

HUMLOG 10

Manual



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ELEKTRONIK[®]
Ges.m.b.H.

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1 General

The *HUMLOG 10* product family is a new development from the E+E ELEKTRONIK, which stands out from the field due to its excellent price / performance ratio.

The compact design with its modular technology facilitates a multiplicity of applications.

The measurement values can be read very well on the large display from a distance of several metres.

HUMLOG 10 family:

HUMLOG 10 = humidity/temperature internal

HUMLOG 10 TSE = humidity/temperature external, with 2-channels to which either 2 temp. probes or 1-2 combined humidity/temp. probe can be connected

HUMLOG 10 THC = humidity/temperature internal (without display)

Due to its extremely low energy consumption and large memory, the product is excellently suited to long term measurement in both mobile and stationery applications.

The SmartGraph 2 software, which is included with the product, offers the user an overview presentation and simple data archiving.

With the professional version of SmartGraph 2, the values for temperature and dew-point can be shown on the display optionally in °C or °F, and the humidity in % (relative humidity) or in g/m³ (absolute humidity).

The technical data of the *HUMLOG 10* can be found on the internet :

<http://www.epluse.com>

2 Display Module

The HUMLOG 10 generally consists of two modules: a Display Module and a Sensor Module.

The memory, real time clock and the microprocessor controller are located on the Display Module.

