C24

Central battery system · User guide

NORMA**LUX**

INDEX

INTRODUCTION

C24i-300 is the addressable central battery system from the C24 family.

The addressable version is able to control and monitor the status of each emergency luminaire connected to the outputs, while the conventional version can only control and monitor each output but not individual fittings connected to them.

C24i-300 is also an autotest device that guarantees its correct functioning and optimize the maintenance works by means of perodic tests (some of them in real time).

C24i-300 has eight 24Vcc maintained outputs.

TECHNICAL FEATURES

- Voltage: 230 V AC +/- 10%.
- Power supply wire cross-section: 2,5 mm^2.
- Output voltage: 24 V DC +/- 20%.
- Output wire cross section: 2,5-6 mm^2.
- Working temperature: -5ºC to 25ºC.
- Class: I.
- IP30.
- Number of outputs: 8.
- Maximum current: 3,5 A by output.
- Type of fuse for the outputs: 4A · 250 V.
- Control capacity: Up to 120 fittings.
- Dimensions: C24i-300: 587 x 460 x 187 mm.
- Type of fuse for the batteries: 16A · 250 V.
- Number of auxiliary inputs: 3.
- Number ouf auxiliary outputs: 3.
- Type of fuse for F2 input: 16A · 250 V.

Remarks:

Prevent the lines connecting each output of the control panel to the emergency luminaires from running through the same tray as other power lines. If corrugated conduit is used, do not use the same conduit for the output lines of the control panel and other power lines.

Normalux recommends the use of twisted shielded wire for the output lines. Connect the cable shield to the earth of the installation.

Batteries	2 x 12 V · 7 Ah			2 x 12 V · 9 Ah			2 x 12 V · 12 Ah			2 x 12 V · 18 Ah			2 x 12 V · 24 Ah		
Autonomy	1 h	3 h	8 h	1 h	3 h	8 h	1 h	3 h	8 h	1 h	3 h	8 h	1 h	3 h	8 h
Total power output (W)	88 W	36 W	14 W	115 W	48 W	19 W	154 W	66 W	27 W	234 W	105 W	42 W	314 W	136 W	58 W
Maximum current (A)	3,86	1,70	0,76	4,97	2,19	0,97	6,62	2,92	1,30	9,94	4,39	1,95	13,25	5,85	2,60

| WIRE SECTION	MAXIMUM INTENSITY	DISTANCE*
1,5 mm^2	1 A	147 m
	2 A	74 m
	3 A	49 m
2,5 mm^2	1 A	245 m
	2 A	123 m
	3 A	82 m

* Length for double wire and charge at end of line.

ASSEMBLY INSTRUCTIONS

STEP Nº 1. Open the device and fix it to the wall by screwing four screws (not supplied) to the base. Make sure that the screws used are strong enough to support properly the device.
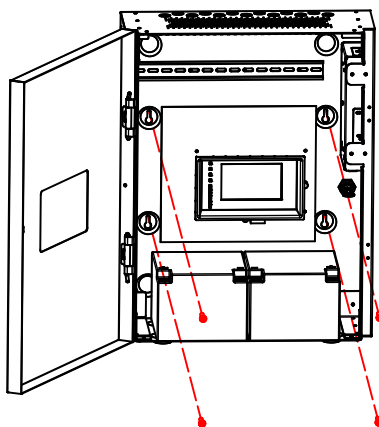
STEP Nº 2. Once the electrical connection is done, close the door by turning and locking it with the key. Keep the key in a safe place to avoid unauthorised access to the device. You can open every C24i-300 with the same key.
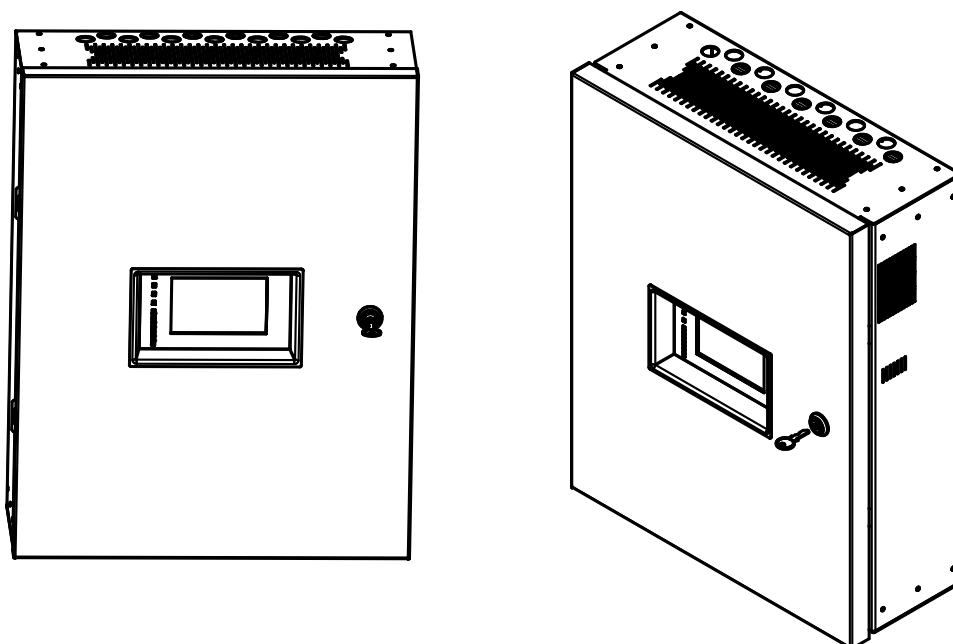
Note: the device is supplied by default with the door available to be opened to the left side. If you need the door to be opened to the right side, you have to change the colocation of the door, by following this operation.

