# 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.



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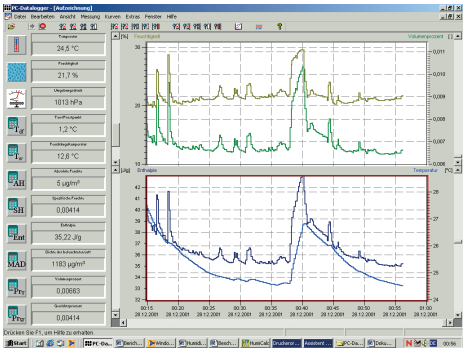
### Software „PCLOG“

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



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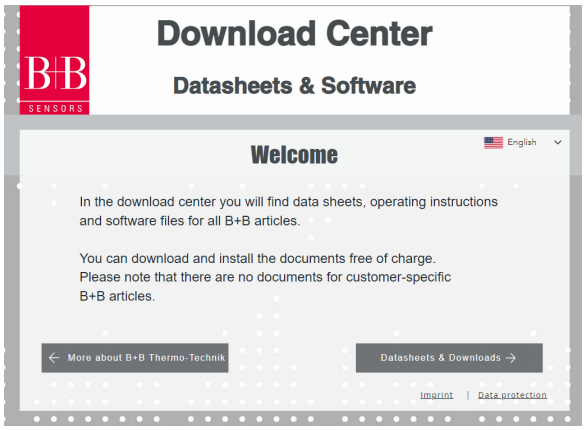
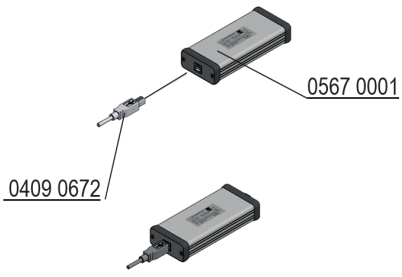
# QUICK-START-GUIDE

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

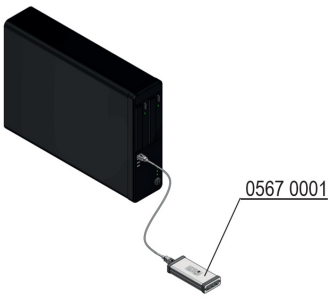
### *Description*



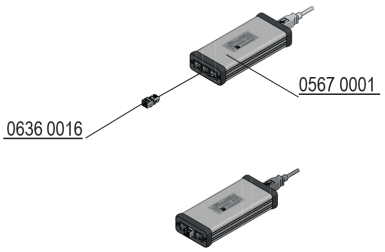

- *Open the following website on your internet browser: bb-sensors.download/*en
- *Enter the article number*
- *Click on the button „software“.*
- *Open the folder structure of the download and run the setup.exe.*
- *Follow successfully install your instructions on your screen to the software „PCLOG“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

# OPERATION MANUAL

## Digital Humidity-Temperature Module HYT939 with I²C-Interface

### Description

### Technical data

| Humidity measurement | |
|---|---|
| Measuring range humidity | 0 ... 100 % RH |
| Accuracy humidity | ± 1,8 % RH at +23 °C<br>(0 % RH to 90 % RH) |
| Reproducibility | 0 .. 10 % RH (0 ... 50 ° C)<br>± 0,2 % RH |
| Hysteresis | <± 1 % RH |
| Resolution Humidity | 0,02 % RH |
| Linearity | < ± 1 % RH |
| Tk residual error (50 % RH) | 0,05 % RH / K (0 ... 60 °C) |
| Long-term drift | < 0,5 % RH / a |
| Meassuring principle | Capacitive polymer humidity sensor |
| **Temperature measurement** | |
| Measuring range temperature | - 40 ... +125 °C |
| Accuracy temperature | ± 0,2 K (0 °C to +60 °C) |
| Reproducibility | ± 0,1 K |
| Resolution Temperature | 0,015 °C |
| Long-term drift | < 0,05 K / a |
| Meassuring principle | PTAT (integrated) |
| **General** | |
| Dimensions (∅ x H) | 13 mm x 32 mm |
| Operating voltage | 2,7 ... 5,5 V |
| Current consumption (nominal) | < 22 µA at 1 Hz update rate |
| Current consumption (max.) | 850 µA |
| Power consumption (sleep) | < 1 µA |
| Operating temperature | -40 °C ... 125 °C |
| Humidity range | 0 ... 100 % RH |
| Digital interface | I2C, s. Art. No. page 1 |
| Material | Polyamid, black |
| Water absorption | 3...4% |
| Connection | Binder plug 5 ways Series 711 |
| Storage temperature | -20°C...+50°C |
| CE-conformance | 2014/30/EU |
| Electromagnetic conductivity | EN 61326-1:2013 |
| Environmental data | RoHS-compliant |

