ECOLOG-NET LH2

Operation Manual

ECOLOG-NET LH2
EL6008Ed

ELPRO-BUCHS AG

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- The software products of ELPRO-BUCHS AG are subject to internal quality requirements and are validated regularly at the works. In the event of program errors, circumvention of the error is regarded as constituting its elimination.
- Software manuals do not contain either instructions on basic operation of a computer or the basic functions of the Windows® operating system. For information on the operation of the computer or the operating system please refer to the applicable computer manuals.

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- ELPRO-BUCHS AG applies the highest quality standards during production of the data loggers and their accessories as well as a certified quality management system in compliance with ISO 9001.
- For information on operation of the data loggers and their accessories please refer to the respective product documentation.
- During the installation of data loggers, probes and accessories, compliance with the locally valid installation regulations is mandatory.
- When used in potentially explosive atmospheres, the zone category and the application and safety instructions of ELPRO-BUCHS AG must be complied with.
- In the event of a guarantee claim, customers receive a repair cost estimate from ELPRO-BUCHS AG to obtain the corresponding consent before starting work.
- The customer will bear the transport costs incurred for any repairs carried out by ELPRO-BUCHS AG. The DAP (value added tax) is borne by ELPRO-BUCHS AG.
- ELPRO-BUCHS AG reserves the right to invoice the customer for costs incurred for repair/part replacement.
- After repair work the product is returned to the purchaser, who will be charged with the return shipping costs (FOB shipping point).

Trademarks

All stated company and product names and their trademarks are the protected property of the respective owner.

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Symbols and description codes used

Symbols

ⓘ	Note

⚠	**IMPORTANT INFORMATION OR WARNING**

☞ Reference to related chapter or document

Software

For a detailed description, see the corresponding operating instructions or the software help files.

Software	Operation Manual
elproLOG ANALYZE elproLOG ANALYZE QLS	SE3003E
elproMONITOR	SM3031E

CE

- This product is subject to CE marking.
- The manufacturer guarantees that this product complies with the relevant guidelines. (see 12.5 *Declaration of conformity*)

- This product must be disposed of in accordance with WEEE (Waste electrical and electronic equipment, 2002/96/EC)!

ⓘ In the interest of our customers, we reserve the right to make changes due to ongoing technical development. As a result, images, descriptions and scope of delivery are not binding! The release of this document is available on the printed and archived original only.
This manual is valid beginning with firmware version 8.14 elproLOG ANALYZE 3.31

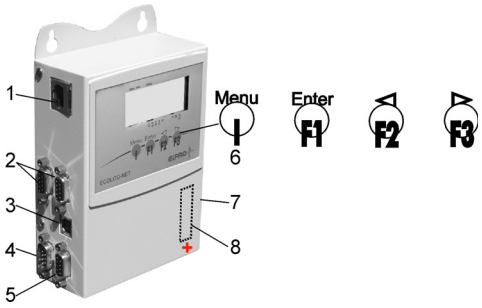
1. Product description

2 rH/T sensors
-40°C ... 70°C
0% ... 100%rH
64,000 measured values

The ECOLOG-NET LH2 Dataloggers are network compatible 4-channel datalogger for recording 64,000 measured values. Temperatures and relative humidity are recorded. The data are loaded to the PC via local network. The datalogger provides the highest level of data security because an internal battery backup allows data recording even in the event of a power outage or network disruption There are various alarm features provided by the local alarm contacts and the network functions.

1.1 Datalogger

Connections
Membrane keypad

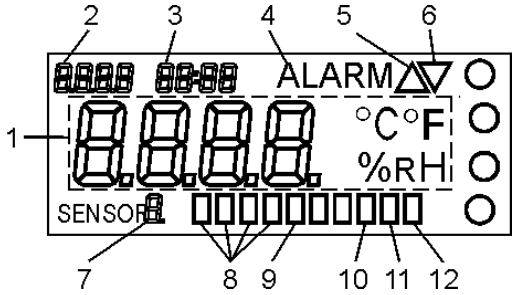


The ECOLOG-NET LH2 has numerous electrical connections available on the left-side of the housing and on the front a display, and a membrane keyboard.

1.*Network connection*
2.*Connection for 2 sensors: -40°C ... 70°C, 0% ... 100%rH*
3.*USB connection*
4.*Power supply, contact inputs and alarm output*
5.*Alarm output*
6.*Membrane keypad with 4 buttons*
7.*Type label with ID number and IP address*
8.*Battery*

1.2 Display

Large LCD display for measured values, units and conditions



1.*Measured value with display units*
2.*Date*
3.*Time*
4.*Alarm*
5.*Measured value is above upper threshold value*
6.*Measured value is below lower threshold value*
7.*Sensor number*
8.*Alarm flag for sensor 1...4*
9.*Communication*
10.*Normal operation + Wait = StOP*
11.*Wait = Strt*
☞10.1 Datalogger display and elproLOG ANALYZE
12.*Battery low*
☞2.6 *Battery backup / lifetime*

2. General application and safety information

2.1 Network and USB connection

The ECOLOG-NET family of dataloggers is fitted with a 10/100 Base T network connection point. The datalogger functions and network can be configured using this connection.
In addition, the datalogger is equipped with a USB connection. This connection can be used for datalogger configuration and data download if no network connection is available; however, it is not possible to define network parameters using this connection. In the event that both connections are busy, no data exchange is possible via the LAN.

DURING COMMUNICATION WITH THE ELPROLOG ANALYZE OR ELPROMONITOR SOFTWARE ECOLOG-NET LH2 ARE NOT ABLE TO LOG MEASUREMENT VALUES.