First, remove the safety washers from the pins of the hinges (1), and dismount these pins from the hinges (2). Then dismount the door from the hinges (3).

Second, unscrew the hinges and the ground wire from the base and screw them on the right side of the base (4).

Finally, turn the door and mount it into the base on the right side by putting the pins in the hinges (2). Be sure that you put the safety washers in the pins (1).
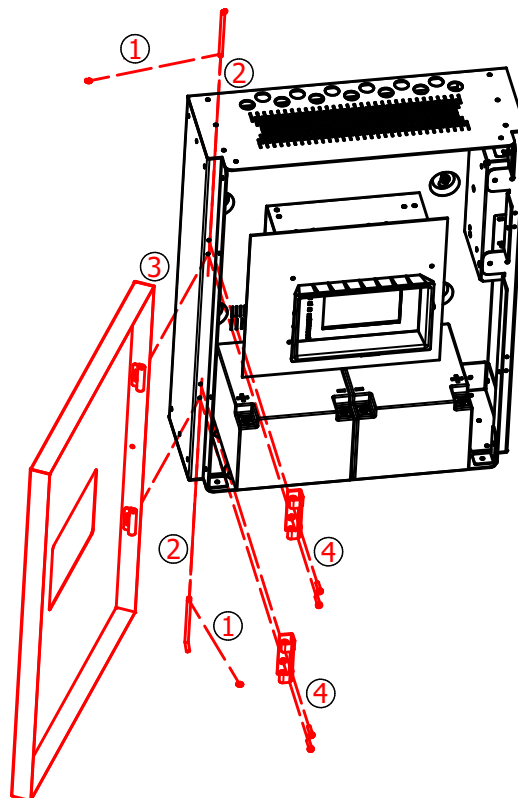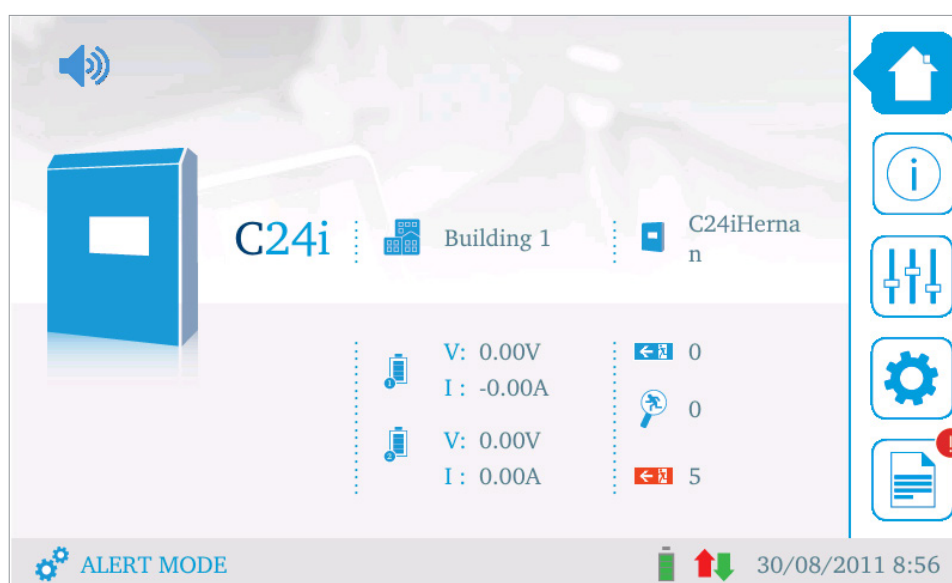
