



EFFEKTA

Instruction manual

ELiT-B



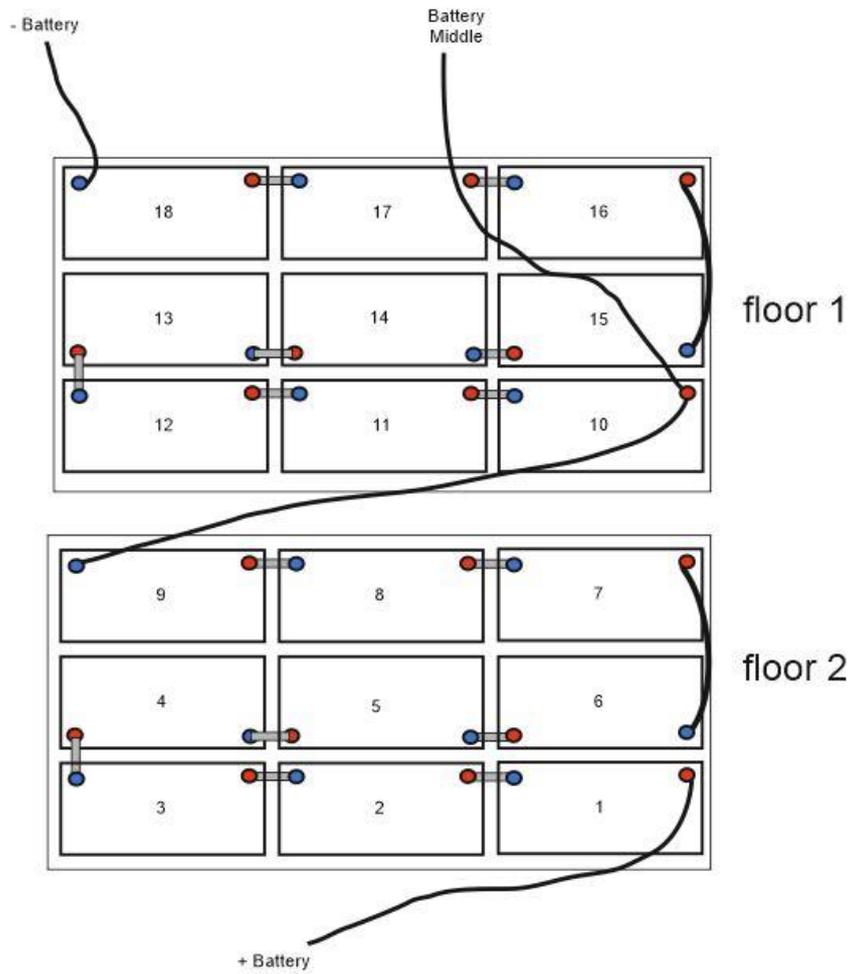
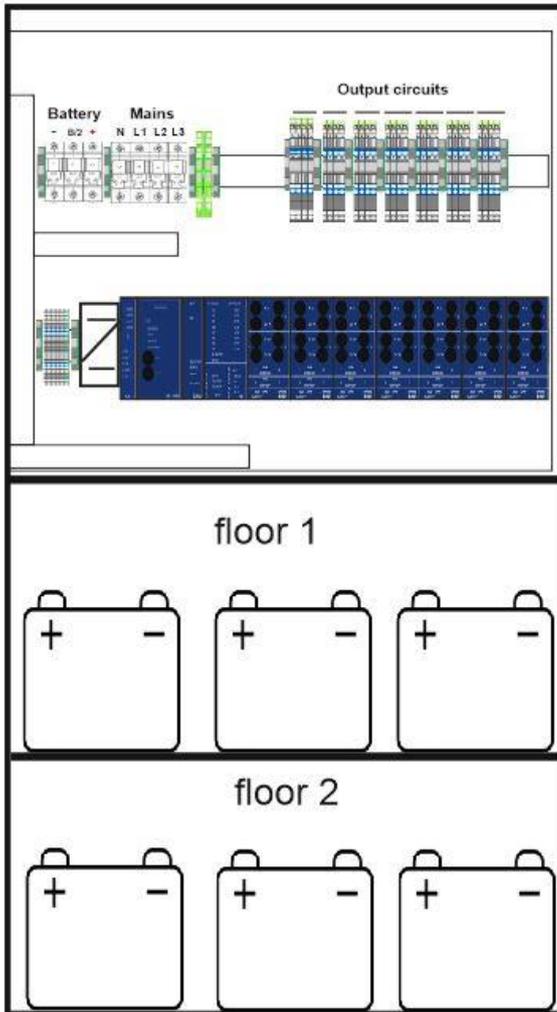


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1. General information - Purpose of the instruction manual

This instruction manual is intended to enable the intended and safe use of the system. The manual must always be available and must be ready to hand at all times. Every person who operate the system (this means: transport, preparation and installation, operation, maintenance and dismantling) has to read and apply the instruction manual. The binding guidelines, norms and laws of the operation site and country of use for safety and professional work must be followed.

Experts of manufacturers and suppliers will give the extensive informations exceed the instruction manual. All of these documents are protected by copyright laws. If not explicitly permitted it's not allowed to share, reproducing or communicate the documents as well as the contents.

2. Safety – General informations

The instruction manual is an essential assemble of the system. The operator insured that the instruction manual is always available and that the operating personal take note of the guidelines.

The operator has to complement the manual with operating instructions due existing national rules for accident preventions and environmental protection as well as the responsibilities of supervision and obligations to report the observance for operational specifics for example to work organisation, workflows and used personal. In addition of the instruction manual of the current binding rules applicable in the country of use and the operation site, the recognized technical rules for safe and professional work must also be observed. Only authorized and trained employees are allowed to work on the system in attention of all safety rules. Incorrect and faulty installation can result in dangers for human life and material damage. All views and pictures in the manual may vary to the delivery state.

Special- and customer-specific versions are listed and described as an attachment. The installation may be success only according to the relevant rules and norms for electrical engineering. To this the national provisions and guidelines of the installation place and country have to be observed.

3. Explanation of symbols



Safety-relevant informations are identified with the adjoining symbols. Non-compliance failure to follow the instructions may result personal injuries or defects on the system.



Notes, marked with a green symbol, provide important informations. Please read very carefully.



This symbol draw attention to further informations.

4. Working at the construction



For safety reasons, power must be disconnected from the control cabinet before installation work. Important, if you switch off the main power supply with battery voltage the system automatically switches to the battery voltage. Battery disconnecting or switching of may only authorised in non-load condition (danger of electric arc).

When working with the battery or battery voltage there is a increased risk of injury and danger of life, so it's very important to respect the correct operation. You necessarily must read the battery manufacturer informations.

5. Liability and warranty

The manufacturer accepts no liability and warranty for damage or consequential damages caused because of:

- Incorrect use
- Non-compliance of rules for safety use
- Operation of non-approved or unsuitable assemblies on the system
- Failure installation
- Intervention in the system

6. Spare parts



Change the defect assemblies only with original spare parts. We only guarantee the full safety requirements if you use original spare parts. Guarantee-, service- and liability claims expire with unsuitable spare parts. If you don't use the original spare parts it can lead to faulty operation or not correct working systems.

7. Supply, storage

Package control

Check all parts on delivery for integrity and completeness. In case of damage of packaging, open the packaging immediately. Please report every damage and missing parts immediate. Otherwise our claims against the transport company will expire.



Check completeness and transport damage on the delivery immediately. If the delivery is damaged do not accept the delivery or only under reserve.

Do only install and store the systems in closed, frost-free and dry rooms. The ambient temperature shall not be under 0°C or over 40°C.

8. Connection sequence



Please read the instruction manual before commissioning and installation. There are important informations for safety use and the maintenance of the system. In this way you protect yourself and prevent damages.

Commissioning: always connect the battery first, then the main power.

Decommissioning:



Before disconnecting the battery and mains power switch the system non load.
System blocked – see page 16 „emergency lighting blockage“
Then disconnect the battery and the mains power.

9. Product description

The CPS-System (Central Power Supply) is a safety lighting system with up to 128 circuits. Each deletion can be operated up to 20 lights in different switching types. The circuits are secured with 5A (5 AT, 6,3 x 32 mm). Maximum load per circuit according to VDE is 3A. The output circuits can be programmed for standard operation or for mixed operation. In mixed operations are 20 light addresses per circuit possible. Each circuit can be configured individually as a standard or mixed operation.

The 7 Inch Touchscreen-Display is operable with a clear display structure.

Via serially integrated USB interface a keyboard, mouse or a USB memory stick can be connected. There you can save the inspection test book or the configuration.

The required tests are possible at freely programmable times. The test results are saved in detail in the integrated test book and can be called up at any time.

- intermediate circuit voltage 216V DC
- Automatic function monitoring of the system and on all the output circuits connected lights
- Connecting terminal of all modules pluggable
- 7-Inch-Touchscreen-Display
- Easy commissioning
- USB 2.0 for keyboard and USB memory stick
- Circuits suitable for up to 20 luminaires each
- Standard and mixed operation can be selected for each circuit
- circuits and luminaires can be freely programmed via touchscreen
- programmable message texts for each luminaires
- Each circuit is supplied with 230V AC / DC
- switching inputs freely programmable (potential free)
- manual reversion
- emergency light blockage
- integrated test book
- integrated WEB server for remote monitoring
- TCP/IP interface

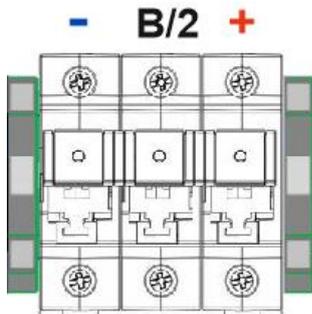
10. Construction and connected battery



Please check the delivered batteries and report/complain in case of mechanical damage immediately! Attention to voltage parts on the battery. Short-circuit-hazard!

Please observe the requirements of DIN VDE 0510 Part 2 and read the data sheets of the battery- manufacturers.

Battery



Please pay attention to the correct polarity.