3.1 *Assign network address*

LAN

USB

In order to obtain an optimal USB connection, the following operational sequence should be followed:

1. Connect the power supply to the datalogger and turn on the PC
2. Once both devices are ready for use, connect the USB cable
3. The Windows driver for the USB connection being used must be installed. If the appropriate driver is missing, it can be installed using the elproLOG ANALYZE software CD.
4. elproLOG ANALYZE: Options - Com Port... - RS232 & 57600 (Hotseries 4) and select appropriate COM-port.

2.2 Temperature effect

- For the range of application 12.1 *Measuring ranges and Accuracy*.
- It can't be guaranteed that the loggers will function properly if the datalogger is exposed to temperatures which exceed the specified threshold range. Experience has shown that the battery freezes at approx. -50°C, that it is no longer possible to perform measurements, and that the timer tracking function can be temporarily interrupted. Once it has been returned to room temperature, the logger must be reprogrammed before it can be used again.
- At temperatures below - 20°C, the display is not easily readable; however, longterm use is not affected.
- For longterm use above 40°C, lithium battery passivation can lead to temporary reading problems (self-discharge protection), which can be resolved with repeated utilization.
- At temperatures above 45°C, battery self-discharging increases. With long term use above 45°C, the battery lifetime can be reduced by about 1/3.
- Exposure to temperatures above 55°C can result in permanent discoloration of the display.
- There is danger of a gas explosion if the lithium battery is heated to temperatures exceeding 100°C.

2.3 Exceptional environmental conditions

Pay attention to the following when dataloggers are used under special environmental conditions:

- IR radiation (heat) and superheated steam can damage the surface coating of the casing
- There is a risk that the battery may explode if the logger is used under microwave radiation

Initial startup

BEFORE THE INITIAL START-UP THE DATALOGGER MUST BE AT ROOM TEMPERATURE!
NOTES TO THE POWER SUPPLY UNIT 8.3 *SUPPLY, CONTACT INPUT, ALARM 2*

2.4 Precautionary measures for handling units containing lithium batteries

Lithium batteries

- Do not short-circuit and charge batteries: Explosion hazard
- Do not throw units which contain batteries into fire: Explosion hazard
- Do not subject batteries to mechanical stress and do not dismantle them as leaking battery fluid is highly corrosive and lithium can generate severe heat or can ignite a fire if it comes into contact with moisture.
- Do not heat battery operated units to temperatures exceeding 100°C: Explosion hazard
- Avoid excessive impact
- Follow the manufacturer specifications for storing batteries
- Return batteries to the supplier for correct waste disposal

2.5 Precautions in handling with power supply units

Power supply unit

Follow the safety and application instructions of the power supply unit.

2.6 Battery backup / lifetime

Battery lifetime
Power-saving mode

10 - 12 months	1 minute measurement interval Operation time reduced with 2 sensors
13 - 18 months	1 minute measurement interval; power-saving mode Operation time reduced with 2 sensors
Battery low	This indicator (☞ 1.2 *Display*) is activated when the battery capacity limit is reached. Replace the battery at the next possible opportunity (☞ 11. *Maintenance*).

2.7 Logger display / Power-saving mode

The datenlogger ECOLOG-NET has a power-save mode which switches off the display. As a result, measurements are only made during the defined log interval.. A small circle located in the display indicate that the datalogger is functioning and recording correctly.
The display is switched on and off using the elproLOG ANALYZE software - Extended setup - Display mode / power save.

2.8 Overlaying graphical data

Data from multiple dataloggers

elproLOG ANALYZE Function: Overlaying
This function allows graphs from multiple dataloggers to be ECOLOG-NET LH2displayed simultaneously. To utilize this function, each datalogger must have the same recording interval. ☞ 5.1 *Datalogger setup*

3. Configuring the datalogger

3.1 Assign network address

Digi Device Discovery
Fixed IP

For datalogger identification within a network environment, a unique network address is assigned to each datalogger. This address is made up of 3 pieces of information: IP address, subnet mask and default gateway. For the elproLOG ANALYZE and elproMONITOR programs, we recommend the use of a static IP address.
In order to avoid network conflicts, the network administrator must assign the addresses! These 3 pieces of information must be entered manually into each datalogger using the software Digi Device Discovery.
For additional installation information see the ☞ elproLOG ANALYZE operating instructions, SE3003E, or the online help feature. This manual can be found on the ELPRO homepage at www.elpro.com/Download/Data Sheets/ECOLOG-NET networkable datalogger.

> ⓘ The datalogger requires an external power supply for the operation of the LAN interface. After connection to the power supply, it takes approximately 1 minute until the datalogger responds via the LAN.

3.1.1 Desktop installation

The relevant network address is assigned to the datalogger during this workstep. This work should be performed at the place of use prior to final installation, e.g. in an office.

3.1.2 Documentation

Documentation for the implemented configurations. Keep a written record of the network parameters on a status printout from the datalogger and...

> ⓘ ...make a note of the IP address on the datalogger type label. This is the simplest way to identify the datalogger during installation!

3.2 Installing the datalogger

3.2.1 Installation

- Mount the datalogger at the place of use in accordance with the network plan.
- Connect the network, power supply, sensors, contact inputs and alarm outputs.

3.2.2 Communication test

Check communication - PING

3.2.3 elproLOG ANALYZE

elproLOG ANALYZE

Set the parameters on the datalogger, ☞ 5. *Settings in elproLOG ANALYZE* and 6. *Threshold value and alarm function*.
Error messages no. 5 ☞ 4. *Menu*

3.2.4 elproMONITOR

elproMONITOR

This program is used for the on-line measured value display. For a detailed description of the functions and use applications ☞ elproMONITOR operation manual SM3031E or the on-line help.

