

ECOLOG-NET LA8

Operation Manual



ELPRO-BUCHS AG

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- 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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- 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).

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Symbols and description codes used

Symbols

	Note
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	IMPORTANT INFORMATION OR WARNING
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 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	SE3003E
elproLOG ANALYZE QLS	
elproMONITOR	SM3031E

-  - This product is subject to CE marking.
-  - The manufacturer guarantees that this product complies with the relevant guidelines. (see: 13.6 *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 from firmware version 1.07
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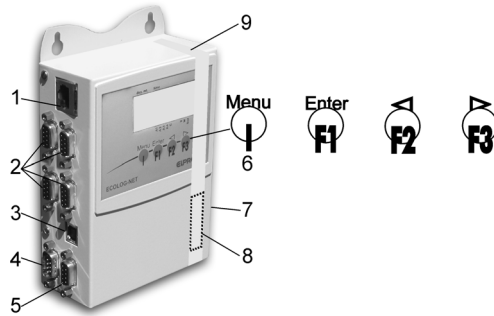
1. Product description

8-channel
4-20mA
64,000 measured values
UPS

The ECOLOG-NET LA8 dataloggers are network compatible 8-channel datalogger for recording 64,000 measured values. 4-20mA signals can be collected. The data are loaded to the PC via local network. In the event of a power outage, all data is retained and the internal clock continues to run. If the sensor power supply should be available during a power failure, then the datalogger power supply unit must be fed with 115/230VAC by an UPS (uninterruptible power supply unit). There are various alarm features provided by the local alarm contacts and the network functions.

1.1 Datalogger

Connections
Membrane keypad
Battery discharge protection

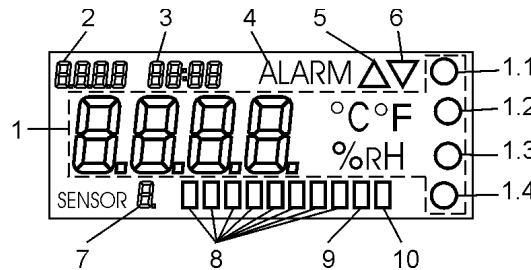


The ECOLOG-NET LA8 has numerous electrical connections available on the left-side of the housing and on the front a display, and a membrane keyboard.

- 1. Network connection
 - 2. 8 x 4...20mA input
 - 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
 - 9. Battery discharge protection
- Removal initiates the first "System Reset" entry in the status! After removal, it is necessary to wait about 10 sec. until the datalogger is operational.

1.2 Display

Large LCD display for measured values, units and conditions



- 1. Measured value with unit of measurement and 4 user-definable units of measurement
 - 1.1, 1.2, 1.3 and 1.4, 4 Dots for user-definable units (→ 5.1.3 Sensor profile)
- 2. Date or communication via USB or LAN connection
- 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...8
- 9. Logging data
- 10. 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 the network connection and USB connection are in use, data cannot be transmitted via LAN connection.

3.1 Assign network address


LAN 

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

USB 

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 appropriate COM-port.


2.2 Temperature effect

- For the range of application  13.1 *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 self-discharging of the battery increases. At continuous operations above 45° C the battery life time will be reduced by 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!

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

approx. 3 months In the event of a complete power failure, the internal battery will retain the current data for up to 3 months (Backup).


Battery low This indicator ( 1.2 *Display*) is activated when the battery capacity limit is reached. Replace the battery at the next possible opportunity ( 12. *Maintenance*).

2.7 Logger display / Power-saving mode

Power-saving mode - display

The datalogger ECOLOG-NET LA8 has a power-save mode which switches off the display. As a result, measurements are only made during the defined log interval.. Four small circles located in the display indicate that the datalogger is functioning and recording correctly.

Power-saving mode - automatic

The display is switched on and off using the elproLOG ANALYZE software - Extended setup - Display mode / power save. If no external power supply is available, the datalogger automatically enters power-saving mode. To check the status during Power-saving mode, use the keypad to temporarily switch on the display.  5.2 *Extended setup*

2.8 Overlaying graphical data

Data from multiple dataloggers

elproLOG ANALYZE Function: Overlaying

Mutual overlaying is not currently available for the datalogger ECOLOG-NET LA8.

3. Configuring the datalogger

3.1 Assign network address

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.

*Digi Device Discovery
Fixed IP*

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. For additional network information see ECOLOG-NET service instruction IT6001A. This manual can be found on the ELPRO homepage at [www.elpro.com/Download/Data Sheets/ ECOLOG-NET networkable datalogger](http://www.elpro.com/Download/Data%20Sheets/ECOLOG-NET%20networkable%20datalogger).



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 network.

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

Set the parameters on the datalogger, 5. *Settings in elproLOG ANALYZE* and 6. *Threshold values and alarm parameters*.

Error messages no. 5 4. *Menu*

elproLOG ANALYZE

3.2.4 elproMONITOR

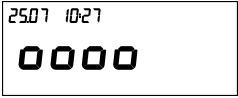

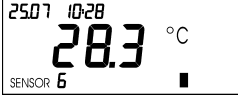

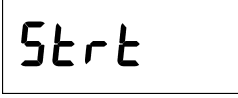












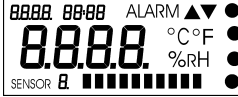






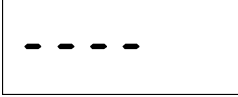
This program is used for the on-line measured value display. For a detailed description of the functions and use applications elproMONITOR operation manual SM3031E or the on-line help.