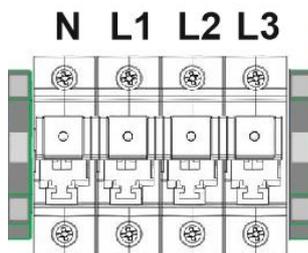


Attention:
False polarity may damage the system!

To monitoring the battery-symmetry a measurement leads can be connected to the middle of the battery system. (B/2)

11. Connection of the mains voltage

Mains



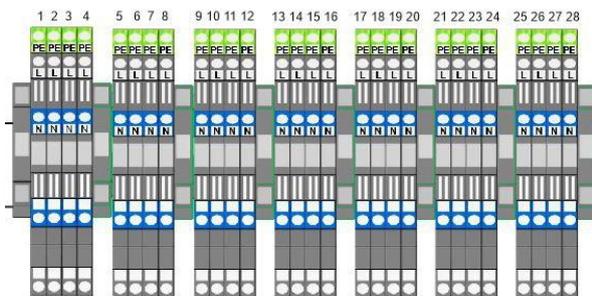
The connection is three-phase.
The main voltage must be 400V +/- 5% and 50Hz.
For single-phase connection L1 – L2 - L3 must be bridged.
The phases must be monitored separately if there is a single-phase connection!



Attention:
Please check that there is no main power.
Observe the correct connection of the phases and the neutral conductor!

12. Connection of the output circuit

circuits for the connection of up to 20 luminaires

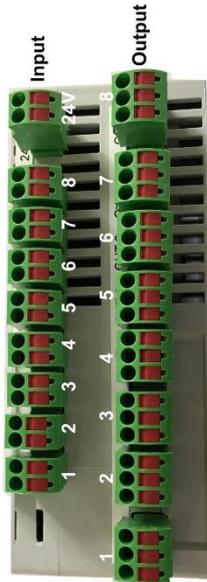


The output circuits, up to a cross section of 4 mm², can be connected to the output terminal. The output circuits are secured with two poles each.



Attention
The terminals may also carry voltage even when the system is switched off. The voltage can be AC or DC.

13. Connection of external light switches



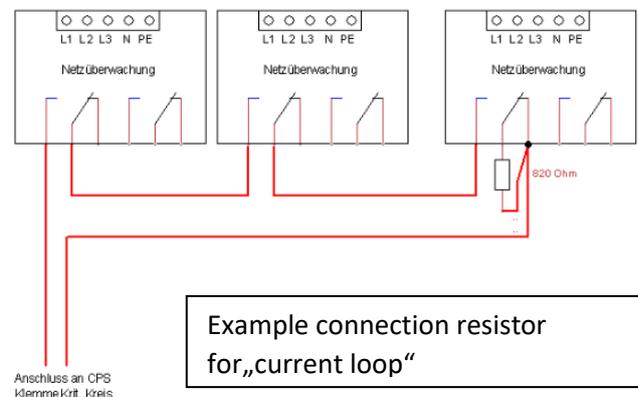
If the general luminaires and safety lights are to be switched at the same time, the 8 separate switching inputs can be used and also programmed. Various switch inputs can be assigned to each circle or single luminaire. The CPS System supplies the connected consumers at main operation. The software programmed the function. The connection line can be connected up to a cross section of 1,5mm². Connection directly on the installed IOi – Modules. The terminals are pluggable and can be removed for connection.

Potential-free contacts have to be connected on the inputs.



The input 7 is factory setting to external DS EIN/AUS, and the input 8 is preprogrammed for a critical circle to connect an external main monitoring.

This one can be programmed on „current loop“ to detect a short circuit or a line break.



On the IOi Module there are 8 relay-contacts available to configure.



factory setting:

- Relays 1 = ready for operation
- Relays 2 = battery operation
- Relays 3 = disturbance

14. Connection of the signaling Control Panel

A signaling Control Panel can be connected up to a cross section of 1,5mm² at the terminals. Connection see further back.

15. Integrated timer

In the system, there are 8 timer with 7 switch-on and off-off times. For each timer, relays and circuits or individual luminaires can be switched. Programming of the timer see point "Inputs" and "Relay" further back.

16. Commissioning



Before switching on the main voltage and inserting the battery, please check as follows:

- Check all connections for correct polarity and the tightness of the terminals
- Check if the critical circuit is connected correctly
- Check the correct connection of the battery block
- It is necessary to charge the battery 24 hours at least before the first function or operating time test

Observe the following sequence when switching on:

1. fitting the battery (observe polarity)
2. connecting the power supply cable
3. connecting the output circuits
4. insert battery backup
5. insert main fuse

17. First commissioning



When the system starts all connected assemblies are automatically scanned. Right after this, they are available to program. If there are retrofitted assemblies, they will be added after a restart.

For first commissioning you need the following informations:

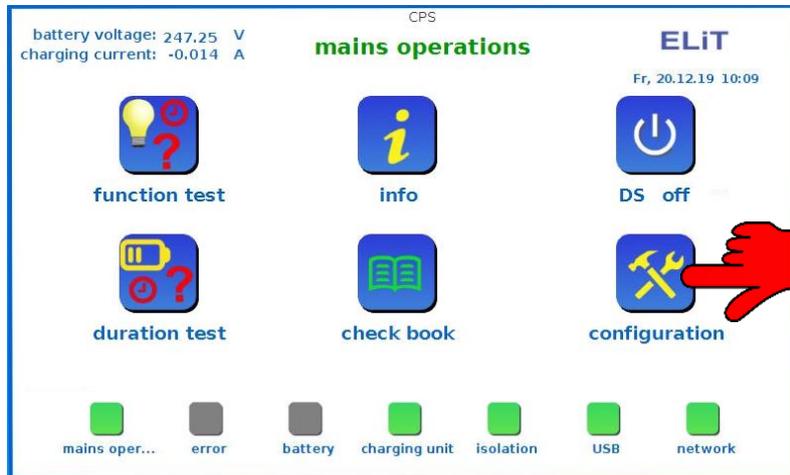
- Number of used circuits
- Operating mode: standard (separate DS and BS circuits) or mixed operation
- Number of luminaire per circle
- Luminaire in maintained or non-maintained use
- possible luminaire locations



For commissioning and configuration you can connect a mouse and / or a keyboard to the USB-interface at the system. This is for simplified programming.

After connecting main voltage and battery voltage the system starts. After scanning the assemblies you can see the start image.

After insert the main- and the battery voltage the system can now be configure:



Select the menu option „configuration“.
The factory password is: „0000“.
You can change this password later. (See further below)



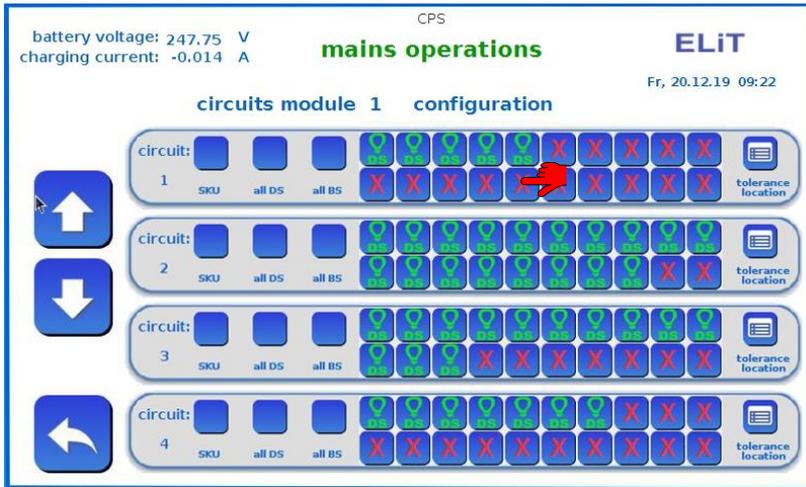
First you have to scan the connected luminaires.
Please switch to the next site.



If you select „search lamps“ the system search for the connected luminaires and calibrated the electric circuits. The scan of the luminaires needs less than 1,5 minutes, independent how much luminaires or electric circuits are connected.

If the system have circuit monitoring (without monitoring component) you also have to select „search luminaires“ so that the currents of the output circuits can be calibrated.

After scanning the luminaires the system transfer you to the next menu option „ circuits configuration“.

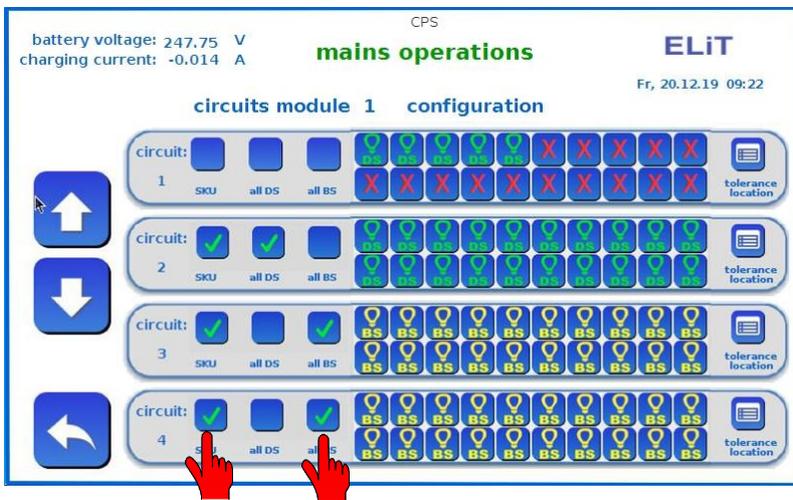


Configuration of the luminaires

You can select:

-  **DS:** The luminaires are set in continuous operation.
-  **BS:** The luminaires are set in non-maintained mode.
-  **No luminaires**

If you touch on the luminaires the modus will switch from DS to BS and vice versa. If you select "all DS" or "all BS" every luminaire will be switched.



The system only shows you the luminaires with monitoring components. Electric circuits with connected luminaires without components **must select** here manual.

To do this select SKU – you see all luminaires. After this you can choose if the electric circuits should be in continuous operation or in non-maintained mode.