3.2.5 Verification of the installation

Check the installation and ensure that sensor positions, alarm parameters and network addresses are correct. Calibration plugs can be used as an aid in simulating defined measured values.

4. Menu

1	Power-saving mode	The rotating element only appears when the data logger is in power saving mode and is recording data. The measured value display can be activated for a few seconds by pressing the menu button. Menu: Temporary jump to menu item 2
2	Measuring mode 25.07 10:28 28.3 °C SENSOR 6	Menu: Jump to menu item 3 or 4 or 5; depending upon the situation
3	Start Strt	Only appears when the datalogger is in start/stop mode and is waiting for the start time. **StOP, ALA, dISP** ☞ 10. *Status and error messages* Menu: Jump to menu item 5
4	Acknowledgment OFF ALARM	Appears when there is an alarm or when the "self-sustaining" function is selected and an alarm is registered. ☞ 6.2 *Window: Setup of Alarm parameters* Menu: Jump to menu item 5 Enter F1: Reset alarm display and alarm contacts as well as entry of the reset time in the alarm log and exit menu, jump to menu item 8 F3: Exit menu, jump to menu item 8
5	Functions Func	Menu: Jump to menu item 6 Enter F1: Timestamp indicated as D2 and exit menu, jump to menu item 8 ☞ 7. *Contact inputs D1 and D2* F3: Exit menu, jump to menu item 8
6	LCD display test 8.8.8.8. 88:88 ALARM ▲▼ °C°F %RH SENSOR 8.	Menu: Jump to menu item 7 F3: Exit menu, jump to menu item 8
7	Alarm output test tESt ALARM	Menu: Jump back to menu item4 or 5 Enter F1: OFF - ON - OFF F3: Exit menu, jump to menu item 8
8	Exit menu - - - -	Automatic jump back to menu item 1 or 2 or 3

ERROR 5: MODULE DOES NOT RESPOND DURING DATA READ-OUT
- THE DATALOGGER IS NOT IN MEASURING MODE
- PRESS F1/F3 TO EXIT THE MENU

5. Settings in elproLOG ANALYZE

5.1 Datalogger setup

Window "Datalogger Setup" is used to define the implemented measuring parameters.

- Mode
- Log Start
- Log Interval
- Module Tag
- Zoom Preset
- Sensor
- PIN

elproLOG ANALYZE Function: Overlaying
The data loggers ECOLOG-NET LH2 can be superimposed.

5.2 Extended setup

Name	Function
Lower one-point adjustment: programmable... Upper one-point adjustment: programmable... Direct calibration by values ...	Those 3 functions are used for adjustments
Definition of the alarm thresholds...	☞6. *Threshold value and alarm function*
Reset alarm	This function is used to acknowledge an alarm message.
Set date and time...	Used to adjust the integrated datalogger clock
Display mode / Powersave...	☞2.7 *Logger display / Power-saving mode*
Terminal mode parameters...	No function in this version
Set language...	No function in this version
Select printer...	No function in this version
Set temperature unit...	Selection of temperature units used. A selection can be made between °C and °F
Set mean value measurement parameter...	This function is used for the elimination of any disturbances resulting from power frequency interferences.
Programming of battery change time...	This function restarts the radio datalogger after a battery replacement (☞2. *General application and safety information*).

6. Threshold value and alarm function

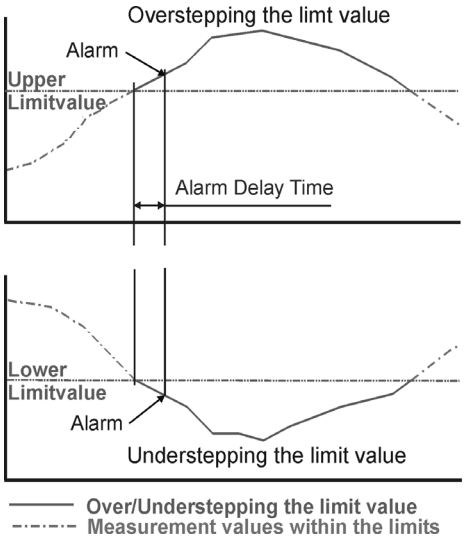
Sensor selection

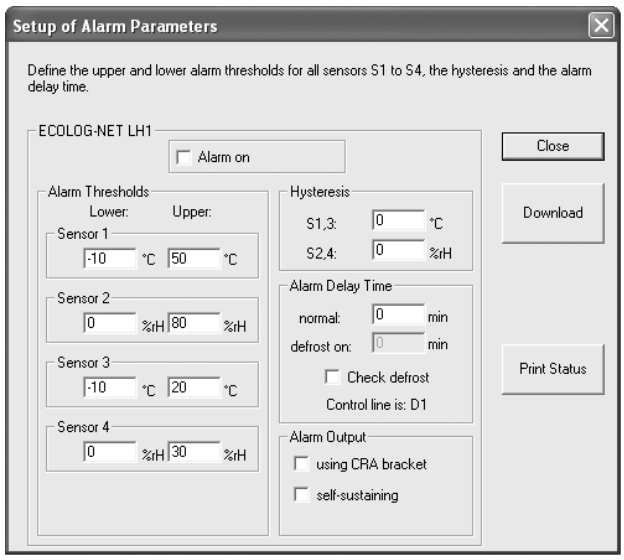
The ECOLOG-NET LH2 datalogger has a feature for monitoring threshold values. Threshold values and alarm parameters are defined in the "Setup of Alarm Parameters" window. Threshold values are only monitored using sensors that are selected in the "Datalogger setup - sensors" window. ☞ 5.1 *Datalogger setup*

6.1 Conditions

Threshold values
Alarm Delay Time
Alarm output

- The measured value must be outside the defined tolerance range, i.e. the measured value is higher than the maximum allowable threshold value or lower than the minimum allowable threshold value.
- The threshold violation must exceed the defined alarm delay times.
- The threshold violation remains active until the measured value reaches the defined tolerance range again.