elproMONITOR

3.2.5 Verification of the installation

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

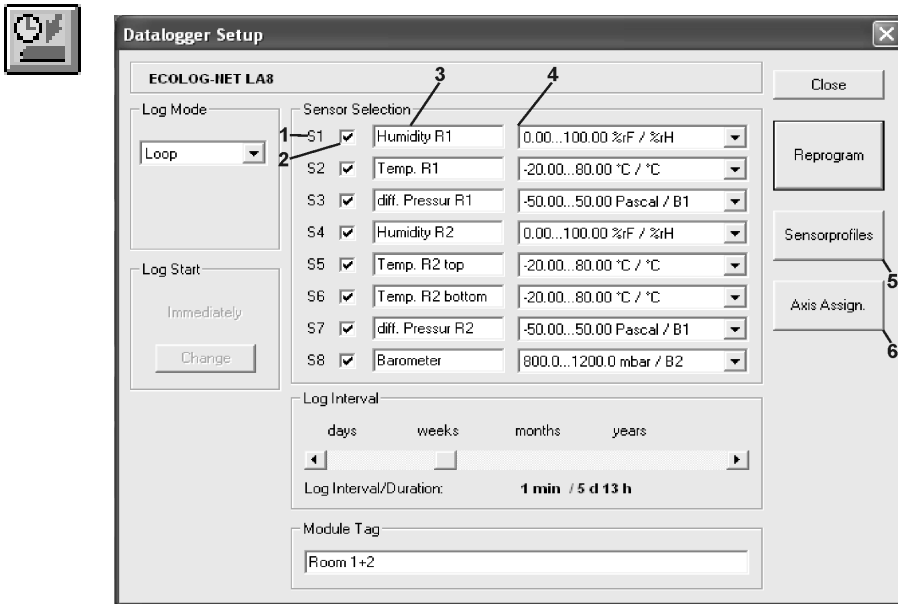
4. Menu

1	<p>Power-saving mode</p> 	<p>The 4 small circles only appear when the datalogger is in power-save mode and is logging data. The measured value display can be activated for a few seconds by pressing the menu button.</p> <p> Temporary jump to menu item 2</p>
2	<p>Measuring mode</p> 	<p> Jump to menu item 3 or 4 or 5; depending upon the situation</p>
3	<p>Start</p> 	<p>Only appears when the datalogger is in start/stop mode and is waiting for the start time.</p> <p>StOP, ALA, dISP  10. <i>Status and error messages</i></p> <p> Jump to menu item 5</p>
4	<p>Acknowledgment</p> 	<p>Appears when there is an alarm or when the "self-sustaining" function is selected and an alarm is registered.  6.2 <i>Window: Setup of Alarm parameters</i></p> <p> Jump to menu item 5</p> <p> 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</p> <p> Exit menu, jump to menu item 8</p>
5	<p>Functions</p> 	<p> Jump to menu item 6</p> <p> Timestamp indicated as D2 and exit menu, jump to menu item 8  7. <i>Contact inputs D1 and D2</i></p> <p> Exit menu, jump to menu item 8</p>
6	<p>LCD display test</p> 	<p> Jump to menu item 7</p> <p> Exit menu, jump to menu item 8</p>
7	<p>Alarm output test</p> 	<p> Jump back to menu item 4 or 5</p> <p> OFF - ON - OFF</p> <p> Exit menu, jump to menu item 8</p>
8	<p>Exit menu</p> 	<p>Automatic jump back to menu item 1 or 2 or 3</p>

	<p>ERROR 5: MODULE DOES NOT RESPOND DURING DATA READ-OUT</p> <ul style="list-style-type: none"> - THE DATALOGGER IS NOT IN MEASURING MODE - PRESS F1/F3 TO EXIT THE MENU
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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
- Close, Reprogram

5.1.1 Procedure for initial set-up

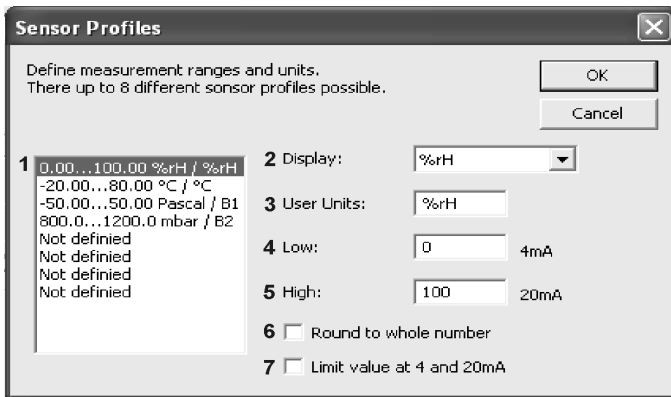
To simplify the configuration of the data logger, it is recommended to proceed as follows:

1. Definition of the threshold values  5.1.3 *Sensor profile*
2. Datalogger setup
3. Axis assignment according to  5.1.4 *Axis assignment*

5.1.2 Sensor

1. Sensor number S1 ... S8
2. Checkbox to select measuring channel
3. User-defined name for measuring channel
4. Measurement range selection. One of the 8 predefined measurement ranges can be assigned to the measuring channel.
5. Opens the window used to set the parameters for the 8 possible measurement ranges  5.1.3 *Sensor profile*
6. Open the window that enables the assignment of probes to the 4 representable axes in the elproLOG graphic  5.1.4 *Axis assignment*

