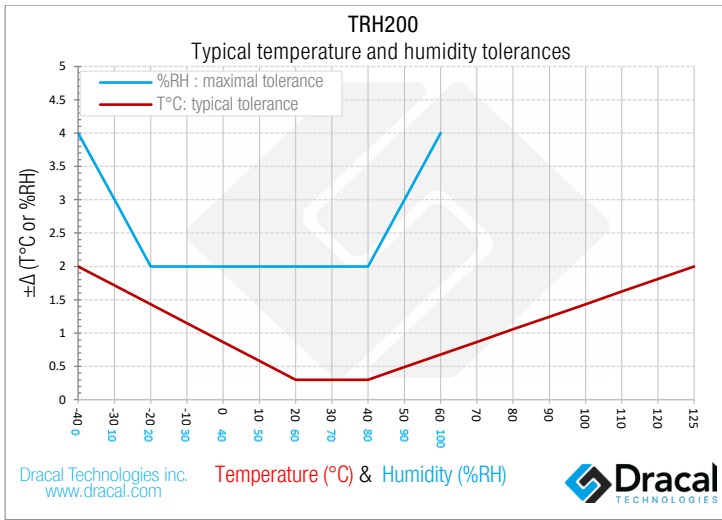
| Parameter | Condition | Value | Units |
|------------------------------|----------------------------|----------|--------|
| Power supply | | | |
| Voltage | Powered through a USB port | 5 | V |
| Current consumption | At 5V | ≤18 | mA |
| Mechanical | | | |
| Dimensions | See schema below | – | – |
| Colour | – | Cyan | – |
| Weight (without USB cable) | – | 40 | g |
| Housing and USB cable | | | |
| Temperature operating range | – | 0 to 70 | °C |
| Humidity operating range | Non condensing | 10 to 90 | %RH |
| Material | – | ABS | – |
| IP rating ^[3] | – | 51 | – |
| System galvanic isolation | – | None | – |
| USB cable length | – | 1 (3) | m (ft) |
| Miscellaneous | | | |
| ADC resolution | – | 16 | bits |
| Long-term stability | – | Yes | – |
| Temperature compensated | By the manufacturer | Yes | – |
| Lifetime | – | 5 | years |
| Certification(s) | | | |
| RoHS | RoHS3 | Yes | – |
| CE | CE/REACH | Yes | – |

^[1] Only if the cable is not moved/flexed while the temperature is below 0°C.

^[2] Each sensor is individually conditioned by the manufacturer of the semiconductor sensor chips in the best stable conditions, and their correction coefficients are recorded for each of them.

^[3] If water condensation or splashing is possible, installing the probe pointing down is recommended to reduce the risk of water build-up in the sensor. If water splashing is possible, take extra precautions to protect the sensor and the cable converter. Depending on the application, extra housing may be required.

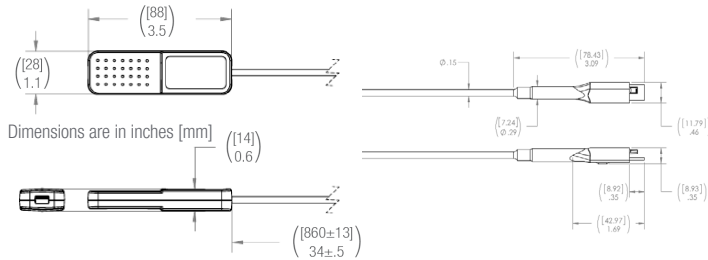
^[5] Typical value for operation in average relative humidity and temperature range. Maximum value is < 0.5 %RH/yr. Higher drift values might occur due to contaminant environments with vaporized solvents, out-gassing tapes, adhesives, packaging materials, etc. For optimal performance, keep the unit in a contaminant free (VOCs) and well ventilated area.



| Available Channel(s) As displayed in our logging software | | | |
|--|-----------------------|-------------------|---------|
| CHANNEL ID* | DESCRIPTION | TYPE | NATURE |
| 00 | CC2 Relative Humidity | Relative Humidity | Real |
| 01 | CC2 Temperature | Temperature | Real |
| 02 | Dew point | Dew point | Virtual |
| 03 | Humidex | Humidex | Virtual |
| 04 | Heat index | Heat index | Virtual |

* Channel ID as it appears in DracalView. Virtual channel IDs differ in DracalView and dracal-usb-get.

PRODUCT DIMENSIONS



ORDERING

PRODUCT(S)

| PART NUMBER | OPTION | DESCRIPTION |
|-------------|----------------|--|
| 601030 | USB-TRH200 | Precision USB temperature and humidity sensor |
| 608030 | USB-TRH200-CAL | Precision USB temperature and humidity sensor - calibratable |
| 603030 | VCP-TRH200 | Precision USB temperature and humidity sensor - with VCP mode |
| 605030 | VCP-TRH200-CAL | Precision USB temperature and humidity sensor - calibratable with VCP mode |

TRACEABILITY CERTIFICATE(S)

| | |
|-------|--|
| NT1WT | 1-point temperature certificate for one (1) unit |
| NT2WT | 2-point temperature certificate for one (1) unit |
| NT3WT | 3-point temperature certificate for one (1) unit |
| NT4WT | 4-point temperature certificate for one (1) unit |
| NT1WH | 1-point relative humidity certificate for one (1) unit |
| NT2WH | 2-point relative humidity certificate for one (1) unit |
| NT3WH | 3-point relative humidity certificate for one (1) unit |
| NT4WH | 4-point relative humidity certificate for one (1) unit |

CAUTION: Please remember that electromagnetic interference (EMI) may decrease the accuracy of the sensor. Avoid using this device near EMI sources such as motors, high-voltage transformers, and fluorescent tubes.

NOTE: Note that this product is not waterproof and requires protection if contact with water is possible.

TIP: Avoid installing the sensor in a location where strong vibration is likely to occur. Strong vibrations may cause slight inaccuracies in the reading.

TIP: Before using any precision measurement equipment, it is advised to power the unit for at least 15 minutes.

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