Dracal TECHNOLOGIES

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 a more precise temperature measurement of hard surfaces. The TRH320 is field interchangeable, thanks to its factory calibrated, linearized and temperature-compensated digital sensor chip. With its precision electronics, extremely small 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 utilities 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			
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	Normal condition	<0.5	%RH/yr

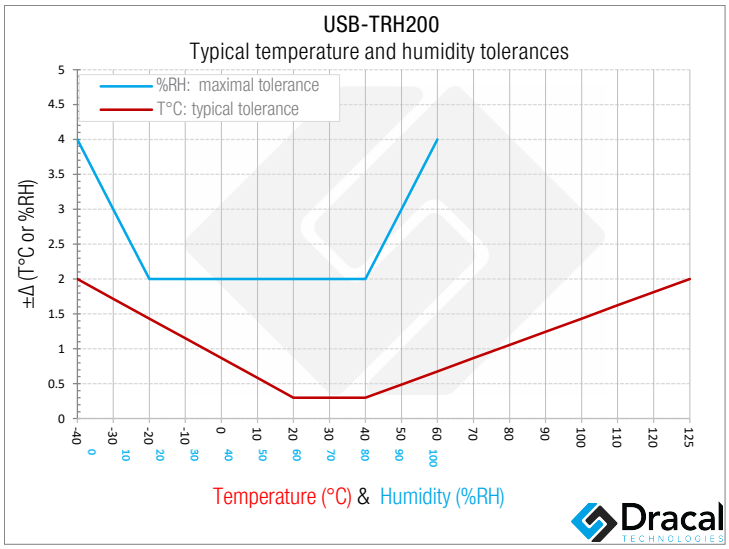
SPECIFICATIONS

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)	–	50	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	–	14	bits
Long-term stability	–	Yes	–
Temperature compensated	By the manufacturer	Yes	–
Lifetime	–	5	years

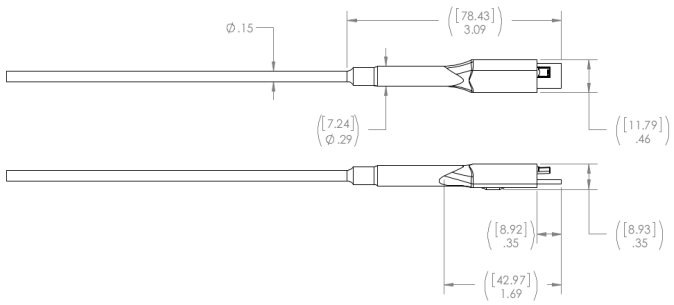
[1] Only if cable is not moved/flexed while the temperature is below 0°C.

[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.



PRODUCT DIMENSIONS



Dimensions are in inches [mm]

CAUTION: Please keep in mind 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: As for any precision measurement equipment, it is advised to power on the unit at least 15 minutes before using it.

Available Channel(s)

As displayed in our logging software

CHANNEL ID*	DECRIPTION	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 Id differ in DracalView and dracal-usb-get.

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

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.