EN

GREISINGER electronic GmbH

Data logger for　　humidity temperature air pressure

from Version V1.5　　Operating Manual **EASY**LOG **80 CL**

g/m³ | kJ/kg | g/kg | Twb | Td

39.9 %

962.9 hPa

BAT　AL　SL　　Logg

SET 1　　▲ 2　　▼ 3

CE

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Content

1. General description

The logger **EASYLog 80 CL** is designed for long term monitoring of climate data. Not only relative humidity, temperature and air pressure can be displayed, but also wet-bulb temperature, dew-point temperature, enthalpy and the moisture content of the air.

The combination of low power consumption with high battery capacity ensure a long recording time.

The last 250.000 measuring values of each variable (that means 1.000.000 values all in all) are stores in the memory.

The LCD-display informs about 2 different variables at the same time (i.e. temperature and humidity) or about the operating status of the logger.

2. Required accessory

The **EASYLog 80 CL** is configurated, started and read-out via the **EASYBus**-interface. Therefore the following accessories are required:

- **Level converter**
  - RS232 <> **EASYBus**   (i.e. EBW 1, EBW 64, EBW 240)
  or
  - USB <> **EASYBus**   (i.e. EBW 3)

- Connecting cable: level converter to **EASYLog**

- **GSOFT 40K** (version >7.14):
  Windows software to start the logger and read out the logger-data

- **EASYBus-Configurator** (version >2.0) or **EBxKonfig** (version >3.9):
  for the configuration of the extended settings

3. Safety advice

This device has been designed, assembled and tested in accordance with the safety regulations for electronic measuring device. However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advices regarding the device will be adhered to when using the device.

1. Trouble-free operation and reliability of the device can only be guaranteed if the device is not subjected to any other climatic conditions than those stated under "Specification".
   To protect the battery, the maximum permissible storage and transport temperature of the device is 70 °C

2. Standard regulations for operation and safety for electrical, light and heavy current equipment have to be observed, with particular attention having to be paid to national safety regulations.

3. When connecting the logger to other devices (e.g. PC) the interconnection has to be designed most thoroughly as internal connections in third-party devices (e.g. connection GND with protective earth) may lead to undesired voltage potentials.

4. If there is any risk whatsoever involved in running it, the device has to be switched off immediately and to be marked accordingly to avoid re-starting.
   Operator safety may be at risk if:
   • there is visible damage done to the device
   • the device is not working as specified
   • the device has been stored under unsuitable conditions for a longer time.
   In case of doubt, please return device to manufacturer for repair and maintenance.

5. **Warning:**
   Do not use these product as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury or material damage.
   Failure to comply with these instructions could result in death or serious injury and material damage.


4. Notes on the logger's delivery status

The delivered logger is in a "sleep mode", that means nothing is displayed and the power consumption is at its minimum. When there is a communication with the software for the first time, the EASYʟᴏɢ leaves the sleep mode and ›Stop‹ is displayed. Then the device is ready for operation.

Note: That sleep mode (nothing is displayed) cannot be restored again.
"Stop" or "Halt" are similar to the sleep mode. Both of that operation modes ensure minimum consumption.

Note: Logger start over keypad:
before logger start over keypad, logger time must be adjust with GSOFT 40K.

5. EASYBus connector

Assignment of panel jack
(view on pins)

EASYBus connection

not connected
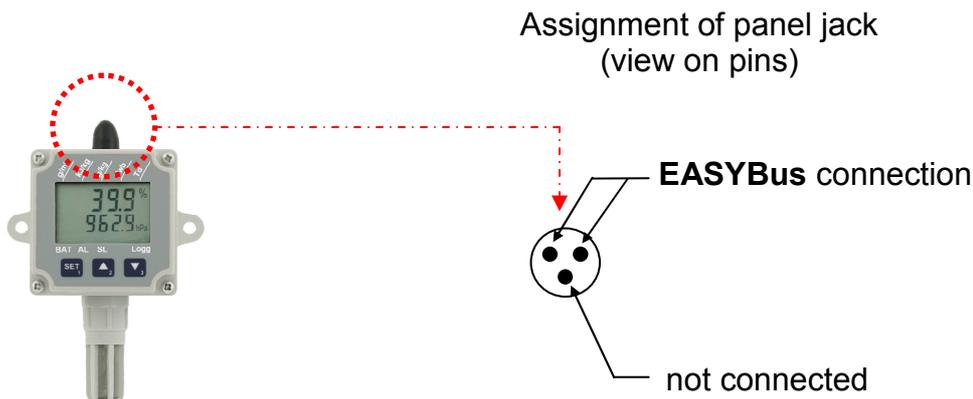
6. Display and control elements