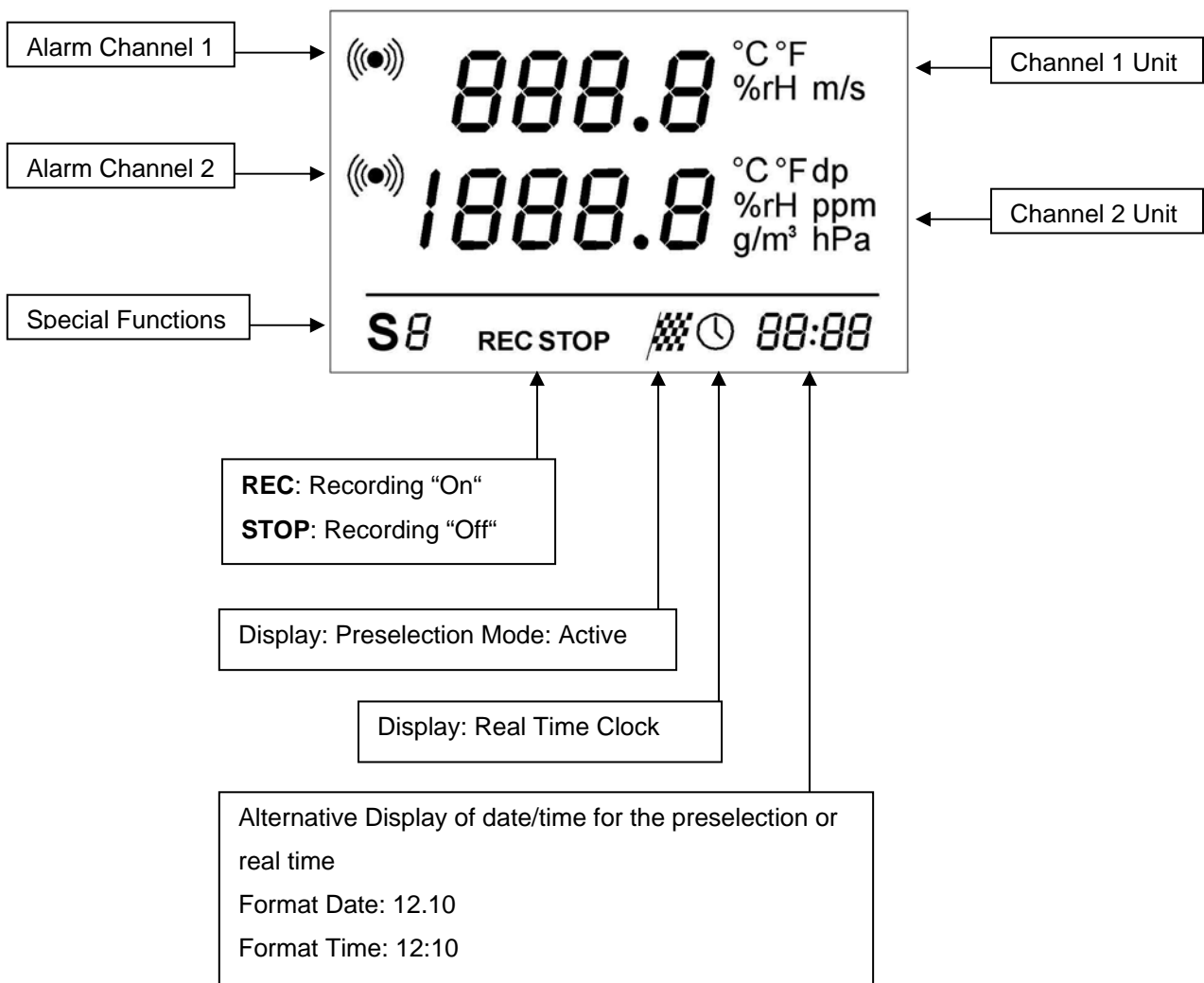


Illustration: HUMLOG 10 Display Elements

Explanations concerning the Display operation:

When a pre-set limit has been exceeded the alarm symbol of the corresponding channel flashes. Once an alarm has been recognised, the alarm symbol remains visible on screen in static form even if the limit is no longer exceeded. The alarm message can only be eliminated by selecting "Memory Readout" on the PC.

If the Pre-Selection mode (start flag) was selected, the start-date and start-time for data recording are shown on the Date/Time display. Once the pre-set date/time has been reached the start flag is eliminated, the real time clock display becomes active and data recording begins.

The units m/s (Channel 1) and ppm / hPa (Channel 2) are reserved for other options.

The special functions are reserved for other options.

3 HUMLOG 10 with Internal Sensors

The sensors for temperature and relative humidity, the corresponding sensor adapters, and the serial interface (RS232) are located on this module.



Illustration: Module with Internal Sensors

Necessary calibration intervals are dependent on the environmental conditions and the requirements of the permissible tolerance deviations.

A single point calibration of the internal sensors can be carried out using a comparison standard. The captured offset values can be entered in the SmartGraph software under: *Measuring Instrument / Manage Measuring Instrument / Sensor Electronics*.

Two point calibrations can only be carried out in the factory.

4 HUMLOG 10 TSE for External Sensors

The connectors for the external sensors, the corresponding sensor adapters and the serial interface (RS232) are located on this module.



Illustration: Module for External Sensors

Either one or two temperature sensors or one to two combined temperature/humidity sensors can be connected here. (Two sensors are only available in connection with the Professional version of SmartGraph 2.)

If only one external sensor is used this is connected to the left hand sensor socket.

In order that the instrument may correctly recognise the association of the sensors to the channels, both sensor socket positions must first be unoccupied. If a sensor is connected to one of the two sockets, the indication **UPLG** (Unplug) appears in the corresponding line (Line 1= left hand socket, Line 2= right hand socket).

If both socket positions are free, the indication **SENS** appears in the upper line, and the first sensor can be connected to the left hand socket position.

There are now 10 seconds available (Countdown on the display) to connect an optional second sensor to the right hand socket position.

Instructions for probe exchange HUMLOG 10 TSE:

- 1.) Unplug the sensing probe.
- 2.) Separate display module from sensor module of basic unit HUMLOG 10 TSE.
- 3.) Display module indicates „Fail“.
- 4.) Connect sensor module with display module.
Display indicates “Sens”.
- 5.) On the display a 10 sec.-counter is shown. Plug remote probe to sensor module within this time.
- 6.) Display indicates „Init“. HUMLOG 10 TSE reads calibration data out of the remote sensing probe.
- 7.) HUMLOG 10 TSE indicates now correct measurement values!



