

HUMIDITY-TEMPERATURE PROBE WITH USB-INTERFACE



Ordering No. 502224
CON-HYTELOG-USB-SET1



Characteristic features

- ▶ Combined temperature and humidity measurement
- ▶ Direct PC-interface over USB
- ▶ Wider measuring range, high resolution
- ▶ Very good linearity and long term stability
- ▶ Two product variants with stainless steel or plastic probe tube
- ▶ Calibration with salt reference cells

Typical areas of application

- ▶ Monitoring of store rooms or in food industry, quality assurance or air-conditioning
- ▶ Humidity measuring system for customised projects, micro-controller applications under windows or Linux platforms

Windows-Software

- ▶ Calculation and display of dew point, absolute humidity, vapour pressure, saturated vapour pressure and enthalpy
- ▶ Tabular representation of measured values
- ▶ Recording of data on hard disk

Description

With this innovative product the PC or laptop serves as an efficient temperature and humidity measuring system. The USB interface is integrated in the handle itself which results in compact dimensions. The power supply is also from the PC and no additional power supply is required.

A precise NTC has been used as temperature sensor. The humidity measurement is carried out with a long term stable, capacitive polymer sensor. The integrated micro controller corrects the Linearity error and temperature drift of the sensors. The applied compensation method guarantees outstanding resolution, measuring accuracy and long term stability.

The recording and graphical representation of measured values is carried out in the PC. An easy to use Windows software for measured value display and data recording is covered in the scope of supply.

Model SET1: With plastic probe tube Ø12 x 70 mm, measuring range 10 ... 95% rH ±3% and -20 ... +60 °C ±0.5 K,

Model SET2: With stainless steel probe tube Ø12 x 125 mm and sinter filter, measuring range 0 ... 100% rH ±2% and -40 ... +80 °C ±0.5 K

Accessories (not in scope of supply): The optional software "PCLOG" offers additional graphical online representation of measurement curves.. Different protection filters of PE or sinter steel are available for protection of the sensors in stainless steel model (SET2).



Technical data

Humidity measurement	
Humidity measuring range	SET1: 10 ... 95 % rH SET2: 0 ... 100 % rH
Humidity resolution	0.01% rH
Typical accuracy (at 23 °C)	SET1: ±3% rH SET2: ±2% rH
Temperature measurement	
Temperature measuring range	SET1: -20 ... +60 °C SET2: -40 ... +80 °C
Temperature resolution	0.01 K
Accuracy	±0.5 K for 0 ... 40 °C
General	
PC-connection	Plug USB, Type A, 1.1 or 2.0 compatible
Power supply	Over USB, approx. 20 mA
Dimensions	Handle approx. Ø18 x 120 mm
Probe tube	SET1: Ø12 x 70 mm, Plastic SET2: Ø12 x 127 mm, Stainless steel
EMV-Compatibility	89 / 336 / EWG
Noise emission:	EN 61000-6-3:2001
Noise immunity:	EN 61000-6-2:2001
Scope of supply	In carry case including PC-Software "RECORDER"
Accessories	See ordering number overview
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WINDOWS-Software RECORDER

With the help of this program, which is covered in the scope of supply, the measured values can be received through the USB-interface and displayed on the PC. The displayed file is compatible with any desired spreadsheet program, with which it is possible to further process, statistically evaluate or visualise the measurement data.

In addition, the PC-Software also calculates dew point, absolute humidity, enthalpy and vapour pressure from the measured values of relative humidity and temperature. The calculated figures can also be stored.

System requirements: Windows 98, 2000 or XP, RS232 or USB-interface. Generally, older PCs are also suitable.

Important hint: First connect the USB-Version to the PC after installing the software. This simplifies driver installation and enables "Plug&Play" feature.

Installation: A detailed installation instruction is provided on the CD, which automatically gets started on inserting the CD (prerequisites: Internet-Explorer 5.0 or higher). Follow these instructions for installation.

Manual Installation: Insert the enclosed CD into your drive and select "Run" in the start-menu and then browse to select the file 'setup.exe' under the path LW:\software\RECORDER\TEMPLOG\disk1. Then follow the instructions of the installation program.

First time operation: Connect the humidity measuring system to the USB-interface of a PC. After first time run of the software, go to menu option "settings" and select device type as "HYTELOG 4800Bd" and also select the type of interface to be used under "connections" (Note: For USB-version, mention the virtual COM-port specified during driver installation). The remaining settings (Data rate, Parity, Start and Stop bit) are automatically selected and need not be changed. If the connection is established, the data communication appears on the terminal window.

Then select "Close". The current settings will be stored.

If you are not able to establish data link between PC and the measuring probe, then first please check the USB cable connection to the PC. Further information on debugging is available under FAQ's on the CD or at our Homepage under SUPPORT.

Data recording: First activate all the hooked up measurement channels that are to be recorded. In 'Text 1' and 'Text 2', you can enter a description, which has to appear as heading on the top of data file. The data is recorded in a file, which is declared as path in the 'Start' button. The recording begins with the 'Start' button.