6.2 Window: Setup of Alarm parameters

Name	Function
Alarm on	Activate this checkbox to switch on the alarm threshold function, ☞ 6. *Threshold value and alarm function*.
Alarm thresholds	Input fields for the lower and upper threshold values.
Hysteresis	The Hysteresis is used to avoid "fluttering" of the alarm contact. A change of state in the contact only occurs when the measured value deviates from from the threshold by the amount of the hysteresis.
Name	Function
Alarm- Delay Time	- normal An alarm is not triggered until the threshold violation has lasted longer than the specified time. - defrost on If the "Check defroster" function is active and defrost contact D1 is closed, then an alarm is not triggered until the threshold violation has lasted longer than the time specified at this enter field.
Alarm output	This mode is used for all applications where the alarm contact controls an external device such as a flash or a telephone dialing unit. - No selection made The text: ALARM is displayed for the duration of the threshold violation. The alarm contact is closed for the duration of the threshold violation. - self-sustaining This mode is used for all applications where the alarm contact controls an external device such as a flash or a telephone dialing unit. The text: ALARM is displayed until a manual reset is executed. The alarm contact remains closed until a manual reset is executed. - using CRA-holder This bracket is not available. ☞ Switches the buzzer on/off: 6.5 *Buzzer*
Close / Download / status Print	These buttons are used to program the datalogger and to close the "Alarm Parameters Setup" window.

6.3 Threshold value violation

1. In an active display, a threshold value violation is indicated by two arrows. ☞ 1.2 *Display*. They are only visible for the duration of the threshold violation. This status is not logged
2. The text: ALARM is displayed when the conditions for an alarm are fulfilled and depending upon the selected alarm output (self-sustaining), and the display/power-saving mode.
3. If an alarm is triggered, the ECOLOG-NET LH2 has a collective alarm function. This function is simultaneously activated with the text: ALARM activated ☞ 6.4 *Collective alarm contact functions* and 9. *Alarm diagrams*.
4. After the alarm delay time is up, an alarm is not registered in the memory until the next log interval has elapsed. All threshold violations / alarms are registred in the alarm protocol, even if they are shorter than the defined log interval!

Acknowledging alarm messages

Alarm messages can be acknowledged manually by using the PC software or the keypad.

Monitoring thresholds values during normal or power-save mode

DURING NORMAL OPERATION, THE THRESHOLD VALUES ARE CHECKED EVERY 4 SECONDS OR AT THE DEFINED LOG INTERVAL IF A SHORTER TIME HAS BEEN SET. IN POWER-SAVE MODE, THRESHOLD VALUES ARE MONITORED EITHER IN 1 MINUTE CYCLES IF THE LOG INTERVAL IS LONGER THAN 1 MINUTE OR AT THE DEFINED LOG INTERVAL IF SHORTER INTERVALS HAVE BEEN SET. THE TEXT: ALARM AND ADDITIONAL ALA IS DISPLAYED IN THE POWER SAVING MODE BY FULFILLING THE RELEVANT CONDITIONS.
THRESHOLD VALUES ARE NOT MONITORED WHEN THE LOGGER IS IN STOP MODE.

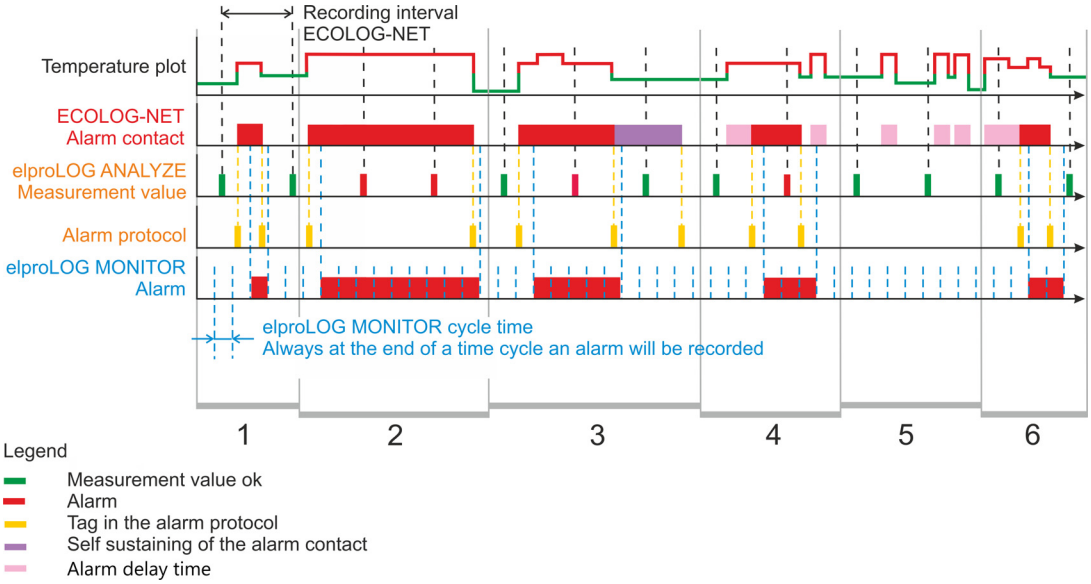
6.4 Collective alarm contact functions

Alarm signaling:
- Relay contact S
- Alarm 1
- Alarm 2
- Buzzer

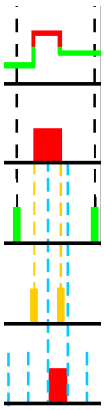
Datalogger type ECOLOG-NET LH2 has 4 possibilities for alarm signaling:

- Relay contact S
  This is a potential-free switch-over contact. The contact switches when an alarm is triggered or when the external power supply fails.
- Semiconductor contact alarm 1
  Only reacts when there is an alarm
  This is a semiconductor switch - break contact to datalogger GND
- Semiconductor contact alarm 2
  Only reacts when there is an alarm
  This is a semiconductor switch - make contact to datalogger GND
- Integrated buzzer
  Serves as an acoustic alarm ☞ 6.5 *Buzzer*

6.4.1 Time response collective alarm

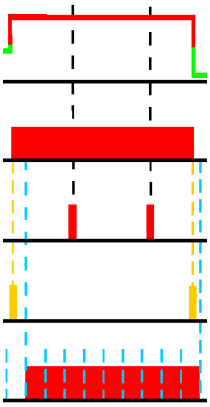


1 **Alarm is shorter than the datalogger recording interval**



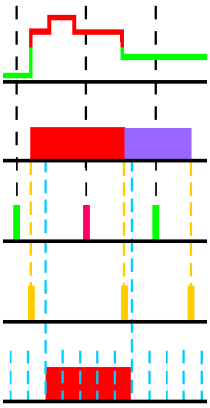
ECOLOG-NET	Alarm contact responds immediately.
ANALYZE	No alarm measurement, because the alarm is shorter than the logging interval.
ANALYZE	Alarm protocol with 2 entries - alarm on/off
MONITOR	Represents an alarm for 1 cycle time.

2 **Alarm is logged**



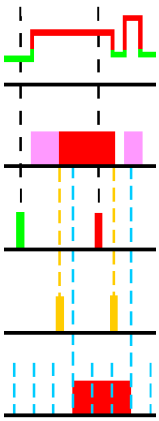
ECOLOG-NET	Alarm contact responds immediately.
ANALYZE	2 Alarm measurement
ANALYZE	Alarm protocol with 2 entries: alarm on/off.
MONITOR	Represents an alarm for 7 cycle time.

3 **Alarm with self-retention; logged**



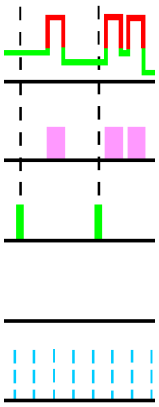
ECOLOG-NET	Alarm contact responds immediately.
ANALYZE	1 alarm measurement
ANALYZE	Alarm protocol with 2 or 3 entries: Alarm on/off/acknowledged.
MONITOR	Represents an alarm till the end of the limit value violation (5 cycle times). The duration of the self-retention period is not represented as an alarm.

4 **Alarm with delay time; logged**



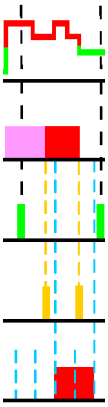
ECOLOG-NET	Alarm contact reacts after the delay time has elapsed
ANALYZE	1 alarm measurement
ANALYZE	Alarm protocol with 2 entries: alarm on/off. "Alarm on" is logged after delay time has elapsed.
MONITOR	Represents an alarm for 3 cycle time. The end of the third cycle already falls in a new, delayed alarm and therefore it is not recognized as an alarm.

5 **Reset of delay time by short threshold value violations**



ECOLOG-NET	Alarm contact does not react. Even in the case of repeated, short threshold value violations, no alarm is logged since the time delay starts from the beginning each time.
ANALYZE	No alarm measurement
ANALYZE	No entry in the alarm measurement
MONITOR	Represents no alarm.

6 **Alarm with time delay not logged**

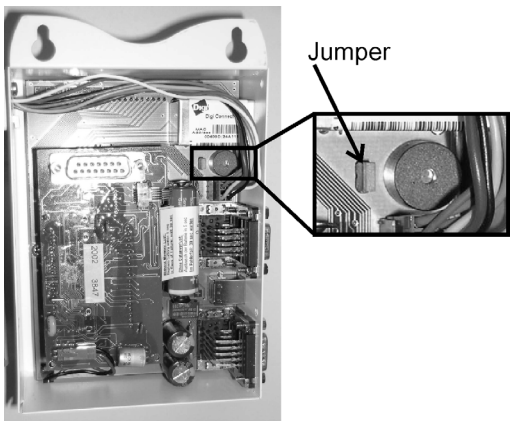


ECOLOG-NET	Alarm contact reacts after the delay time has elapsed
ANALYZE	No alarm measurement
ANALYZE	Alarm protocol with 2 entries: alarm on/off.
MONITOR	Represents an alarm for 3 cycle time.

6.5 Buzzer

The buzzer is always active since it cannot be switched on or off via the elproLOG software. If the buzzer is disruptive, it can be deactivated by removing the jumper.