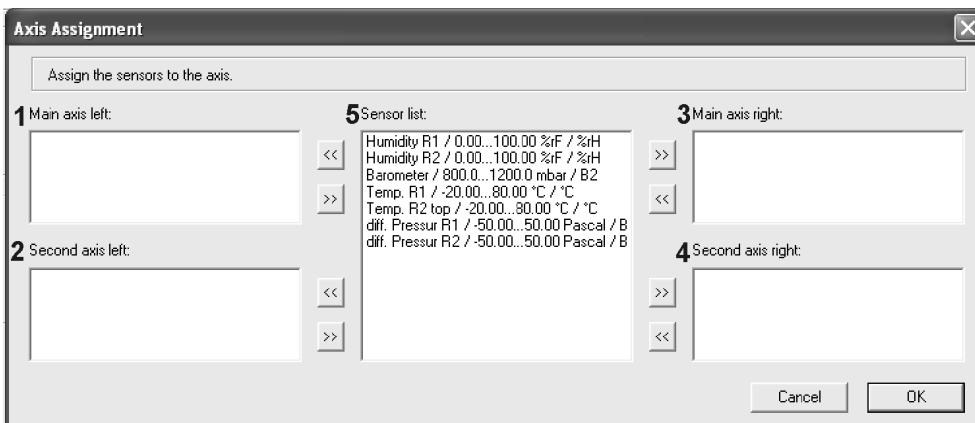
5.1.3 Sensor profile



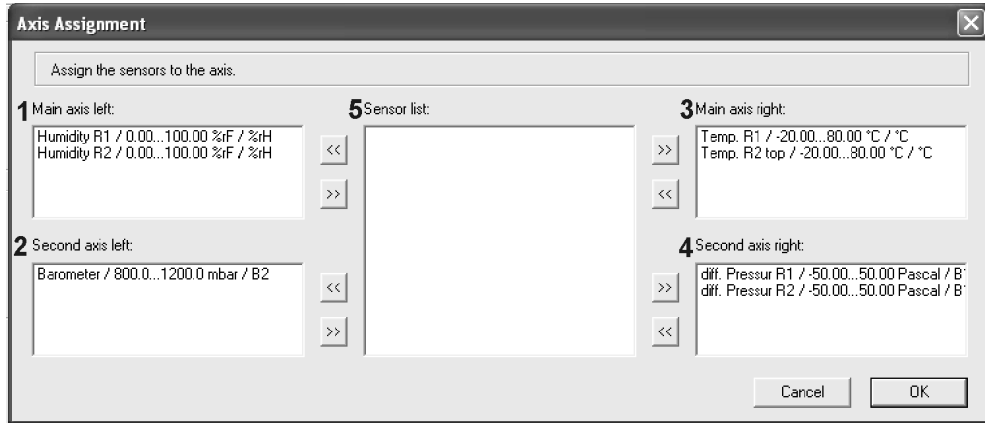
Sensor profile

1. By selecting a probe it is possible to define the measurement range and the unit point 2 to 6.
2. Menu for selecting the measurement units shown on the display.
Units of measurements °C, °F and %rH are shown on the datalogger display. For all other units, select one of the 4 items (items 1 to 4). The items are numbered from top (1) to bottom (4) (1.2 Display).
3. The graphic function of the elproLOG ANALYZE software can represent up to 4 independent y-axes. Each of these axes can be assigned its own measurement unit.
The unit text may not contain a semicolon (;) since this character is used by default as a separating character for communication with the elproMONITOR.
4. Measurement scaling in accordance with sensor settings for the lower limit of the measurement range.
5. Measurement scaling in accordance with sensor settings for the upper limit of the measurement range.
6. Scaled measurements are rounded and represented as whole numbers.
7. Limit function for measurement values outside of the measurement range from 4 - 20mA for the defined range.
Values over 20.4 mA result in O.F.
Measurements below 3.6mA result in U.F.
N.C. is not shown
 10. Status and error messages

5.1.4 Axis assignment



Prior axis assignment



Axis 1, 2, 3, 4

After axis assignment

- 1.
- 2.
- 3.
- 4.

Assigns a sensor to one of the 4 possible Y-axes. There are 2 main axes; 1 and 3 and 2 minor axes; 2 and 4 (2. Axis) available. The difference between the 4 axes can be in the selected measurement range as well as in the unit of measurement. The main axes are the dominant axes in the scaling of the graphic.

Axes list

- 5.

List of all possible sensors that are not yet assigned to an axis.



Only sensors with the same unit and the same measurement range may be assigned to the same axis.


5.2 Extended setup



Name	Function
Set calibration date	This function enters the current date as the calibration date into the status of the datalogger.
Definition of the alarm thresholds...	6. <i>Threshold values and alarm parameters</i> The internal buzzer is also switched on/off in this window
Reset alarm	This function is used to acknowledge an alarm message.
Set date and time...	Used to adjust the integrated datalogger clock
Configure logger display...	2.7 <i>Logger display / Power-saving mode</i>
Configure communication settings...	Settings for terminal mode communication D-HC-6001Ax
Set temperature unit...	Selection of temperature units used. A selection can be made between °C and °F
Set new password...	<ul style="list-style-type: none"> - Set a password. - Delete: Entering a password in the "old password" line alone deletes the password
Programming of battery change time...	This function restarts the radio datalogger after a battery replacement (2. <i>General application and safety information</i>).


6. Threshold values and alarm parameters

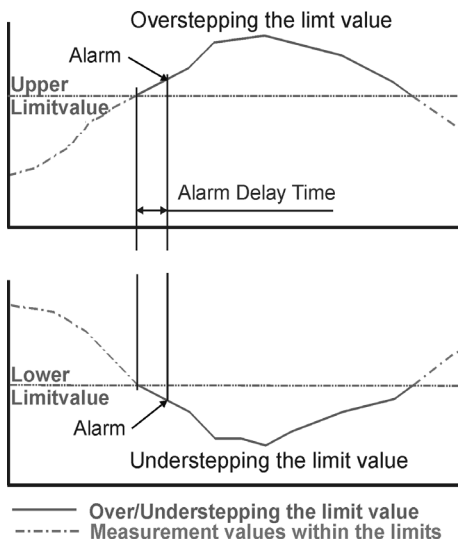
The ECOLOG-NET LA8 datalogger has a feature for monitoring threshold values. Threshold values and alarm parameters are defined in the "Setup of Alarm Parameters" window. Threshold values are only monitored using sensors that are selected in the "Datalogger setup - sensors" window. [5.1 Datalogger setup](#)

Sensor selection 

6.1 Conditions

- 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.

Threshold values
Alarm Delay Time
Alarm output 



Setup of Alarm Parameters ✕

Define the upper and lower alarm thresholds for the sensors and the delay times.

Alarm on

Alarm Thresholds	Lower:	Upper:
Humidity R1	45 %rH	65 %rH
Temp. R1	18 °C	25 °C
Diff. Press R1	4 Pascal	20 Pascal
Barometer	800 mbar	1200 mbar
Humidity R2	45 %rH	65 %rH
Temp. R2 top	16 °C	20 °C
Temp. R2 bottom	16 °C	20 °C
Diff. Press. R2	-20 Pascal	-4 Pascal

Alarm Delay Time

normal: min

defrost on: min

Check defrost

Control line is: D1

Alarm Output:

self-sustaining

buzzer

Close

Download

6.2 Window: Setup of Alarm parameters

Name	Function
Alarm on	Activate this check box to switch on the alarm threshold function.
Alarm thresholds	Input fields for the lower and upper threshold values.
Alarm-Delay Time	<ul style="list-style-type: none"> - normal An alarm is not triggered until the threshold violation has lasted longer than the specified time. - defroster 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	<p>This mode is used for all applications where the alarm contact controls an external device such as a flash or a telephone dialing unit.</p> <ul style="list-style-type: none"> - 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. - buzzer Switches the buzzer on and off
Close / Download	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 LP4 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 registered 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.
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.

