HUMIDITY
TEMPERATURE
FLOW
CONDUCTIVITY

HYGROCHIP
Humidity sensors
LabKit with USB-Interface

RoHS

Characteristic Features

- **PC LabKit with USB-Interface for all HYGROCHIP humidity sensors**
- **Supports HYT 221, HYT 271 and HYT 939**
- **Measurement of temperature and relative humidity**
- **Calculation of further humidity parameters**
- **Plug-in connection adapter included**
- **Evaluation software RECORDER and PCLOG for Windows included**

Typical Areas of Application

- **Evaluation of the digital HYGROCHIP humidity sensors**
- **Data recording for stabilisation and long-term testing**
- **PC-supported humidity and temperature measurement with Windows**

Windows-Software

- **Temperature and relative humidity display**
- **Dew/frost point calculation, and further parameters**
- **Graphic presentation of the measured values**
- **Hard desk data storage**

Description

The Labkit was developed as a Plug&Play tool for a fast evaluation of the HYGROCHIP digital humidity sensors. The ready-to-use system consists of a PC-adapter with an USB connecting wire, a connection adapter with plugs for all product variants, a connection cable and an easy to operate, user-friendly WINDOWS software CD-ROM. The recording of the measured values and the graphic presentation is carried out with the help of a PC.

The provided software PCLOG enables the online-visualisation, records all measured values as graphics and stores the measured values and data in a file. With the PCLOG software, it is easy to test the behaviour of the sensor in an application. Additionally, the integrated PCLOG hx-computer provides the calculation and display of dew point, absolute humidity, vapour pressure, saturated vapour pressure, enthalpy and many other meteorological parameters.

The operating manual for the software and detailed instructions for installation is available on the data medium.

Note: **The Labkit does not contain any sensors. The sensors should be ordered separately.**

Technical Data

Sensor-Parameter (HYT 271)	
Humidity measuring range	0 … 100% rH
Humidity resolution	0.02% rH
Humidity accuracy	HYT 271 ±1.8% rH
Temperature measuring range	–40 ... 125°C
Temperature resolution	0.015°C
Temperature accuracy	HYT 271 ± 0.2°C
General	
Sensor connection length	approx. 10 m
PC-connection	USB, 1.1 or 2.0 compatible
Interface	Com-Port Emulation with FTDI
Power supply	over USB
Rights reserved for any changes in the technical data!	

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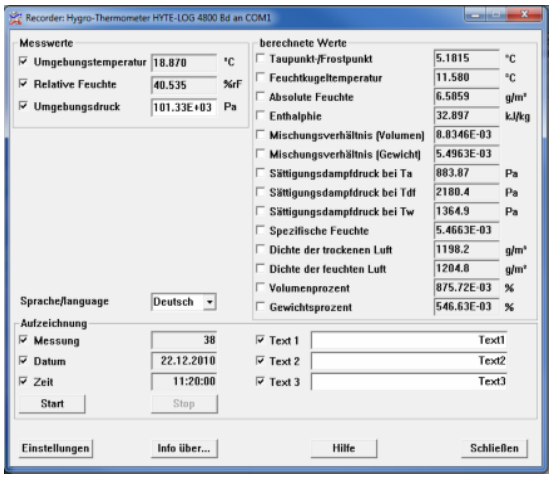
WINDOWS-Software RECORDER

With the help of the Windows-software RECORDER, included in the Labkit, the measured values (relative humidity and temperature) can be recorded through the USB-interface and stored on the PC. The stored CSV format file is compatible with all spreadsheet programs, through which it is possible to further process, statistically evaluate or visualise the measured data.

Additionally, the PC-software also calculates the dew point, absolute humidity, enthalpy and vapour pressure from the measured values. The calculated parameters can also be stored.



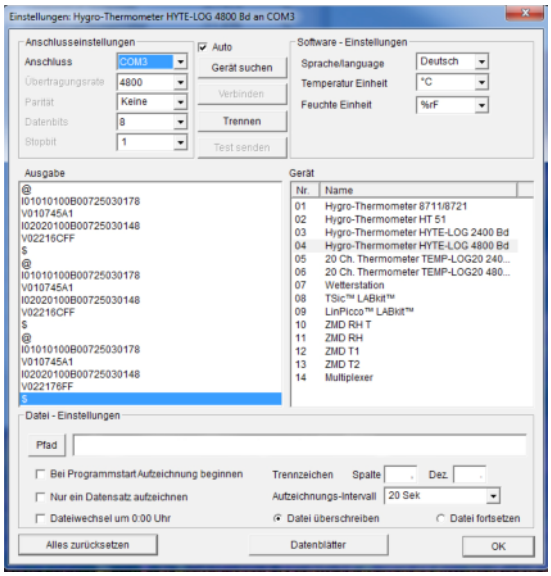
System requirements: WIN 98, WIN 2000, WIN XP or WIN 7, USB-Interface.

