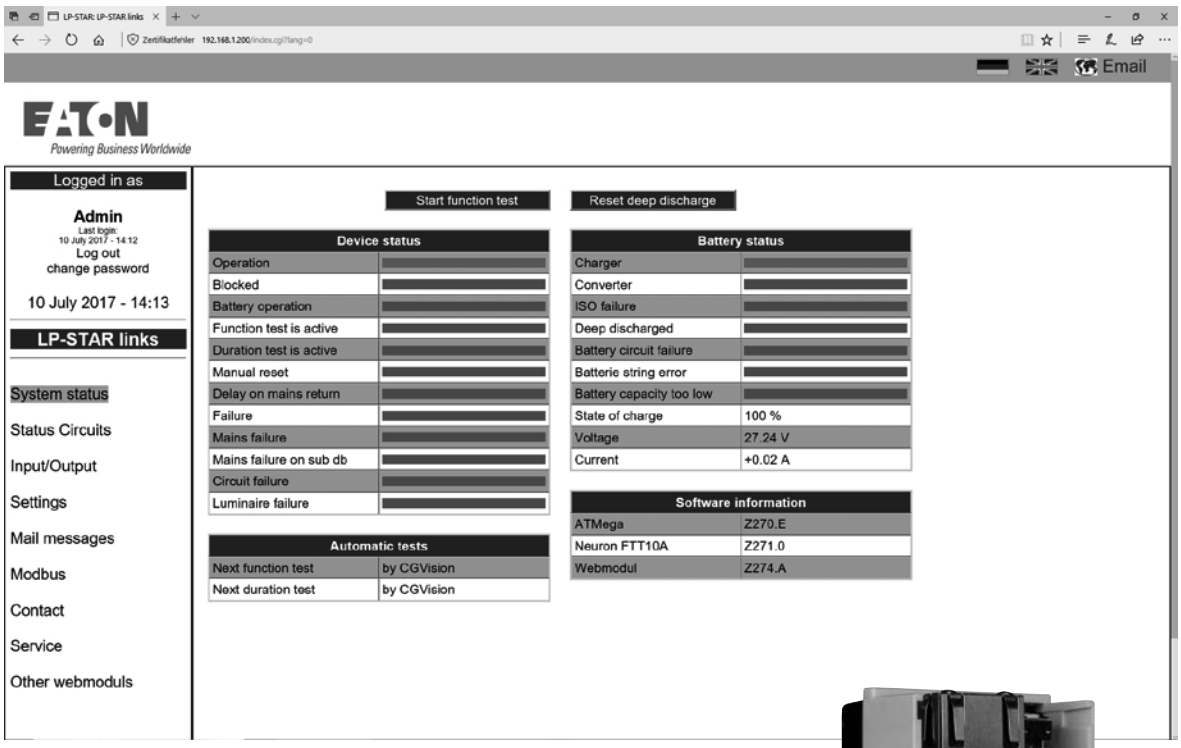
Mounting and operating instructions CEAG Webmodule CG-S LP-STAR

Target group: Skilled electricians



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1 Safety Instructions

⚠ NOTE

The Webmodule CG-S shall only be used for its intended purpose and in undamaged and perfect condition!

When working on the electronic device make sure that it is disconnected from the voltage! Pay attention to the different power supplies in mains or battery operation.

Observe the national safety rules and regulations for prevention of accidents as well as the safety instructions included in these operating instructions marked with ⚠!

2 Conformity with standards

Conform to: EN 60950-1. Developed, manufactured and tested acc. to ISO 9001.

3 Technical data

Supply voltage	24 V DC
Power consumption	1.2 W
Current consumption	33 mA +/- 25%
Connection	RJ45
Insulation class	III
Degree of protection acc. to EN 60529	IP 20
Ambient temperature	-10 °C .. +55 °C
Connection terminal	1.5 mm²
Weight	0,1kg
Dimensions	90 x 35 x 32 mm

3.1 Description / Scope of application

The webmodule CG-S for visualisation and monitoring of a LP-STAR system via local ethernet (LAN) with a customary WEB-browser (e. g. Internet ExplorerTM). Integrated mail-client for a comfortable and event based failure notification for up to 5 email addressees. Password protected access accounts capable of parametrisation.

4 Important instructions about cybersecurity for using the CG-S web module in Ethernet networks

The CG-S web module is a component of safety devices in an Ethernet communications network, and is therefore particularly important to prevent unauthorised access, for example, through hacker attacks. The CG-S web module has several safety features, e.g. encryption, password protection etc. The security of the CG-S web module ultimately depends on operator settings, e.g. high-quality passwords and the network environment in which the web module operates. An unsecure network environment facilitates unauthorised access by external parties.Here is important information on how to protect the web module and make it highly secure against unauthorised access.

Settings of the CG-S web module

Password protection:

Password protection is extremely important to prevent unauthorised and unwanted access by external parties. Certain rules must be therefore followed when setting a password:

- The password should be at least six characters long; the longer the better. It should contain upper and lower case characters and special characters and numbers (?!%+…).
- Do not use the names of family members, pets, your best friends, favourite stars or their birthdays or similar setups.
- Passwords should not be listed in dictionaries if possible.
- Passwords should not contain common patterns or repeated patterns or keyboard samples, e.g. qwertz or abcd1234 and so on.
- Adding simple numbers at the end of a password or a special character e.g. $! ? #, at the start or end of an otherwise simple password is also not recommended.

The CG-S web module requests that the user sets a new password at the first logon to replace the default password. Failure to do so facilitates hacking enormously. When setting a new password, the password quality is shown with colour codes for assistance.

Use in a network, e.g. intranet

General instructions to managed network hardware, e.g. routers, switches etc.

- Keep your firmware up to date!
- Change the default password of the device!
- When configuring the router, disconnect the device from the network!
- Set up a firewall with MAC address filtering!
- Activate DDoS protection (Distributed Denial of Service)
- Block unneeded ports and protocols
- Deactivate the unused features of your router!
- Deactivate remote access to your router!

Additional instructions to WLAN components

- Configure your access point using secure channels. The access point should be set up and administration performed through a wired connection and not using wireless access.
- Modification of the network name (SSID)
- Activate an encryption method, at least WPA
- Encryption using the default WEP is unsecure and not recommended.
- Use a complex password consisting of at least 20 characters to protect your WLAN, because so-called offline attacks can be made even without an active network connection.
- Deactivate the WPS-PIN procedure!
- Turn on your WLAN only when in use.