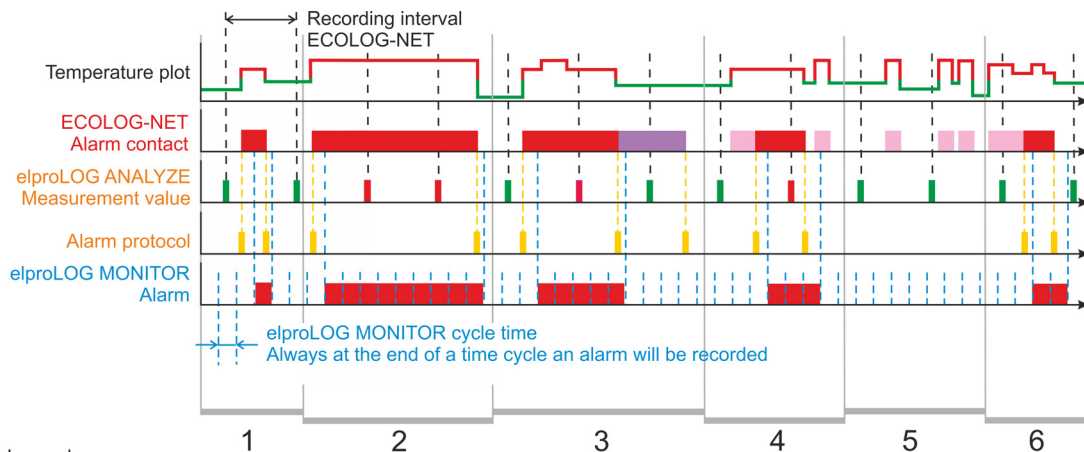
6.4 Collective alarm contact functions

Datalogger type ECOLOG-NET ...A8 has 4 possibilities for alarm signaling:

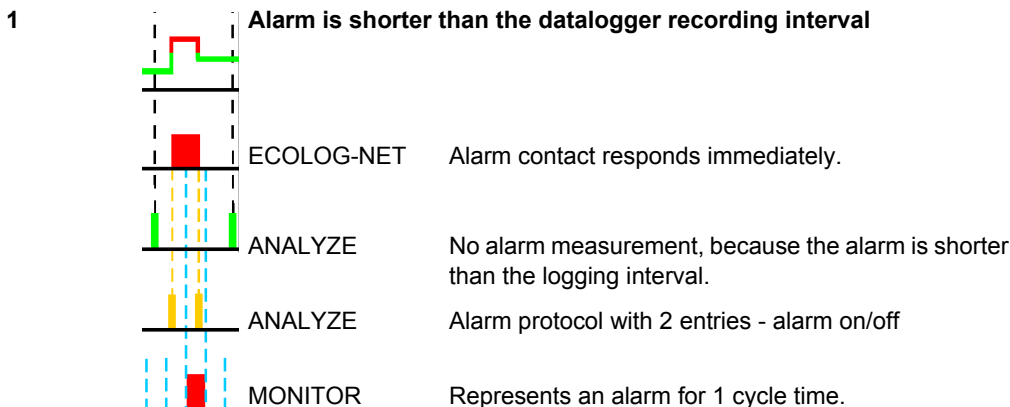
- Relay contact S
This is a potential-free switch-over contact. The contact switches when an alarm is triggered or when the external power supply fails.
- Semiconductor contact alarm 1
Only reacts when there is an alarm
This is a semiconductor switch - break contact to datalogger GND
- Semiconductor 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  6.2 Window: Setup of Alarm parameters

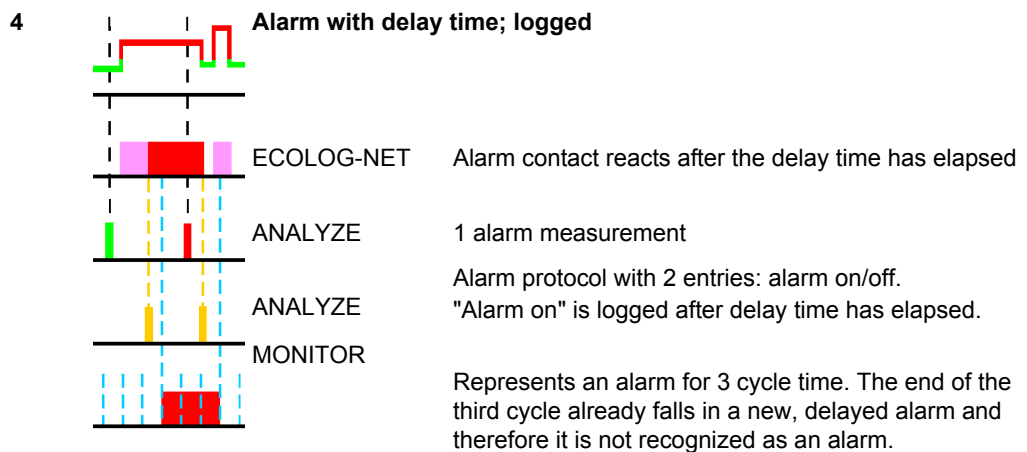
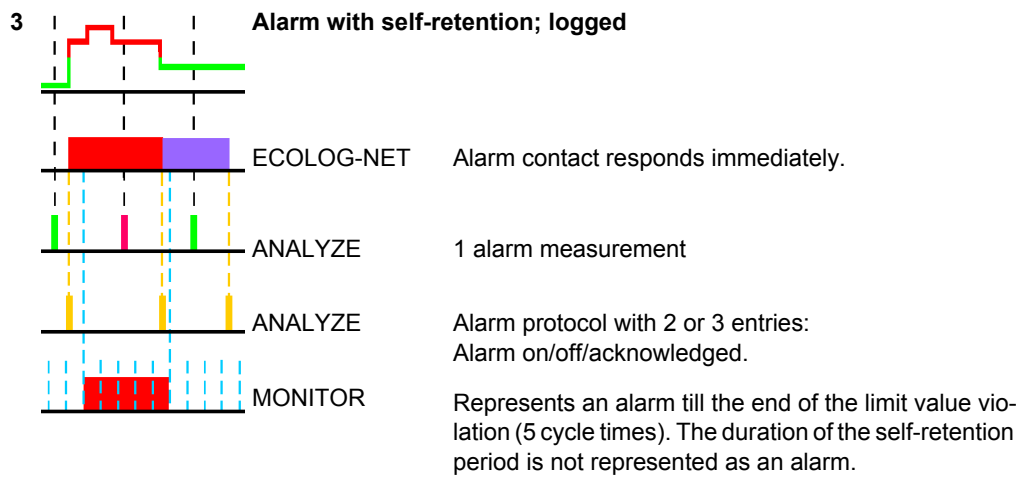
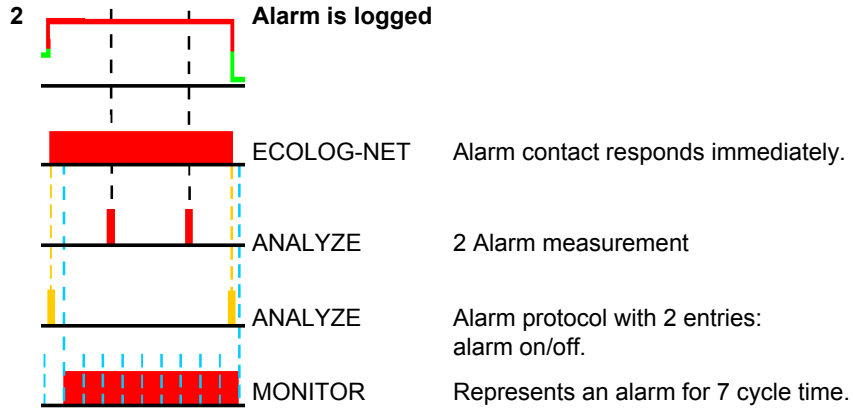
Alarm signaling:
 - Relay contact S
 - Alarm 1
 - Alarm 2
 - Buzzer 