Important information: The USB should be connected to the PC only after installing the software. This simplifies the driver installation and enables the "Plug&Play" feature. Windows 7 automatically installs the required drivers.

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

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

First time operation: Connect the Labkit to the USB-interface. After the first software run, go to the menu option "settings" and select the device type as "HYTELOG 4800" . Then select the type of interface to be used under "connections" (Note: 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 to be changed. If the connection is established, the data communication appears on the window. Then select "Close". The current settings will be stored.



If you are not able to establish a data link between the PC and the measuring probe, please check the USB cable connection to the PC. Further information on debugging is available under FAQ´s on the CD.

Data recording: First activate the checkbox of all the measurement channels that are to be recorded. In 'Text 1' and 'Text 2', a description can be entered, which will appear on the header of the file. The data is recorded in the file, which is declared as a path under the settings. The recording begins with the 'Start' button.

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

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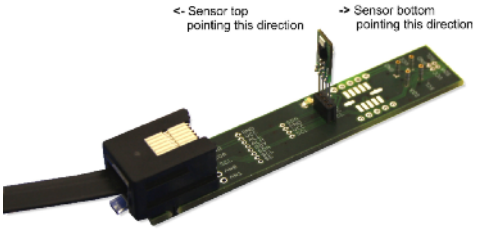
Correct Hardware Installation

Plug the HYT sensors into the sensor adapter as shown in the illustration.

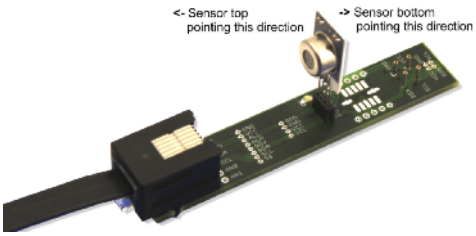
Please ensure the correct plug direction and that the pins are correctly inserted into the socket.

Sensor Connection

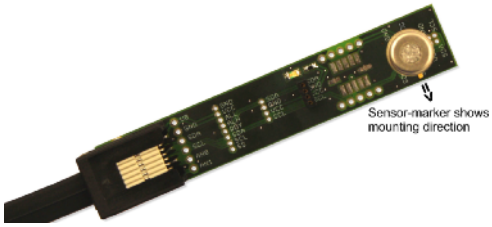
Applicable for HYT 271:



Applicable for HYT 221:

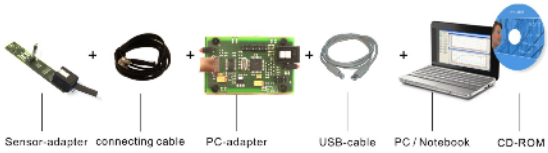


Applicable for HYT 939:



Place the sensor as described into the adapter board and then connect it with the help of the connection leads provided with the PC-adapter.

Then connect the PC-Adapter through the USB-cable to the PC or your Notebook.



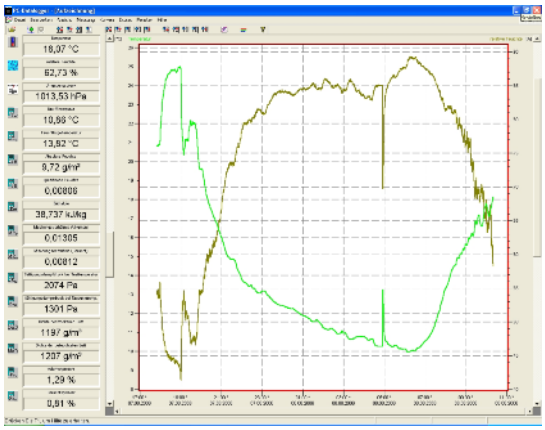
Internal Data Transfer

The communication between the PC and the measuring probe takes place serially by means of COM port emulation. Therefore, it is easy to link the measurement to your own software. (Programming knowledge presupposed).

For the USB UART FTDI 232 used, drivers are available for Linux, MAC or PDAs. Further information is available on www.ftdichip.com.

The interface works on a data rate of 4800 Baud, 8 data bits, no parity and one stop-bit. Further information about the data protocol can be downloaded on www.hygrochip.com.