Further recommendations and best practices are listed in the EATON whitepaper "Cybersecurity considerations for electrical distribution systems" available via a search engine with the search key word „WP152002EN" for download as PDF file.

5 Installation

NOTE

For the mounting and operation of electrical apparatus, the respective national safety regulations as well as the general rules of engineering will have to be observed!

5.1 Mounting

Pay attention to tempera-tures outside the permitted range during operation. The permissible ambient temperature may not exceed 55°C.

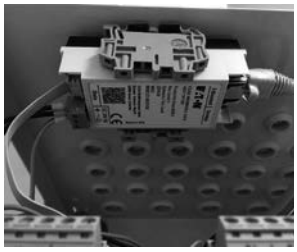
The module was designed for DIN rail mounting (2TE) to be only mounted in the cabinet. An external mounting outside the LP-STAR Unit is not permitted.

5.2 Electrical connection

5.2.1 Electrical connection to the CSU (LP-STAR)

The webmodule LP-STAR is supplied with 24V DC of the LP-STAR Unit. The PE connector must be connected to the protection earth (PE) in the LP-STAR UNIT.

Note: The DC-DC inverter can supply max. 20 pcs. further DLS/3Ph-busmodules/TLS-modules! The 6-pole data cable connects the webmodule with the CU control unit:

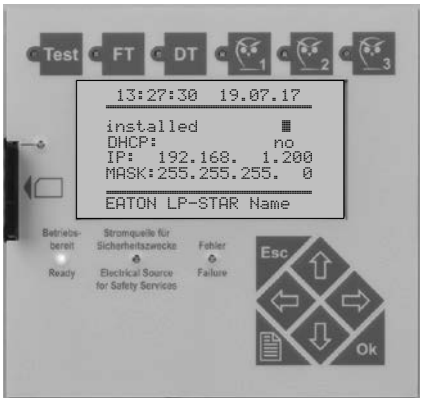


Placement of the webmodule in the LP-STAR

Connection of the webmodule

5.3 Commissioning the Webmodule on the control unit

After connection of the power supply (24V DC), the webmodule needs up to 1.5 minutes for booting. After the booting, the red LED of the webmodule flashes slowly. To log on the webmodule on the CU control unit, the service pin of the webmodule must be pressed for approx. 1 second. The menu „webserver setup" appears in the display of the control unit of the ZB-S / AT-S+. During the log on procedure the display shows a lot of question marks. After approx. 3-5 seconds the display shows the standard settings of the webmodule:



The webmodule gets automatically activated to the control unit, which is displayed by the red LED (some seconds) of the control unit and the webmodule. After 1-2 minutes the procedure is finished and the webmodule is ready to operate.

LED-display of the webmodule:

- Green LED on:
  - registrated on control unit + normal operation
- LED flashes red/green:
  - Reset of the webmodule to factory default
- LED flashes red:
  - Webmodule not registrated on control unit
- LED flashes quickly red:
  - No connection to the control unit

Service pin of the webmodule:

- Press the service pin for:
  - < 3 sec.: Register/unregister of the webmodule on the control unit (CSU)
  - > 10 sec.: Reset to factory default

⚠ ATTENTION

All programmed data get lost!

5.4 Deactivate the webmodule on the control unit

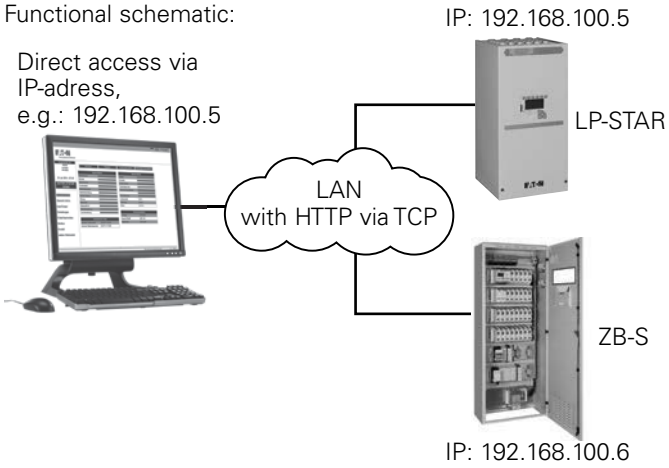
The webmodule can be deactivated on the control unit. For this, the service pin of the webmodule has to be pressed for approx. 1 sec. The screen showed in the picture above appears. With the push button „arrow left" or „arrow right" the webmodule can be set as „not installed". Press o.k. and back with menu button. Now the webmodule is offline and the red LED flashes slowly.

During activities on the control unit of the ZB-S /AT-S+, e.g. programming of luminaires, it is possible that the connection between the control unit and the webmodule is interrupted for a short time. This gets displayed by a red LED on the control unit or rather on the webmodule.

Furthermore the webbrowser shows „data is synchronized". The connection will automatically be restored after a short time.

5.5 Monitoring via an internet browser

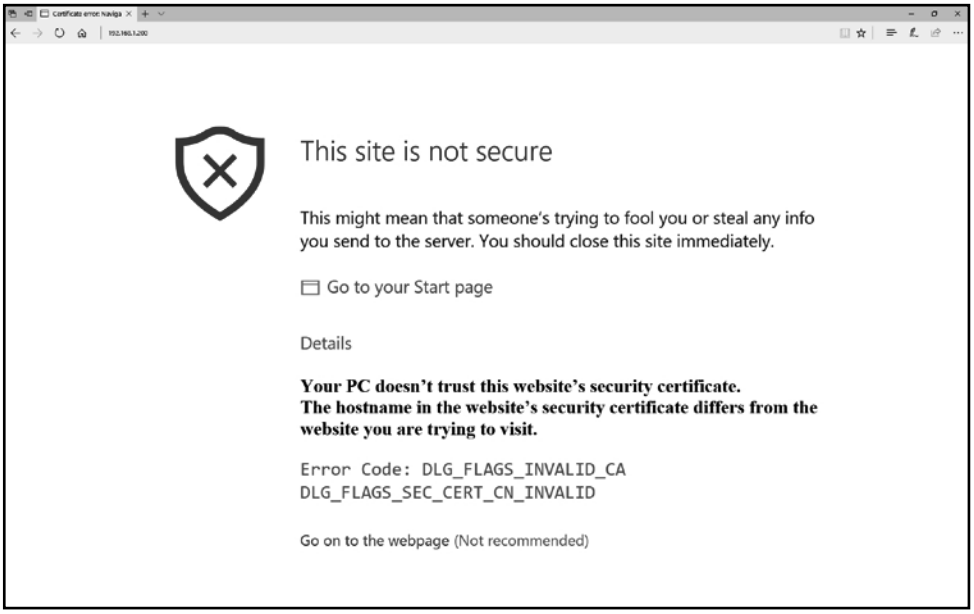
Functional schematic:

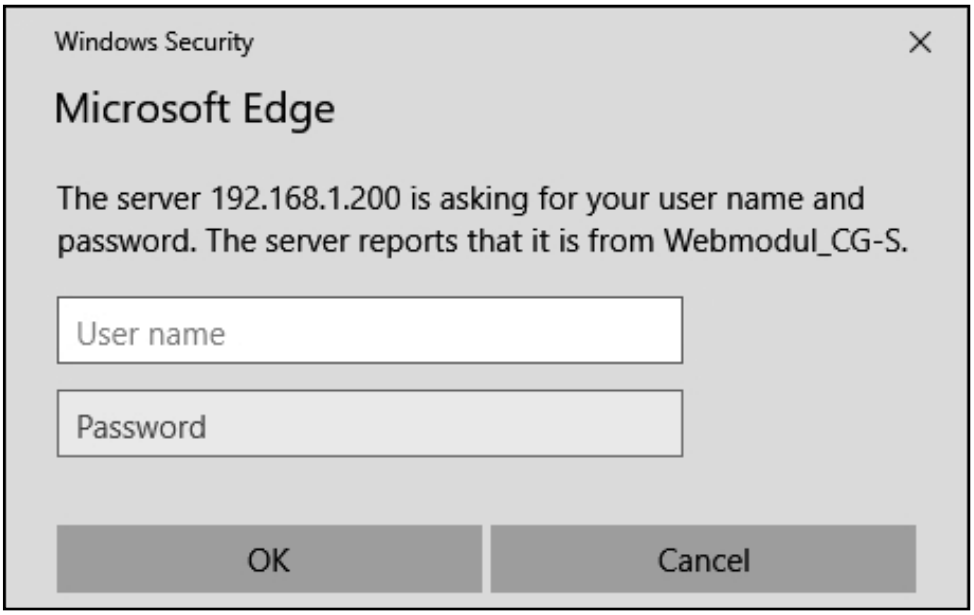


The webmodule allows a visualisation of a ZB-S/US-S central battery system or an automatic test system AT-S+ via ethernet.If the device shall be installed in a factory intranet it is necessary to get all required information, like network settings or mail settings from the IT-department in charge (see chapter 6.5, Settings)

Standard IP-address in factory default is: 192.168.1.200

6 Handling LP-STAR





ATTENTION

At the first start of a web-browser, it can take up to 15 sec., until the access to the website is possible.

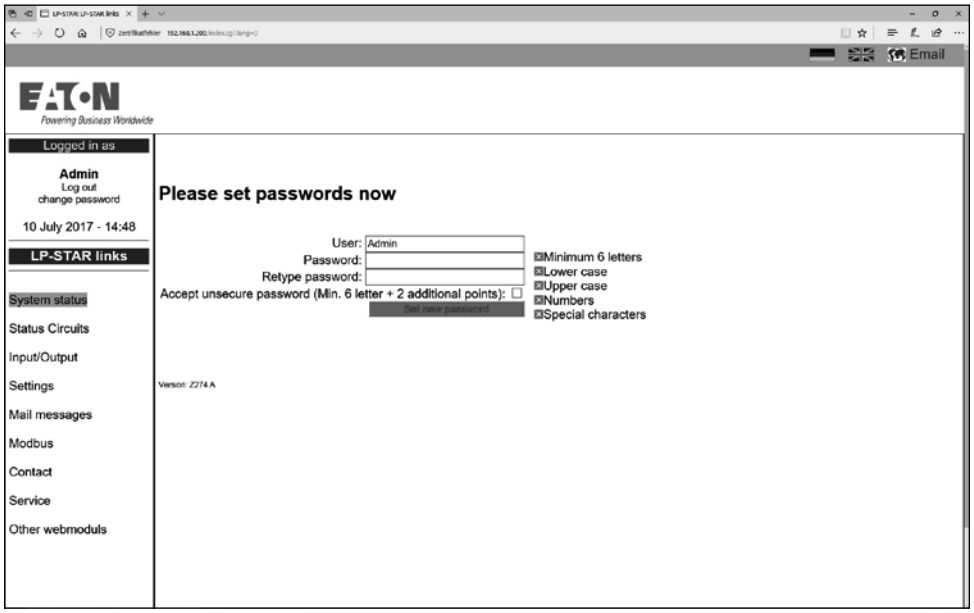
Due to a secured connection to the webserver, it is necessary to use https://xxx.xxx.xxx.xxx (ip-address). With factory default 192.168.1.200 will be the right address: https://192.168.1.200

A message with an invalid security certificate appears. This is harmless. Continue with "Go on to the webpage".

Note: This website and message can be different in dependence of used web browser.

Following dialog box with user/password appears.

Without enter of the user name and password, continue with "OK".



