

OHT20 – A/B/C

Universal USB humidity and temperature sensor in miniature design



The new OHT20 USB Sensors measure relative humidity, temperature, melting point and absolute humidity. They are run directly by a USB Port of a computer. The OHT-20 is offered in three variations: Type A, B or C. Type A has a precision of $\pm 1,5\%RH$ for humidity and in temperature a precision up to $\pm 0,1$ degrees Celsius. In connection with the delivered measuring software is a very flexible and precise measuring system with data logger limit monitoring.

FEATURES

- sends alert via network (wifi), sms, voice mail, e-mail, application
- real time measuring passed over to spreadsheet
- robust stainless steel housing with sinter filter (sensor head)
- miniature architecture
- calibrated digital sensor
- high-speed
- software for data logging, monitoring and general logging
- integrated USB 2.0 interface, electronic completely integrated in USB
- integration in inhouse application possible by embedded DLL
- LabView- kompatibel with example-vi
- external power supply not necessary*
- exchangeable sensor head**
- on request deliverable with DAkkS certificate

*By connecting several sensors at on time a power HUB with separate power supply may be necessary

**Beschädigte oder gealterte Sensorköpfe können bei Bedarf ausgewechselt werden.

TYPICAL FIELDS OF APPLICATION



greenhouses



air and drying facilities



food industry



server room monitoring



labs/research



plant engineering



ISO 9000 certification

ACCORDANCE TO THE FOLLOWING RULES AND NORMS

Emitted interference:

test regulations: *product norm* EN 55022:1998+A1:2000+A2:2003
electrical interference field strength

fault-free operation:

test regulations: *product norm* EN55024:1998+A1:2001
discharging of static electricity of EM fields
after EN 61000-4-2
EN 61000-4-3

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TECHNICAL DATA



HUMIDITY MEASUREMENT

measuring area	0 ... 100% RH
precision type A	typical $\pm 1.5\%$ RH at 25°C, 0 ... 100% RH
precision type B	typical $\pm 2.0\%$ RH at 25°C, 0 ... 100% RH
precision type C	typical $\pm 3.5\%$ RH at 25°C, 0 ... 100% RH
resolution	0.01% RH
non-linearity	< 1% RH typical (0 ... 100%), max. 3%
hysteresis	0,8 % RH entire measuring range
precision of replication	$\pm 0.1\%$ RH
RH reaction time, 1/e (63%)	typical ca. 3 seconds in slowly moving air
long-term stability (drift)	typical <1% RH per year*
calibration	Calibration of OHT sensor head is done according to ISO/IEC 17025 at 25°C to 22%, 50% and 68% RH.
total weight	95g.

All specifications apply at 25 °C

*If the sensor is used in environments with extreme conditions (eg vapor of benzin, glue, diluter, vinegar, acids...) the aging process can be accelerated. The service life of the sensor is extremely dependent on the environment. Damaged or aged sensor heads can be exchanged.



TEMPERATURE MEASUREMENT

measuring area	-40 ... +125°C
precision type A	typical ± 0.1 °C at (+20 to +60 °C)
precision type B	typical ± 0.2 °C at (0 to +90 °C)
precision type C	typical ± 0.3 °C at (-10 to +55 °C)
resolution	0,0.1°C
precision of replication	± 0.1 °C
reaction time	< 5 seconds

All specifications apply at 25 °C



VOLTAGE FEED

supply voltage	Supply by USB
current consumption	< 20 mA

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PRESSURE

admissible gauge pressure min 8 bar



OUTPUTS

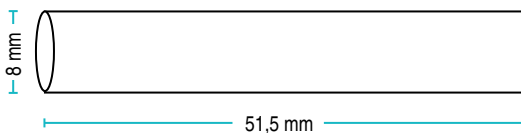
communication USB 2.0 for computers with Windows OS, Win7 & Win8, Win10



CABLE CONNECTION

cable-type PVC (black)
safety class IP40
area of temperature -25°C to +70°C
length standard 2m (customizable)