6.4.1 Time response collective alarm

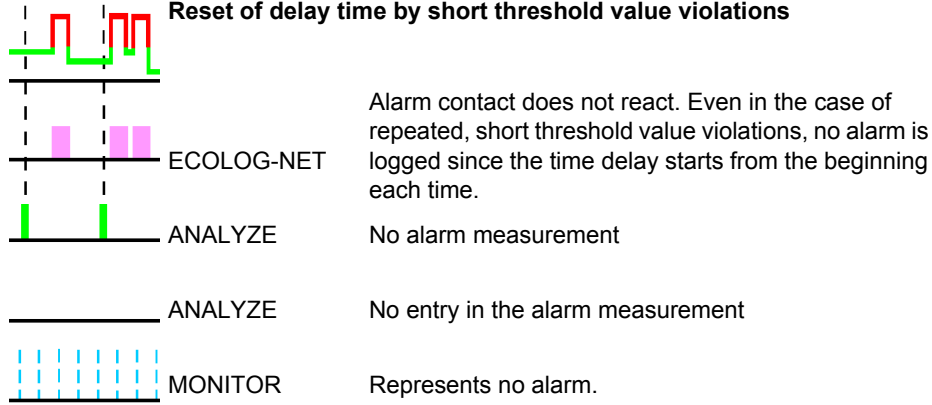


- Legend
- █ Measurement value ok
 - █ Alarm
 - █ Tag in the alarm protocol
 - █ Self sustaining of the alarm contact
 - █ Alarm delay time

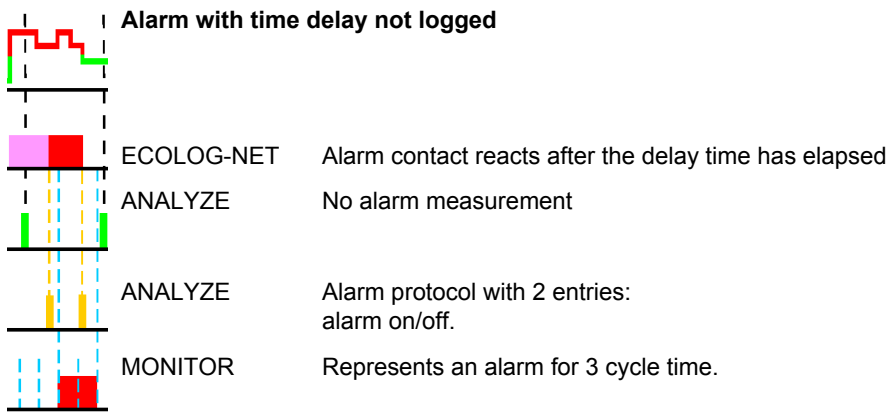




5 Reset of delay time by short threshold value violations



6 Alarm with time delay not logged



7. Contact inputs D1 and D2

Both inputs are busy with dual functions!
In each case, only one function should be used!

Assign
Defrost input

Function	possible configurations			
Assign	D2 key	D2 key		
Defrost input	D1 external		D1 external	
Alarm forwarding		D1 external	D1 external	D1 external and D2 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 values and alarm parameters*) or for alarm forwarding.
Wiring 8.3 *Supply, Contact inputs, Alarm 2*
- D2 external For alarm forwarding.
Wiring 8.3 *Supply, Contact inputs, Alarm 2*

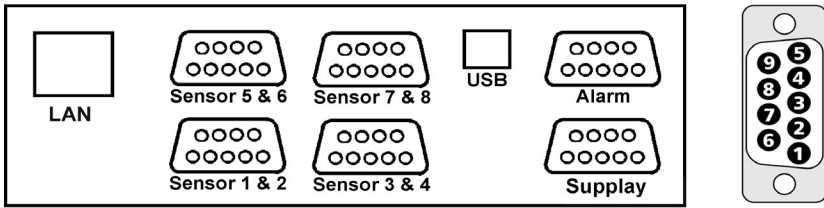
Status

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

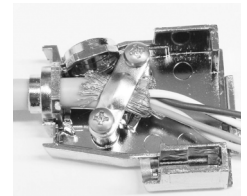


8.1 Sensor 1 - 8

Plug	SA	SB
Sensor 1 & 2	Sensor 1	Sensor 2
Sensor 3 & 4	Sensor 3	Sensor 4
Sensor 5 & 6	Sensor 5	Sensor 6
Sensor 7 & 8	Sensor 7	Sensor 8

Pin	Signal	Function
1	Gnd	Ground
2	Gnd	Ground
3	SA	Signal input (shunt to ground; 50-100Ω)
4	V sens	Sensor supply (logger operating voltage)
5	Gnd	Ground
6	Gnd	Ground
7	Gnd	Ground
8	SB	Signal input (shunt to ground; 50-100Ω)
9	V sens	Sensor supply (logger operating voltage)

Sensor signal Connector with metalized housing Part no. 800504



⚠ - FOR CABLE LENGTHS >30M USE SHIELDED CABLE
- MAXIMUM CABLE LENGTH 200M
- ENSURE A GOOD CONTACT BETWEEN THE SCREEN AND THE CONNECTOR

Sensor	+	Signal	even. shield
SA	4	3	2
SB	9	8	7

Connecting a 2-wire transmitter

Sensor	+	-	Signal	even. shield
SA	4	5	3	2
SB	9	6	8	7

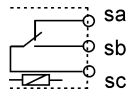
Connecting a 3-wire transmitter

8.2 Alarm

Alarm
Plug white
Part no. 800506

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

Alarm contact



Alarm contact (relay contact)

Relay contact represented in dead state.