Buzzer
Jumper



Datalogger with the back removed

7. Contact inputs D1 and D2

Assign Defrost input

Function	possible configurations	
Assign	D2 key	D2 key
Defrost input	D1 external	
Alarm forwarding		D1 external

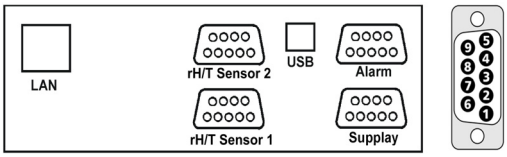
D2 key	See function F2, timestamp designated as D2 F ☞4. *Menu* This function can be used to register incidents such as a watchman's patrol on the logger.
D1 external	As defroster input (☞6. *Threshold value and alarm function*) or for alarm forwarding. Wiring ☞8.3 *Supply, Contact input, Alarm 2*
	For alarm forwarding. Wiring ☞8.3 *Supply, Contact input, Alarm 2*

The status of D1 and D2 is not recorded in the alarm protocol and has no influence on the alarm contacts. They are first logged to memory on the datalogger at the end of the following recording interval in memory. In the measurement table, elproLOG ANALYZE both contacts are represented as D1, D2 or MarkPos.

Alarm forwarding

Alarm forwarding is used in combination with the elproMONITOR software. The status (alarm / no alarm) of the contacts is checked during the update of the monitor data. Status changes between two updates are not detected.

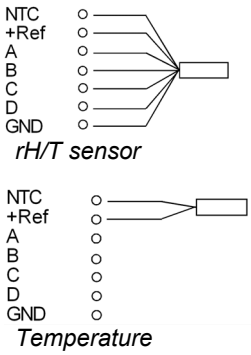
8. Pin assignments and connections



8.1 rH/T Sensor - 1 and 2

rH/T sensor
DB9 female
connector metal-lized
Part no. 800504

Pin	Signal	Function	Schema
1	NTC	Temperature	
2	Gnd	Ground	
3	B	Humidity signal	
4	A	Humidity signal	
5	Gnd	Ground	
6	+Ref	Power supply	
7	Gnd	Ground	
8	D	Humidity signal	
9	C	Humidity signal	



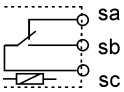
CABLE LENGTH 12.1 *Measuring ranges and Accuracy*

8.2 Alarm

Alarm
Plug white
DB9 female
Part no. 800506

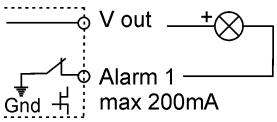
Pin	Signal	Function
1	Sb	Alarm contact (relay contact)
2	Gnd	Ground
3	Gnd	Ground
4	Alarm 1	Alarm output
5	V out	Alarm power supply (logger operating volt-age)
6	Sc	Alarm contact (relay contact)
7	Sa	Alarm contact (relay contact)
8	Gnd	Ground
9	Gnd	Ground

Alarm contact



Alarm contact (relay contact)
Relay contact represented in dead state.
Connection sa - sc: Alarm
Connection sb - sc: no a Alarm
This relay is actuated (sb - sc) as soon as the power supply is available.

Alarm output 1



Alarm output 1(open)
Semi-conductor contact! Use only for DC voltage (DCV)
- Opens in the event of an alarm
- No floating contact
- Alarm cable max. 15m long

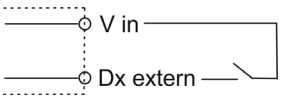
8.3 Supply, Contact input, Alarm 2

External power supply unit
Contact input and Alarm 2
Plug red
DB9 male
Part no. 800505

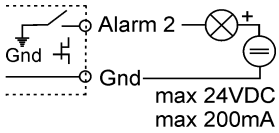
Pin	Signal	Function
1	Alarm 2	Alarm output
2	D1 external	Contact input
3	n.c.	
4	Gnd	Ground
5	V in	External power supply (logger operating voltage)
6	Gnd	Ground
7	Gnd	Ground
8	Gnd	Ground
9	Gnd	Ground

FOLLOW THE SAFETY AND APPLICATION INSTRUCTIONS OF THE POWER SUPPLY UNIT.

Contact input
Alarm output 2
External power supply unit

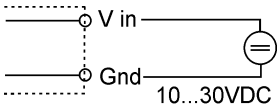


Contact input



Alarm output 2 (make contact)
- Semi-conductor contact! Use only for DC voltage (DCV)
- Contact closes during an alarm
- No floating contact

Alarm cable max. 15m long

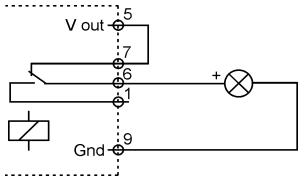


external power supply
ATTENTION: The starting current amounts to approx. 1.6A for a short time. If more than one dataloggeris being operated using the same power supply, the power supply must be appropriately powerful.

9. Alarm diagrams

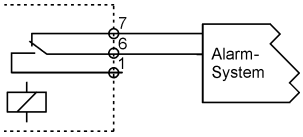
9.1 Alarm; Connector white

Alarm = threshold violation



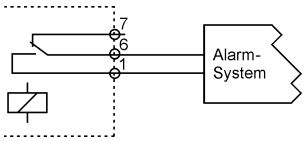
- Alarm: Contact open
- Datalogger requires an external power supply for signaling
  ☞ 8.3 *Supply, Contact input, Alarm 2*
- Relays
- Switching load max. 42VAC or VDC; 500mA

Alarm = Threshold value violation or failure of external power supply



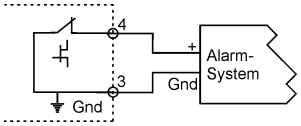
- Alarm: Contact open
- Relays
- Switching load max. 42VAC or VDC; 500mA

Alarm = Threshold value violation, failure of external power supply or cable break



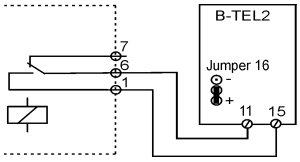
- Alarm: Contact open
- Relays
- Switching load max. 42VAC or VDC; 500mA