ELECTRICAL CONNECTION
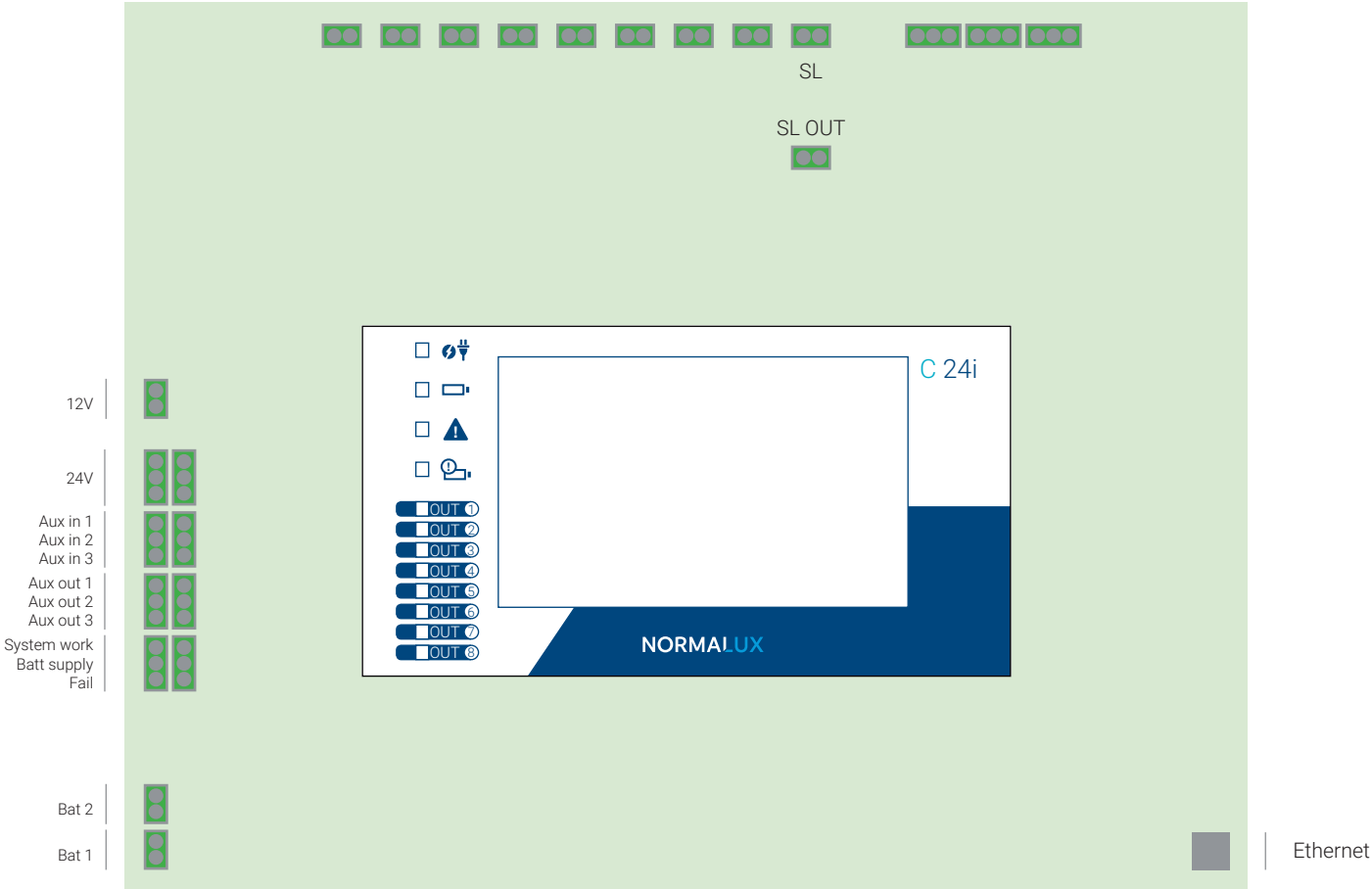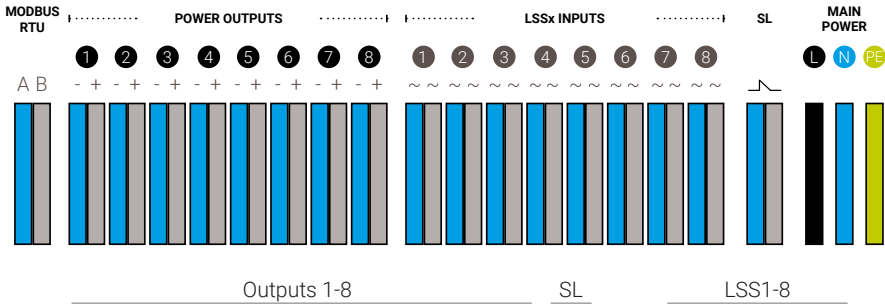
- L · N · G: Power supply of the central (230 Vac · 50/60 Hz).
- SL: Sense Loop. Input to connect a phase monitor. If this input is not connected, it should have a bridge connection on.
- SL OUT: SL output to connect to the SL input in another central.
- OUTx: 24 Vcc outputs.
- LSSx: 230Vac · 50Hz inputs used to control the outputs.

