OPERATION MANUAL

Humidity/temperature measurement system
Hytelog Multisensor with USB-interface

Description

Technical data

Humidity measurement	
Humidity measuring range	0 ... 100 % RH
Humidity resolution	0.01 % RH
Typical accuracy	±1,8 % RH (at 23 °C)
Temperature measurement	
Temp. measuring range	–40 ... 125 °C
Temperature resolution	0.01 °C
Accuracy	±0.2 °C between 0 and 60 °C
Module	
Power supply	Over the USB port
Operating current	Approx. 50 mA
Interface	USB-interface, 1.1 und 2.0 compatible
Probe dimensions	150 x Ø12 mm
CE-conformance	2014/30/EU
EMV-noise emission:	EN 61000-6-3:2011
EMV-noise withstanding:	EN 61000-6-2:2011
Scope of supply	Transducer with USB-connection cable, CD with Windows-Software and data sheets
Artikelno.	See ordering numbers on page 2

Characteristics features

- Combined Temperature and Humidity measurement
- Three RJ12-connecting sockets
- Resolution 0.01 % RH, 0.01°C
- Accuracy 1,8 % RH, 0.2°C
- Inclusive of Windows-Software “PCLOG”

Areas of application

- Monitoring of stock rooms, in quality assurance or air conditioning systems
- Systems engineering

Windows-Software „PCLOG“

- Calculation and display of dew point, abso-lute humidity, vapour pressu-re, saturated vapour pressure and enthalpy
- Tabular representation of measured values
- Storing of data on hard disk

Description

The product offers an efficient measurement and display system for up to 3 sensors for temperature and relative humidity. The scope of supply includes a port converter, which enables direct operation through the USB port of a PC. The software „PCLOG“ and an USB-connection cable are also in the scope of delivery.
For measuring humdidity and temperature you can use the sensors HYT221, HYT271 or HYT939. The high quality polymer sensor guarantee outstanding measuring accuracy and long-term stability, also under extreme operating conditions.
The current measured values are transferred to the connected PC through the USB interface. The display and graphical representation of the meas-ured values appear on the PC. An easy to use Windows software for display of measured values and data representation is included in the scope of supply.
The USB driver software emulates a serial COM-port. The ASCII-protocol for data communication is documented and enables integration with user’s own developed programs.

B+B Thermo-Technik GmbH | Heinrich-Hertz-Straße 4 | D-78166 Donaueschingen
Fon +49 771 83160 | Fax +49 771 831650 | info@bb-sensors.com | bb-sensors.com

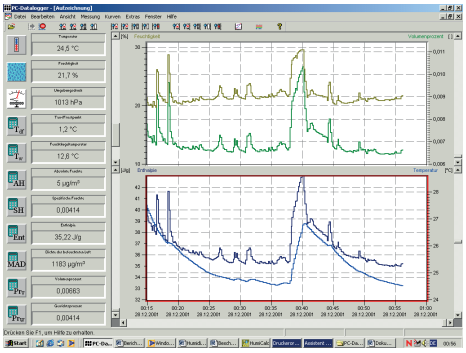
OPERATION MANUAL

Humidity/temperature measurement system Hytelog Multisensor with USB-interface

Software „PCLOG“

Besides storing data on hard disk, the software offers a very important feature of graphical repre-sentation of all measured and recorded channels in the form of humidity and temperature Vs time chart (online scriber function). By means of Drag & Click, the window section can be enlarged and the time or temperature axis can be scaled as desired. Besides the graphic view, representation is also possible in the form of a table. The in-between space is used for capturing measured data series into a spreadsheet program (for example EXCELTM) or for word processing. All tables and graphic repre-sentations can be printed out in colour. In addition, simple monitoring and control functions are also integrated in the software. Limits can be set for each channel. An acoustic signal (Wave file) is given out when the values are exceeded.

A speciality of the program is the integrated hx-calculator. This calculates further fifteen parameters like dew point, absolute humidity, enthalpy, the wet bulb temperature, the vapour pressure and saturated vapour pressure etc. from the measured values of relative humidity and temperature.



First time operation

Connect the humidity measuring system to the USB- Interface of the Computer. Please start the software „PCLOG“.

Download: bb-sensors.download/en

The required settings are done. If no interface is found, please choose the interface by hand. The record window is opened, when the measuring system is identified. If a sensor is identified, you can see the values on the left side. Then you can choose the value you want to record in the record window. Right click on the record window and choose „formating and axes“. In the menu you can choose the values you want to record. With the button „Start recording“ the record will be started.

Attention

Please avoid extreme mechanical and inappropriate exposure.

The device/product is not suitable for potential explosive areas and medical-technical applications.