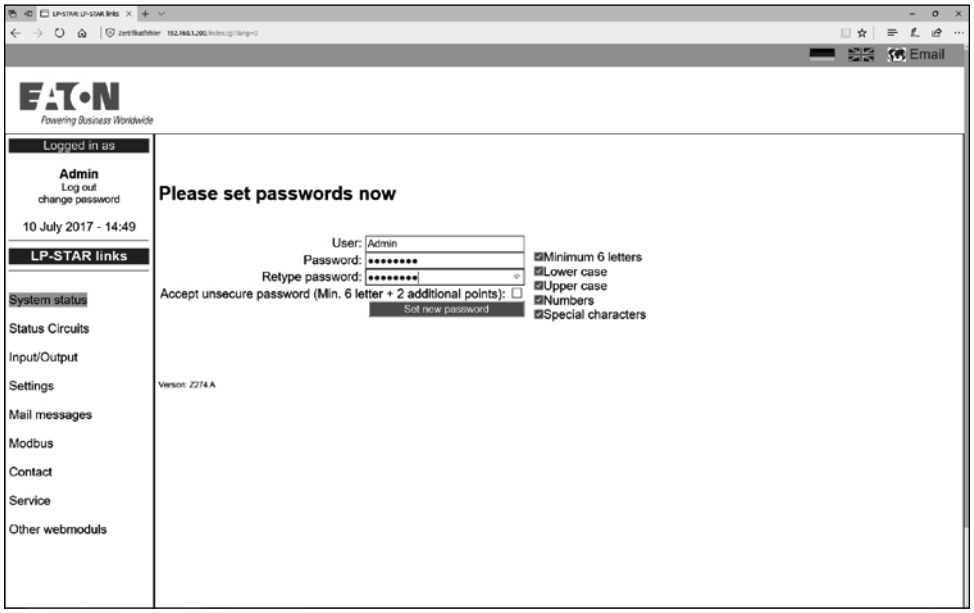
NOTE

With the first Login, it is neccessary to set a new password.

A secure password must fulfil minimum the first plus two following criteria:

- min. 6 letters
- min. 1 lowercase letter
- min. 1 uppercase letter
- min. 1 number
- min. 1 special character

During enter of the password a view displays whether the above criteria are fulfilled. A red cross indicates if not all criteria are fulfilled and acceptance of the password is denied.



If above criteria are fulfilled this is indicated with a orange or green tick and the password can be adopted via "Set new password".

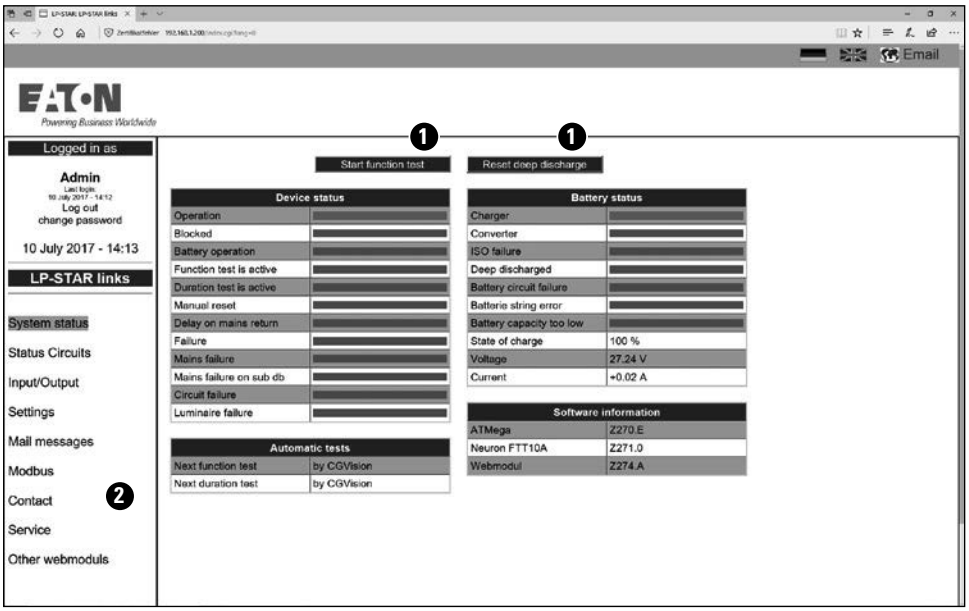
If for any reason no secure password is desired, the request for criteria can be deactivated by ticking "Consent to insecure password". Simple passwords can then be specified but this is not recommended due to security reasons. The password can be reset at any time via "Modify password".

ATTENTION!

If the password is lost, it is only possible to reset the webmodule to factory default (Service Pin > 10 sec.).

6.1 Submenus LP-STAR

6.2 Overview LP-STAR



*Due to security reasons (remote access) and after starting a function test, you must wait for 30 minutes before starting a new function test. The remaining time is displayed on the button. The function test functionality is deactivated during the remaining time. If for special reasons several consecutive function tests are required, these must be started on the system on location.

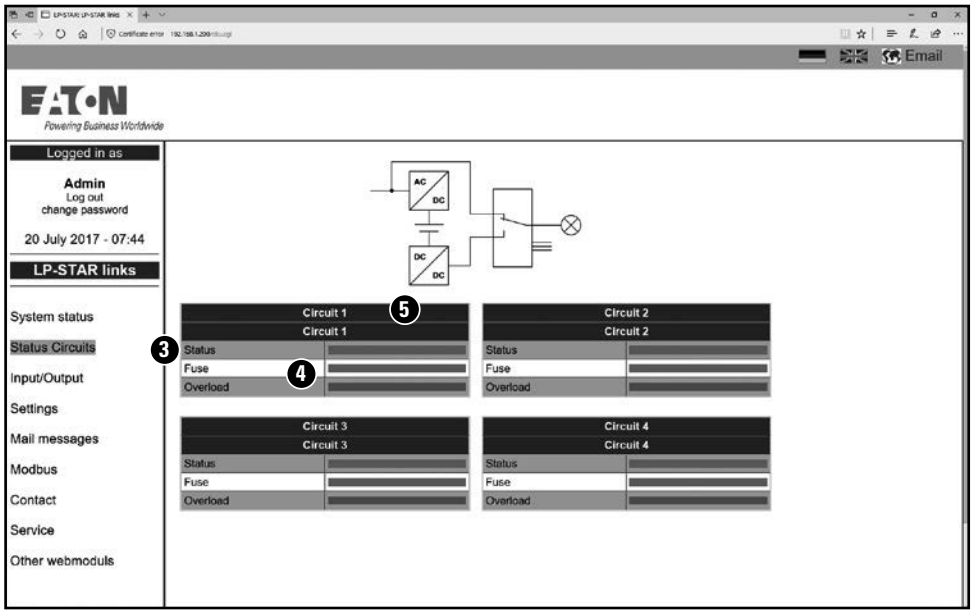
After successful login the mask „Overview ZB-S“ appears by showing all relevant statuses of the system (control unit), battery and charging unit as well as display of the next automatic test (FT/BT) and software information on the control unit ZB-S.
The statuses are shown coloured:
green: function o.k.
yellow: FT/BT runs
red: function failure

When logged in as „admin“ it is possible to push the buttons for the following commands: ❶:

- start function test*
- reset deep discharge protection

Choosing the menus on the left side you get in the marked submenus. ❷.