HOME SCREEN

When connecting the central to the power supply, the "Home" screen appears. In this screen there is information about the status of the central as well as the status of the luminaires connected to it. There is information about:

· Functioning mode of the central (alert, emergency, failure, test or rest mode).
· Total number of emergency fittings connected to the central.
· Total number of new fittings detected.
· Total number of emergency fittings with a failure.
· Voltage and current of the batteries.

In this screen as well as in any screen described in this manual, there are two common elements that will always be displayed:

· The buttons in the right side to access the different functionalities and configurations of the display (Home, Info, Controls, Configuration, Report).
· Status bar located in the lower part of the screen. This bar has info about the profile selected, the power supply that the central is receiving at the moment (either mains or battery), communication with the luminaires, the Ethernet communication and the time and date.
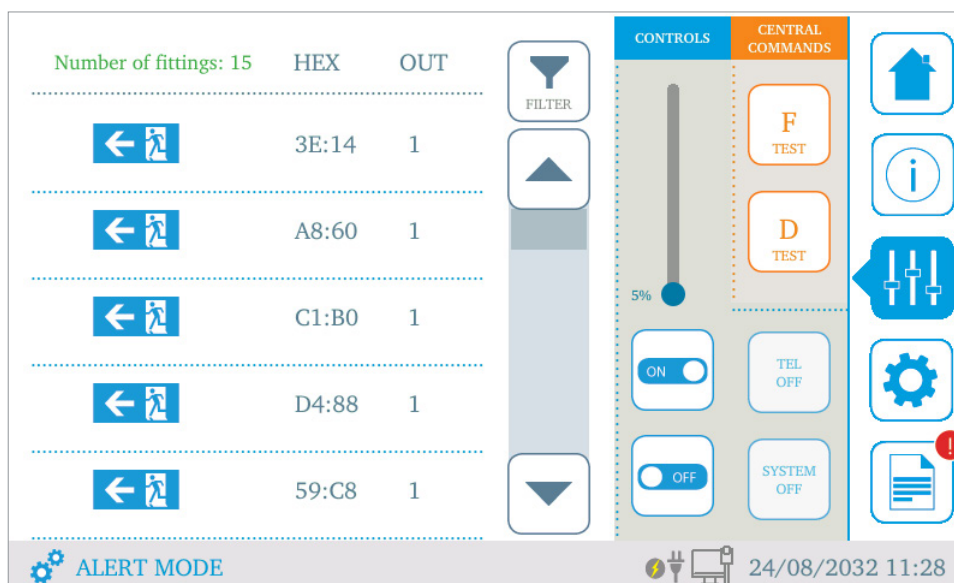
INFO SCREEN

Pressing the second icon from the menu in the right, the INFO screen will be displayed. In this screen, there are several options to get info about the central or the fittings connected. + button will show outputs information.

CONTROLS SCREEN

Pressing the third icon in the right side of the screen, the menu with the different control options for the central is displayed:

· **F TEST.** Carries out a functional test in the central.
· **D TEST.** Carries out an autonomy test in the central.
· **CONTROLS.** Swtich on, off or set a percentage of light of all the fittings connected to the central.
· **HEX.** It allows to control one individual fitting. Each luminaire is programmed with an hexadecimal code that is written in two stickers (one in the fitting itself and another one in the box). You can use the "Filter" button to filter by output, group, reference,...).

