



HUMIDITY



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# HYT LabKit with USB-Interface



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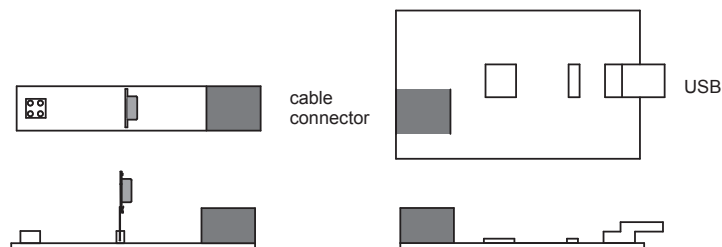
## Digital Humidity and Temperature LabKit

### Plug&Play for a fast evaluation of the HYT modules

#### Benefits & Characteristics

- PC LabKit with USB-Interface
- Supports HYT 221, HYT 271 and HYT 939
- Calculation of further humidity parameters
- Plug-in connection adapter included
- Only one sensor per LabKit applicable
- Temperature and relative humidity display
- Dew/frost point calculation and further parameters
- Graphic presentation of the measured values
- Evaluation software RECORDER and PCLOG for Windows included

#### Illustration



#### Technical Data<sup>1)</sup>

	Humidity	Temperature
Operating range:	0 % RH to 100 % RH	-40 °C to +125 °C
Accuracy:	±1.8 % RH at 23 °C (0 % RH to 90 % RH)	±0.2 K (0 °C to +60 °C)
Resolution:	0.02 % RH	0.015 °C
PC-connection:	USB, 1.1 or 2.0 compatible	
Power supply:	over USB	

<sup>1)</sup> For further technical information see application note

#### Order Information<sup>1)</sup>

	HYT LabKit
Order code	150.00073

<sup>1)</sup> The LabKit does not contain any sensors. The sensors must be ordered separately.



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## Digital Humidity and Temperature LabKit

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Optimal as Plug&Play for a fast evaluation of the HYT modules

### Additional Documents

	Document name:
Datasheet:	DHHYT271_E
Datasheet:	DHHYT221_E
Datasheet:	DHHYT939_E
Application note:	AHHYTM_E



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# Application Note

## Humidity Module



### HYT Labkit

The labkit was developed as a Plug&Play tool for a fast evaluation of the HYT 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, userfriendly 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 must be ordered separately.

#### 1 WINDOWS-Software RECORDER

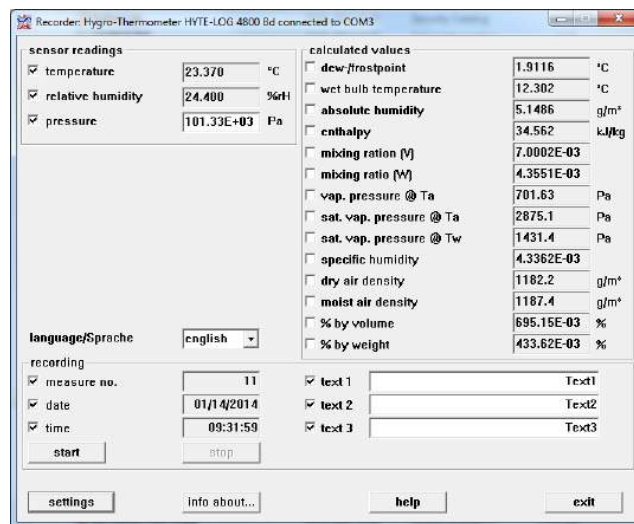
With the help of the Windows-software RECORDER, included in the labkit, the measured values (relative humidity and temperature) can be recorded through the USB-interface and stored on the PC. The stored CSV format file is compatible with all spreadsheet programs, through which it is possible to further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



# Application Note

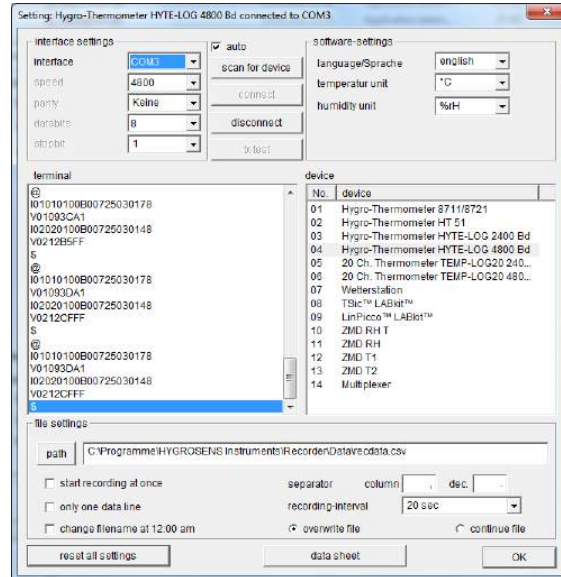
## Humidity Module



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**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 CSVformatting. 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.



