theben

Manual
DALI-2 Presence Detector theRonda P360 DALI-2 HCL UP

2022-09-01_307483 01

theben

Contents

1 General

1.1 Safety information

CAUTION
Installation and connection should only be carried out by a qualified electrician!

1.2 Proper Use

The presence detector theRonda P360 DALI-2 HCL is intended for indoor installation.
The presence detector theRonda P360 DALI-2 HCL is exclusively intended for use as contractually agreed between the manufacturer and the user. Any other use is considered to be unacceptable. The manufacturer does not accept liability for any resulting damages.

1.3 Explanation of terms

There is a difference between motion detectors and presence detectors. Motion detectors can only detect large movements. Presence detectors, on the other hand, can detect even the smallest of movements – those made while seated, for example. The theRonda P360 DALI-2 HCL detects both large and small movements and is therefore called a presence detector.

1.4 Definitions

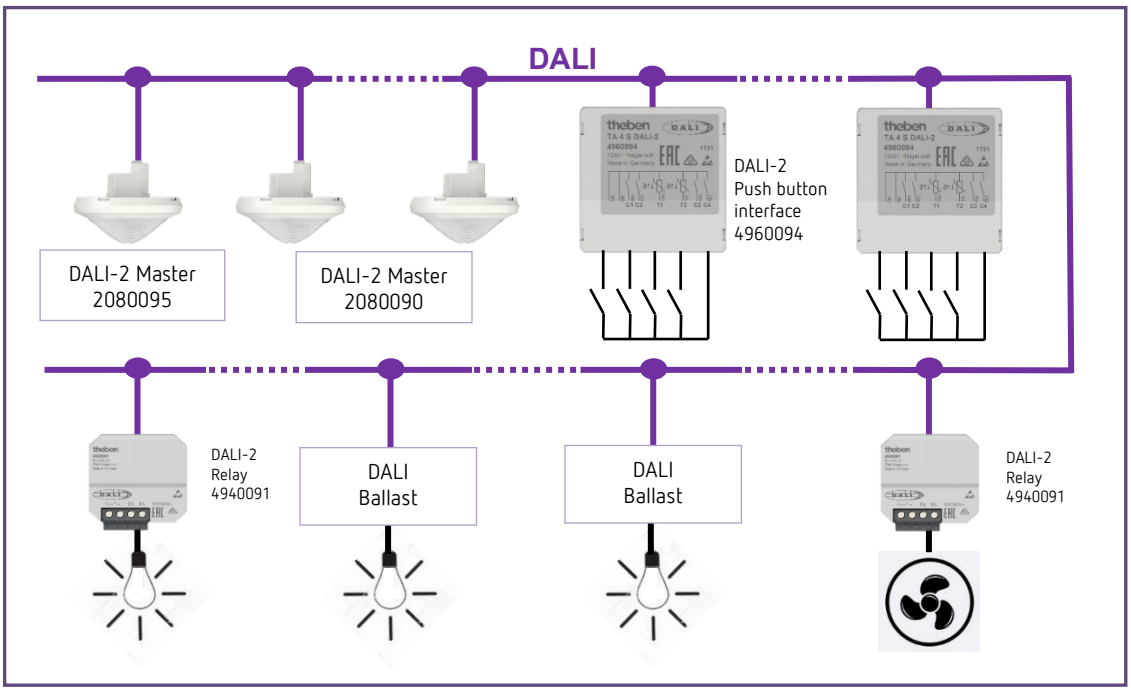
HCL	Human Centric Lighting
RGB	RGB colour model – RGB stands for red, green, blue
RGBW	RGB colour model with adjustable white component
TW	Tunable white function
DALI	Digital Addressable Lighting Interface
EB	Electronic ballast
Master	Presence detector theRonda P360 DALI-2 HCL UP
Presence detector	theRonda P360 DALI-2 HCL UP
AP	Surface-mounted
DE	Ceiling installation
UP	Flush-mounted
Control	Constant lighting control
Switching	Switching operation

2 Function description

The DALI-2 Room Solution from Theben is a DALI-2 single room solution handling all aspects of lighting control. For the single room solution, all key components such as presence detector, switch actuator, push button interface as well as the app for start-up are available from Theben. Unlike standard DALI presence detectors, the DALI-2 Room Solution offers new functionalities such as HCL function, TW/RGB functionality, time-controlled functions, etc.

The presence detector theRonda P360 DALI-2 HCL is the heart of the DALI-2 Room Solution. It evaluates the information from the DALI-2 push button interfaces and controls the actuators, such as DALI-2 EBs or DALI-2 relays. Various DALI-2 presence sensors are available for extending the detection area.

DALI-2 Room Solution



The presence detector theRonda P360 DALI-2 HCL and other DALI components are connected to the DALI line. The DALI supply is provided by the master.

A user-friendly "DALI-2 RS Plug" app is available for start-up and configuration. This free app allows you to intuitively start up a DALI-2 single-room solution without any knowledge of DALI-2.