Software PCLOG



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Characteristic Features

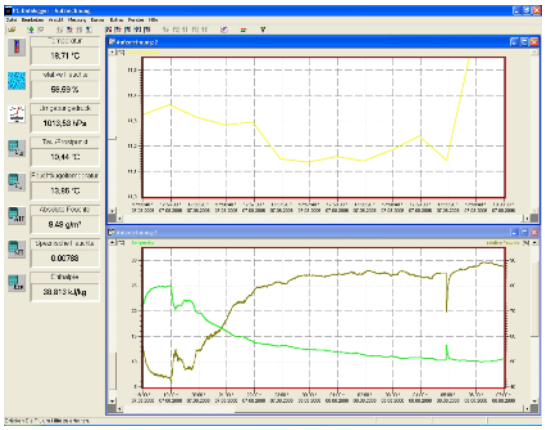
- **Numerical display of current measured values and further calculated parameters**
- **Graphic presentation of the measured values as an ongoing process (Online-Visualisation)**
- **Recording of the measured values in a file**
- **Limit value monitoring with visual and acoustic alarm signal**
- **Switch signal output over relay cards**
- **Conversion of physical units**
- **Integrated formula editor**
- **Integrated hx-computer for calculation and display of dew point, absolute humidity, vapour pressure, saturated vapour pressure as well as further meteorological parameters**
- **Extensive configuration possibilities, options and settings**

Typical Areas of Application

- **High-end measuring technique for scientific applications, laboratories, research and inspection and testing set-ups**
- **Industrial instrumentation, ware houses, production and in quality assurance**

Visualisation and Documentation

The most important feature of the software is the graphic visualisation of all measured and recorded channels as a y/t chart (online scriber function). By means of Click & Drag, the window section can be enlarged and the time or temperature axis can be scaled as required. Multiple recording windows can be opened simultaneously. Moreover, multiple physical parameters can be presented in each window in which the axis definition, colour scheme, channel description, icons and many other options can be configured. The clipboard serves as the export function for transfer of the measured data series into a spreadsheet calculation with the help of user friendly wizards. All tables and graphic presentations can be plotted or printed in colour.



Installation of Software PCLOG

The Software PCLOG is included in the Labkit. Open and start the file “setup.exe“ in the path ...\Software\PCLog\deu' on the enclosed CD. Please follow the installation instruction. The Software is installed automatically.

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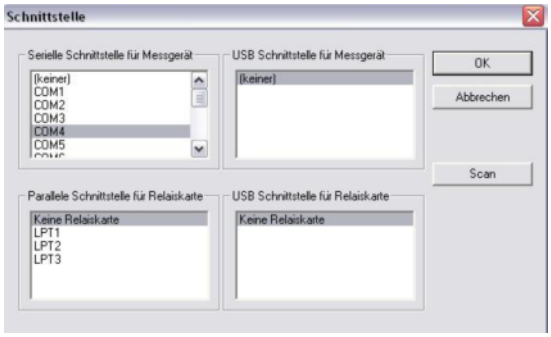
Configuration of PCLOG Software

Start the software PCLOG and open the option "Extras" in menu and click on "Activation". The following dialogue box will open:

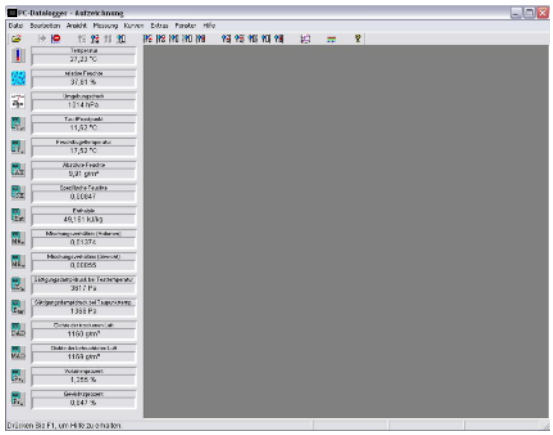
Now for the "Device", select the device driver "14 Hygro-Thermometer HYTE-LOG 4800 Bd". The activation code will be registered automatically. Confirm the dialogue with 'OK'.

Now open the option "Extras" in the menu and then go to the sub-menu "Interface". Put in the corresponding interface.



The used interface – if not known – can be determined in the device manager under Windows. (Control panel → System → Hardware → Device Manager → Connections)

The PCLOG start screen appears. The measured values of the sensors are displayed on the left side.



The measurement begins in the menu with “Measurement” → “Start recording”. Confirm the window selection with OK.

Now click on the thermometer icon and the icon with the water drops in the left side panel. The corresponding measuring curves are displayed.

All mechanical dimensions are valid at 25°C ambient temperature, if not differently indicated. ■ All data except the mechanical dimensions only have information purposes and are not to be understood as assured characteristics. ■ Technical changes without previous announcement as well as mistakes reserve. ■ The information on this data sheet was examined carefully and will be accepted as correct. No liability in case of mistakes. ■ Load with extreme values during a longer period can affect the reliability.
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