Alarm = Threshold value violation or cable break



- Alarm: Contact open
- Datalogger does not require external power supply
- Semi-conductor contact! Use only for DC voltage (DCV)
- Switch load max. 24VDC; 200mA

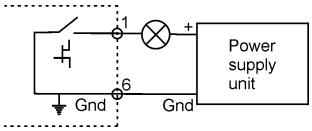
9.1.1 Elpro telephone dialing device



- Alarm: Threshold violation, loss of datalogger power or cable damage between datalogger and telephone dialing device.
- Jumper 16, see image
- Settings B-TEL 2
  Set "Connection type" to "positive command"

9.2 Supply; Connector red

Alarm = Threshold value violation



- Alarm: Contact closed
- Semi-conductor contact! Use only for DC voltage (DCV)
- Signalization has its own power supply
- Switch load max. 24VDC; 200mA

10. Status and error messages

10.1 Datalogger display and elproLOG ANALYZE

Display	elproLOG ANALYZE	
CAL	--	Additional alarm text in the power saving mode
Strt	--	Datalogger is waiting for the log start time programmed at menu item: Datalogger setup
StOP	--	Datalogger is in Start/Stop mode and the memory is full. No further measured values can be logged. In order to resume data logging, the logger must be reprogrammed. Datalogger is in this state when it is delivered...H2.
Ld.	--	Once the rH/T sensor is connected, the adjustment data will be automatically loaded to the data logger.
b.F.		Battery voltage is low
CAL.E.	--	Error during adjustment
C.F.	C.F.	Faulty datalogger
HHHH	--	Logger keyboard is defective
L.C.		Faulty datalogger
Ld.F.	--	Error during loading of rH/T parameters
n.c.		No sensors connected
S.C.		Sensor has a short-circuit
O.F.	>=max	Measured value is larger than the allowed maximum
U.F.	<=min	Measured value is smaller than the allowed minimum

10.2 Datalogger status in elproLOG ANALYZE

RAM IMG-BMP destroyed

This error message appears in the datalogger status report in line: "Module time". The cause of this error message can, for example, be a battery change if the battery change time was not programmed (☞ 11. *Maintenance*).

Battery

The status of the batteries is displayed in the (elproLOG ANALYZE) status information.
Battery replacement: ☞ 11. *Maintenance*

Firmware

The version of the firmware is documented in the status.

11. Maintenance

Maintenance schedule

To ensure proper datalogger functioning, the following steps should be part of a periodic maintenance schedule:

- Perform datalogger readout and save the data
- Test the alarm function, if implemented
- Replace the battery ☞ 12.3 *Dimensional view*
  (Part no. 800556, set of 2, storable for at least 5 years / lithium 3.6V, 2100mAh, AM3/LR6/AA)

Battery

An energy consumption counter is used to monitor datalogger battery life. For this reason, only the specific manufacturer recommended battery should be used. Do not remove the battery from the logger when it is not in use. The use of third party batteries or removal of batteries will produce incorrect status information at the battery indicator.

Replacing battery

AFTER THE BATTERIES ARE CHANGED, THE BATTERY CHANGE TIME MUST BE SET (ELPROLOG ANALYZE SOFTWARE - EXTENDED SETUP - PROGRAMMING BATTERY CHANGE TIME...) OTHERWISE THE ENERGY COUNTER WILL NOT FUNCTION CORRECTLY!

12. Technical data

12.1 Measuring ranges and Accuracy

12.1.1 Temperature measurement

Logger with sensor typical; Logger at room temperature

Range		Resolution	Typical accuracy (U95)
-50.0°C..	-25.0°C	0.1°C	± 0.4°C
-24.9°C..	0.0°C	0.1°C	± 0.3°C
0.1°C..	30°C	0.1°C	± 0.2°C
30.1°C..	70.0°C	0.1°C	± 0.3°C
70.1°C..	100.0°C	0.1°C	± 0.4°C
100.1°C..	140.0°C	0.1°C	± 0.7°C

WITH A TOTAL CABLE LENGTH > 5M, THE ACCURACY RANGE MUST BE INCREASED BY 0.3°C, WHILE THE TOTAL CABLE LENGTH FOR BOTH SENSORS TOGETHER MUST NOT EXCEED 20M!