Instructions for using additional extensions for the probes:

The probes are adjusted for the standard cable with a length of 2m. By using extension cables for the probes the accuracy of the measured relative humidity degrades.

Using an additional extension cable with a length of 2m or 4m: no change of the humidity offset is necessary.

Using an additional extension cable with a length of 6m: set an offset value of -0.8% in the software SmartGraph.

Using an additional extension cable with a length of 8m or 10m: set an offset value of -1.8% in the software SmartGraph.

Go into software SmartGraph and perform following step:

- instrument -> configuration of instrument
- select the instrument
- sensors -> settings (relative humidity)
- enter the offset as described above

Necessary calibration intervals are dependent on the environmental conditions and the requirements of the permissible tolerance deviations.

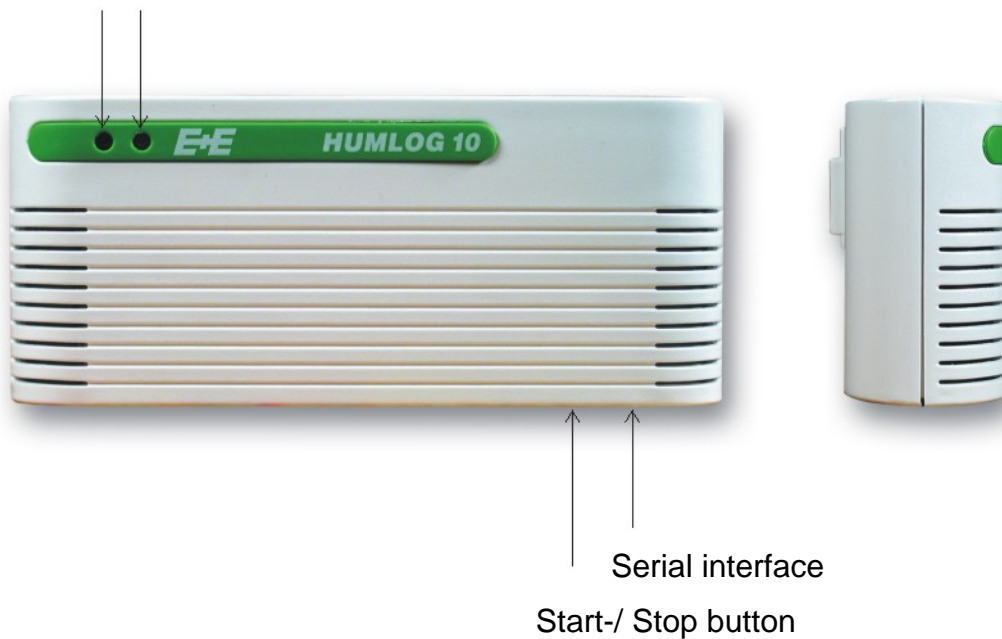
A single point calibration of the external sensors can be carried out using a comparison standard. The captured Offset values can be entered in the SmartGraph software under: *Measuring Instrument / Manage Measuring Instrument / Sensor Electronics*.

Two point calibrations can only be carried out in the factory.

5 HUMLOG 10 THC with Internal Sensors/without Display

General: the hardware of the HUMLOG10 compact is almost identical to the hardware of the HUMLOG10 with display. Two LEDs (a red and a green one) are used as a sub-stitute for the display to indicate the operation mode and the alarm. In addition, you will find close to the serial interface a start / stop button to switch on / off the datalogger.