3 Technical data

Operating voltage	230 V AC, +10%/-15%, 50 Hz
Power consumption without DALI participant	< 0.7 W
Power consumption with DALI participants	< 1.6 W (with DALI output 150 mA)
DALI output	guaranteed 150 mA, max. 250 mA (EN 62386-101)
Connection type	Screw terminals
Cable cross-section	max. 2 x 2.5 mm^2
Type of installation[1]	Flush-mounted
Size of flush-mounted housing	Size 1
Recommended installation height	2 – 10 m / max. 15 m
Minimum height	> 1.7 m
Detection area, horizontal	360°
Detection area, walking[2]	Ø 24.0 m | 452 m^2
Detection area, seated[3]	Ø 6.0 m | 28 m^2
Time accuracy of time switch	≤ ±0.5 s/day at +25 °C
Power reserve of time switch	at least 7 years
Radio frequency/transmission power BLE	2.4 GHz/Class 2 (2.5 mW)
Protection rating	IP 20 (IP 54 when installed)
Ambient temperature	-15 °C to +45 °C
CE Declaration of Conformity	This device corresponds to EN 60669-2-5.
RCM conformity	This device is compliant with the ACMA guidelines.
DALI conformity	IEC 62386-101/103
Supported devices[4]	208 (DT7)/209 (DT8)/218
Supported control units	301/303

[1] surface-mounted installation and ceiling installation using springs also possible with accessories
[2] transverse movement with an installation height of 3 m

[3] seated with an installation height of 3 m
[4] according to DALI standard, DT0/DT2/DT3/DT4/DT5/DT6 are supported

4 Product characteristics

4.1 Usage

The focus is on purpose-built facilities, within the following applications in particular:

- Offices
- Large offices
- School rooms
- Conference rooms
- Entrance halls
- Hospitals, retirement homes
- Restaurants, bars
- Warehouses and sports halls

4.2 Functionality

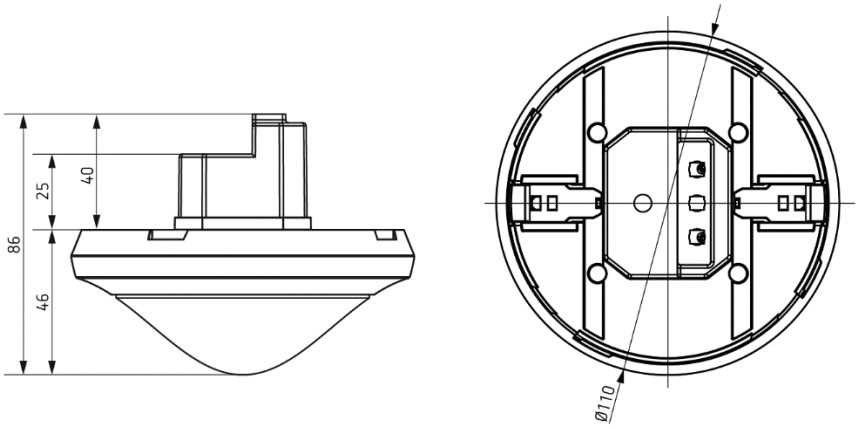
- Up to 4 lighting channels, DALI addressable
- Easy, intuitive configuration of DALI groups via DALI-2 RS Plug app (for tablets iOS/Android and for laptops with BLE Windows 10)
- Connection protection to protect against third-party tampering
- Integration of up to 16 DALI push button instances via app
- Integration of up to 4 DALI relays via app
- Colour temperature control based on time of day HCL
- Operation with RGB and RGBW LEDs
- Time-controlled actions thanks to the integrated time switch
- Switching mode or constant lighting control with standby function
- Switching mode with dimmable lighting
- Switching mode and constant lighting control without influence of presence
- Dimming speed of manual dimming adjustable in 2 steps
- Selection of dimming curve (normal or linear dimming curve according to IEC 62386-218)
- Fully or semi-automatic
- Brightness switching or setpoint value adjustable in lux
- Teach-in of the brightness switching value or the setpoint value
- Setting of room correction factor (brightness measurement calibration)

- Lighting time delay configurable
- Adaptable 3-channel light measurement
- Easy to calibrate brightness measurement
- Short-term presence
- Self-learning time delay
- Simple configuration of the energy-saving behaviour (eco/eco plus)
- Selectable control speed
- Manual override via remote control or push button
- Staircase light function
- Response to push button operation selectable (school/office)
- Test mode for checking function and detection area
- Test mode light
- Configurable with app remote control – direct communication via BLE and thus easy reading of all parameters
- Scenes can be lighting group-, switching group-, relay- or EB-oriented and can be called up via push button or user remote control
- Configurable detection sensitivity
- Restriction of detection area
- Integration of several DALI-2 presence sensors for extending the detection area
- Automatic detection and integration of presence sensors (up to 5 devices)
- Simple and cost-effective installation of all components on one DALI line
- The user remote controls theSenda S or theSenda B can be used to dim or switch the lamps when calling up the scenes
- Nice design with exchangeable bezel frames in two colours
- Ceiling installation in flush-mounting box
- Surface-mounted installation possible with surface frame 110A (optional)
- theSenda S user remote control (optional)
- User remote control theSenda B (optional)