6.1 Display

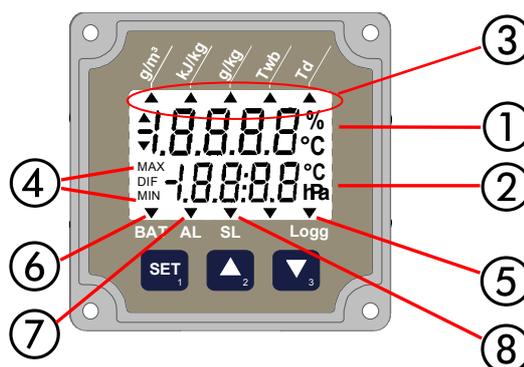| ①	Main display
②	Secondary display
③	Arrows for unit display (for calculated variables)
④	Display element for max / min
⑤	Logg: indicates that logger is recording
⑥	BAT: signals weak battery *(see chapter 9).*
⑦	AL: signals an alarm state at minimum one channel
⑧	SL: signals an active sea-level correction for the air pressure

6.2 Function of the buttons (brief description)

SET	**SET** (button 1) • *switch display* • *call menu*
▲	Arrow key **UP** (button 2) • *call / delete max-value*
▼	Arrow key **DOWN** (button 3) • *call / delete min-value*

7. Operation

7.1 Operating possibilities at the device - display selection

Function	Procedure
Switch display	Push button **SET₁** shortly *The measuring channel is switched* *Note:* *The measuring channel is automatically switched every 4 sec.*
Display max-value	Push button **▲₂** shortly *The max-values of the measuring channel are displayed for 4 seconds.* *(The max-value display function is signalled by the display element "MAX").* *Note:* *You can immediately switch to the next measuring channel pushing the button again.*
Delete max-value	Push button **▲₂** for about 5 seconds. ***"CLr"** is displayed and the max-values of all measuring channels are deleted.*
Display min-value	Push button **▼₃** shortly *The min-values of the measuring channel are displayed for 4 seconds.* *(The min-value display function is signalled by the display element "MIN").* *Note:* *You can immediately switch to the next measuring channel pushing the button again.*
Delete min-value	Push button **▼₃** for about 5 seconds. ***"CLr"** is displayed and the min-values of all measuring channels are deleted.*

7.2 Operating possibilities at the device - logger operation

Function	Procedure
Display and adjust cycle time	Push button **SET**₁ and **▲**₂ at the same time. *The main display shows "CYCL". The secondary display shows the currently adjusted cycle time [in sec.].* *If the logger is currently not recording, the desired cycle time [4 sec to 5h (18000 sec)] can be adjusted via the buttons* **▲**₂ *and* **▼**₃ . *Press button* **SET**₁ *again to confirm your adjustments and to leave the menu.* <u>Note:</u> *If no key is pressed for more than 2 min, the menu is quit without saving.*
Start recording	Push button **SET**₁ for about 5 seconds. *The main display shows "run".* *The secondary display shows "no".* *To start recording select "YES" with the arrow keys (button* **▲**₂ *or* **▼**₃ *) and verify with* **SET**₁ *.* <u>Note:</u> *If no key is pressed for more than 2 min, the menu is quit without saving.*
Stop recording	Push button **SET**₁ for about 5 seconds. *The main display shows "HoLd".* *The secondary display shows "no".* *To stop recording select "YES" with the arrow key (button* **▲**₂ *or* **▼**₃ *) and verify with* **SET**₁ *.* <u>Note:</u> *If no key is pressed for more than 2 min, the menu is quit without saving.* <u>Notice:</u> *If you have activated one of the following options* • *"logger stop via buttons disabled"* • *"do not stop active logger"* *at the configuration of the logger the menu to stop the recording cannot be called.*

7.3 Operating possibilities via software GSOFT 40K

You can easily operate the logger via the software GSOFT 40K (> V7.14). This software provides a variety of functions to operate the logger. For example:

- start and stop the logger

- read out the logger data; illustrate them graphically and save them

- adjust the alarm boundaries and alarm delay *[1]

- activate the sea-level correction and enter the actual sea level *[1]

  Description: *The measured barometric air pressure can be converted to the air pressure at sea level if the actual height above sea level is entered.*

- activate the function: "logger stop via buttons disabled"

[1] Please note: *The alarm settings and the sea-level correction can be only changed if the logger is stopped (= logger without logger data).*

7.4 Operating possibilities via software EBxKonfig or EASYBus-configurator

The software EBxKonfig (> V2.0) or EASYBus-configurator (> V3.9) is needed to change the configuration settings.
With that software the following adjustment are additionally possible.