CONFIGURATION SCREEN
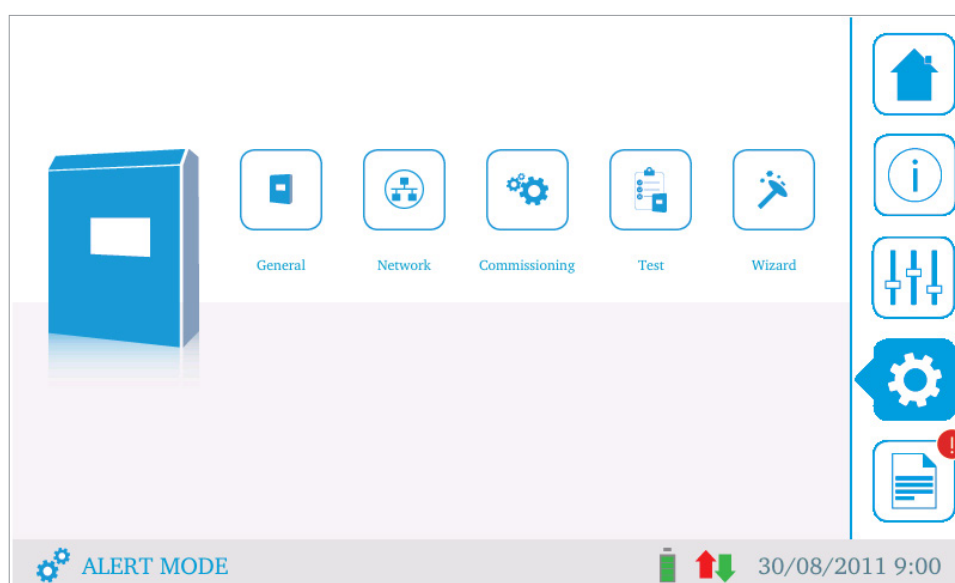
Pressing the fourth button on the right side menu, the configuration menu will be displayed. Password is required (default password: 1234). In this menu, there are the following options:

· **GENERAL.** To establish general parameters of the central (name, building, passwords, pre-selected autonomy, models of the batteries used, etc).

· **NETWORK.** To establish the network parameters (IP address, subnet mask and gateway).

· **COMMISSIONING.** This menu has tools to help with the commissioning of the installation (scanning, group edition, scene edition and input edition).

· **TEST.** Allows to configure the date, time and the frequency of the functional and autonomy tests.

· **WIZARD.** A very useful assistance for the commissioning of the central.

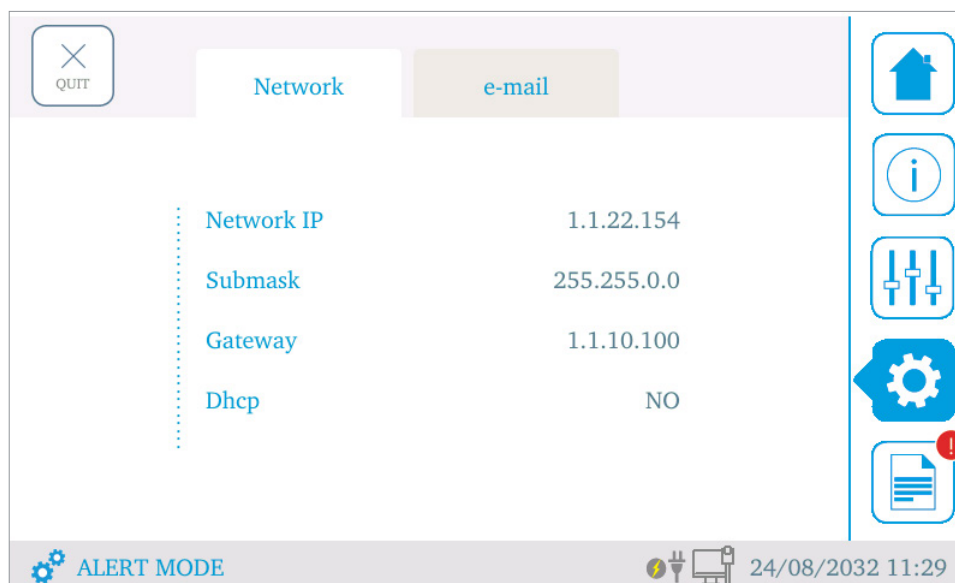**COMMISSIONING TOOLS · General**

To set general parameters of the central:

- Central name.
- Building name.
- Language.
- Date/Time.
- Passwords.
- Models of the batteries used.
- Pre-selected autonomy.
- Self-protection.
- Max discharge current.
- Sound clic.
- Sound emergency.
- Sound fail.
- Sleep mode.
- Brightness of the screen.

COMMISSIONING TOOLS · Network

To set network parameters of the central:

·   Network IP address.
·   Subnet mask.
·   Gateway.
·   DCHP.
·   E-mail options.
·   Modbus/IP.