6.3 Overview final circuit



In picture “Status Circuits” ❸ the status of the individual circuit ❹ will be displayed.

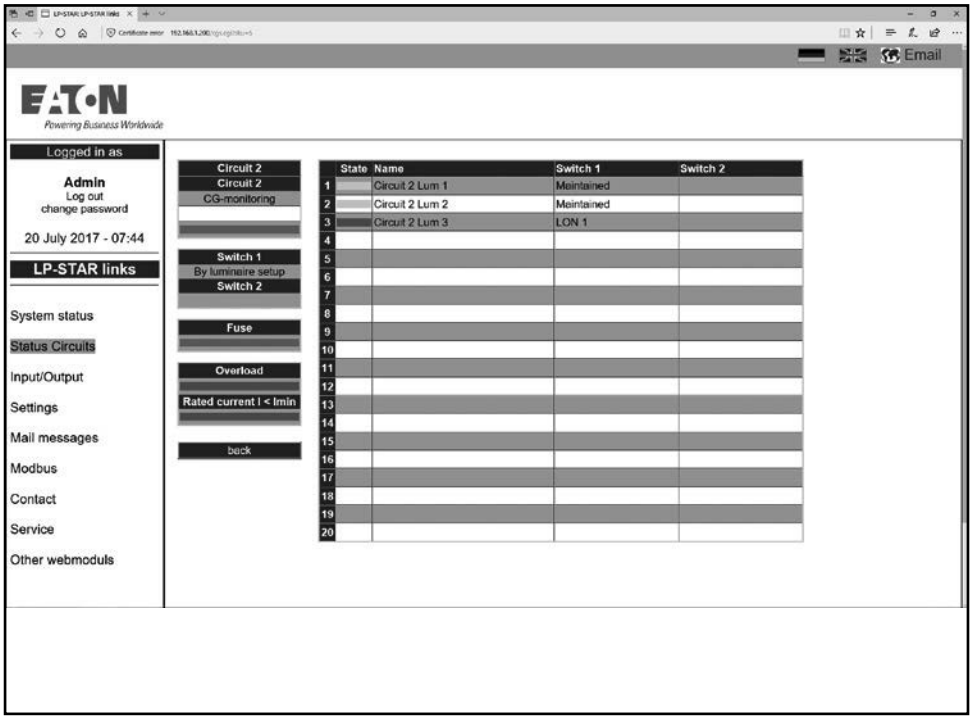
- **Status:** Sum status circuits
- **Fuse:** Outgoing fuse of the circuit
- **Overload:** Overload display of the circuit

Meaning of the colours:

- **Red:** Failure
- **Green:** OK

❺ With a click on the individual circuit the appendant mask starts.

6.3.1 Circuit picture

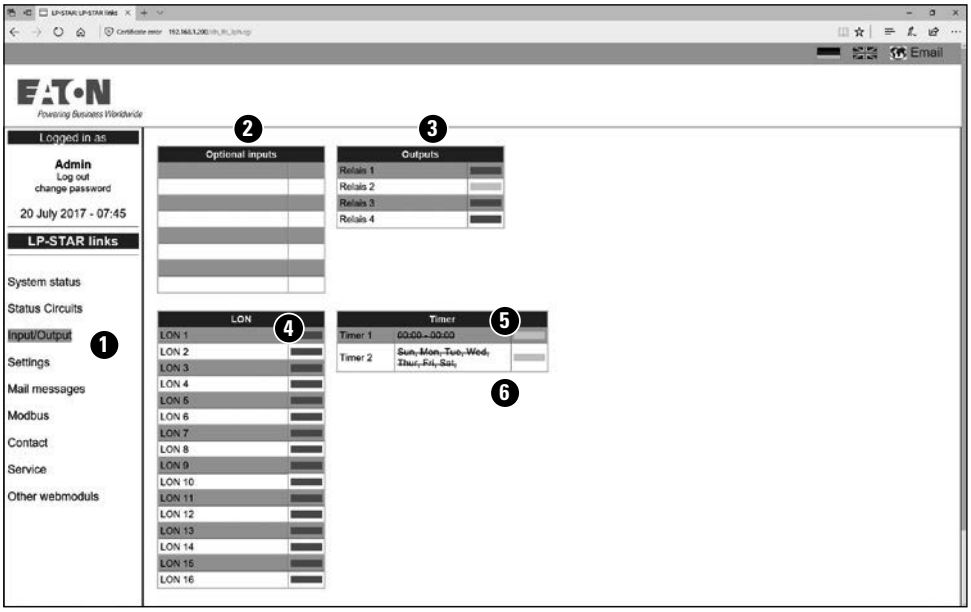


The circuit picture shows the status of the circuit and the status of installed luminaires incl. destination text and switch assignment.

The to-be states of the luminaires are displayed as follows:

- **Grey:** switched OFF
- **Yellow:** switched ON
- **Red:** Failure

6.4 Input / Output

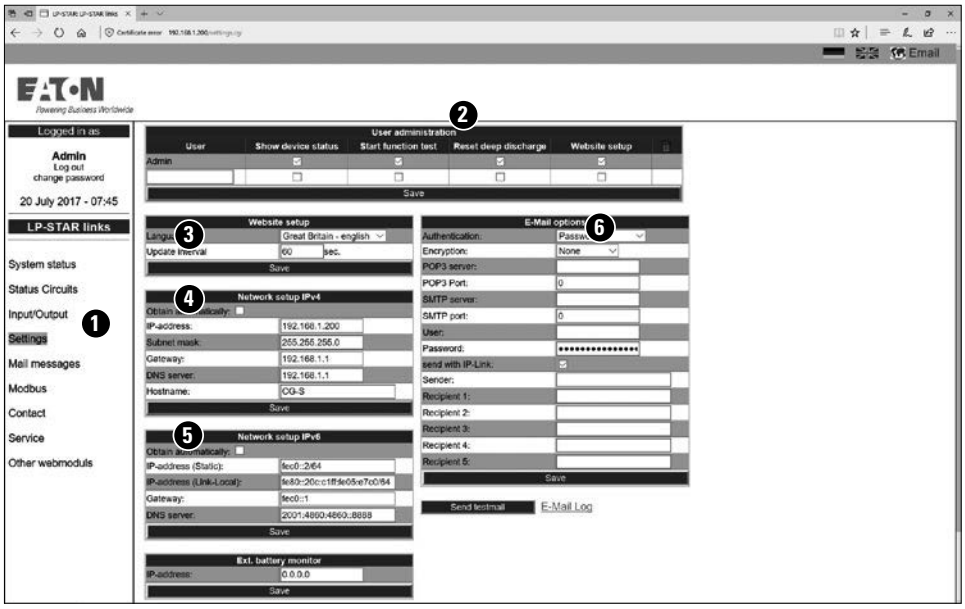


The menu Input/Output ❶ shows the status of the optional inputs ❷ which must be programmed as switch, relay outputs ❸, LON switches ❹ and Timer ❺.