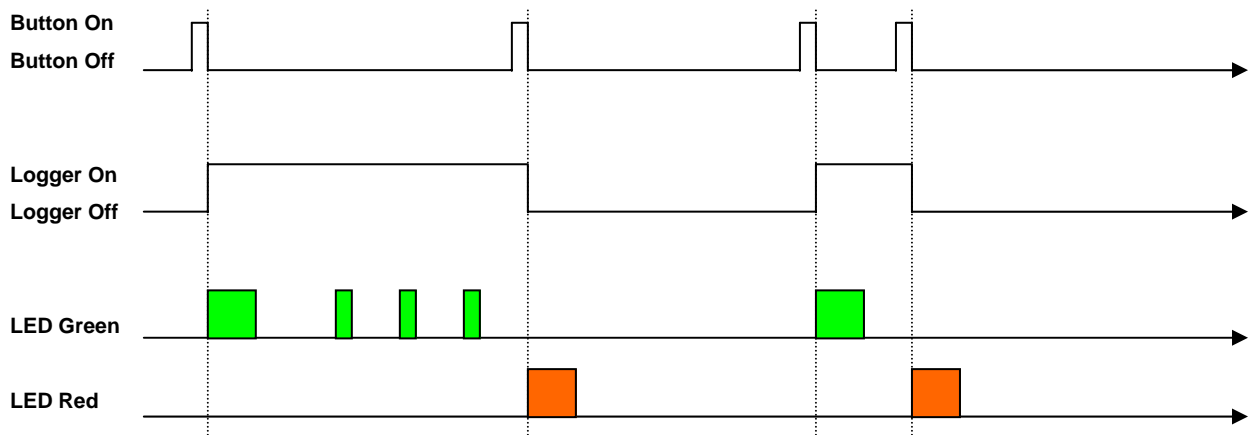
Operation mode / Alarm



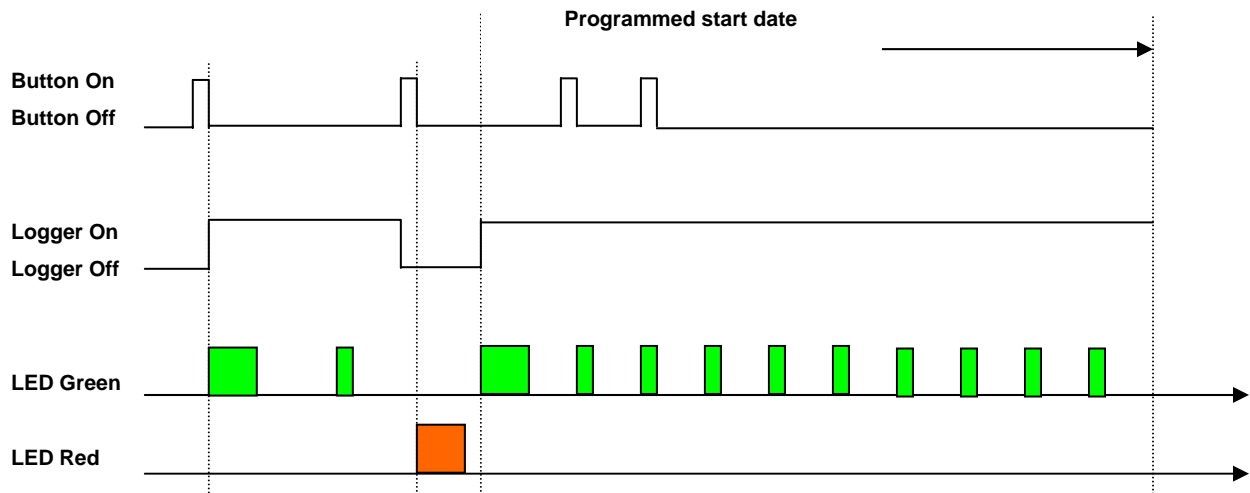
Start/Stop function: the off / on button enables the HUMLOG10 to start and stop recording. The manual activation / deactivation of the datalogger and the configuration in start/stop or in ring mode are independent.. By pressing the off / on button, the HUMLOG10 will start recording ; by pressing it again, the HUMLOG10 will stop etc...

Important: In the start / stop mode, the HUMLOG10 will start recording from the start date on (provided that this date is set in the HUMLOG) no matter if the start / stop button is being pressed during this time.

Before the HUMLOG starts recording, it can be activated or deactivated too via the on / off button (s. timing diagram).