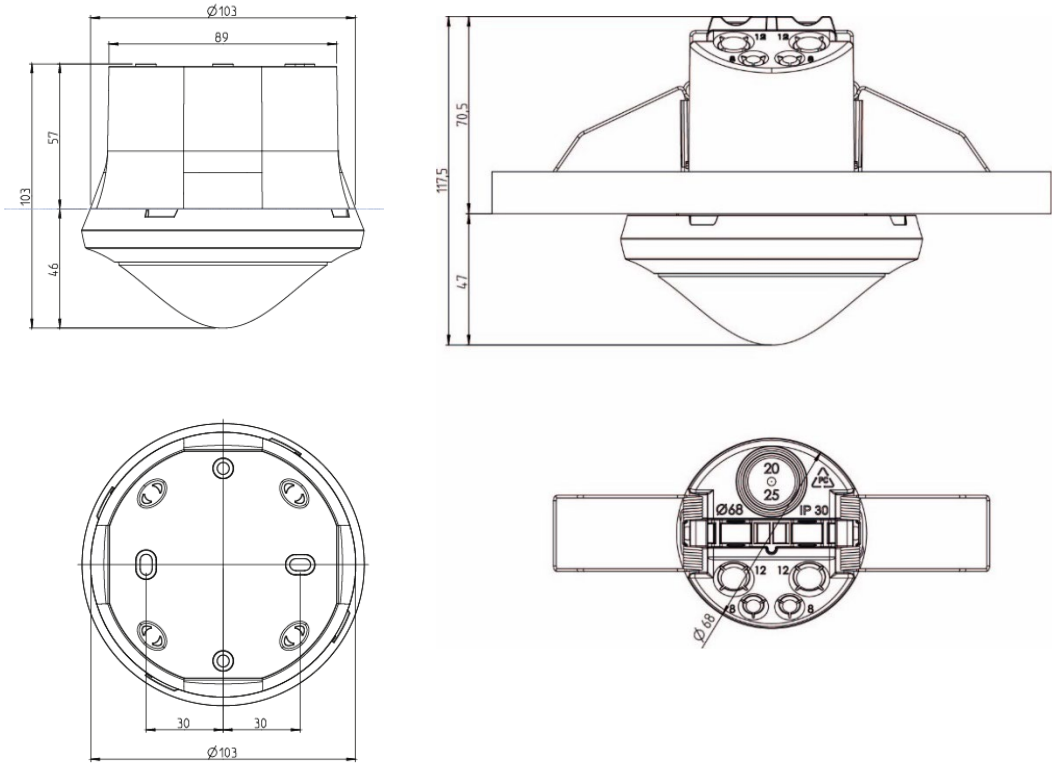
All of the product characteristics are described in detail in the following sections.

4.3 Dimensions

4.3.1 Flush-mounted installation



4.3.2 Surface-mounted installation and ceiling installation with springs



with surface frame 110A

with ceiling flush-mounting box 68A

4.4 Detection area

The circular detection area of presence detector theRonda P360 DALI-2 HCL UP covers a large area and permits a **complete** room coverage with many applications.

Note that seated and walking persons are detected in differently sized areas.

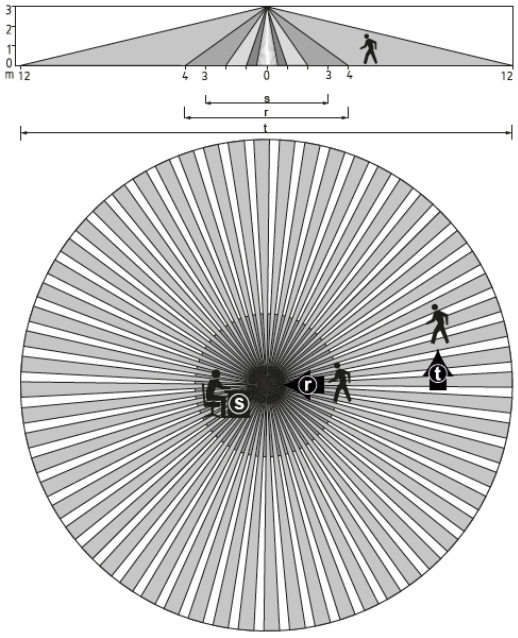
The recommended installation height is 2 – 10 m. As installation height increases, the sensitivity of theRonda P360 DALI-2 HCL decreases. At an installation height of 4 m or higher, walking motions are necessary and the detection areas of several theRonda P360 DALI-2 HCL should overlap in the marginal zones. The detection range is reduced as the temperature increases, and the sensitivity can be adjusted in 5 increments via the DALI-2 RS Plug app.

Seated persons
theRonda P360 DALI-2 HCL responds very sensitively to slightest movements. The specifications refer to slightest movements (at table height, approx. 0.8 m).

Walking persons
From an installation height of > 4 m, the size of and distance between the active and passive zones increase. More pronounced movements are required for clear detection.

Installation height (A)	Transverse (t)		Head on to (r)		Seated (s)	
2.0 m	380 m²	Ø 22 m	28 m²	Ø 6 m	16 m²	Ø 4.5 m
2.5 m	415 m²	Ø 23 m	38 m²	Ø 7 m	24 m²	Ø 5.5 m
3.0 m	452 m²	Ø 24 m	50 m²	Ø 8 m	28 m²	Ø 6.0 m
3.5 m	452 m²	Ø 24 m	50 m²	Ø 8 m	38 m²	Ø 7.0 m
4.0 m	452 m²	Ø 24 m	50 m²	Ø 8 m	–	–
5.0 m	452 m²	Ø 24 m	50 m²	Ø 8 m	–	–
6.0 m	452 m²	Ø 24 m	50 m²	Ø 8 m	–	–
10.0 m	491 m²	Ø 25 m	50 m²	Ø 8 m	–	–

All figures are guidance values (Detection areas according to sensNORM, see data sheet)



4.4.1 Area restriction

The detection area is limited by an attachable cover clip with several pre-punched segments (9070921), which are broken out by the installer to achieve the desired detection characteristic.

4.5 Wireless receiver/transmitter BLE

This wireless interface allows bidirectional communication between tablet (Android, iOS) or laptop running Windows 10 and presence detector via Bluetooth. In this way, all parameters can be read out easily and start-up is simple. Firmware updates of the master are possible via the app using Bluetooth.