Pin assignment

1 VDD	2 GND
3 SDA	4 SCL
5 GND	6 NC

Ordering numbers

Article	Articleno.
Humidity and temperature measuring system Hytelog Multisensor inkl. 1 m USB-connection cable, operation manual and software	0567 0001
Humidity and temperature measuring system Hytelog Multisensor-Set 1 inkl. digital humidity/temperature probe with I²C-interface art. no. 0636 0011, cable length 3 m, 1 m USB-connection cable and service case with operation manual and software	0570 0001
Humidity and temperature measuring system Hytelog Multisensor-Set 2 inkl. digital humidity/temperature module with I²C-interface art.no. 0626 0110-05, 1 m USB-connection cable and service case with operation manual and software	0570 0002
Humidity and temperature measuring system Hytelog Multisensor-Set 3 inkl. digital humidity/temperature probe HYT131 art.no. 0636 0016, 1 m USB-connection cable and service case with operation manual and software	0570 0004

Accessories	Articleno.
Digitale humidity/temperature module with I²C interface	0626 0110-05
Connection cable for humidity/temperature probe, Art.-Nr. 0626 0110-05, Length 2 m, TPE-sheath	0409 3004
Digital humidity/temperature probe with I²C-interface, cable length 3 m	0636 0011
Digital humidity/temperature probe HYT131	0636 0016

Please note that if up to 3 digital humidity / temperature probes are connected at the same time, the I²C addresses must be different.

Digital humidity / temperature sensor with I²C interface 0636 0011 I²C address: 0x28

Digital humidity / temperature sensor with I²C interface 0636 0011-09 I²C address: 0x29

Digital humidity / temperature sensor with I²C interface 0636 0011-10 I²C address: 0x2A

B+B Thermo-Technik GmbH | Heinrich-Hertz-Straße 4 | D-78166 Donaueschingen
Fon +49 771 83160 | Fax +49 771 831650 | info@bb-sensors.com | bb-sensors.com

DATA SHEET

Digital humidity and temperature probe with I²C interface

Description

Performance characteristics

- Combined temperature- and humidity measurement
- Measuring sensor in stainless steel housing with sintered filter
- Resolution 0.03 % RH, 0.015 °C
- Accuracy ±2 % RH, ±0.2 °C
- I²C interface

Application areas

- Monitoring of storage rooms
- Quality assurance
- Plant engineering
- Air conditioning

Technical data

Humidity measurement	
Measuring range humidity	0...100 % RH
Resolution humidity	0.03 % RH
Accuracy	±2 % RH (at 23 °C)
Temperature measurement	
Measuring range temperature	-40...+125 °C
Resolution temperature	0.015 °C
Accuracy	±0.2 °C at 0...+60 °C
Module	
Power supply	2.7...5.5 V DC
Power consumption	max. 850 µA
Interface	I²C, adress 0 x 28 or alternative adress
Dimensions	Ø 12 x 150 mm
Sintered filter	Ø 12 x 20 mm, stainless steel 1.4404
Connection	RJ12 plug, 6 pole
Cable length	3 m, other cable length on request
CE conformity	2014/30/EU
Electromantic compatibility	EN 61326-1:2013

Description

The digitale humidity/temperature probe with I²C interface has been specially developed for use with the „Hytelog Multisensor“ humidity/temperature measuring system. The wide measuring ranges from -40 to +125 °C and 0 to 100 % RH enable use in a wide variety of application areas, e.g. in the hot air flow systems.
The high-quality stainless steel housing is equipped with a fine-pored V2A protective filter, which above all offers protection against coarse dust and mechanical damage. The temperatureresistant connectioncable is hard-wearing and conforms to industrial requirements. The humidity/temperature probe can be used stationary or in portable systems by means of a compression fitting. These two options are also offered by humidity/temperature measuring system with USB interface and software, to which up to three humidity/temperature probes can be connected.

Attention

Extreme mechanical and improper stress must be avoided at all costs.

The product cannot be used in potentially explosiv areasor in medical technology applications.

DATA SHEET

Digital humidity and temperature probe with I²C interface

I²C interface

The communication corresponds to the I²C protocol. All technical specifications of the protocol and the commands can be found in the „Protocol description I²C“. The documentation is available on request or can be downloaded from our website.

The sensor can be addressed via the standard address 0 x 28 (or alternativ address). Up to four bytes can be read via this address. If the temperature is not required, it is sufficient to read only the first two bytes.

Data		
0 x 28	Byte_0	MSB Humidity
	Byte_1	LSB Humidity
	Byte_2	MSB Temperature
	Byte_3	LSB Temperature

Scaling the measured values

The I²C values are transmitted from the sensor as 16 bit values. The first two bits are status bits with the folowing meanings:

Bit15: CMode Bit, if 1 – element is in command mode

Bit14: Stale Bit, if 1 – no new value has been created since the last read

In order to mask the two satus bits in a 16-bit value, they are logically linked with 3FFF and AND. The remaining 14 bits represent the measured value. The masked data must now be scaled into a physical unit of measurement:

The following scaling applies to the measured values:

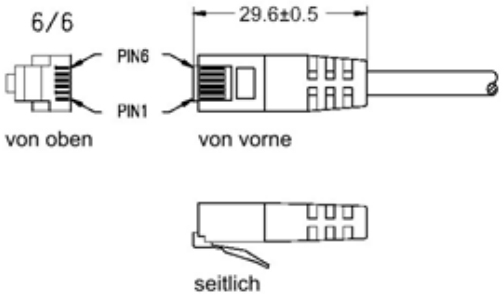
Humidity channel		
Numerical value	0x	0000...3FFF
via I²C interface	dec.	0...16383 (I2C)
Physical value	0...100 % RH	
Scaling	% RH (I2C) [%]= (100/(2^{14}-1))xI2C	

Temperature channel		
Numerical value	0x	0000...3FFF
via I²C interface	dec.	0...16383 (I2C)
Physical value	-40...+125 °C	
Scaling	T(I2C) [°C] = (165/(2^{14}-1))xI2C-40	

Pin assignment of the plug

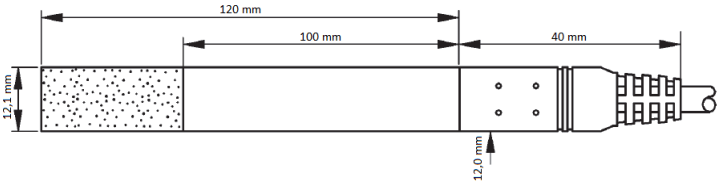
RJ45	Colour	Function	
1	black	VDD	Operating voltage 2.7...5.5 V
2	brown	GND	Mass
3	red	SDA	Serial data I2C
4	orange	SCL	Serial tact I2C
5	yellow	GND	Mass
6	green	---	not used

Connection assignment



Dimensions

- Probe in stainless steel housing Ø 12 x 100 mm with protective filter and connection cable



Order numbers

Humidity/temperature probe with I2C interface	Article number
Cable length 3 m, address 0x28	0636 0011
Cable length 3 m, address 0x29	0636 0011-09
Cable length 3 m, address 0x2A	0636 0011-10

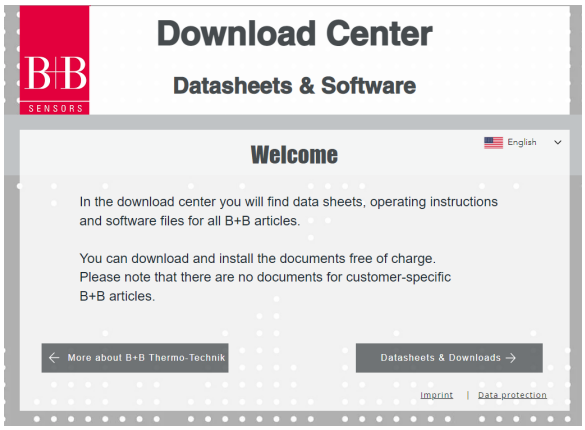
Accessories

Articlel	Article number
Humidity/temperature measuring system with USB interface (Hytelog Multisensor)	0567 0001
Humidity/temperature measuring system Hytelog Multisensor-Set (incl. 0567 0001 and 0636 0011)	0570 0001
Clamp connection	0554 0099

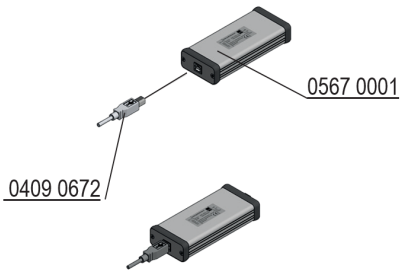
QUICK-START-GUIDE

Humidity/temperature measurement system Hytelog-Multi-Set 3
0570 0004

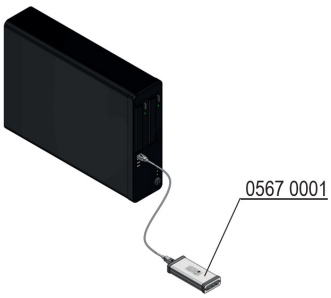
Description



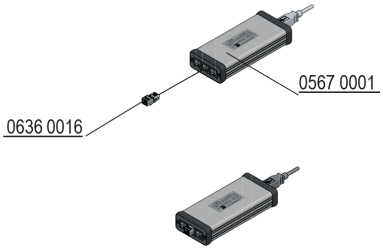
- *Open the following website on your internet browser: bb-sensors.download/*en
- *Enter the article number*
- *Click on the button „software“.*
- *Open the folder structure of the download and run the setup.exe.*
- *Follow successfully install your instructions on your screen to the software „PCLOG“ on your system*



- *Connect the humidity / temperature measurement system (Item No.: 0567 0001-10) with the connection cable (Item No.: 0409 0672).*



- *Connect using the connection cable, the humidity/temperature measurement system to your PC.*



- *Connect the digital humidity/temperature probe HYT 131 (Item No.: 0636 0016) with one of the existing RJ12 sockets of humidity/temperature measuring system (Item No.: 0567 0001).*

- *Start the program „PCLOG“. A launch window will open and you are immediately ready to begin your measurements.*

B+B Thermo-Technik GmbH | Heinrich-Hertz-Straße 4 | D-78166 Donaueschingen
Fon +49 771 83160 | Fax +49 771 831650 | info@bb-sensors.com | bb-sensors.com