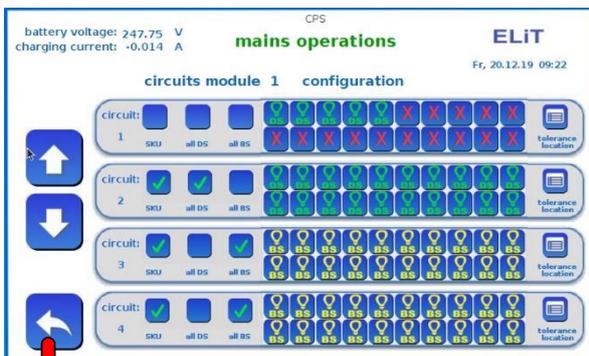


All configurations will first be taken over after saving the configuration in the CPU!

Now you have to do this before you go to the next step.

Doing as follows:

Go back until you see the question if you would like to take over the configuration into the system.





Go back until you see the question if you would like to transfer the configuration into the system.

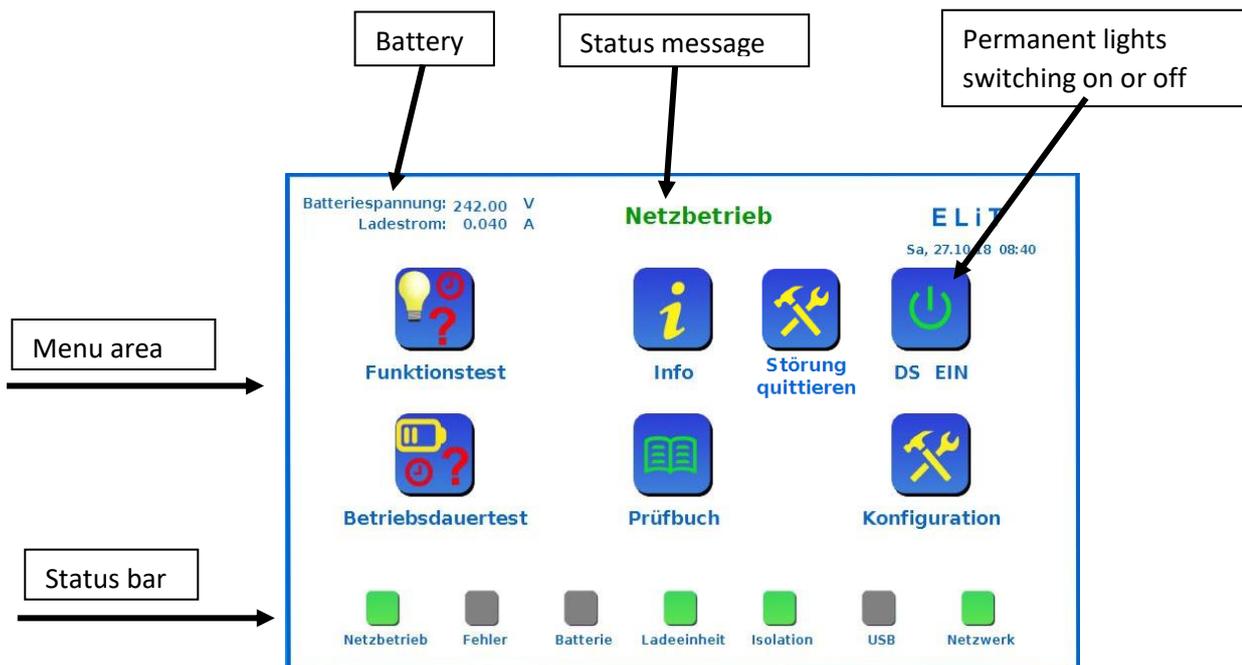
Confirm this with The configuration will now send into the CPS and the system will be performed with the new configuration after a restart.



All changes in the configuration area are first activated after the changes have been transferred.

More configuration possibilities you can find further down in the configuration area

18. The main menu



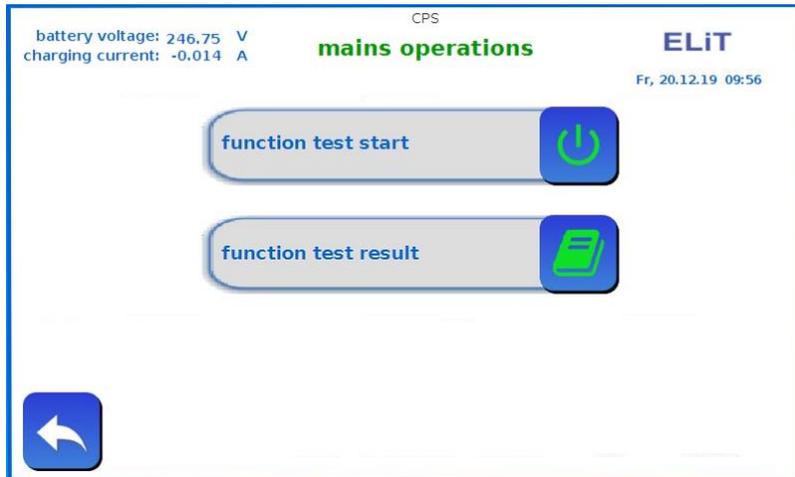
You can select all menus and submenus with the icons on the touchscreen. You control the system via touchscreen. If you have to write a text, there will be a visual keyboard you can use. You also can connect a mouse or standard keyboard via the USB interface.

In the status bar you will find an overview of the condition of the system. The status message will show you further informations or error messages about the system.

Battery: in the left upper corner you find informations about the battery voltage and the charging current of the battery at any time.

If you have a coming the button "error acknowledge" appears. Errors that need to be acknowledged and are no longer pending can be acknowledged using this button. E.g.: lamp failure, fan failure, etc.

19. Menu function test



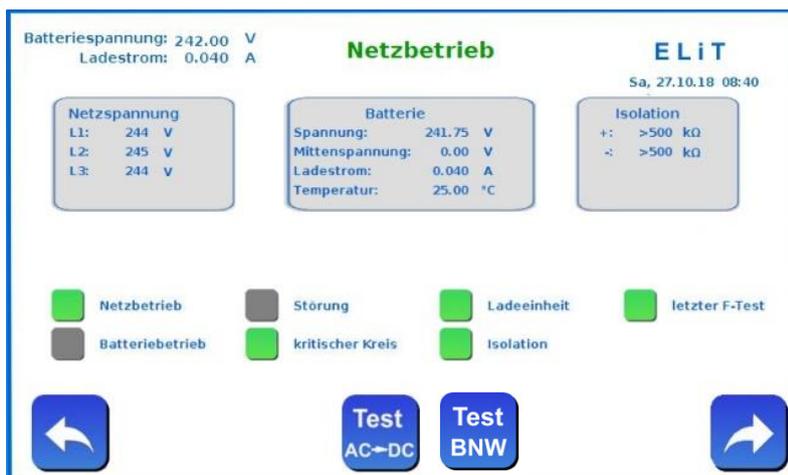
In the menu you find the last test results or start a function test manually.

To activate an automatic function test: see at "configuration function test" further below.

You can programming the automatic test to daily or weekly.

20. Menu Informations

At the info-menu you easy find a view about the condition of the system, voltage, battery voltage, temperature and insulation value.



Test AC->DC

If you select „Test AC->DC“ you simulate a power failure to test the battery mode.

Test BNW

When using the new self-monitored BNW-S, BNW-5i-S or IOe230-S they can get self-tested with this button.



Select „further on“ to switch to the next page.



Select „go back“ to switch to the main menu.



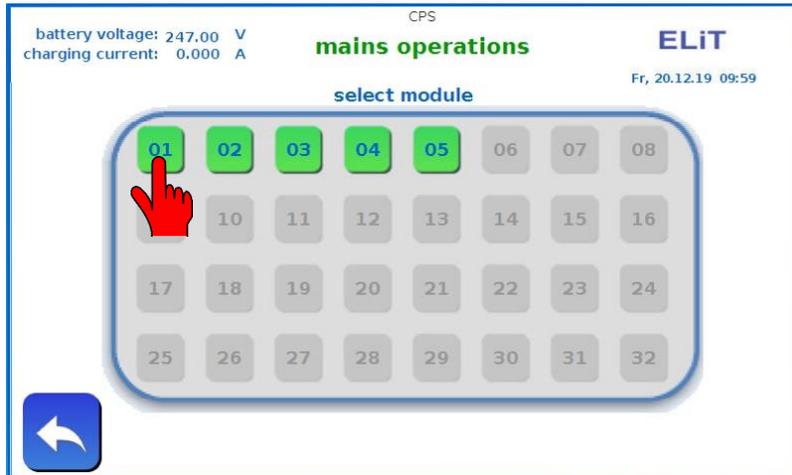
At the menu on page 2 you have an easy view of diverse settings in the program.



Select „further on“ to switch to the next page.



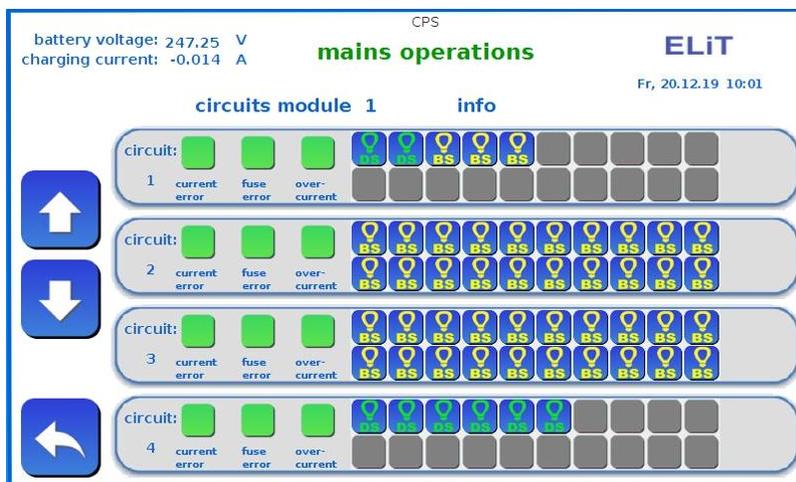
Select „go back“ to switch one level back.



On page 3 you see how many output circuit modules are in the system.

Red modules have a luminaire disturbance.

Select a module to see details about the connected luminaires.



On the following page you can see the connected luminaires.

Marked red luminaires are identified as a failure at the function test.