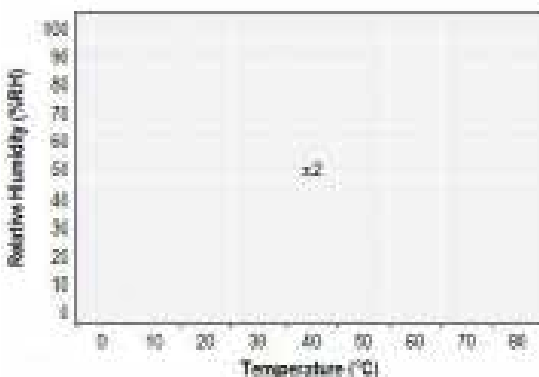
DIMENSIONS OHT20



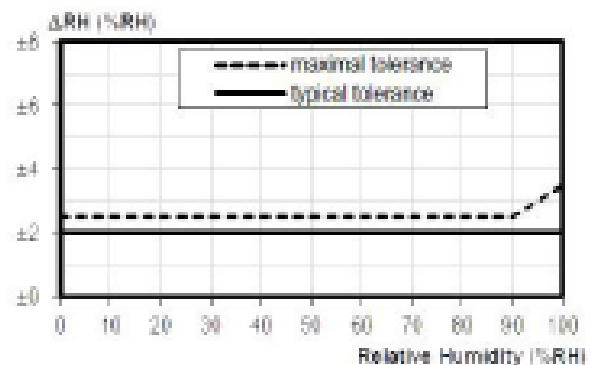
length: 51,5 mm
diameter: 8,0 mm
weight: ca. 10 g
housing: stainless steel, sintered metall
connector: plug, 4 pin



PRECISION RELATIVE HUMIDITY



PRECISION TEMPERATURE



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STORAGE AND MOUNTING

Storage and operation of the sensor can be done under the same circumstances.

If the sensor was used or stored in a hot or dry area or with aggressive substances an accelerated aging or damage of the sensor element is possible. The measuring result can be influenced by this fact. A damaged sensor can possibly be re-activated by being stored at a temperature between 20 and 30 degrees celsius for at least 24 hours with a humidity of over 74%. Mounting should be done in slowly floating air. Since relative air humidity always refers to the temperature in the air the sensor should be installed at a place which is representative for the referred temperature. Hot places, eg near machines, can influence the measuring result strongly.

Connection with the PC is realised by a USB Port. Just plug it into the USB of your computer.

If there are more connections needed a USB HUB can be used as extension. If a device driver is needed Windows will tell you automatically. Just follow the instructions for installing the driver.



SAFETY INSTRUCTIONS

Der OHT20 mustn't used in processes where people are at risk or hurt. The sensors mustn't used as emergency stop button at machines or facilities or in safety-relevant areas. The cable connections to the sensor mustn't exceed neither -25 degrees celsius nor +70 degrees celsius- otherwise they can be damaged. If the sensor head is used under extreme circumstances or with aggressive chemicals the function can be negatively affected or the sensor head will be damaged permanently. Process of aging of the humidity sensor will be accelerated with temperatures over 100 degrees celsius. The humidity sensor will be damaged with temperatures over 120 degrees celsius. Other versions are available for higher temperatures.

UNIVERSAL SERIAL BUS

The Universal Serial Bus (USB) is a simple solution for connecting different devices with a PC.

The plug-ins for your USB device are normally at the back or side of your PC or at an external HUB. There are normally 2 or 4 USB connecting points at the PC or 4 to 7 at a HUB. If more connections are needed ports can be extended with one or more HUBs. These HUBs are available in computer shops. The USB interface of the OHT device has the USB 1.1 specification and is completely compatibel to USB 2.0.

After plugging in the USB sensor you will be automatically requested to install the driver if it is missing. If the driver was installed before you can directly start. The software continuously checks new devices and integrates the new page into the display if there is a new device. Sensors can be added or deleted while running the process. The PC needn't be re-started. No external power supply is necessary because the sensors are supplied by the USB.

INSTALLATION OF USB DRIVERS

Plugging in your OMNI Sensor USB the first time, Windows will ask for installing an appropriate driver. OMNI SENSORS provides appropriate drivers together with the device. Choose the driver on the provided medium or download the correct version via OMNI SENSORS homepage. After downloading follow the instructions of your operating system.

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ON REQUEST DELIVERABLE WITH DAKKS CERTIFICATE



DECLARATION OF CONFORMITY:

supplier's declaration to ROHS-rules and regulations 2011/65/EU

We hereby confirm not to exceed the amount of restricted compounds of the delivered assembly the maximum concentration values according to RoHS- rules and regulations 2011/65/EU of the European Parliament and the Council of 08 June 2011. Hence our delivered assembly is conform to EU RoHS.