The central has a web server that allows its control from any computer connected to the same local network.

By default, the central is programmed with a predetermined network parameters that can be modified:

·   IP address: 192.168.1.254
·   Subnet mask: 255.255.255.0

Connect the gateway to your computer using a crossover cable, configure your computer in the same network range than the gateway, access to your web browser and type the IP address of the gateway (by default 192.168.1.6).

COMMISSIONING TOOLS · Commissioning tools
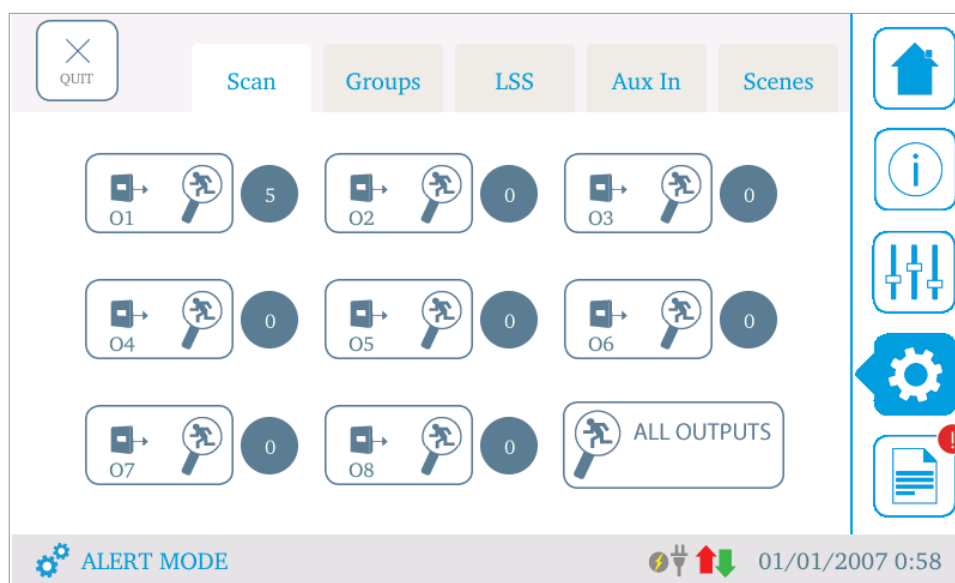
Scan the outputs, made groups, set the LSS logic functioning, set the auxiliary inputs,..

By pressing the magnifier glass buttons the fittings connected to each one of the outputs will be detected.

The fittings provided by Normalux are programmed with an hexadecimal code that is used to identify each fitting. This code is printed in a sticker that is placed on a visible spot within the luminarie itself.

See the scanning display in the drawing in this page. You can see the eight outputs with the number of fittings detected on each output. To start the scanning process, press on the magnifying glass icon, either by output or all at the same time.

Once the process is finished, press on any of the outputs to see the result of the scanning.

COMMISSIONING TOOLS · Commissioning tools


A group is a set of emergency luminaires that can be connected to different outputs. Meaning that a group can include luminaires connected to different outputs. The system allows the creation of a maximum of 16 groups.

Select the group number you want to coonfigure and then, the fittings you want to add to the group. You can use the "Filter" button to filter by output or reference,...

COMMISSIONING TOOLS · Commissioning tools
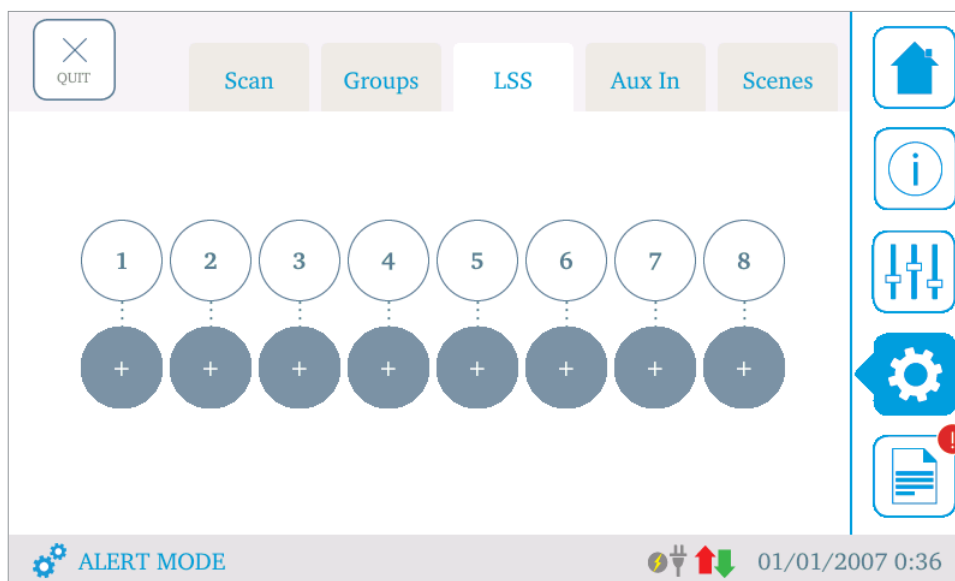
It allows to control the maintained mode of the fittings per output when there is power supply.