### Features

- Dew resistant
- Temperature compensated
- I²C interface
- Low hysteresis
- Compensated linearity error
- Low temperature drift
- Easily replaceable

### Applications

- Mechanical engineering
- Environment technology
- Plant engineering
- Medical devices engineering
- Dryer systems
- Building automation
- in connection with internal bus systems

### Description

Accurately calibrated, digital humidity-temperature module with I²C interface. The sensor is dew resistant, temperature compensated, shows a very low hyteresis, negligible long term drift and linearity errors. Up to 112 addresses on the same bus line. It is mechanically robust, easy exchangeable and chemically resistant. The module features a high quality micro system on ceramic substrate using a polymer capacitive humidity sensor. The TO-39 housing with steel mesh filter is suitable among others for the use in medical devices and dryer systems.

### Attention

Please avoid extreme mechanical and inappropriate exposure.
The device/product is not suitable for potential explosive areas and medical-technical applications.

### Article numbers

| Humidity/temperature probe with I²C-Interface | |
|---|---|
| Address 0x28 | 0626 0110-05 |
| Address 0x29 | 0626 0110-10 |
| Address 0x2A | 0626 0110-11 |

**You can find the detailed datasheet on our website bb-sensors.download/en**



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## Digital Humidity-Temperature Module HYT939 with I²C-Interface

### Accuracy relative humidity measurement

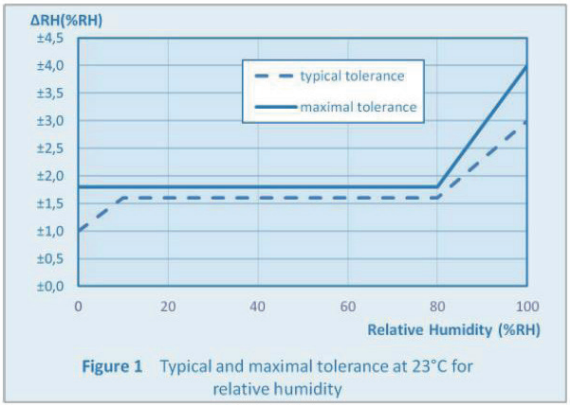
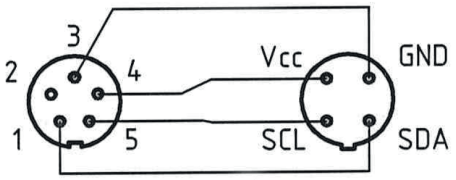



**Figure 1** Typical and maximal tolerance at 23°C for relative humidity

### Plug assignment

Binder M9 x 0.5 socket, 5-pole, 711 series, gold contacts




*Binder 5pol.*
*Series 711*
*View from solder side*

*HYT939*
*View sensor*
*terminal side*

### Accuracy temperature measurement

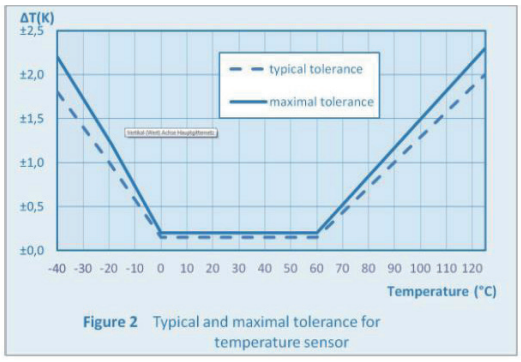
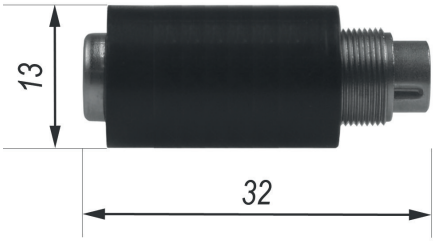



**Figure 2** Typical and maximal tolerance for temperature sensor




### Humidity scope

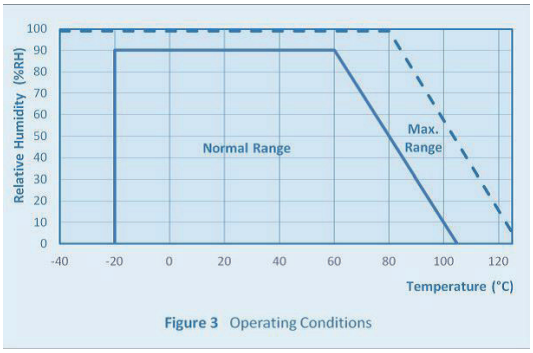



**Figure 3** Operating Conditions

### Accessories

| Article | Article number |
|---|---|
| RJ12 connectioncable 2 m | 0409 3004 |
| RJ12 connectioncable 5 m | 0409 3004-01 |
| RJ12 connectioncable 10 m | 0409 3004-06 |