4.6 Infrared receiver

An infrared receiver can be used to receive control commands. This process involves unidirectional communication. theRonda P360 DALI-2 HCL can be operated with the following remote controls:

- theSenda B user remote control (9070985)
- theSenda S user remote control (9070911)
  see chapter 7.8 User remote control)

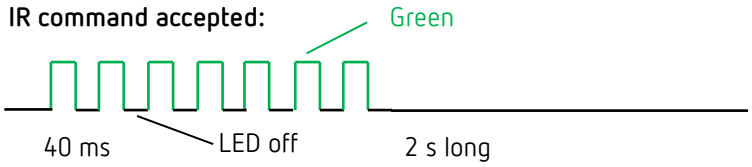
4.7 Display/visualisation

The statuses of theRonda P360 DALI-2 HCL are indicated via an RGB LED in different colours. The RGB LED is located under the lens.
The following states are possible:

1. Bootloader active:

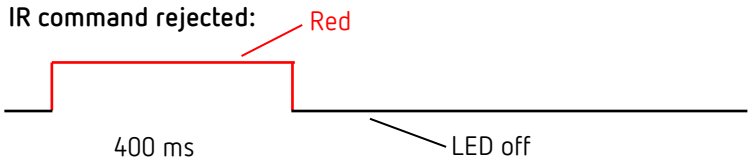
Display during firmware update of the master.

2. IR command accepted:



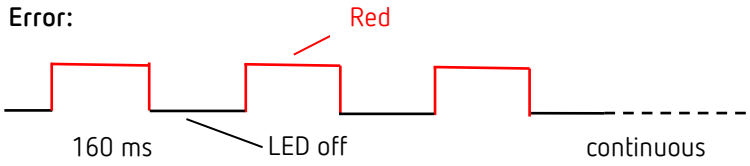
LED flickers (12.5 Hz) when a valid remote control command is received.

3. IR command rejected:



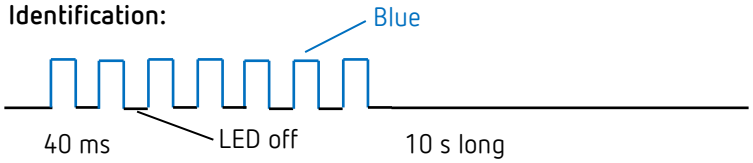
Rejection pulse when an invalid remote control command is received.

4. Error:



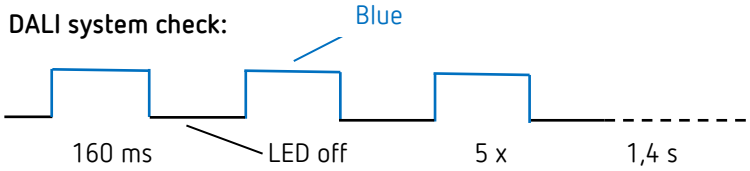
Error flashing (applies until the error has been resolved).

5. Identification:



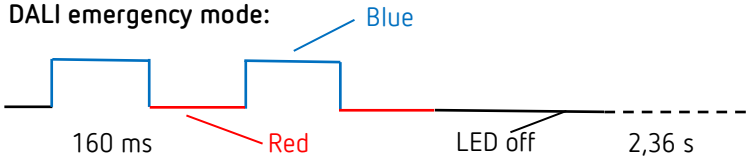
Flashing pattern for identifying the master.

6. DALI system check:



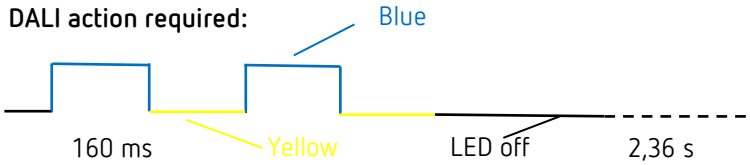
The master checks all DALI devices connected to the DALI bus.

7. DALI emergency mode:



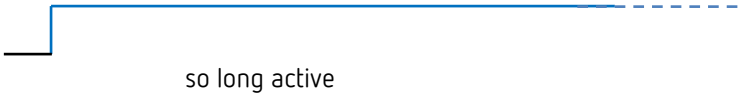
DALI devices have not yet been assigned to a group. The flashing stops when all DALI operating devices have been assigned to a group.

8. DALI action required:



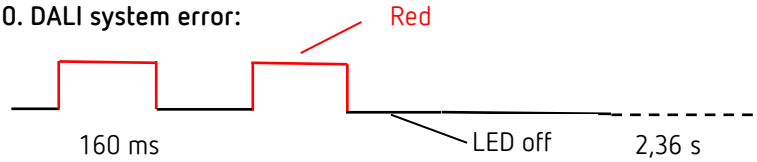
Change in the system structure; new or missing DALI participants were discovered.

9. DALI group assignment:



Master is in the Assign DALI Device mode.

10. DALI system error:

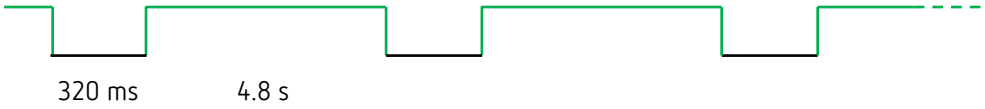


No DALI device is connected to the master, or a DALI line is interrupted.

11. Presence test:

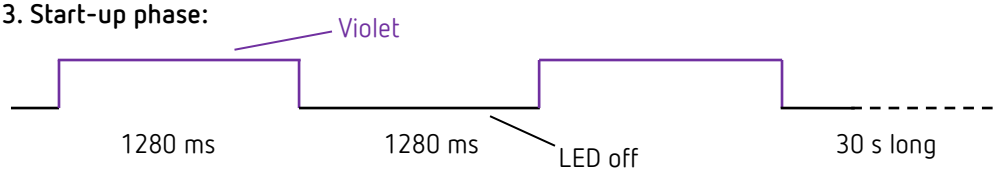
RGB LED lights up in green when motion is detected, otherwise it is off; it is valid until the presence test is terminated.