 The luminaires are programmed in continuous operation

 The luminaires are programmed in non-maintained mode

Select  to switch to the next output circuit.

Select  to switch back to the previous output circuit.

21. Menu duration test

At the menu duration test you can find the last test results or you can start a new test.

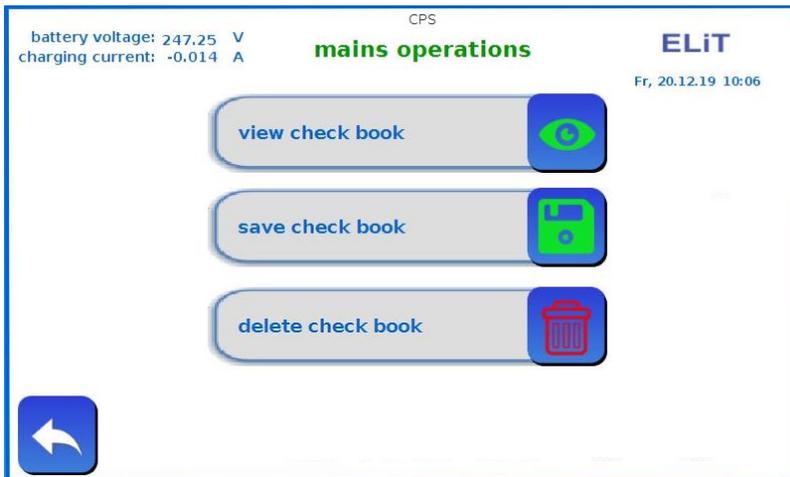
Generally you have to make a duration test once a year, **outside the operating times.**



After doing the duration test the system will be limited because of the empty battery.

You have to do the duration test at the time when no people are in the building. Please note: immediately after the duration test there is only a limited emergency operation possible.

22. Menu check book



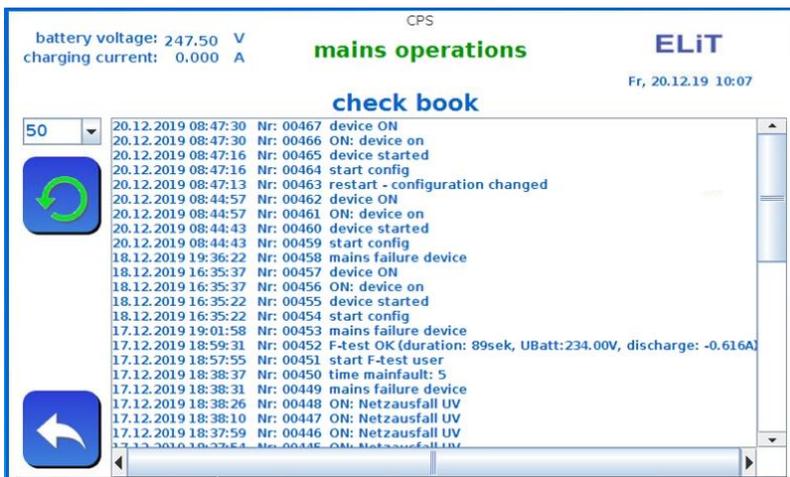
At this menu are you can have a look on the **check book**.

Save the check book: You can connect a USB memory stick to save the test book.

Delete the check book:
Attention: there´s no way to re-build the memory!

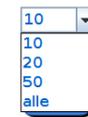


To recognize the USB stick, insert the USB stick before you switch to the save menu. Before you remove the stick again, push the button  to remove it safely. If you remove it before you push this button, data may be lost on the stick.



Show check book:

To show the check book you have to select the number of your desired option/messages. You can choose the last 10, 20, 50, 100 or 200 messages



After your decision press this button to upload the messages.



Button „go back“



If you would like to see the check books of the previous year's select "save test book".

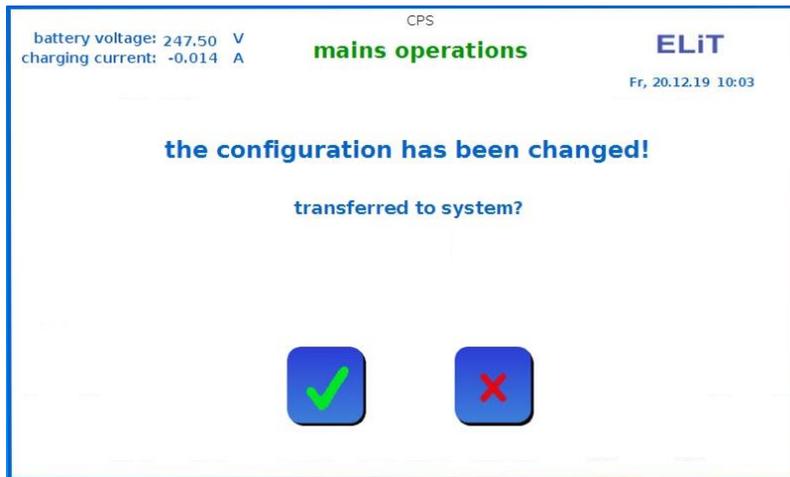
23. Menu configuration



You have extensive options to set the system to your needs if you go to the configuration area. You need a password for the configuration menu.

The factory password is: „0000“. You can change this password in the menu.

Select „further on“ and you switch to further menu options.



Whenever you leave the configuration the system ask you if you would like to save/transfer the changes. Only if the changes were transferred they are saved permanently and effectively in the CPU.



Transfer and save the configuration. After that the system automatically restarts and the changes are activated.



Only if you save the configuration in the CPU they will be adopted!



emergency light blockage

Emergency lighting blockage

The system is blocked.

If there is an emergency lighting blockage the emergency light of the system doesn't work effective. The charger remains in position.



Attention: If there is an active emergency lighting blockage the connected luminaires **will not turn on** if there is a power failure.



device name

System location

You can choose a name for the system or you can put a location in.



lamp name

Luminaire name

You can name the luminaire according to your wishes. If there is a disturbance the system will show you the luminaires you named. To name the luminaires select the default text and then enter the new text.



Alternative you also can save the default texts on your USB memory stick, editing in excel and upload them on the system again.



Manuel reversion

In some darken production sites the emergency lighting may not switch back automatically after a power failure. Only responsible persons can switch to normal operation „by hand“. The manual reversion switchback prevents the system from automatically switching back to normal operation after an emergency operation and can only be reset via the display or an external button.



Inputs

At this menu option you can configure the inputs of the IOi-Modules and the optional external IOe-Modules and so you also can program the connected main monitoring. The system automatically identify the connected modules and make them available to program.



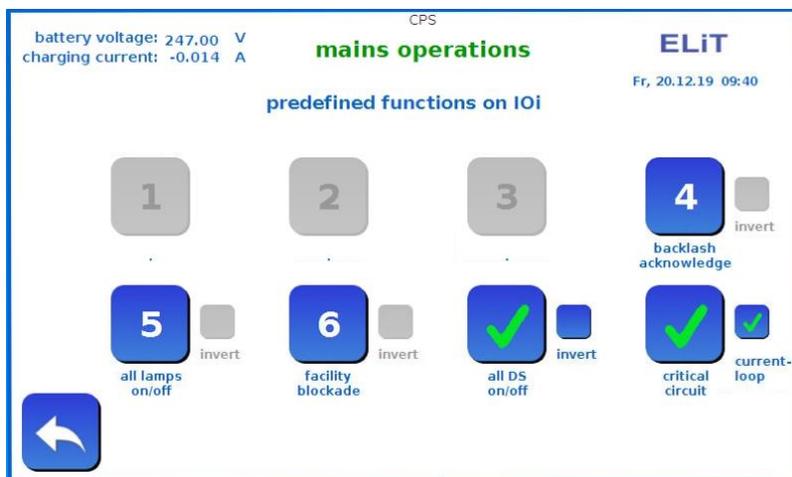
You can choose:

INPUTS	OUTPUTS
I1	O1
I2	O2
I3	O3
I4	O4
I5	O5
I6	O6
I7	O7
I8	O8
ERROR	
BUS	
BUS-MONITORING	
BUS	di
ERROR	1
ERROR +	2
THRESHOLD	3
TEST	IOi

The IOi Modules :
Module installed in the main system.
For this module there are present functions available.

IOe Module: Optional external IO-Modules

BNW easy: For easy programming of the bus network monitors BNW and BNW-5i M (see BNW description)



Some inputs have already been presented for easier programming.

So you can connect to input 8 one or more main monitoring and optionally activate the current loop.

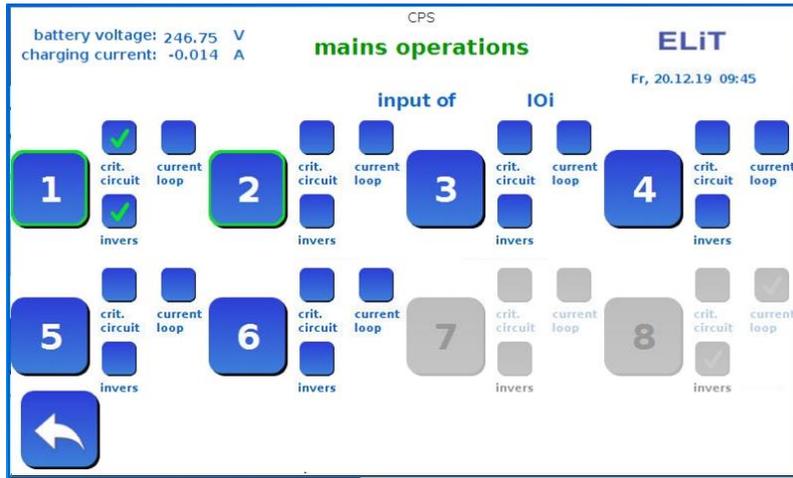
Select the option you want. .