LSSx are 230 Vac · 50 Hz inputs tha controls outputs. For example, if LSS1 is +, it means that Input nº1 has voltage. If it is 0 means there is no voltage.

COMMISSIONING TOOLS · Commissioning tools

It allows to define how the system will behave when receiving a signal from any of the auxiliary inputs. There are three inputs in the central: I1, I2 and I3.

Each input has two different status: contact open or close. You can set a type of device connected to the Aux input (toogle or push buton) and link it to a scene.
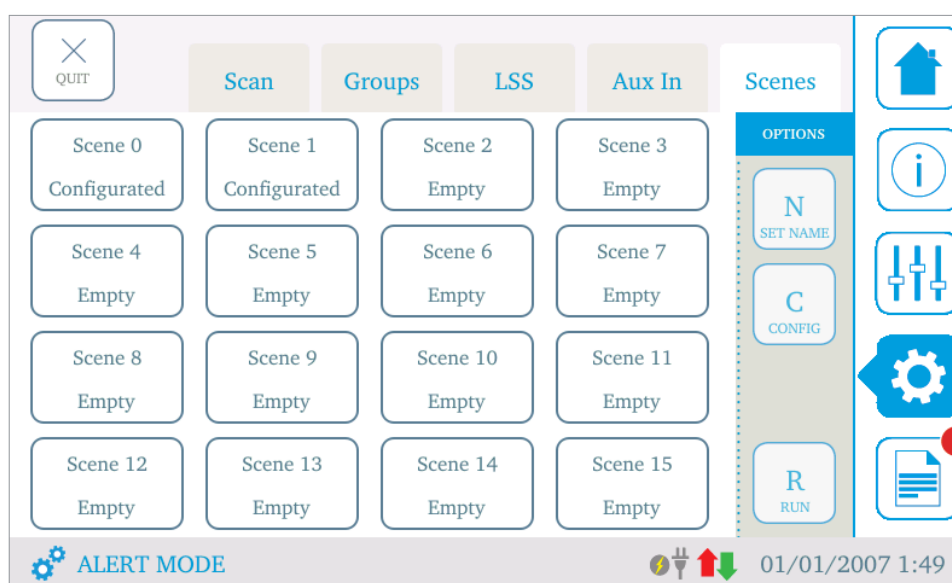
Toogle is a button with two actions:

·   First press: Excute the scene.
·   Second press: switch off.

Push is a button with one action:

·   Fist press: Excute the scene.

COMMISSIONING TOOLS · Commissioning tools

C24i allows to configure up to 16 scenes. A scene is a list of actions or commands. You can set the name of the scene, the list of actions and press "run" to try the scene programmed. You will be able to:

· Integrate LSS functions.
· Executes scenes or actions to groups.
· Control Aux outputs.
· Control outputs.
· ...

Please, in order to avoid any eventual loss of commands, add a 3 seconds delay between actions.

MODBUS INTEGRATION

Scan the QR code below to download the Modbus integration intructions of the central.