- Selection of the unit of the calculated variables *[2]

- Offset and slope adjustment for each measured variable *[2]

- Activation of the function: "do not stop active logger"

[2] Please note: *This can be only changed if the logger is stopped (=logger without logger data)*

8. Battery life time and recording period

Measuring cycle:	4 sec	3 min	15 min	5 h
Recording period:	11.5 days	521 days	7.1 years	142 years
Battery life time:	--	--	ca. 5 years	--

Please note: Short measuring cycles seriously reduce the battery life time!

In this case you should consider not unplugging the **EASYBus**-interface.
Then the logger is supplied via the interface.
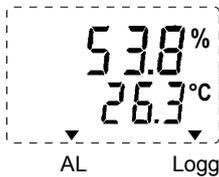The internal battery is spared.

9. Operating displays

The **EASYLOG** provides two LCD-displays: 7 mm   (main display) and
                                                     5.8 mm (secondary display).

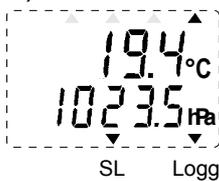## 9.1 Measured value display

The LCD mainly displays the measured values:

a)

```
 53.8 %
 26.3 °C
AL        Logg
```

MEASURED VALUE DISPLAY
Alternating display of the following measuring channels:

a) main display: humidity [%]
    sec. display: temperature [°C]

b)

```
 19.4 °C
1023.5 hPa
SL        Logg
```

b) main display: selected calculated variable with the
                         corresponding unit arrow (here: Td)
    sec. display: air pressure [hPa]

The particular measuring channels are displayed for about 4 sec. and then are automatically switched to the next ones.

• The arrow "Logg" signals that the logger is recording.

• The arrow "AL" signals an alarm state at minimum one channel.

• The arrow "SL" signals an active sea-level correction .
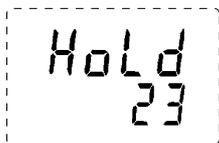
9.2 Logger status messages

At stand-alone-operation (= no EASYBus connected) logger status messages are displayed.

```
StoP
```

STOP:
The **EASYLOG** recording has been ›stopped‹.
The logger memory is empty.

Note: At this state the power consumption is at its minimum.

```
HoLd
  23
```

HOLD:
The **EASYLOG** recording has been ›halted‹. No data is stored, but the logger memory contains data.
The number of the saved recording sets is shown at the secondary display.

```
run
dELA
```

START DELAY:
The logger is activated, but no data is recorded yet.
As soon as the start delay is run out the logger begins with the recording according to the programmed starting condition.

```
run
 AL
```

START ALARM:
The logger is activated, but no data is recorded yet.
The logger begins with the recording as soon as the measured values are within the selected min- and max-alarm boundaries.

9.3 System messages

...

BATTERY:

- display of the BAT-arrow left hand down:
  The **EASYₗₒG** battery is almost spent and needs to be replaced. The data recording is still active.

- permanent display **BAT**:
  The battery is spent and the recording has been automatically stopped (even if at EASYBus-operation).
  It is still partly possible to read the measured values and to read-out the saved logger data.
  => Please return the logger to the manufacturer.
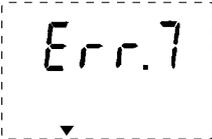
ERROR 7:
The **EASYₗₒG** has detected a system error.

- *remedy: Reset the error via GSOFT 40K.*
  If the error message is displayed furthermore please send the logger to the manufacturer for repair.

9.4 Alarm and error messages

The following messages correspond to a particular measuring channel and are displayed accordingly.

ALARM LOW:
The measured value is below the selected min-alarm limit.

This and the current value is displayed alternately.

ALARM HIGH:
The measured value is above the selected max-alarm limit.

This and the current value is displayed alternately.

ERROR 1:
The measuring range of this channel is exceeded.

ERROR 2:
The measuring range of this channel is under-run.

ERROR 9:
The sensor for this channel provides invalid values.
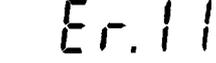
ERROR 11:
The variable could not be calculated, because the measuring range has been exceeded or a measured value, that is needed for the calculation, is not available or faulty.