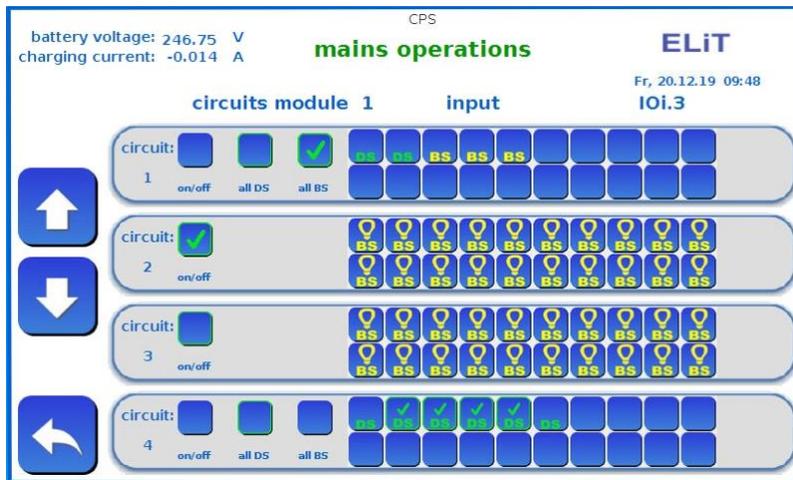
The function 7 and 8 (critical circle and p lights on/off) are factory pre-programmed. The selected inputs are marked occupied in the IO menu.



At "location / inputs" you can label all inputs in order to get a clear assignment in the case of an error message.



You can invert every input or you can define a „critical circle“ for connecting a main monitoring. „crit.circle “. The outputs automatically generate a fault message and show the triggered main monitorings. All inputs can optionally also activate the current loop. If you activate the current loop an 820R resistor must be attached to the end of the current loop.



After choosing an input you can random match any luminaires or circuits.

If you select „up“ and „down“ you switch to the next electric circuit module. When all luminaires and circuits are programmed select “go back” to leave this screen.

The programming of the IOe modules is identical to the IOi modules.



Attention: NEVER choose “all” in circuits with luminaire monitoring modules otherwise they switch off the circuit and cannot send data to switch the lights. In the case of mixed operation, always select all BS or all DS and BS.

Timer



This icon takes you to the time setting of the timers. Each of the 8 timer has 7 switch-on and off times (channels) Each of these times can be switched to a day of the week, daily, Monday-Friday, or Saturday and Sunday.



Weekday = „Off“ deactivates the timer

Then select the desired timer and configure the circles or luminaires as already written at the inputs.



The check mark at the time setting shows that times are already stored for this timer

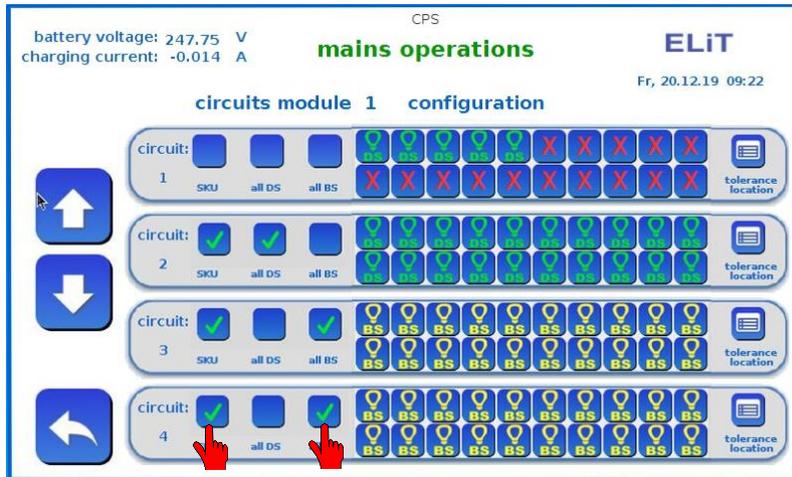


The green border on the timer symbolizes that circles or a relay is already programmed for this watch.

Uhr 1



Circuit configuration



On the display after “searching lamps” you see the lights with installed individual monitoring. On this menu you can choose the function of any luminaires (maintained light or non-maintained light) as well as you can manual choose any luminaires or you can deactivate the monitoring of the luminaires.

Circuits with connected luminaires without monitoring modules **must be** selected manually **here**. To do that select SKU – you see all luminaires. After this you can choose if the electric circuit shall be maintained or non maintained.



Select „tolerance location“. Here you can enter your desired tolerance for the current monitor of this circle in % and name the electric circle according to your wishes.



You have to set the value to 0 at “too high” and “too low” of the reserved circuits and not used circuits at the moment.

Configuration the function test



Here you can enter in the time and (for weekly) the weekday to the automatically daily or weekly function test.



automatic functions test

If the system shall make the automatically function test activate here. With „function test deactivated“ there is no automatically test.



seperate light for lightning error

Here you can set when you have a lightning error if it triggers a single disorder or a collective disorder. On the BMT-V2 there is a own LED for lightning error.

Configure relays



Relais

The installed IOi module has 8 freely programmable relays with potential-free changer. You can program the relays according to your wishes.

You also can match to one relay various functions for example to generate a collective fault message. You can also control each relay using the internal timers. Settings for the time see inputs. If a time switch is to control a relay, you then only have to select the relevant time switch.

Standard-settings



Relays 1: ready for operation
Relays 2: battery operation
Relays 3: error

Date and time settings



You can set the date and time with this symbols



After setting the time, the system needs a few seconds until you can see the new time on the screen.

Searching lamps



If you select „searching lamps“ the system scans all connected luminaires and calibrated the circuits. This takes, independent how many luminaires are connected, less than 1,5 minutes.



Also on systems with circuit monitoring (without monitoring modules) “searching for luminaires” must be activated so the currents of the outgoing circuits can be calibrated.

After scanning the luminaires you will be automatically transferred to the next menu setting „configure electric circuits“. All new luminaires were configured to maintained lights (DS). If you would like to change into non maintained light see “configuration circuits”

Aberrance power ELC



Here you can change the tolerance of the aberrance current in the mA. This has an effect to the luminaire function test and the searching of the luminaires.

Service



The password protected area is reserved for the service technician.

Operating time



Fill in the nominal operating time in hours. This has an effect to the battery test.

Configure the password



You can change the password in the password menu.
The factory password is: „0000“.

Configure the language



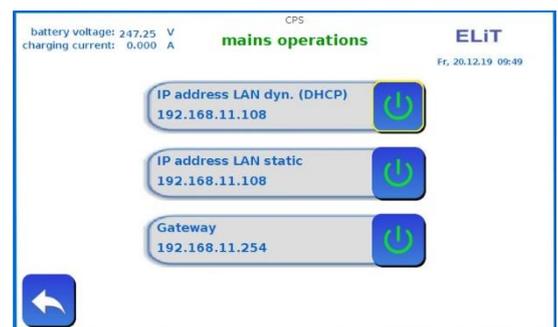
Change the language.

TCP/IP mains power configuration



Display and settings to the network data.

Please only change the settings in this area if you have experience with network. Please contact first your network administrator.



Measured values of the luminaires



measured data lamps

Here you see the current to every luminaires in mA. So it's easier to find double addressed luminaires. The system shows you the measured currents of the las function test.



The table is only temporary and will not be saved. After a restart the table will be deleted. If you transfer the configuration in the CPU the system will also restart and so the table is re-set. So you have to do a new function test to see the data.

Save / rebuild



Speichern Wiederhersteller

In the Save / rebuild area, you can save your settings, texts, etc. on a USB stick and, if necessary, import them back into the system. Here you can create backup copies of your settings and also the luminaire texts.



You must insert the USB stick into the system before going to the menu. There are 4 USB ports on the back of the display that you can use as you like.



Here you can save the configuration you have made on USB and read it again if required. With a complete backup, all settings and texts as well as the message memory are saved on the USB stick.

You can also transfer the entire message memory to a USB stick here.



Backup Konfig erstellen

Here you can create a backup copy of the configuration and the luminaire locations (In Out.txt) also without a USB stick on the integrated SD card or read it back again. But this will then overwrites the factory settings stored here.

DS Touch



DS-Touch

The DS On / DS Off button in the start screen  is programmed in priority mode and is therefore overridden to all other DS On/Off commands.

However, if the DS lights are only to be switched via an external switch or a timer, the DS On / DS Off button in the start screen can be deactivated here.

24. Bus-Signaling and remote control panel BMT

The BMT is connected via the 4-wire RS485 bus. Up to 5 BMT can be operated in parallel on one system.

LED display: emergency light blocked, ready, fault, Battery operation, DS On

Keys for: Blocking, DS on/off, Alarm Off, Code input

Acoustic message: in case of malfunction (switch-off)



Never lose a key again! The tableau is operated by buttons that are protected from unauthorized switching by a security code.



Unlock Code: 4123

After entering the code, the keys can be operated. If no keys are pressed for 10 seconds, the keyboard locks automatically again.

Exception is the Alarm Off button - The button allows you to turn off the alarm without a code.



The BMT can be configured in the system. For each of the max. 5 BMT, you can determine whether you want an acoustic fault message, and whether a short acoustic feedback should be provided when pressing a button

25. Battery

According to EN 50272-2, the batteries must be checked regularly to ensure that they are working properly.

In accordance with manufacturer's requirements you must check during an inspection following:

- Voltage settings of the loading unit
- Voltage of the whole battery
- Cleanness and tightness
- Tight fit of the connector

Defect battery blocks have to be changed immediately. Please note the manufacturer specifications in relation to the capacity, the charging voltage per cell, the information to the ventilation as well as the sizes.

26. Maintenance

The CPS system must be maintained by expert personal once a year. Also you have to make the battery test. The written report of the annual maintenance have to include following:

- charging voltage-/power
- discharging current
- Voltage of the battery at the start of the test
- Voltage of the battery at the end of the test

The written report of the annual maintenance is the basis of possible warranty claims.

27. Examination requirements of European Norm

According to the respective national valid guidelines and requirements you have to check the emergency lightning system.

The following information's are snapshots and make no claim to completeness.

Please read the current valid norms.

First exam

After installation the system, the installation must be subjected to a first exam.

EN 1838

DIN 5035-6

DIN EN 50172

DIN VDE 0100-600

DIN VDE 0100-560

DIN VDE 0100-718

DIN VDE 0108-100

Please note to this the national requirements and norms.