INDEX OF FAILURES

FAILURE	TYPE	DESCRIPTION
F0	F0_FUSIBLE_BAT1_BROKEN	Shows that the fuse of battery 1 is broken.
F1	F1_FUSIBLE_BAT2_BROKEN	Shows that the fuse of battery 1 is broken.
F2	F2_BAT1_DESCONECTADA	Shows that battery 1 is disconnected.
F3	F3_BAT2_DESCONECTADA	Shows that battery 2 is disconnected.
F4	F4_FUSIBLE_INPUT_BROKEN	Shows that the input fuse is broken.
F5	F5_BAT1_DETERIORADA	Shows that battery 1 has voltage values compatible with a damaged battery.
F6	F6_BAT2_DETERIORADA	Shows that battery 2 has voltage values compatible with a damaged battery.
F10	F10_OUT1_FAIL	Shows that either there is a shortcut in output 1 or the output fuse is open.
F11	F11_OUT2_FAIL	Shows that either there is a shortcut in output 2 or the output fuse is open.
F12	F12_OUT3_FAIL	Shows that either there is a shortcut in output 3 or the output fuse is open.
F13	F13_OUT4_FAIL	Shows that either there is a shortcut in output 4 or the output fuse is open.
F14	F14_OUT5_FAIL	Shows that either there is a shortcut in output 5 or the output fuse is open.
F15	F15_OUT6_FAIL	Shows that either there is a shortcut in output 6 or the output fuse is open.
F16	F16_OUT7_FAIL	Shows that either there is a shortcut in output 7 or the output fuse is open.
F17	F17_OUT8_FAIL	Shows that either there is a shortcut in output 8 or the output fuse is open.
F18	F18_OUT1_CONTROL_ERROR	Shows that the control logic in output 1 is reporting a problem.
F19	F19_OUT2_CONTROL_ERROR	Shows that the control logic in output 2 is reporting a problem.
F20	F20_OUT3_CONTROL_ERROR F_CTRL_BUS_LED3	Shows that the control logic in output 3 is reporting a problem.
F21	F21_OUT4_CONTROL_ERROR	Shows that the control logic in output 4 is reporting a problem.
F22	F22_OUT5_CONTROL_ERROR	Shows that the control logic in output 5 is reporting a problem.
F23	F23_OUT6_CONTROL_ERROR	Shows that the control logic in output 6 is reporting a problem.
F24	F24_OUT7_CONTROL_ERROR	Shows that the control logic in output 7 is reporting a problem.
F25	F25_OUT8_CONTROL_ERROR	Shows that the control logic in output 8 is reporting a problem.

INDEX OF FAILURES

FAILURE	TYPE	DESCRIPTION
F30	F30_INPUT_CONTROL_ERROR	Shows that the control logic of the input power is reporting a problem.
F31	F31_INPUT_CONTROL_ERROR	Shows that the control logic of the battery is reporting a problem.
F32	F32_AUTONOMÍA	Shows that the batteries are not able to satisfy the requested autonomy.

INDEX OF WARNINGS

WARNING	TYPE	DESCRIPTION
W0	W0_VOLTAJE_UNCONTROLLED_OUT1	Shows that there is some power in the output which is not coming from the central.
W1	W1_VOLTAJE_UNCONTROLLED_OUT2	Shows that there is some power in the output which is not coming from the central.
W2	W2_VOLTAJE_UNCONTROLLED_OUT3	Shows that there is some power in the output which is not coming from the central.
W3	W3_VOLTAJE_UNCONTROLLED_OUT4	Shows that there is some power in the output which is not coming from the central.
W4	W4_VOLTAJE_UNCONTROLLED_OUT5	Shows that there is some power in the output which is not coming from the central.
W5	W5_VOLTAJE_UNCONTROLLED_OUT6	Shows that there is some power in the output which is not coming from the central.
W6	W6_VOLTAJE_UNCONTROLLED_OUT7	Shows that there is some power in the output which is not coming from the central.
W7	W7_VOLTAJE_UNCONTROLLED_OUT8	Shows that there is some power in the output which is not coming from the central.
W10	W10_VRED_NO_DETECTED	Shows that there is no power of control network.
W11	W11_VFDC_NO_DETECTED	Shows that there is no power of input power.
W12	W12_BATERÍA_VACIÁ	Shows that the battery has undergone a complete dicharge.
W90	W90_IOUT_OUT_OFF_RANGE	Shows that the output current is too high to keep the autonomy.
W91	W91_POWER_OUT1_OFF_RANGE	Shows that the power in output 1 is over 85W.
W92	W92_POWER_OUT2_OFF_RANGE	Shows that the power in output 2 is over 85W.
W93	W93_POWER_OUT3_OFF_RANGE	Shows that the power in output 3 is over 85W.
W94	W94_POWER_OUT4_OFF_RANGE	Shows that the power in output 4 is over 85W.

INDEX OF WARNINGS

FAILURE	TYPE	DESCRIPTION
W95	W95_POWER_OUT5_OFF_RANGE	Shows that the power in output 5 is over 85W.
W96	W96_POWER_OUT6_OFF_RANGE	Shows that the power in output 6 is over 85W.
W97	W97_POWER_OUT7_OFF_RANGE	Shows that the power in output 7 is over 85W.
W98	W98_POWER_OUT8_OFF_RANGE	Shows that the power in output 8 is over 85W.

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