12. Light test:



The light test mode is used to check the brightness threshold and constant lighting control.

13. Start-up phase:



After triggering the restart, the master goes through the start-up phase. This is indicated with this flashing pattern.

14. Indication of motion:

RGB LED lights up in green when motion is detected, otherwise it is off; it is valid until the indication of motion is terminated.

5 Connection

The presence detector theRonda P360 DALI-2 HCL (master) is connected to the mains voltage and the DALI line. Depending on the application, the required DALI participants such as DALI-2 presence sensors, DALI-2 push button interfaces and DALI operating devices are connected to the DALI line.

ⓘ A maximum of 1 DALI-2 master, 5 DALI-2 presence sensors, 16 DALI-2 push button instances and 4 DALI-2 relays can be connected to the DALI bus.

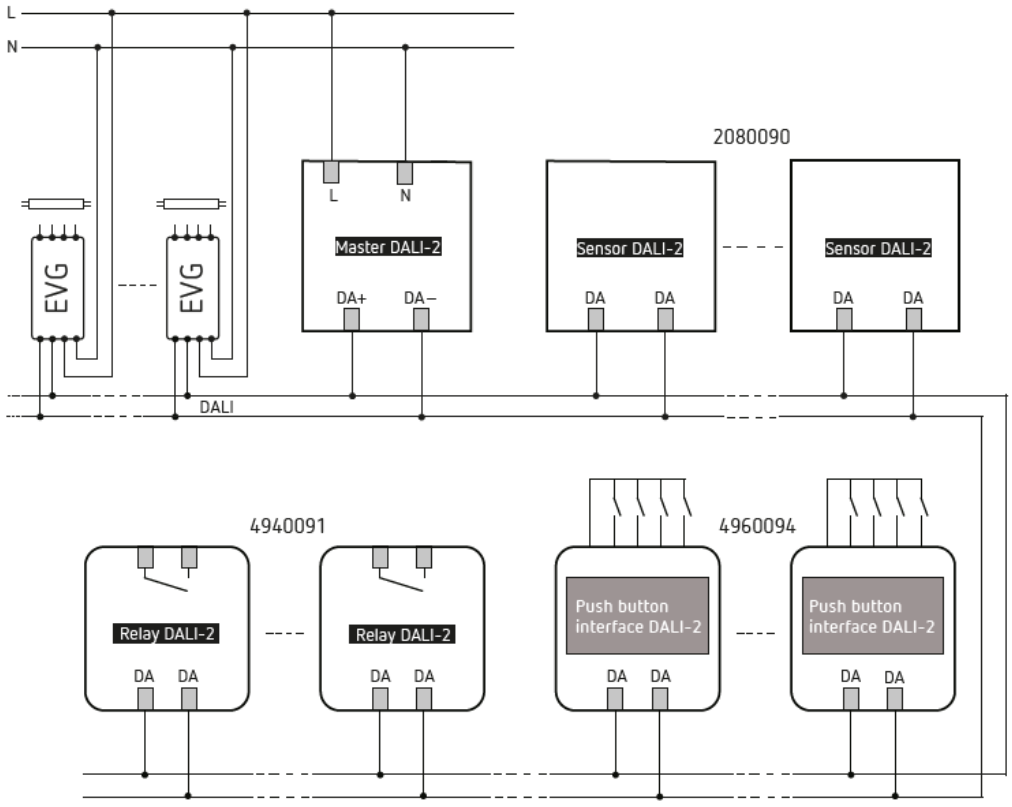
ⓘ Altogether, a maximum of 64 DALI devices (EBs and relays) can be connected.

ⓘ The master provides the power supply for all bus-powered DALI participants.

ⓘ **Only one power supply is allowed! Do not connect any external power supplies to the DALI bus.**

ⓘ **The current consumption of all DALI participants must not exceed 150 mA.**

ⓘ Short circuit mechanism according to IEC 62386-101, see Chapter 8.1 Short circuit mechanism.

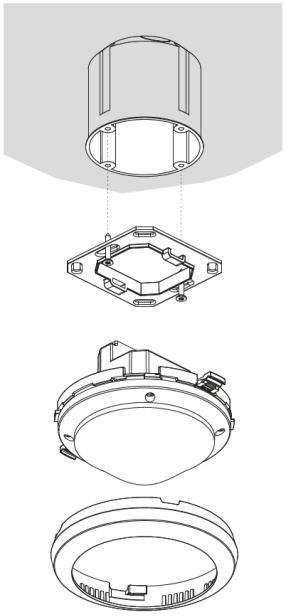


DALI participants, see Chapter 9. Accessories.

6 Installation

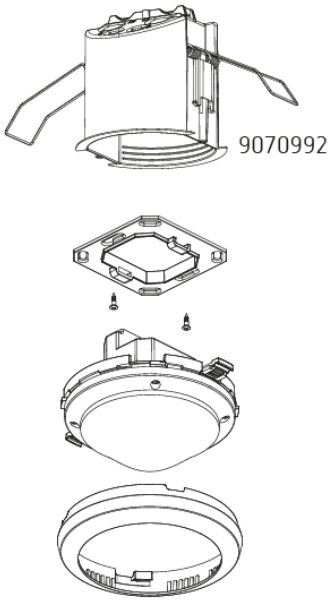
6.1 Flush-mounted installation

The theRonda P360 DALI-2 HCL is flush-mounted using a size 1 standard flush-mounting installation socket.