Timing Diagram: HUMLOG 10 THC in ring mode



Timing Diagram: HUMLOG 10 THC in start-/stop mode

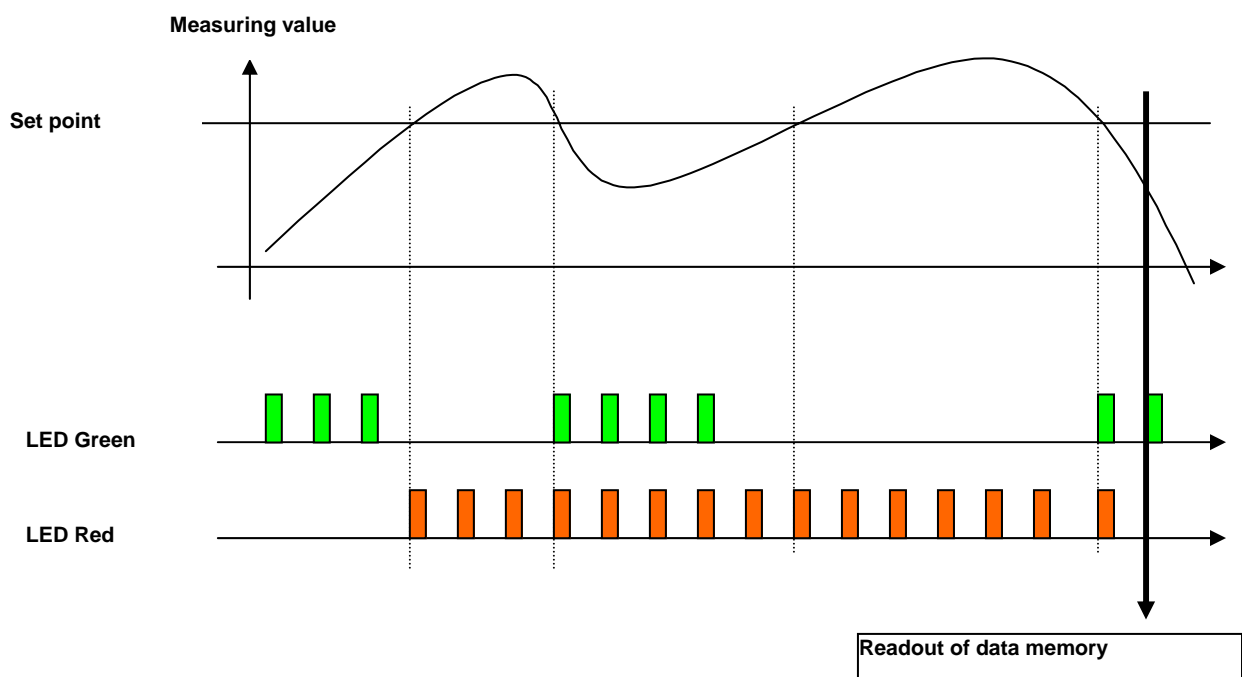
The button should be kept pressed for approx. 1 sec. to start / stop the HUMLOG10. When activating the HUMLOG10, the green LED remains on during 3 sec. The red LED remains on during 3 sec. when deactivating the HUMLOG10. While recording, both LEDs on the HUMLOG10 or just one of them will flash at 10 sec interval. This time interval is completely independent of the recording and storage intervals set by the user in the HUMLOG10.

Alarm function: the datalogger is equipped with an alarm function on both channels (temperature and humidity) which enables the user to set minimum as well as maximum limit values.

The red LED will flash in case of an alarm.

If an alarm occurs while the HUMLOG10 is recording, the green LED will switch off and the red LED will start flashing.

As soon as the measured values have become normal again, both LEDs will flash to signal that an alarm came up. This can be reset by reading out the memory.



Timing Diagram: HUMLOG 10 THC alarms

6 Changing the Sensor Module

To change the Sensor Module please carefully remove the *HUMLOG 10* back-plate with a screwdriver. The Sensor Module can now be detached from the display Module.

Place the new Sensor Module on the display Module guide rail and push the two modules together until they engage.



Illustration: Removing the Back-Plate



Illustration: Assembly of the Modules

7 Changing the Battery

When the indication **BAT** flashes in the upper line of the display, the battery must be changed.

