USB ATMOSPHERIC PRESSURE, TEMPERATURE AND RELATIVE HUMIDITY SENSOR — PTH200

DESCRIPTION

The PTH200 is designed for environmental temperature, humidity and atmospheric pressure (barometric) data acquisition. Its core digital sensor chips are built around industry-proven technologies and are individually factory-calibrated, linearized and temperature-compensated, resulting in a cutting-edge performance. 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.	0.01	°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	–
Atmospheric pressure			
Operating temperature range	–	0 to 70	°C
Operating pressure range	For full accuracy	45 to 110	kPa
Extended pressure range	Linear range of ADC	1 to 120	kPa
Altitude resolution[4]	–	≅10	cm
ADC resolution	–	24	bits
Response time	–	0.5	s
Factory calibrated	Individually[2]	Yes	–
Filter	–	2nd order	–
Noise	–	±0.0012	kPa
Sensor location	Inside the USB interface housing		

SPECIFICATIONS

Parameter	Condition	Value	Units
Atmospheric pressure			
Accuracy	Typ., 25°C, 70 to 110 kPa	±0.15	kPa
Accuracy	0 to 50°C 45 to 110 kPa	±0.2	kPa
Accuracy	-20 to 85°C 45 to110 kPa	±0.35	kPa
Accuracy	-40 to 85°C 45 to 110 kPa	±0.6	kPa
Filter - Layer 1			
Material	Polyethylene terephthalate (PET) mesh		
Filter - Layer 2			
Material	PTFE membrane		
Efficiency	Particle size ≥200 nm	99.99	%
Power supply			
Voltage	Powered through a USB port	5	V
Current consumption	At 5V	15	mA
Mechanical			
Dimensions	See schema below	–	–
Colour	–	Cyan	–
Weight (without USB cable)	–	40	g

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.

 REVAugust20,2021

Designed and assembled in Canada

SPECIFICATIONS

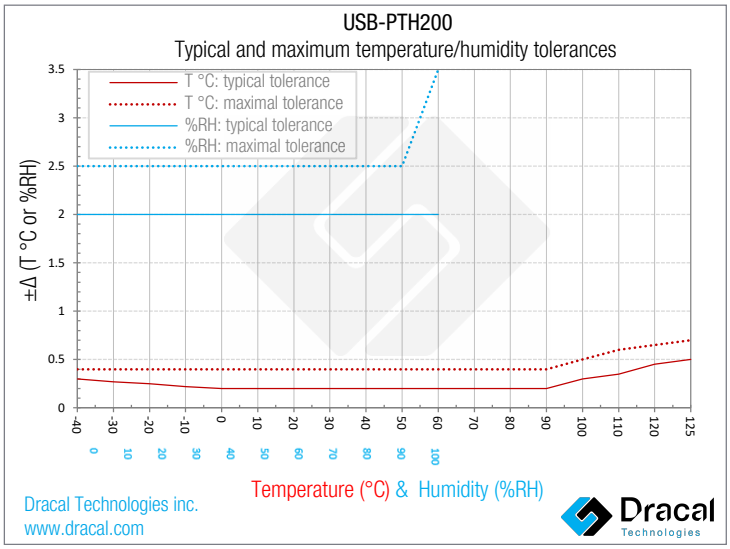
Parameter	Condition	Value	Units
Housing and USB cable			
Temperature operating range	–	0 to 70	°C
Humidity operating range	Non condensing	10 to 90	%RH
Material	–	ABS	–
IP rating	–	51	–
System galvanic isolation	–	None	–
USB cable length	–	1 (3)	m (ft)
Miscellaneous			
ADC resolution	–	16	bits
Long-term stability	–	Yes	–
Temperature compensated	By the manufacturer	Yes	–
Lifetime	–	5	years

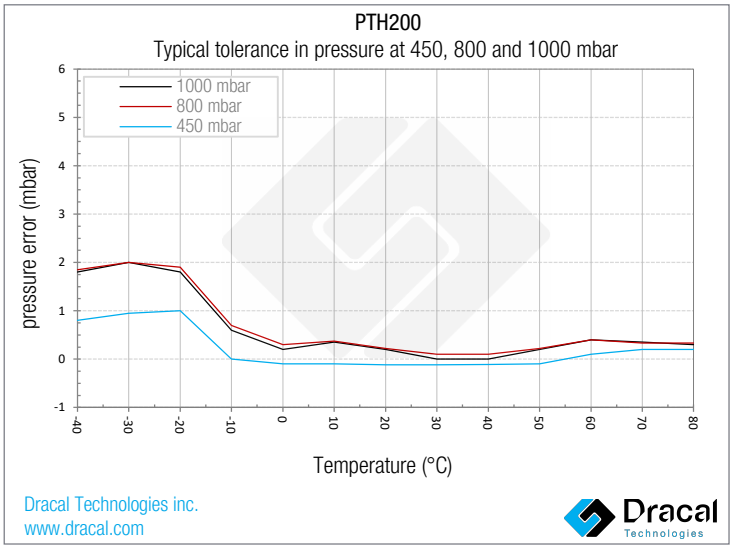
[1] Only if cable is not moved/flexed while the temperature is below 0°C.

[2] Each sensor is individually conditioned by the manufacturer of the semi-conductor sensor chips, in the best stable conditions 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 the cable converter using extra precautions. Extra housing may be required depending on the application.

[4] In a fully controlled environment.





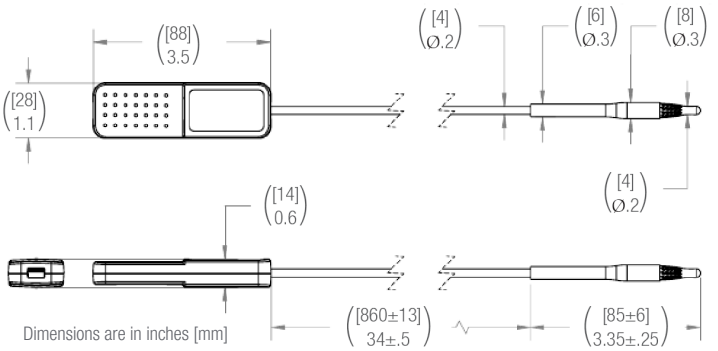
AVAILABLE CHANNEL(S)

As displayed in our logging software

CHANNEL ID*	DECRIPTION	TYPE	NATURE
00	MS5611 Pressure	Pressure	Real
01	SHT31 Temperature	Temperature	Real
02	SHT31 Relative Humidity	Relative Humidity	Real
03	Dew point	Dew point	Virtual
04	Humidex	Humidex	Virtual
05	Heat index	Heat index	Virtual
06	Altitude	Height	Virtual

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

PRODUCT DIMENSIONS



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 or, 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.

TIP: As for any precision measurement equipment, it is advised to power on the unit at leat 15 minutes before using it.

ORDERING

PRODUCT(S)

PART NUMBER	OPTION	DESCRIPTION
601014	USB-PTH200	USB Atmospheric pressure, temperature and relative humidity sensor
603014	VCP-PTH200	USB Atmospheric pressure, temperature and relative humidity sensor - with VCP mode
608014	USB-PTH200-CAL	USB Atmospheric pressure, 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
NT1WP	1-point pressure certificate for one (1) unit
NT2WP	2-point pressure certificate for one (1) unit
NT3WP	3-point pressure certificate for one (1) unit
NT4WP	4-point pressure certificate for one (1) unit
NT5WP	5-point pressure certificate for one (1) unit

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