## 2 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.

### 3 Sensor Connection

Applicable for HYT 271:



Applicable for HYT 221:



Applicable for HYT 939:





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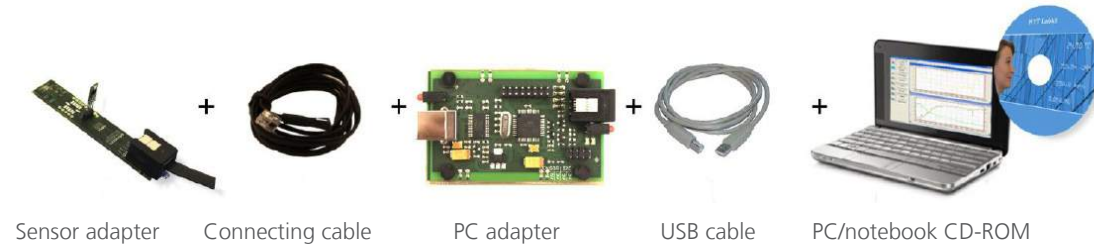
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Place the sensor as described into the adapter board and then connect it with the help of the connection leads provided with the PC adapter. Then connect the PC adapter through the USB cable to the PC or your notebook.



### 4 Internal Data Transfer

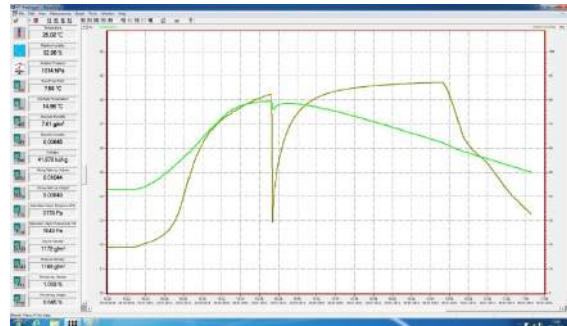
The communication between the PC and the measuring probe takes place serially by means of COM port emulation. Therefore, it is easy to link the measurement to your own software. (Programming knowledge presupposed). For the USB UART FTDI 232 used, drivers are available for Linux, MAC or PDAs. Further information is available on [www.ftdichip.com](http://www.ftdichip.com).

The interface works on a data rate of 4800 Baud, 8 data bits, no parity and one stop-bit.

### 5 Software PCLOG

#### 5.1 Visualisation and Documentation

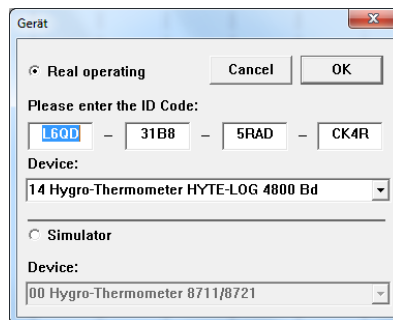
The most important feature of the software is the graphic visualisation of all measured and recorded channels as a y/t chart (online scriber function). By means of Click & Drag, the window section can be enlarged and the time or temperature axis can be scaled as required. Multiple recording windows can 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.



#### 5.2 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.

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





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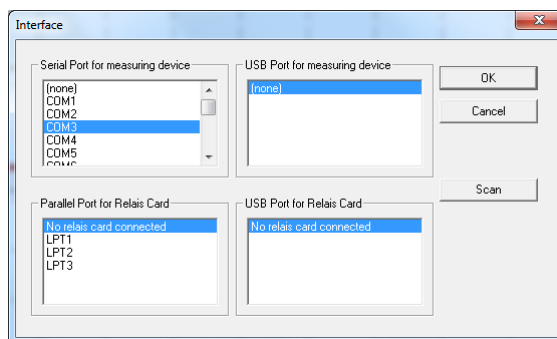
# Application Note

## Humidity Module



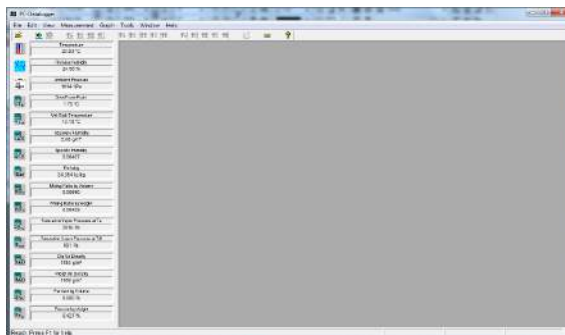
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Now for the „Device“, select the device driver „14 Hygro-Thermometer HYTE-LOG 4800 Bd“. The activation code will be registered automatically. Confirm the dialogue with ‚OK‘. Now open the option „Extras“ in the menu and then go to the sub-menu „Interface“. Put in the corresponding interface.

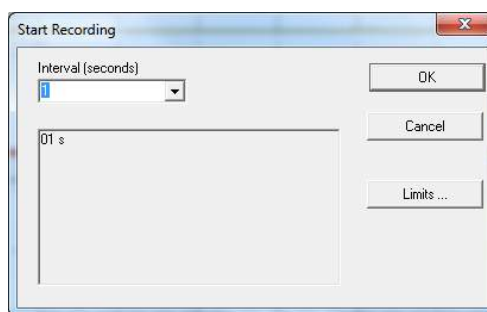


The used interface – if not known – can be determined in the device manager under Windows. (Control panel P System P Hardware P Device Manager P Connections) The PCLOG start screen appears. The measured values of the sensors are displayed on the left side.

The measurement begins in the menu with „Measurement“ P „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.



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