Recurrently inspections of electrical systems for safety purposes

According to the national valid requirements you have to make recurrently inspections. The results must record in the test book with date and test-results. An automatic test-equipment must according to EN62034. After an operating time test the batteries don't have the full power until they're recharged and then there is a risk of power failure. So you should only do long tests at times with low risk and you have to take appropriate safety measures until the battery is charging complete.

Daily check

You have to check the function display daily with a visual inspection to ensure the operation conditions. A direct check on the system isn't necessary if the status of the system is reported to a permanently manned position during operation, for example with a message panel.

The following conditions must be signalled:

- Ready for operation
- Emergency lightning operation
- Collective fault

Weekly check

The weekly check of the system is by switching the power source for safety reasons and to check function of the connected luminaires. An automatic test-equipment must according to EN 62034. You can start the weekly check manual in the main menu or automatic with programming of testtimes in the submenu "function test".

Monthly check

The monthly check of the system is by switching the power source to a power failure for safety reasons and check the function of all connected luminaires. After completing the check you have to rebuild the general lighting. You have to check the correct function of the monitoring system.

Annual check

You have to do the inspection of the rated operating time (battery test) once-a-year. Therefore the system must be checked for the compliance with the required operating time. As well you have to check if all luminaires are there, clean and functional. The duration test must be performed when no one is in the building. Please note that immediately after the operating time there is only a limited emergency operation possible. The rated operating time must be checked of function. You can start the operating test manual in the main menu.



365 days after the commissioning you get an automatic note for the annual check.

3-year-exam

At latest after 3 years you have to measuring the illuminance of the safety lighting according to DIN EN 1838.

Protocols of the recurrent inspections

The recurring inspection results according to the norm are saved for more than 4 years. If needed you can save it on a USB memory stick. The results can be edited in a usual windows word processor as well as printed.

28. LED Display modules

CPU

LED error (rot)	off – no fault blinking – collective fault message flashes – no SD-card or read/write error
LED run (yellow)	flashes in normal operation
LED bus (green)	flashes at active Bus

CC1

LED BUS (green)	Bus-communication
LED ERR. (red)	Error
LED BST (yellow)	High rate charge (boost)
LED RUN (green)	Status display CC1

UE 1500

LED „ERROR“ (red)	blink – AC-relays stuck fast blinking– DC relays stuck flashes – relays do not pull
LED „BUS“ (green)	flashes at active bus
LED „MAINS“ (green)	Lights up when supply from main power AC
LED „BATTERY“ (yellow)	Lights up when supply from battery

IOi

LED INPUTS „I1 – I8“ (yellow)	Display lights up when input is bridged.
LED OUTPUTS „O1 – O8“ (yellow)	Display lights up when output is activated
LED I/O „Error“ (red)	off – Bus error-free on – Bus has an error flashes 2 times – Toggel-Modus is activated
LED I/O „Bus“ (green)	flashes at bus-activity
LED Iso-Monitor „ERROR+“ (red)	off – no isolation-error on – isolation-error between battery plus and PE
LED Iso-Monitor „ERROR-“ (red)	off – no isolation-error on – isolation-error between battery minus and PE
LED Iso-Monitor „Bus“ (green)	flashes at Bus activity
LED Phasen-Monitor „L1-L3“ (green)	on – phase voltage present off – phase voltage smaller than 184 V flashes – phase voltage not correct (JP must be set)
LED Phasen-Monitor „Bus“ (green)	flashes at Bus activity

SKUi

4 x LED „ON“ (yellow)	LED lights up – associated end circuit is switched on
4 x LED „ERROR“ (red)	LED lights up – error at the associated end circuit LED blinking – fuse failure LED flashes – configuration is send to the luminaires
LED „BATTERY“ (yellow)	LED lights up – Battery mode At every bus request of the module at battery operation the LED light goes out for a moment
LED „MAINS“ (green)	LED lights up – mains operation mode At every bus request of the module at mains power operation the LED light goes out for a moment

29. Quick guide for systems in standard operation circuits in DS or BS (no mixed operation)



Please read the installation- and instruction manual before you do the commissioning and installation. There are important information about the safety, the correct use of the system and the system-maintenance. Therefore you protect yourself and prevent damages at the system.

Commissioning: Always connect the battery first, after that the mains power.

Decommissioning: Always disconnect the battery power before you disconnect the mains.

Commissioning



Before you turn on the power supply and inserting the battery fuse it's absolutely necessarily to check as follows:

- Check all connections of correct polarity and tight fit of the terminal
- Check the correct connection of the critical circle
- Check the correct connection of the battery block
- Please load the battery more than 24 hours before you make the first function- and duration test

When turn on, note the correct order

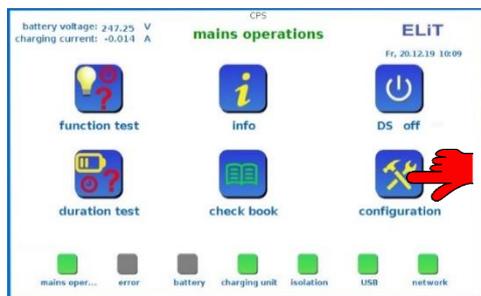
1. Install the battery (check the polarity)
2. Connect the power cable
3. Connect the output circuits
4. Insert the battery fuse
5. Insert main fuse

First commissioning



When you start the system, all connected components are automatically scanned. After this they are available to programming. If some components were retrofitted, they will be added after a restart.

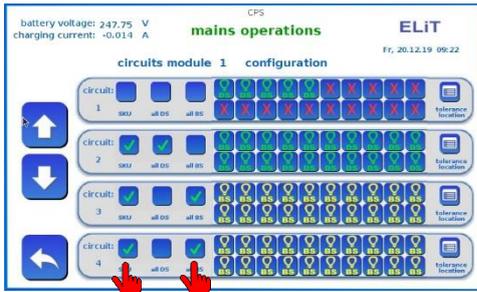
The system starts after connecting the mains- and battery voltage. After scanning the components you see the start display.



Select "configuration".
The factory password is: „0000“.
You can change this password later.



Now go to the menu item "circuits configuration"



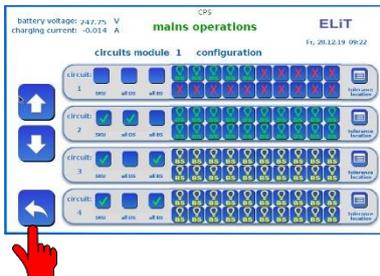
You have to select the circuits with connected luminaires without components here manually. Therefore select SKU to all occupied circuits. You see all luminaires. After this you can choose if the electric circle should run maintained or non maintained. Select "tolerance location" to choose the desired tolerance of the current monitor of this circuit in % and to name the electric circle.



You have to set the value 0 at "too high" and "to low" of the reserved circuits and not used circuits at the moment

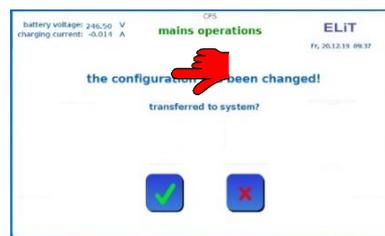
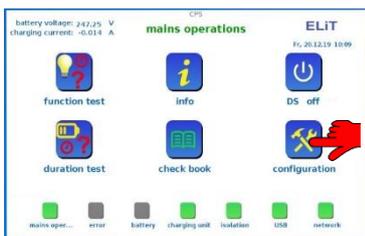
All configurations will first be taken over after saving the configuration in the CPU!

There you have to do as follow:



Go back until you were asked if you would like to transfer the configuration into the system. Confirm this the configuration will transferred into the CPU and the system will perform the new configuration after a restart.

However, the circuits still need to be calibrated. To do this, go back to the configuration and go to page 2



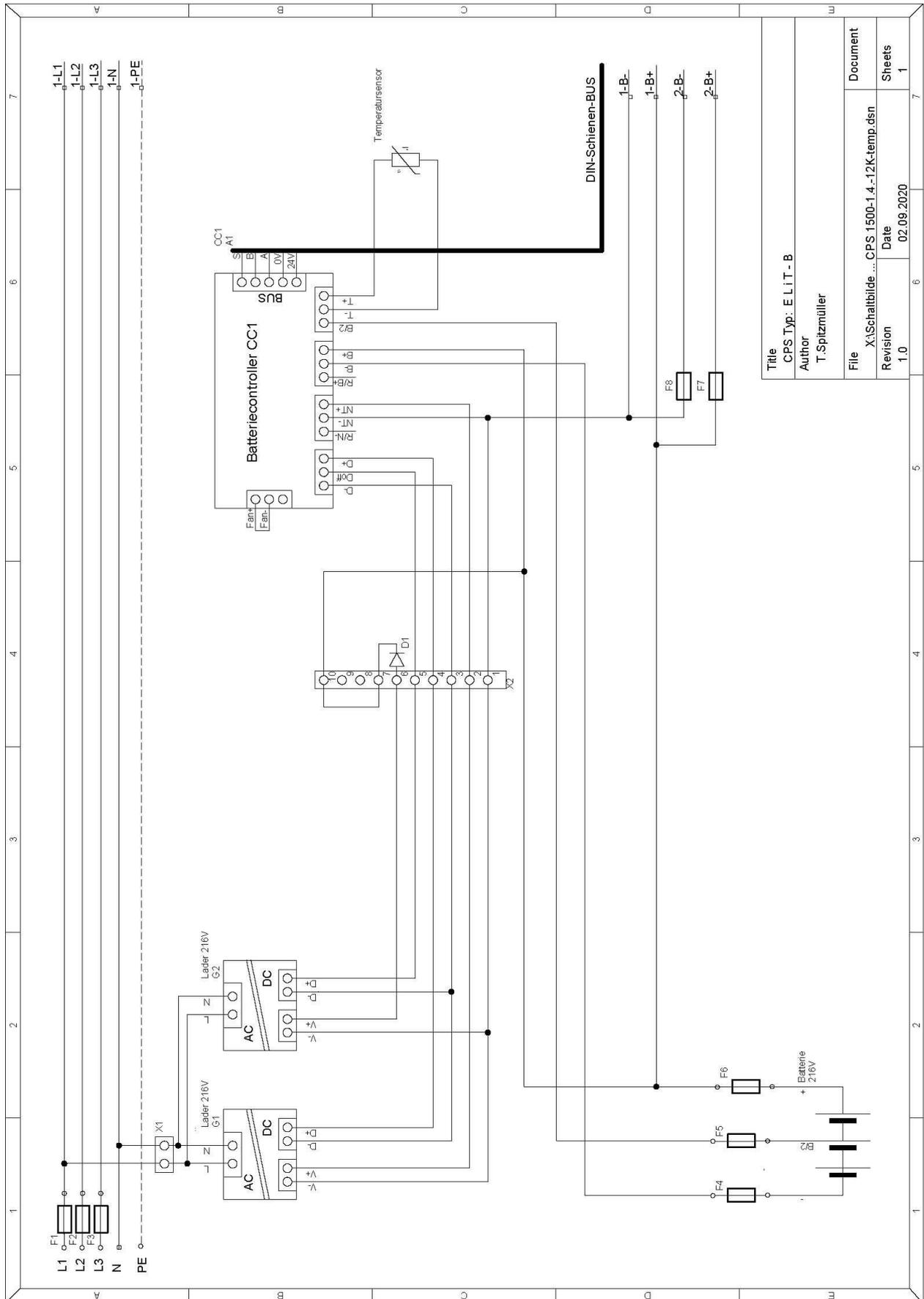
Select "searching lamps" and the system calibrates the circuits. The calibration of the luminaires takes less than 1,5 minutes. You also have to select "searching lamps" at systems with circuit monitoring (without monitoring component) to calibrate the currents of the output circuits. After scanning the luminaires you will be automatically switched to „ circuit configuration".