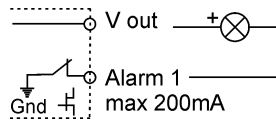
Connection sa - sc: Alarm

Connection sb - sc: no a Alarm

This relay is actuated (sb - sc) as soon as the power supply is available.

Switching load max. 42VAC or VDC; 500mA

Alarm output 1



Alarm output 1(open)

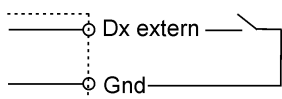
- Opens in the event of an alarm
- Semi-conductor contact! Use only for DC voltage (DCV)
- No floating contact
- Alarm cable max. 15m long

8.3 Supply, Contact inputs, Alarm 2

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

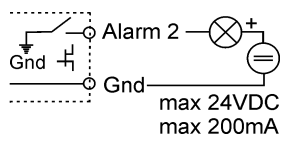
Pin	Signal	Function
1	Alarm 2	Alarm output
2	D1 external 1	Contact input
3	D2 external 2	Contact input
4	Gnd	Ground
5	V in	External power supply (logger operating voltage)
6	Gnd	Ground
7	Gnd	Ground
8	Gnd	Ground
9	Gnd	Ground

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



Contact input

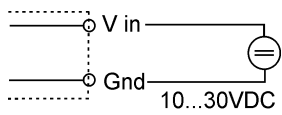
Contact input 1 and 2



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

Alarm output 2



External power supply unit

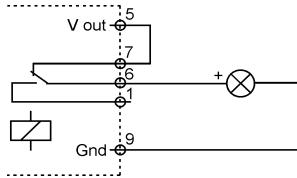
ATTENTION: The starting current is temporarily ca 1.6A (100ms). If more than one datalogger is being operated using the same power supply, the power supply must be appropriately powerful.

External power supply unit

9. Alarm diagrams

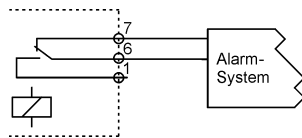
9.1 Alarm; Connector white

Alarm = threshold violation



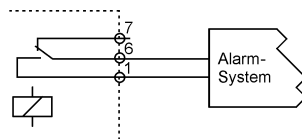
- Alarm: Contact open
- Datalogger requires an external power supply for signaling
 8.3 *Supply, Contact inputs, Alarm 2*
- Relays
- Switching load max. 42VAC or VDC; 500mA

Alarm = Threshold value violation or failure of external power supply



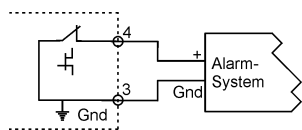
- Alarm: Contact open
- Relays
- Switching load max. 42VAC or VDC; 500mA

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



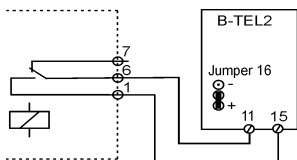
- Alarm: Contact open
- Relays
- Switching load max. 42VAC or VDC; 500mA

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

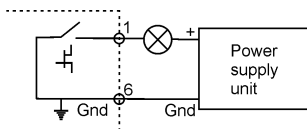
9.1.1 Elpro telephone dialing device



- 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

ALA	--	Additional alarm text in the power saving mode
CON	--	Datalogger communicating with software
USB	--	Communication via the USB connection
LAN	--	Communication via the LAN connection
DISP	Measured value	The measured value is outside of the range that can be displayed (-999 ... 9999). The measured values are however correctly logged.
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 ...A8 is in this state when it is delivered..
C.Fd	C.F.	Faulty datalogger
C.FO	C.F.O	Measured value > 22.0 mA
O.F.	≥ max	20.4 mA < measured value ≤ 22 mA
U.F.	≤ min	0.0 mA ≤ measured value < 3.6 mA
C.FU	C.F.U	Measured value < 0.0 mA

10.2 Datalogger status in elproLOG ANALYZE

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 (12. *Maintenance*).

RAM IMG-BMP destroyed

This message is shown in the data logger status in line: "Last reprogrammed on". It is the result of the data logger reset counter. All entries in the alarm protocol will be erased!

System resets since last reprogramming.

The status of the batteries is displayed in the (elproLOG ANALYZE) status information. Battery replacement: 12. *Maintenance*

Battery

The version of the firmware is documented in the status.

Firmware

11. Transmitter

11.1 Temperature with Pt100

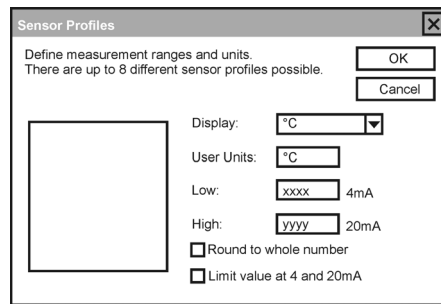
Part no. 800051

Measuring range according to operating range of sensor

Pt100 temperature probe with 4-20mA transmitter

Measurement range	depending on Pt100 sensor; Catalog
Probe class	DIN A
Accuracy	+/- 0.1% of measurement range or min. +/- 0.3°C
Power supply	8...35VDC
Connectors, cables, power supply,	13.5 Accessories