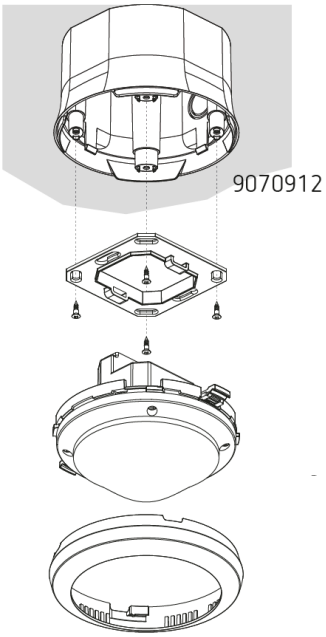
6.2 Ceiling installation

For easier installation of theRonda P360 DALI-2 HCL in false ceilings with thicknesses between 0.5 mm and 3 cm, a ceiling flush-mounting box 68A is available (see accessories). This also ensures cord grip and contact protection. The installation diameter is 72 mm (drill diameter 73 mm).



6.3 Surface-mounted installation

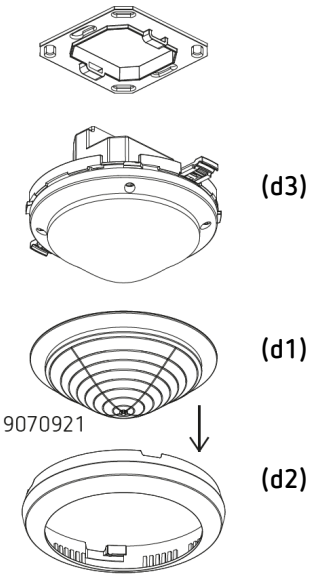
A surface frame 110A is available for surface mounted installation (see accessories).



6.4 Installation of area restriction

The cover clip accessory can be used to individually restrict the detection area.

- Cut clips as required (d1)
- Insert area restriction in cover ring (d2)
- Install on detector (d3)



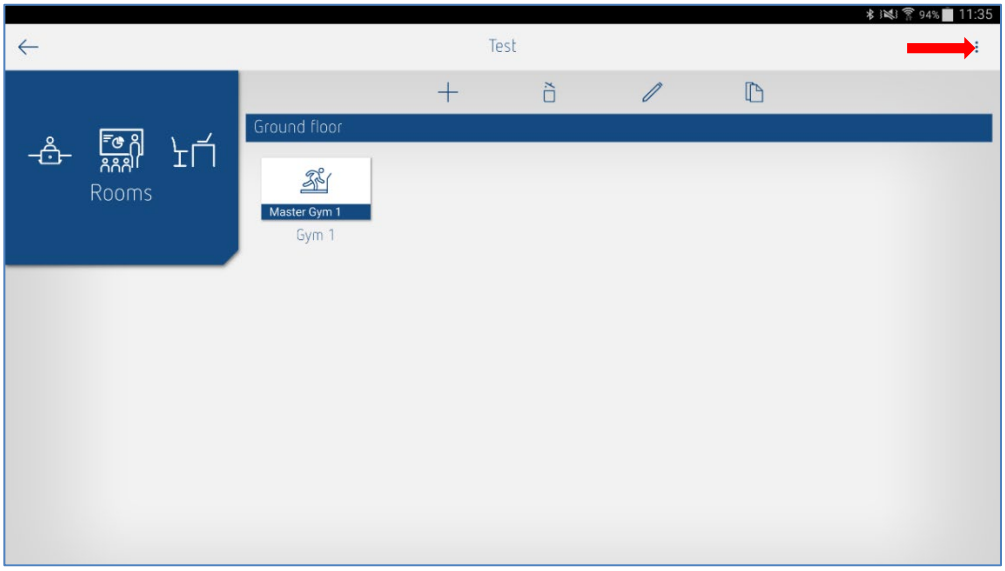
7 Start-up with "DALI-2 RS Plug" app

All settings and start-up are carried out via BLE using the "DALI-2 RS Plug" app. The app is intuitively structured and supports the following basic functions:

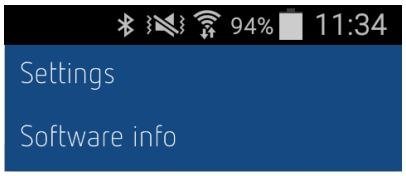
- Creating and saving a project with several rooms or DALI-2 Room Solution
- Planning and configuration of the DALI-2 Room Solution, with and without connection to the Master
- Importing the system and assigning the devices
- Exchange of devices
- Creating time programs
- Setting options for Human Centric Lighting (HCL), RGBW
- Diagnosis and setting functions for the master