12.1.2 Measurement of relative humidity

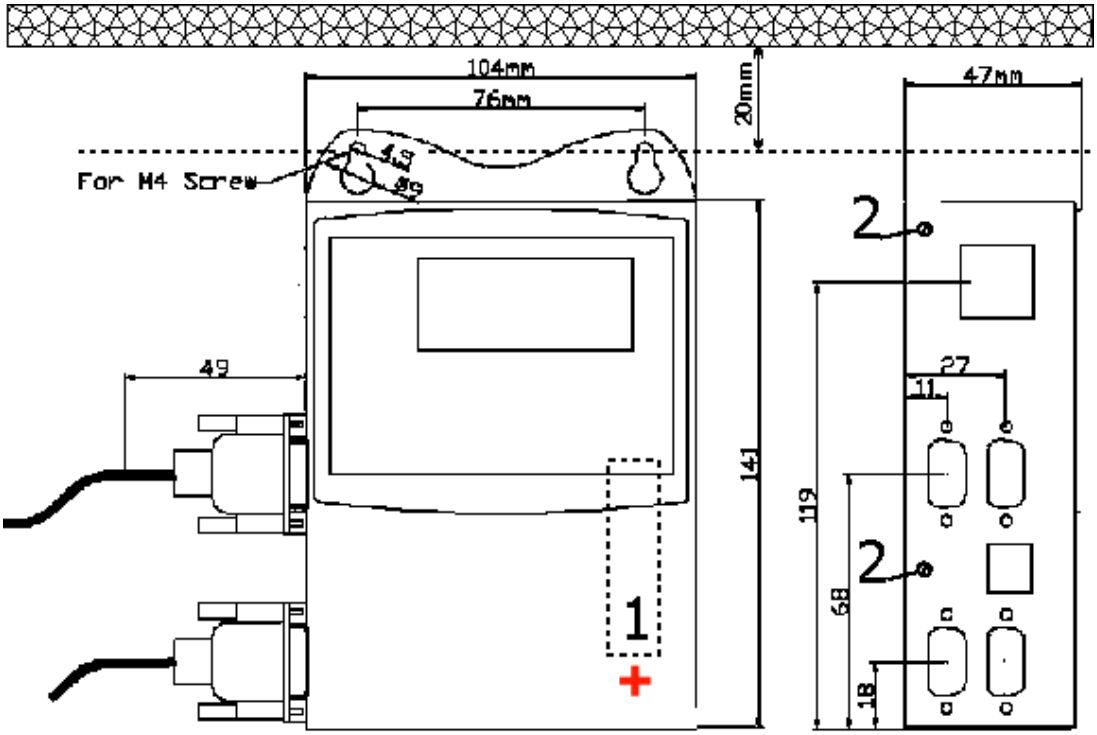
Range	Resolution	Typical accuracy (U95)
0%..100%rH	0.2%rH	At room temperature, 23°C: ± 1.5%rH Hysteresis 10-90-10%rH: <1%rH

WITH A TOTAL CABLE LENGTH OF > 5M, THE ACCURACY RANGE MUST BE INCREASED BY 1%RH, WHILE THE TOTAL CABLE LENGTH FOR BOTH SENSORS TOGETHER MUST NOT EXCEED 20M!

12.2 Operating range

Operating range Sensors	800646 and 800647	-35°C..70°C 0%rH..100%rH, dew proof
Ambient temperature Data logger	-35°C.. 55°C	
Protective class	IP30	
Alarm contact	Switching load	42VAC or VDC 500mA
Alarm output	Switching load Alarm cable, max. length	24VDC 200mA 15m

12.3 Dimensional view



1. Battery;
   for a battery exchange, the rear wall has to be removed.
2. Screws for the attachment of the rear wall

12.4 Accessories

Part no.	Name
800496	Power supply unit with connector DB9 24V 0.35A
800498	Power supply unit with connector DB9 24V 1.6A
800504	DB9 connector, male, rH / T
800506	Plug DB9, male, alarm, white
800505	Plug DB9, female, power supply, red
800646	rH / T probe
800647	rH / T replacement probe
800786	Connector cable for rH / T probe 1m
800787	Connector cable for rH / T probe 2m
800788	Connector cable for rH / T probe 5m
800789	Connector cable for rH / T probe 10m
800790	Connector cable for rH / T probe 15m
800791	Connector cable for rH / T probe 20m
800359 800362 800363	Various alarm flashers
800556	Replacement battery, set of 2, can be stored for up to 5 years

12.5 Declaration of conformity

EG Konformitätserklärung
CE Déclaration de conformité
EC Declaration of conformity

Seite 1 von 1 | Page 1 de 1 | Page 1 of 1

Gültig ab | Valable à partir du | Valid from **08. 2016**
Zertifikat Nr. | No du certificat | Certificate No **10.109 08-16**

Beschreibung | Description | Description **Datalogger Typ** Type Type	**Art. Nr.** No d'article Part No	**Funktion** Fonction Function
ECOLOG-NET LP4	800478	for temperature recording
ECOLOG-NET LP4F	800479	for temperature recording
ECOLOG-NET LH2	800480	for humidity and temperature recording
ECOLOG-NET LA8	800485	for 8 external current (4-20mA) signals
ECOLOG-NET LA8F	800486	for 8 external current (4-20mA) signals

Hersteller	| Fabricant	| Manufacturer	**ELPRO-BUCHS AG, 9470 Buchs, Switzerland**
Datei	| Fichier	| File	**10.109 08-16 Conformity ECOLOG-NET**
Richtlinien EMV	| Directives CEM	| Directives CEM	**2014/30/EU**
Richtlinien RoHS2	| Directives RoHS2	| Directives RoHS2	**2011/65/EU**
Standards			**EN 61000-6-1:2005, EN 61000-6-2:2005, EN 61000-6-3:2006, EN 61000-6-4:2006 EN 50581:2012**

Wir erklären, dass die oben aufgeführten Produkte den erwähnten Richtlinien und Normen oder normativen Dokumenten entsprechen.
Diese Erklärung gilt für alle Ausführungen innerhalb der Modell-Serie. .

Nous déclarons que les produits décrit ci-dessus sont conformes aux dispositions de directives et les normes ou autres documents normatifs susmentionnés.
Cette déclaration est valable pour tous les modèles parmi cette série.

We declare that the products listed above are in conformity with the mentioned provisions of directives and the standards or other normative documents.
This declaration is valid for all versions of the above mentioned product series.

Buchs, den 31. August 2016
Buchs, le 31 août 2016
Buchs, August 31, 2016

ELPRO-BUCHS AG
CQO

Björn Niggemann

we prove it.

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CE

Revision History

Author	Date	Version	Description
A. Gubler	04.03.2011	--	First edition; replaces EL6003Bk
A. Gubler	01.10.2012	a	new Graphic
A. Gubler	07.03.2013	b	Polarity of D1 changed to Vin
A. Gubler	13.01.2014	c	Several minor text corrections
A. Gubler	21.11.2016	d	New CE declaration

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