Setting parameters Pt100



Connection list DB9 and connector M12; 800508



Wiring of: 800508 female for cable length > 30m

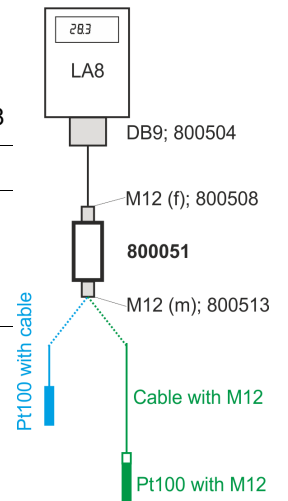


Wiring of: 800513 male




	DB9	Function	Signal LA8	Cable - length < 30m - with M12 connector	Wire color	Cable - length > 30m - needed 800508	Wire color
Sensor 1	3	Temp.	SA	blue	blue	yellow	yellow
	4	Supply	Vsens	brown	brown	brown	brown
	7	Ground	Gnd	white	white	white	white
Sensor 2	8	Temp.	SB	blue	blue	yellow	yellow
	9	Supply	Vsens	brown	brown	brown	brown
	2	Ground	Gnd	white	white	white	white


Pt100 with 4-20mA Transmitter and cable connector M12; 800513
Cable length max. 12m



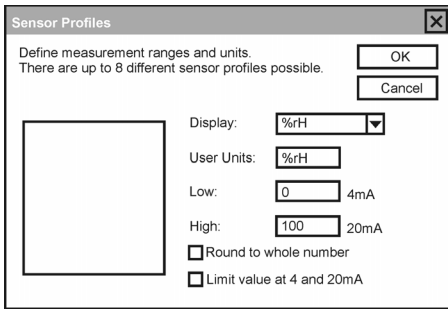
11.2 Humidity

Temperature and relative humidity transmitter EE21

- Measurement range -40...60°C, 0...100%rH
- Accuracy at 23°C +/- 0.3K, +/- 1.5%rH
- Power supply 20...35VDC
- Connectors, cables, power supply,  13.5 Accessories

for example
 Part no. 800821 or 800823
 For further information, see the original data sheet Designs for high humidity and polluted environment are available 

Setting parameters: Humidity





Procedure for setting parameters for temperature

 11.1 Temperature with Pt100

Connection list DB9 and connector M12; 800508 SA for temperature and SB for humidity

DB9	Function	Signal LA8	Cable	Cable
			- length < 30m - with M12 connector	- length > 30m - needed 800508
			Wire color	Wire color
1	Ground	Gnd	white	white
3	Temperature	SA	back	green
4	Supply	Vsens	brown	brown
8	Humidity	SB	blue	yellow



Wiring of: 800508 female for cable length > 30m
 brown green  white yellow 

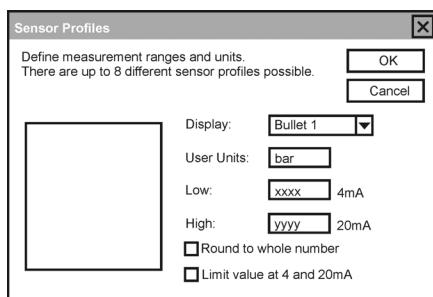
11.3 Pressure

e.g. Part no. 800813
 For further information, see the original data sheet

Pressure transmitter

- Transmitter [Catalog](#)
- Measurement range depending on pressure transmitter
- Accuracy +/- 0.5% of the measurement range
- Power supply 15...32VDC
- Connectors, cables, power supply, [13.5 Accessories](#)

Parameterization pressure



Connection list DB9 and connector M12; 800508




Wiring of: 800508 female for cable length > 30m




	DB9	Function	Signal LA8	Cable - length < 30m - with M12 connector	Cable - length > 30m - needed 800508
Sensor 1	3	Pressure	SA	blue	yellow
	4	Supply	Vsens	brown	brown
	7	Ground	Gnd	white	white
Sensor 2	8	Pressure	SB	blue	yellow
	9	Supply	Vsens	brown	brown
	2	Ground	Gnd	white	white

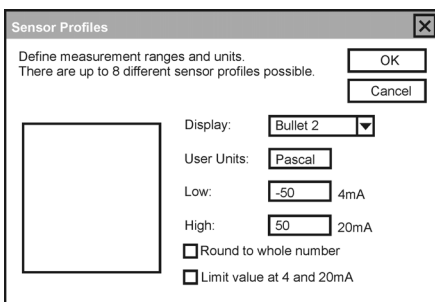
11.4 Differential pressure

for example
 Part no. 800200
 For further information, see the original data sheet 

Differential pressure transmitter

- Measurement range -50...+50 Pascal
 other values available on request
- Medium only air and no corrosive gases
- Accuracy at 20°C <+/- 3 Pascal
- Operating temperature 0...70° C
- Protection class IP54
- Power supply 24VDC
- Connectors, cables, power supply,  13.5 Accessories

Parameterization differential pressure



Connection list DB9 and sensor terminals

				Cable - length < 30m - without connector	Cable - length > 30m - without connector	
	DB9	Function	Signal LA8	Wire color	Wire color	Terminal
Sensor 1	3	dP	SA	blue	yellow	%
	4	Supply	Vsens	brown	brown	+
	7	Ground	Gnd	white	white	0
Sensor 2	8	dP	SB	blue	yellow	%
	9	Supply	Vsens	brown	brown	+
	2	Ground	Gnd	white	white	0





11.5 CO₂

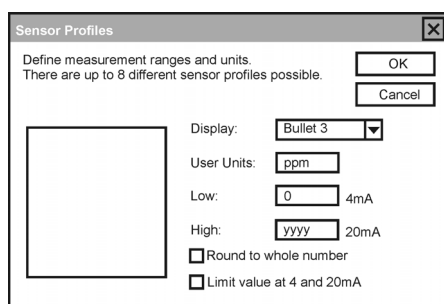
e.g. Part No. 801248
(wall mounting) or
800810 (duct mounting)

For further information, see the original data sheet

CO₂ transmitter

Measurement range	depending on transmitter
Accuracy at 20°C	+/- [1% of the full scale + 1.5% of the measured values]
long-term stability	+/- 5% of range / 5 years
Response time	< 60s
Warm-up time	< 5min
Applications	0...100%rH (non-condensing), -20...70° C
Power supply	24VDC, 2.5W

Parameterization CO₂




Connection list DB9 and sensor terminals




	DB9	Function	Signal LA8	Cable - length < 30m - without connector	Cable - length > 30m - without connector	Terminal
Sensor 1	3	CO ₂	SA	blue	yellow	mA
	4	Supply	Vsens	brown	brown	+
	7	Ground	Gnd	white	white	0
Sensor 2	8	CO ₂	SB	blue	yellow	mA
	9	Supply	Vsens	brown	brown	+
	2	Ground	Gnd	white	white	0

12. Maintenance

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

Maintenance schedule 


- Perform datalogger readout and save the data
- Test the alarm function, if implemented
- Replace the battery  13.4 *Dimensional view*
(Part no. 800556, set of 2, storable for at least 5 years / lithium 3.6V, 2100mAh, AM3/LR6/AA)

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.