- **Grey:** Function not active
- **Yellow:** Function active

If the internal timer on the LP-STAR control unit is deactivated, the Timer times and week days ❻ are crossed out in the picture.

6.5 Settings



In the picture "Settings" ❶ it is possible to set up the main settings of the web server:

❷ **User administration:** Enter of new user with different access rights, which can activated/deactivated with a tick.

After confirmation via "Save" a message appear, to enter a password for the new user.

❸ **Website setup:**

- Selection of the language
- Update interval of the webpage (standard is 60 sec.)

❹ **Network setup IPv4:** Please contact the IT-department, which dictates the parameters in the intranet:

• IP-address: obtain automatically
-> IP-address gets awarded over DHCP-server

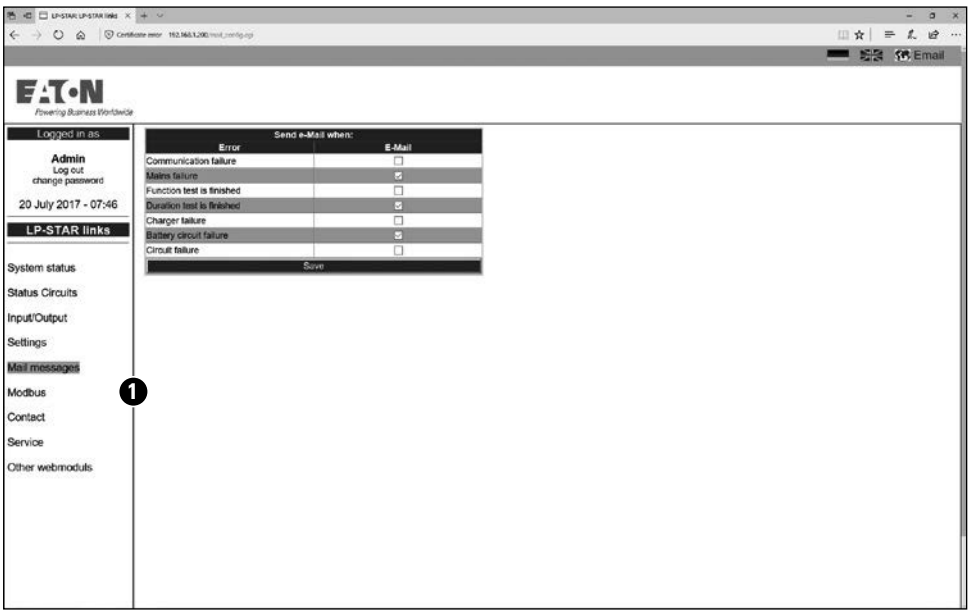
• IP-address: for static IP-address use following values
-> static IP-address

- IP-address: xxx.xxx.xxx.xxx
- Subnet mask: xxx.xxx.xxx.xxx
- ateway: xxx.xxx.xxx.xxx
- DNS server: xxx.xxx.xxx.xxx

❺ **Network setup IPv6:** The webmodule supports the new IPv6. Please contact the IT-department, which dictates the parameters in the intranet, e.g. DHCP or IP-settings.

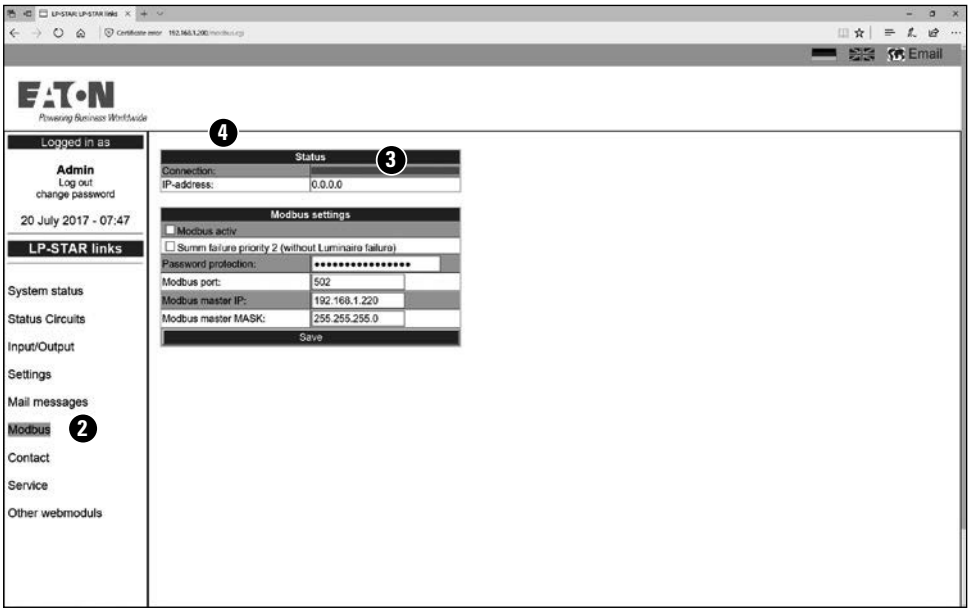
❻ **E-Mail options:** The LP-STAR webmodule has an integrated mail-client, which can send an Email to up to 5 email-addresses in case of an adjustable event (see chapter 6.6. „Mail messages"). You get the necessary information from your relevant IT-department (e.g. POP3 or SMTP server) Please note the required "Encryption" which can be START-TLS or SSL/TLS.

6.6 E-Mail messages



In this menu it can be chosen in which case of failure an Email shall be send, e.g. after a functiontest with detailed status information.