EXCEL™: The created file is compatible with CSV-Format. In order to display the measured data, you can use graphic tools, for example, the diagram-assistant. However, other programs can also be used to graphically represent or evaluate the measured data.

Calibration

The measuring probe is supplied in calibrated condition. The accuracy at 23 °C is of the order of ± 0.3 °K and $\pm 2\%$ rH. Under normal operating conditions, it is not necessary to re-calibrate the probe. The cross checking of measuring accuracy of the humidity measurement part can be done by end user with the salt reference cells available as special accessories. The cross checking must be done in temperature stable environment. The detailed instructions for calibration are available for download at our homepage.

Alternatively, the measuring system can be sent to our calibration laboratory for cross checking or calibration.

HYGROSENS INSTRUMENTS GmbH
- Calibration Laboratory -
Maybachstr. 2
79843 Löffingen

Further information at our website:

www.hygrosens.com

Internal data transfer

The communication between PC and measuring probe happens serially by means of a COM port emulation. Therefore, it is very simple to link the measurements to your own software, programming knowledge presupposed.

For the used USB UART FTDI 232, drivers are available for Linux, MAC or even PDAs.

The interface works on a data rate of 4800 Baud, 8 Data bits, No parity and one Stop bit. Further information on data protocol can be downloaded from our homepage.

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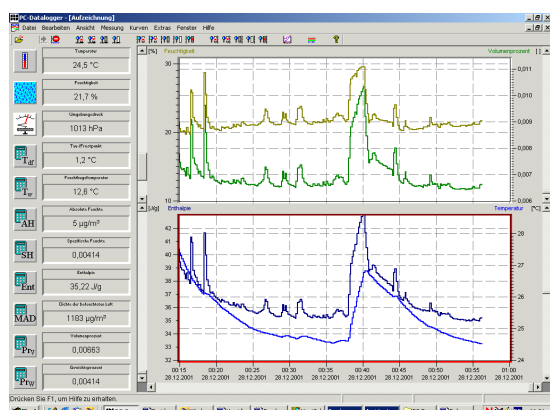
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Accessories (Optional)

Software PCLOG



Besides storing data on hard disk, the software offers a very important feature of graphical representation of all measured and recorded channels in the form of 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. In addition, simple monitoring and regulation functions are also integrated in the software. Limits can be set for each channel. Control of up to eight external loads is possible over a relay card attached at the USB port.

A speciality of the program is the integrated hxc-calculator. This calculates further fifteen physical parameters one of which is dew point.

Software Profilab

The driver for USB-measuring probe is directly integrated in Profilab. With this software, professional measurement projects can be carried out in a simple, graphical development platform. You can simply draw the wiring diagram of the measurement circuit and do the project design. Without any knowledge of programming, the measurement values of temperature and humidity can be easily used in the measurement circuit. Arithmetic and logical components take care of linking and processing of the measured values. Modules like impulse generators, timers and relay cards etc. provide extensive possibilities for control and regulation. Various instruments, scribes and tables serve as the storage and representation of measured values and you can monitor the measurement system with display and control elements. The system is operated through a self designed front panel, on which you can arrange switches, potentiometers, displays, LED's, instruments etc. The software also enables compilation of the project into an EXE-file, which can run without "Profilab".

Relay cards

The output of control information is given by the WINDOWS software "PCLOG " or "PROFILAB" over the LPT-Port as switching signal. The relay cards, available as accessories, are needed for giving connection for heavier loads like heater valves, servomotors or signal generators. The switching status of output is indicated through LEDs. The relay boards can also be used for many other applications.

Humidity reference cells

The HYGROSENS Humidity reference cells serve as humidity standards, in order to create stable humidity values for experimental purposes or for calibration of the measuring device. The accuracy possible under stable temperature environment conditions is in the range of 1 % relative humidity. The working principle is based on a saturated salt solution, over which a specific relative humidity value adjusts itself. The cells also contain a semi-permeable Teflon membrane (diaphragm) through which the salt solution is separated from the measurement area.

Protection filter

The stainless steel probes can be fitted with various types of protection filters, if required. The PE protection filter is water repellent, the stainless sinter filter is robust, temperature resistant and protects the sensor element against dust.. The filter with tip is suitable for measurement in bulk materials and granules.

Ordering number catalogue

USB-Humidity-Temperature Stainless steel probe	50 22 29
USB-Humidity-Temperature Plastic probe	50 22 24
USB Temperature probe	50 22 23

Software

Windows-Software PCLOG	18 30 30
Windows-Software PROFILAB EXPERT	18 30 44

Relay cards

8 Relay for mains voltage with,with USB-interface	15 65 32
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Further accessories

*PE-Sinter filter, hydrophobic	SIF12-HDPE-Z1220
*Stainless steel sinter filter flat	SIF12-V2A-Z1227
*Stainless steel sinter filter pointed	SIF12-V2A-SP1227
* Humidity Reference cells, diverse values	Special brochure on request

Articles marked * are not available through CONRAD-ELECTRONIC. Please refer to HYGROSENS

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