In order to do this, please first remove the Sensor Module (see Changing the Sensor Module).

Please remove the four screws on the rear of the Display Module, using a suitable screwdriver.

Lay the Display Module on a flat surface, with the display facing upwards, and carefully remove the upper part of the plastic cover.

Now remove the old battery and fit the new battery (Type: LS14500/Saft, 3.6V; Order No: HA 03 01 02) into the holder.

Important: Please observe the correct polarity of the battery and read the safety tips on the battery.

The **BAT** indication now disappears and the measurement values are shown again on the display.

The battery should be changed annually. Frequent data transfer with the PC and low sample rates reduces battery life.



Illustration: Opening the *HUMLOG 10* to change the battery



Illustration: Changing the battery

8 Mounting the *HUMLOG 10*

The *HUMLOG 10* can be used as a mobile and stationary data acquisition system. For stationary applications the *HUMLOG 10* may only be mounted on a flat surface. In order to do this, please first remove the Sensor Module (see Changing the Sensor Module).

Two holes for wall mounting are provided in the guide rail of the Display Module. Use these to mount the Display Module. Next carefully join the two modules together until they engage.



Illustration: Mounting the *HUMLOG 10*

9 Switching on the HUMLOG 10

Just to take care of the battery the HUMLOG 10 the HUMLOG 10 is switched off during the delivery period.

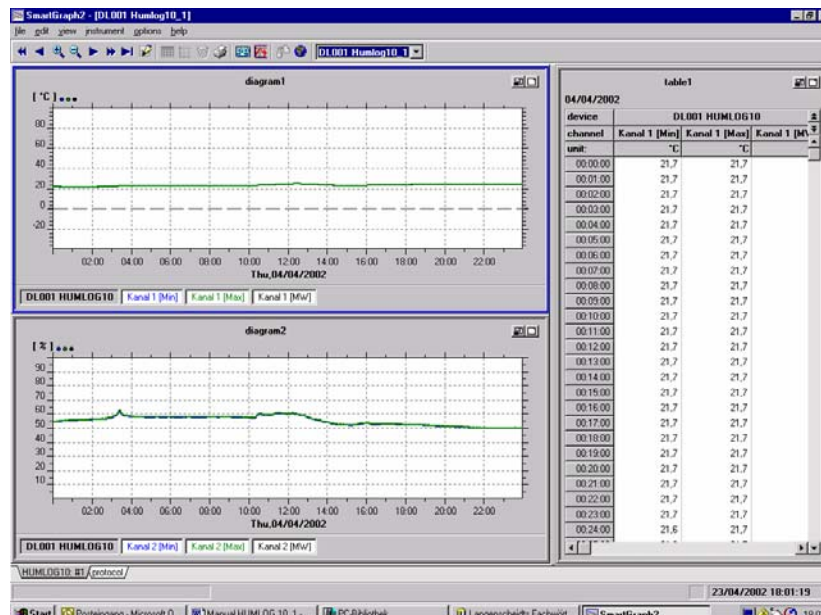
Commissioning:

- install and open the enclosed evaluation software SmartGraph on your PC (insert Disk 1/2 and run: setup_humlog10.exe)
- Connect the data logger and the serial interface of your PC using the supplied transfer - cable
- Open the menu – selection instrument and chose the command read configuration

As soon as the first communication has been successfully the measuring values appear on the display and the HUMLOG is ready for operation.

Remark:

If difficulties should occur during the communication kindly check your interface – settings. (further information see menu selection help within the SmartGraph software)



10 Tips and Tricks

- Please change the battery annually (Type: LS14500/Saft, 3.6V; Order No: HA 03 01 02).
- Frequent communication with the PC reduces battery life.
- Please use only the cable supplied for PC data transfer.
- Please avoid condensation on the sensor electronics and *HUMLOG 10*.
- For the entire information and further details regarding handling, configuration and evaluation of the data logger kindly have a look at the menu – selection help at the enclosed SmartGraph Software.

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