6.7 Modbus/IP



Modbus port: Default on port 502, but changeable if desired

Modbus Master IP: IP-Address of the Modbus master

Modbus Master Mask: Subnetmask of the Modubus master

The new settings will be overtake first, with click on „save".

The webmodule LP-STAR contains an integrated Modubus/IP-interface ❷ , which allows a connection to a modbus based building management system (BMS) of the LP-STAR system. A complete Modbus interface description is available separate, e.g. via the customer center, or as download from www.ceag.de

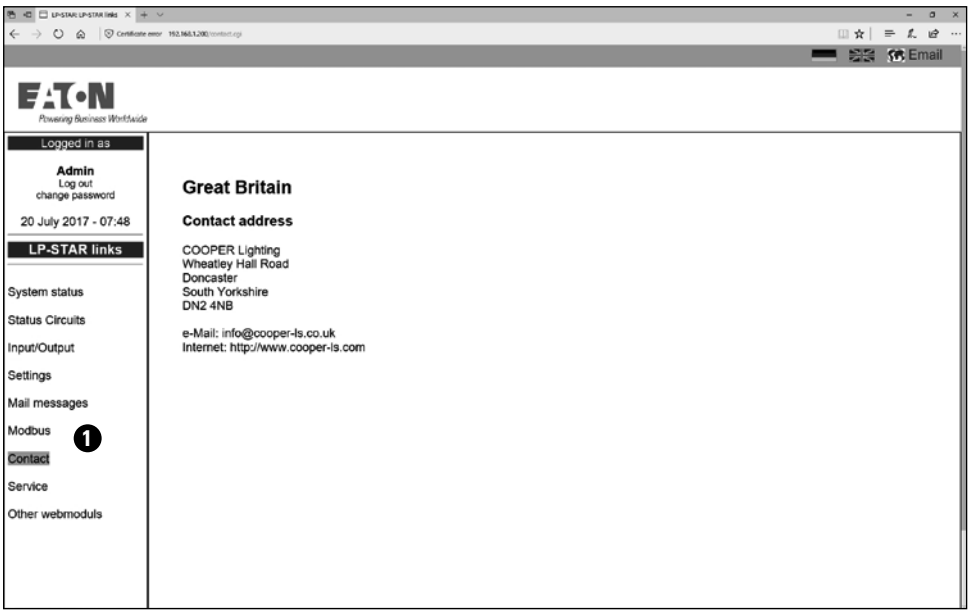
Modbus settings ❸:

Modbus active: With a hook the modbus interface can be activated.

Sum failure priority 2: If this function is activated, a luminaire failure is not include in the sum failure.

Password protection: A password protection can be activated here, if a password protection is desired.

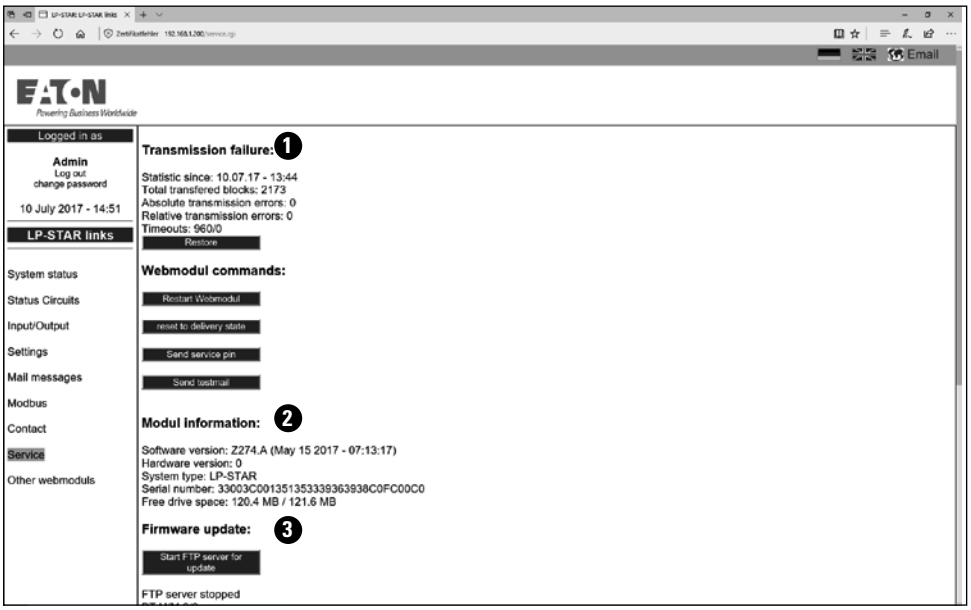
6.8 Contact



In the menu „Contact“ ❶ a responsible contact address for CEAG products appears, according to the selected language.

6.9 Service

On the „Service“ screen, transmission statistics and web module information can be read out, commands triggered and an FTP server started for carrying out a secure firmware update.



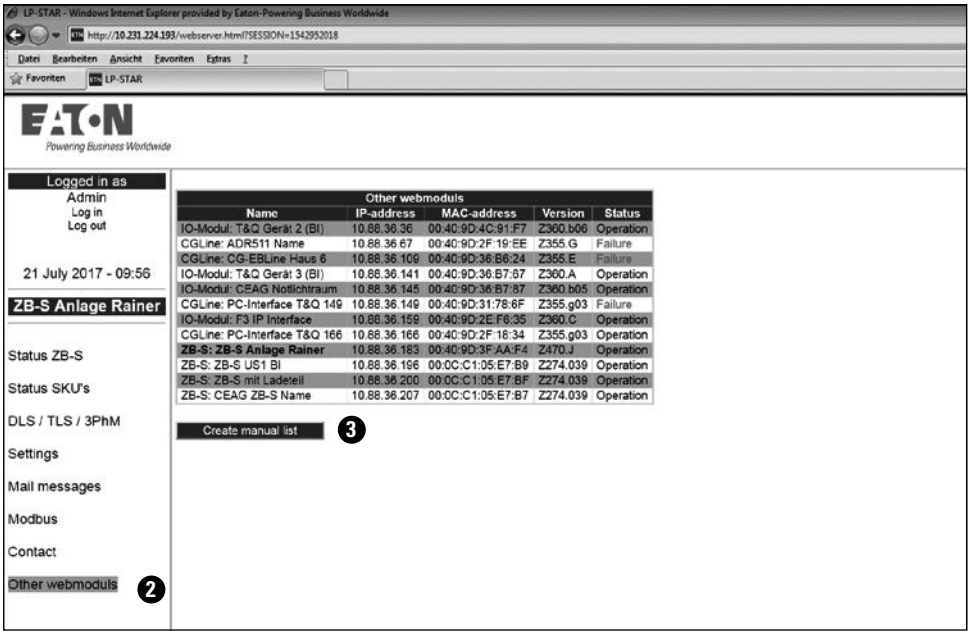
1 Transmission faults are displayed here. These may provide information with network problems.