Now you can leave the configuration as described above. Save changes again as be-written. The configuration is now complete.

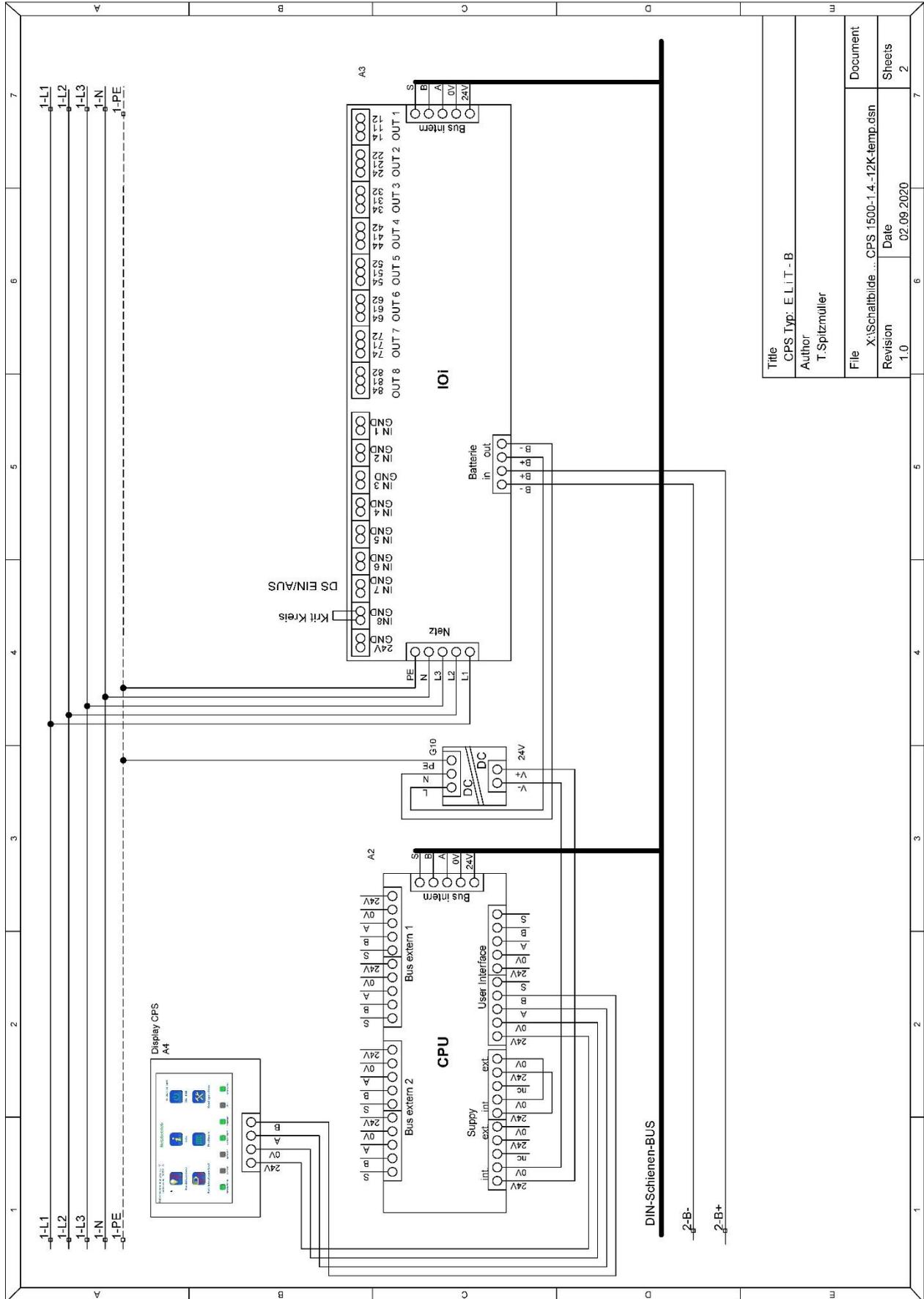


All changes in the configuration area are first activated after the changes have been transferred. More settings and configuration possibilities you can find in the instruction manual.

30. Circuit diagrams



Title		CPS Typ: E Li T - B	
Author		T. Spitzmüller	
File	X:\Schaltbilde ... CPS 1500-1.4.-12K-temp.dsn	Document	
Revision	1.0	Date	02.09.2020
Revision	1.0	Sheets	1



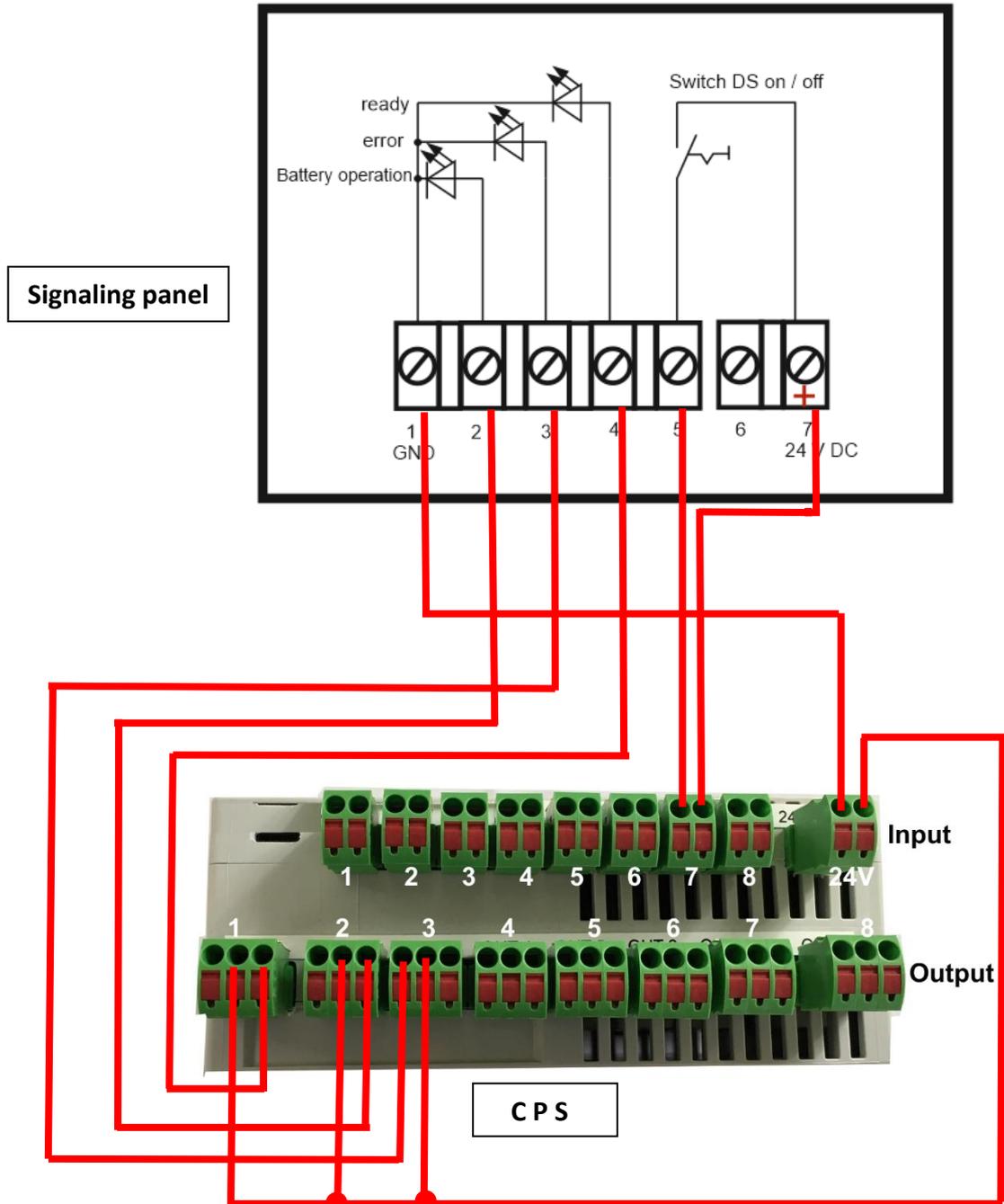
Title		CPS Typ: E.L.I.T.-B	
Author		T.Spitzmüller	
File	X:\Schaltbilde ... CPS 1500-1.4-12K-temp.dsm	Date	02.09.2020
Revision	1.0	Sheets	2
Document		Document	