Note: A description of the possible reasons for that error messages is in chapter 12 (FAQ).

10.   Specifications

Measuring range:	
Temperature	-25.0 … +60.0 °C
Humidity	0.0 … 100.0 %RH (recommended range : 10 … 90 %RH)
Air pressure	300.0 … 1100.0 hPa (mbar)
Additional selectable variables	
Wet-bulb temperature	-27.0 … +60.0 °C
Dew point temperature	-40.0 … +60.0 °C
Enthalpy	-25.0 … 999.9 kJ/kg
Moisture content of the air	0.0 … 640.0 g/kg
Resolution	0.1 °C / 0.1 %RH / 0.1 hPa
Accuracy (± 1 digit):	
Temperature	±0.3 °C ±0.017 * (T – 25 °C)
Humidity	±2 %RH (at range 10 … 90 %RH)
Air pressure	±1.0 mbar (typ.), ±2.5 mbar (max.)
Display	two 4½-digit LCD-displays (about 7 and 5.8 mm high)
Interface	EASYBus
Busload	equals to 2 EASYBus-elements
Battery life time	depending on the chosen measuring cycle about 5 years (at 15 minutes and nominal temperature).
Measured value memory	250.000 measuring values of each variable
Measuring cycle	4 seconds to 5 hours (18000 seconds)
Memory type:	
›cyclic logger‹	• recording can be activated by start/stop function (i.e. key-press, boundaries). • 64 independent recording sets are possible.
›ring logger‹	The logger records continuously; as soon as the whole memory is used the old data of the beginning are overwritten.

Recording period	depending on the chosen measuring cycle i. e. 521 days at 3 min measuring cycle 7.1 years at 15 min measuring cycle	
Alarm function	alarm points selectable within the measuring range and alarm delay adjustable from 0 to 500 min	
Nominal temperature	25 °C	
Operating temperature	-25.0 … +60.0 °C	
Storage temperature	-30.0 … +70.0 °C	
Housing		
Dimensions	48.5 × 48.5 × 35.5 mm (L × W × D) without sensor and plug	
Design	ABS housing, transparent screen made of polycarbonate, splash-proof according to IP65	
Sensor tube	about Ø 15 mm, made of polyamide	
Protection head	removable twist plastic head made of polycarbonate	

11. Disposal

This device must not be disposed as "residual waste". To dispose this device, please send it directly to us (adequately stamped). We will dispose it appropriately and environmentally friendly.

12. Frequently asked questions [FAQ]

Problem:	**The logger cannot be stopped via keys.**
Possible reason:	*"Logger stop via buttons disabled" has been activated at the configuration of the logger.*
Remedy:	*Deactivate this function by means of GSOFT 40K (at tab „settings").*

Problem:	**The logger cannot be stopped both via keys and GSOFT 40K.**
Possible reason:	*"Do not stop active logger" has been activated at the configuration of the logger.*
Remedy:	*Deactivate this function by means of EASYBus-configurator or EbxKonfig.*

Problem:	**The alarm settings or the sea-level correction cannot be changed.**
Possible reason:	*The logger has still saved data.*
Remedy:	*Stop logger as recommended by the software (delete data).*

Problem:	**The desired calculated variable cannot be changed.**
Possible reason:	*The logger has still saved data.*
Remedy:	*Stop logger as recommended by the software (delete data).*

Problem:	**A error message is displayed.**

Error message	*Possible reason*	*procedure / remedy*
Err.1 measuring range exceeded	*Measuring range of the channel has been exceeded.*	*Operate logger within its specifications.*
	humidity: sensor bedewed	*Twist filter cap carefully off and let sensor dry.*
	Sensor defective	*Send the logger to the manufacturer for repair.*
Err.2 measuring range under-run	*Measuring range of this channel is under-run.*	*Operate logger within its specifications.*
	Sensor defective	*Send the logger to the manufacturer for repair.*
Err.7 system error	*Recording error*	*Reset the error via GSOFT 40K. If the error message is displayed furthermore send the logger to the manufacturer for repair.*
	System error	*Send the logger to the manufacturer for repair.*
Err.9 sensor error	*Humidity / temperature sensor has moved out of its socket*	*Check the position of humidity / temperature sensor.*
	Sensor defective	*Send the logger to the manufacturer for repair.*
Er.11 calculation error	*Error message at a variable needed for the calculation (humidity / temperature / pressure)*	*Remedy the reason for error at this channel.*