



USB TEMPERATURE AND RELATIVE HUMIDITY SENSOR

TRH320

DESCRIPTION

The TRH320 is specifically designed for environmental temperature and humidity acquisition. With its factory calibrated, linearized and temperature-compensated digital sensor chip, it is field interchangeable. Thanks to its precision electronics, extremely small variations in temperature and humidity can be detected using a standard USB port.

The compact probe eases integration, even in space-constrained locations, and the built-in particle filter provides protection against dust, soot and other contaminants.

APPLICATIONS

- OEM
- Greenhouse
- 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

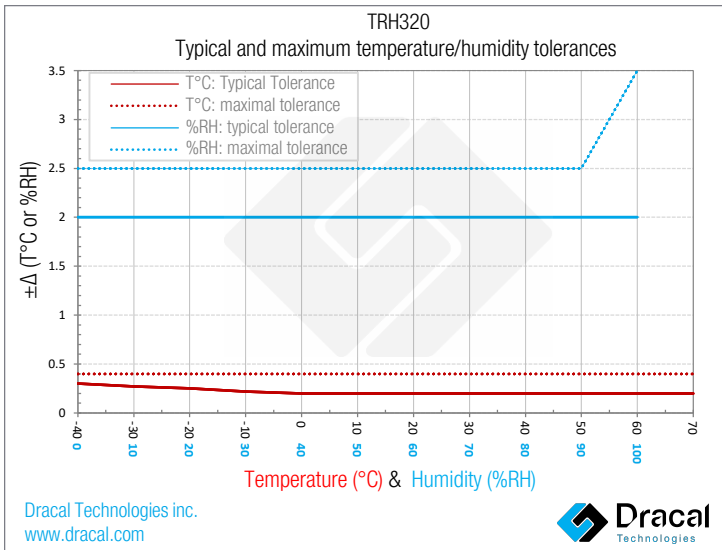
| SPECIFICATIONS | | | |
|--------------------------------|---------------------------------------|-----------|-------|
| Parameter | Condition | Value | Units |
| Temperature | | | |
| Operating range ^[1] | – | -40 to 70 | °C |
| Accuracy | Typ., 0 to 70°C | ±0.2 | °C |
| Accuracy | -40 to 0°C | ±0.5 | °C |
| Resolution | Typ. | 0.015 | °C |
| Repeatability | Typ. | 0.06 | °C |
| Response time | t63% | 8 | s |
| Factory calibrated | Individually ^[2] | Yes | – |
| Relative humidity | | | |
| Operating range ^[3] | Non-condensing | 0 to 100 | %RH |
| Accuracy | Typ., 25°C, 0 to 100 %RH | ±2 | %RH |
| Accuracy | Max., 25°C, 0 to 90 %RH | ±2.5 | %RH |
| Accuracy | Max., 25°C, 90 to 100 %RH | ±3.5 | %RH |
| Resolution | Typ. | 0.01 | %RH |
| Repeatability | – | 0.15 | %RH |
| Factory calibrated | Individually ^[2] | Yes | – |
| Filter - Layer 1 | | | |
| Material | Polyethylene terephthalate (PET) mesh | | |
| Filter - Layer 2 | | | |
| Material | PTFE membrane | | |
| Efficiency | Particle size ≥200 nm | 99.99 | % |

| 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 |

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

^[2] Each sensor is individually conditioned by the manufacturer of the semi-conductor sensor chips, in the best stable condition and their correction coefficients are recorded in each of them.

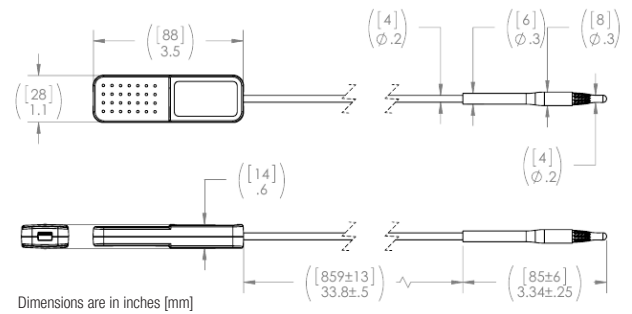
^[3] If water condensation or splashing is possible, it is recommended to install the probe pointing down to reduce the risk of water build-up in the sensor. If water splashing is possible, protect the sensor and cable converter using extra precautions. Extra housing may be required depending on the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



| AVAILABLE CHANNEL(S) As displayed in our logging software | | | |
|--|-------------------------|-------------------|---------|
| CHANNEL ID* | DESCRIPTION | TYPE | NATURE |
| 00 | SHT31 Temperature | Temperature | Real |
| 01 | SHT31 Relative Humidity | Relative Humidity | Real |
| 02 | Dew point | Dew point | Virtual |
| 03 | Humidex | Humidex | Virtual |
| 04 | Heat index | Heat index | Virtual |

* Channel Id as it appears in QTenki. Virtual channel Id differ in QTenki and usbtkeniget.

PRODUCT DIMENSIONS



ORDERING

| PRODUCT(S) | | |
|-------------|----------------|--|
| PART NUMBER | OPTION | DESCRIPTION |
| 601032 | USB-TRH320 | USB temperature and relative humidity sensor |
| 603032 | VCP-TRH320 | USB temperature and relative humidity sensor - with VCP mode |
| 608032 | USB-TRH320-CAL | USB temperature and relative humidity sensor - calibratable |

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: Keep in mind that electromagnetic interferences (EMI) may adversely reduce the precision of the sensor. Avoid using this unit close to EMI sources such as motor, transformers, high voltage and fluorescent light.

NOTE: This product is not waterproof and must be protected if contact with water is possible.

If the probe is inadvertently splashed or submerged in water for a few seconds, unplug the unit, shake it up and let it dry.

Tip: Avoid installing the sensor in a location where considerable vibrations may be present. Large vibrations can introduce extra inaccuracy in the pressure readings.

Warning: This product is not designed for use in, and should not be used for, human applications.

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.

Sales:
sales@dracal.com

General Inquiries:
info@dracal.com

Technical Support:
support@dracal.com

Visit us at:
www.dracal.com

Dracal Technologies Inc.
7900 boul. Taschereau
Edifice A, suite 204
Brossard, QC, Canada
J4X 1C2