2 The following commands enable:

- The web module to be rebooted
- The web module to be reset to its state of supply
- A service PIN to be sent, enabling the web server menu to be shown in the display of the LP-STAR
- A test mail to be sent for testing the mail function

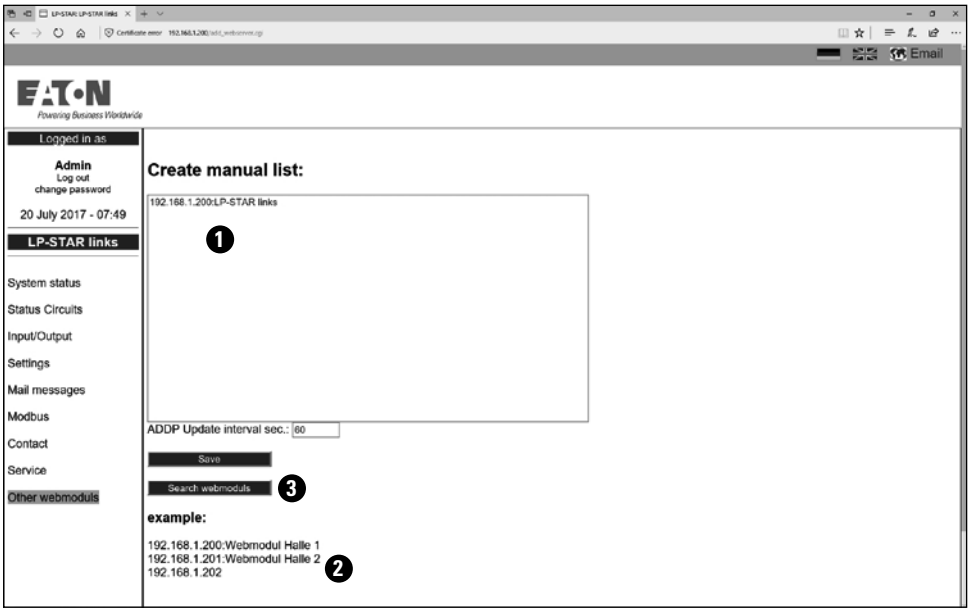
3 To carry out a firmware update the FTP server of the web module must be activated beforehand. The .bat file for the update can then be executed.

6.10 Additional webmodules



This menu 2 shows all installed ZB-S, AT-S+ and LPSTAR webmodules in the network including their addresses and acutal status. The device name in bold shows the current webmodule on which website you are at the moment. Choose webserver by clicking on its name, than the relevant mask will appear This function „other webmodules“ uses broadcast to find the other webmodules in the network. If no webmodules appear in this menu, even if there are modules installed, the network blocks broadcast communication. In this case it is necessary to creat a manual list 3 (see chapter 6.10.1 „Create manual list“).

6.10.1 Create manually list

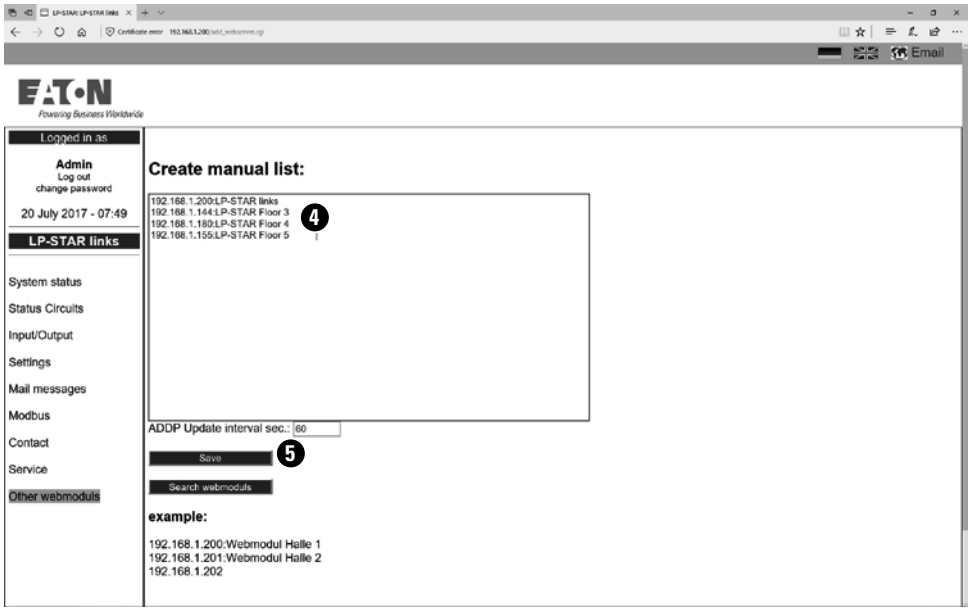


To create a manual list ❶, please enter the IP-address of the other web-modules as follows:

„xxx.xxx.xxx.xxx“ //
Text 1.Webmodule

„xxx.xxx.xxx.xxx“ //
Text 2.Webmodule

Example see below of the Figure ❷. It is possible to try „Search webmodules“ in the network ❸



The detected webmodules will be automatically entered in the list ❹. With „Save“ ❺ the changes will be applied. The procedure can take approximately up to 10 minutes, until all webmodules will appear.

Notes

Eaton is dedicated to ensuring that reliable, efficient and safe power is available when it's needed most. With unparalleled knowledge of electrical power management across industries, experts at Eaton deliver customized, integrated solutions to solve our customers' most critical challenges.

Our focus is on delivering the right solution for the application. But, decision makers demand more than just innovative products. They turn to Eaton for an unwavering commitment to personal support that makes customer success a top priority. For more information, visit **www.eaton.com/electrical.**

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