7.1 App basic settings

7.1.1 Android, iOS

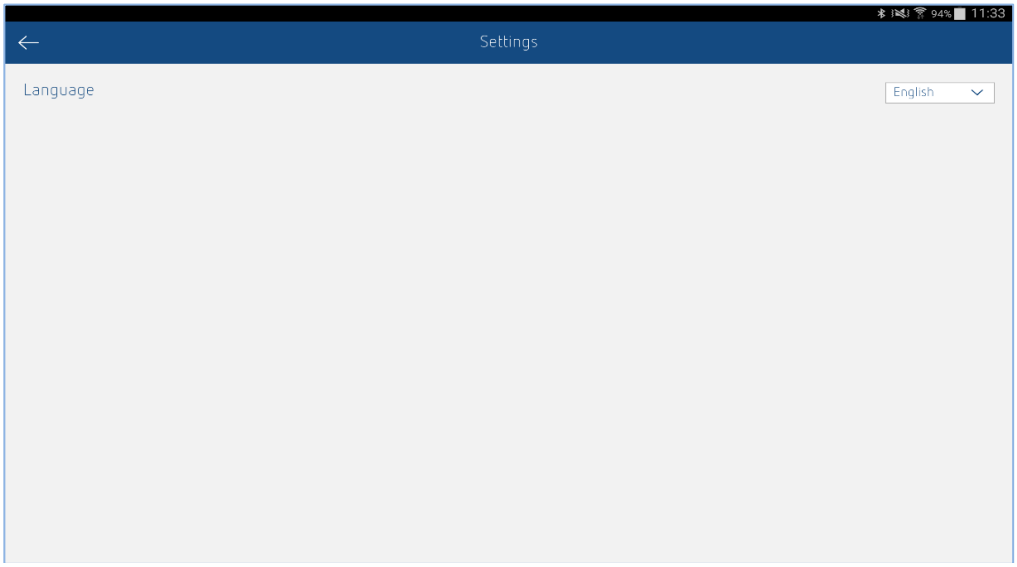


The 3 dots on the right side take you to "Settings" and "Software Info".



The following settings can be made:

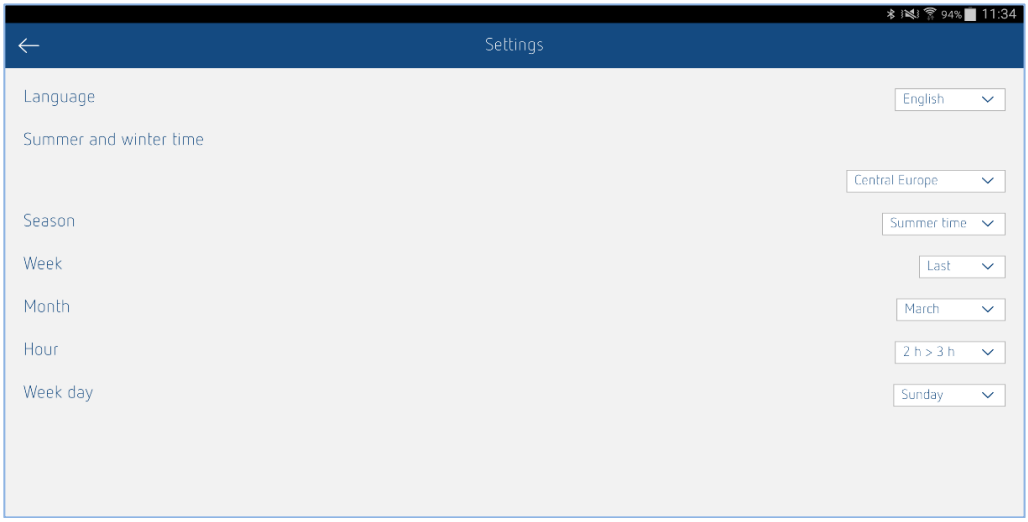
Settings...
The desired language can be selected in the settings.



Language
The following languages are supported:

- German
- English
- French
- Italian
- Dutch
- Swedish

When **Settings...** is opened in the "Rooms" window, the settings for daylight saving time changeover also appear.



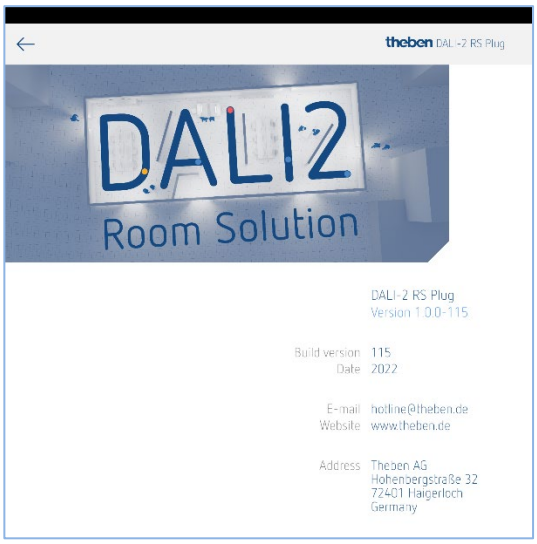
Example: Daylight saving time automatically changes from 02:00 to 03:00 a.m. on Sunday in the last week of March.

The selections are:

- No SU/WI: There is no automatic daylight saving time changeover
- Central Europe: template for Central Europe
- Western Europe: template for Western Europe
- Eastern Europe: template for Eastern Europe

Customised settings are also possible.