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!

Replacing battery 

13. Technical data

13.1 Measuring ranges and Accuracy

	Range	Resolution	Accuracy
Measuring (over the entire operation range)	3.6mA ...20.4mA	0.003mA	± 0.04mA

OTHER DEVICES IN THE LOOP MUST BE POTENTIAL FREE. THE DATALOGGER MEASURES AGAINST MASS (SINGLE ENDED)!

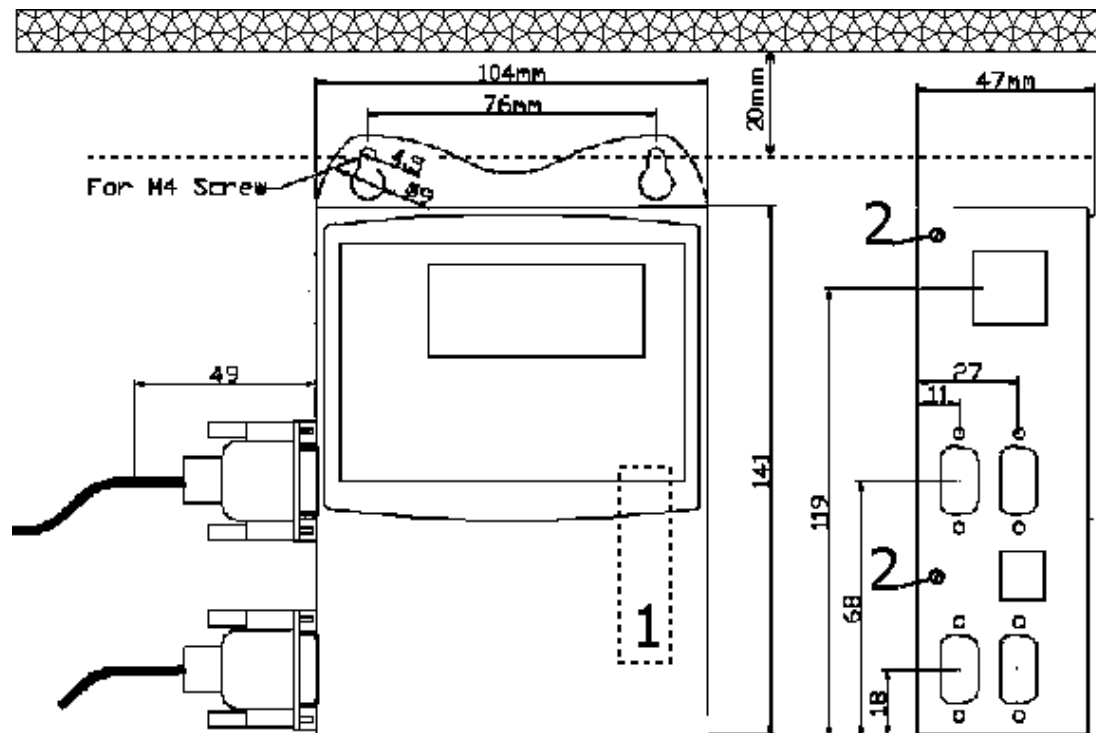
13.2 Viewing ranges

Measurement range in user unit	0 ...2	3 ...21	22 ...210	211 ...2100	> 2100
Resolution per digit (saved value in datalogger)	≤ 0.003	≤ 0.003	≤ 0.03	≤ 0.3	> 0.3
Resolution in ANALYZE	0.001	0.001	0.01	0.1	1.0
Range Resolution (Representation range of "whole number" and / or "value limitation")	The scaled range (3.6mA ...20.4mA) will at step 6242 be resolved to +/- 1 the last number displayed.				

13.3 Operating range

Ambient temperature		-35°C.. 55°C
Protective class		IP30
Working resistance		50 ...100Ohm
Power supply	Standard application 13.5 Accessories	24VDC
Alarm contact	Switching load	42VAC or VDC 500mA
Alarm output 1 and 2	Switching load	24VDC 200mA
	Alarm cable, max. length	15m

13.4 Dimensional view



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

13.5 Accessories

Part no.	Name
800488	Current calibrator
800496	Power supply unit with connector DB9 24V 0.35A [#]
800498	Power supply unit with connector DB9 24V 1.6A [#]
800504	Connector DB9 with soldering work of sensors metalized casing
500506	Plug DB9, male, alarm, white
800505	Plug DB9, female, power supply, red
ECA_PT100_SILxx_M12	Connection cable PT100 with M12 plug
ECA_4C_PVCxx_M12	4-wire connection cable with M12 plug for cable lengths <30m
ECA_LIYCX0,34	4-wire connection cable without M12 plug for cable lengths >30m
800508	Plug M12 (f) with insulation displacement connection technology
800513	Plug M12 (m) with insulation displacement connection technology
800359	Various alarm flashers
800362	
800363	
800556	Replacement battery, set of 2, can be stored for up to 5 years
	Transmitter, sensor and cable according ELPRO price list

Please keep the transmitter power requirements in mind. Where necessary, use a power supply unit with higher output power.



13.6 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	Art. Nr.	Funktion	
Type	No d'article	Fonction	
Type	Part No	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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 9470 Buchs | Switzerland
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Revision History

Author	Date	Version	Description
A. Gubler	27.07.2005	--	First edition
A. Gubler	26.01.2006	a	Chapter 2.7 and new battery protection
A. Gubler	06.05.2006	b	Chapter 4 revised on elproLOG 3.33 and FW 1.07 Chapter 8.1 and new connector assignment
A. Gubler	26.11.2009	c	Reference to elproLOG ANALYZE operating instructions (SE3003E) and online help
A. Gubler	01.10.2012	d	ECOLOG-NET WA8 deleted, small changes (Layout), new graphic, chapter 6.4.12,
A. Gubler	16.01.2014	e	DB9 added, several minor text corrections
A. Gubler	21.11.2016	f	New CE declaration

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