31. Connection signaling Panel

Signaling and remote control panel

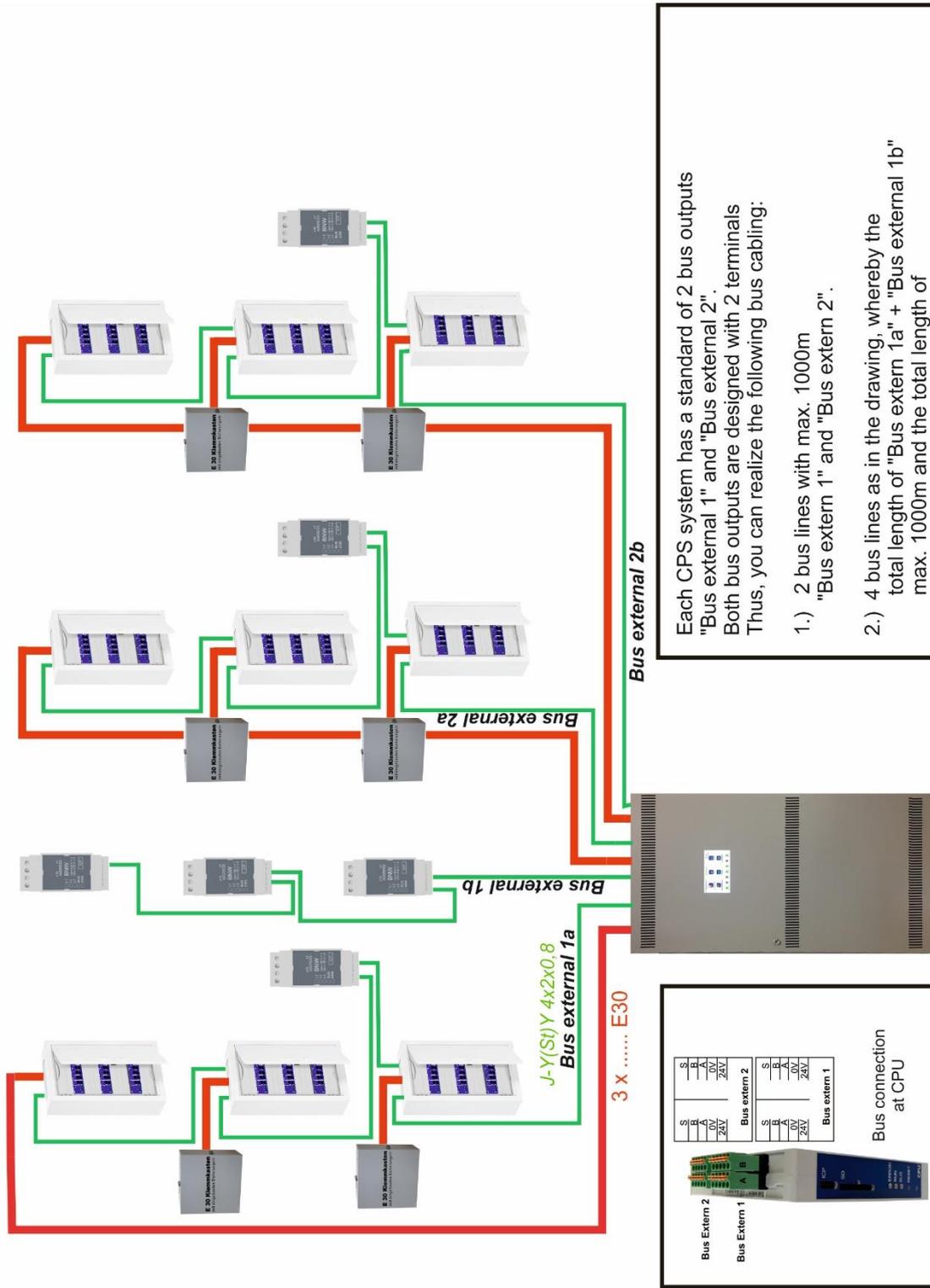
According to DIN EN 50172 (VDE 0108 part 100)

Display ready for operation, battery operation, error
 Control elements key switch
 Supply voltage: 24 VDC
 Connection: 6pol cable



32. Wiring scheme US + BNW

On the last bus participant there is a final resistance 120 Ohm to be applied via the free terminals A - B

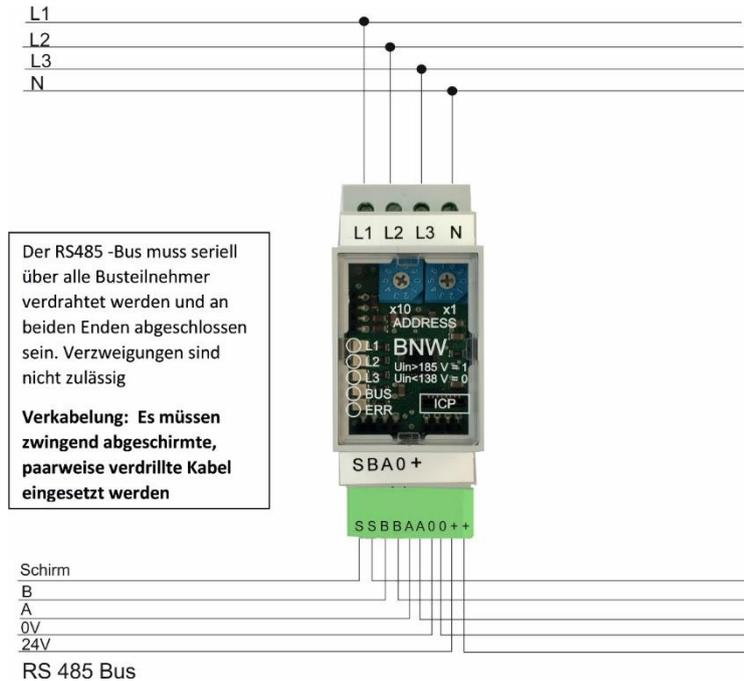


Each CPS system has a standard of 2 bus outputs "Bus external 1" and "Bus external 2". Both bus outputs are designed with 2 terminals. Thus, you can realize the following bus cabling:

- 1.) 2 bus lines with max. 1000m "Bus external 1" and "Bus external 2".
- 2.) 4 bus lines as in the drawing, whereby the total length of "Bus external 1a" + "Bus external 1b" max. 1000m and the total length of "Bus external 2a" + "Bus external 2b" max. 1000m.

The RS485 bus must be serially wired over all bus participants and completed at the ends. Branches are not allowed. **Twisted paired cables must be used**

33. BNW - Bus-mains-monitoring

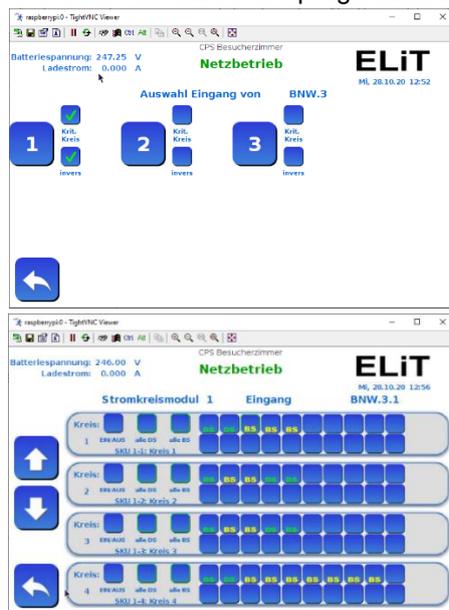


Description:

For connecting and monitoring the 3 phases with N conductor. The associated LED on the front lights up when the phase voltage is bigger than 184V. The status of the connected phases is transmitted to the higher-level system via the bus every 100 ms. The two status LEDs provide information about the operating status. In normal operation of the system, the green LED flashes with every bus query of the module (approx. every 100 ms). The red LED lights up when there is an error in the module itself or when the bus is inactive. A unique address (1-56) is set for each BNW in the system using the two address switches.

Programming BNW

Select the module to be programmed via "Inputs" then "IOe".



The inputs 1,2,3 are the individual phases that are applied to the bus network monitor. You can program the BNW as a 1, 2 or 3-phase mains monitor. If only 1 phase is monitored, only input 1 is programmed. If 2 or 3 phases are connected to the mains monitor, you must also program all 3 inputs. **First select "Critical Circle" and "Inverse"**. This means that you will receive a fault message in the event of a power failure.

Then select the input. If a complete circle is to be switched on if this phase fails, then select "all BS" for the corresponding circle. But you can also switch individual lights. You program inputs 2 and 3 of the BNW in exactly the same way as input 1.

"ON/OFF" must not be selected for lights with an ELC-light module



With the "BNW easy" function, the bus network monitors (BNW and BNW5i) can be programmed much faster. If a BUS network monitor is to switch on all lights if a phase fails, it can be marked in "BNW easy" and there is no need to program each individual input on each circuit.



Select the desired network monitor and save with "Accept".

If BNW is not selected in "BNW easy", each phase can of course still be assigned to each individual lamp or circuit.

34. Technical data sheet



Data sheet CPS Typ: ELiT - B

According to VDE 0108

Type	ELiT - B			
Serial number	2400603			
Case Typ	CPS ELiT-B	Dim.:	1100 x 600 x 422mm	
Protection	IP 20			
Main voltage	400/230V 50Hz			
Output voltage	230V AC		216VDC	
Main voltage/main power	400/230V 50Hz	L1=	L2=	L3=
		1,8 A	6,5 A	0,0 A

Consumer

Output power max.:	1.500 W	6,9 A	
Supply time	1 h		
Output circuits	12	max. current for each circuit 3A	
Fuses output circuits	5 AT		

UV-outputs

Amount	0
Fuses	0 A

Charger

Main voltage/main power	230V / 50Hz	1,8 A
Charger current	1,4 A	
Constant charge	2,27 V/Z	245,2 V
Boost charge	2,35 V/Z	253,8 V
Battery	108 Pb	216,0 V

Fuses

Mains	F1=	10 A	F2=	16 A	F3=	10 A
Battery	F4=	16 A	F5=	0,5 A	F6=	16 A

back up fuse of the system at least

At three-phases current	3 x fuses Typ gG	25 A
At one-phases current	1 x fuse Typ gG	25 A

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