Software info

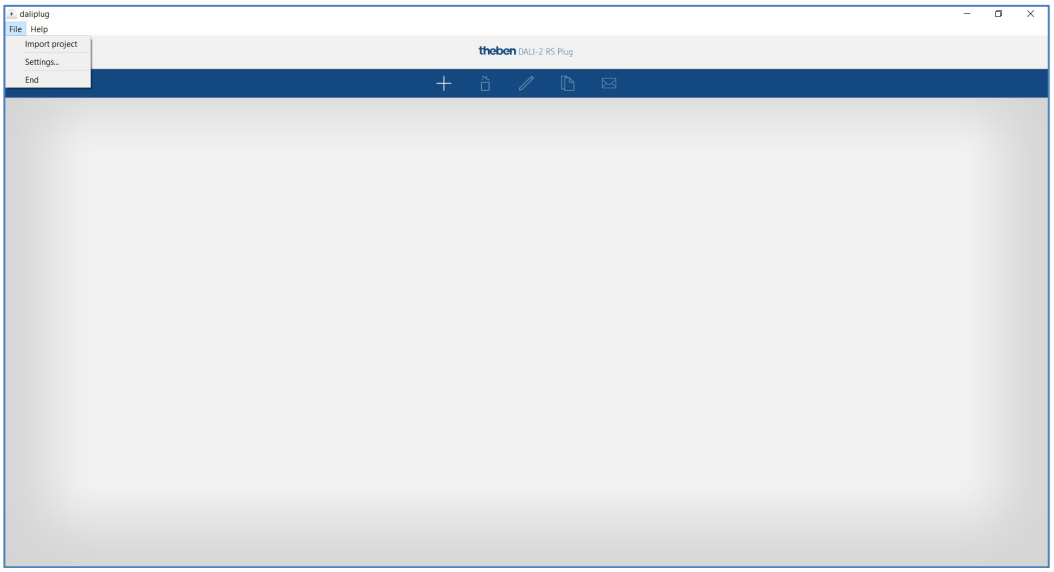


Import project

Archived projects can be easily imported by tapping the *.dlp file in the e-mail and then selecting the DALI-2 RS Plug app in the pop-up window.
We recommend using Microsoft Outlook for the import, as not all e-mail services create the link to the DALI-2 RS Plug app.
Exporting projects, see Chapter 7.2 Create project.

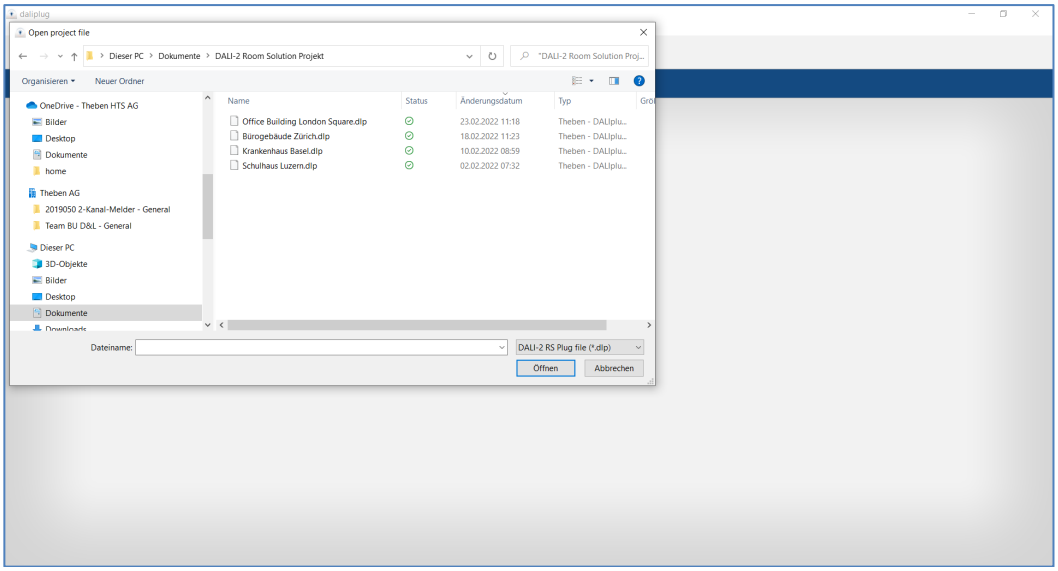
7.1.2 Windows 10

File



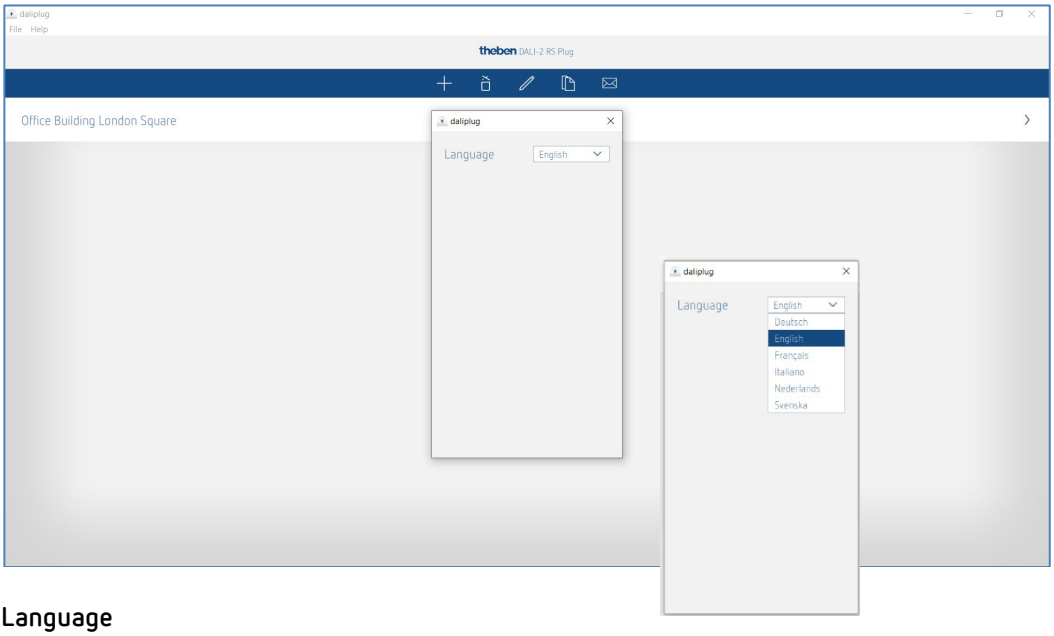
The following settings can be made:

Import project
Archived projects can be easily imported. The projects are of type *.dlp.
Exporting projects, see Chapter 7.2 Create project.



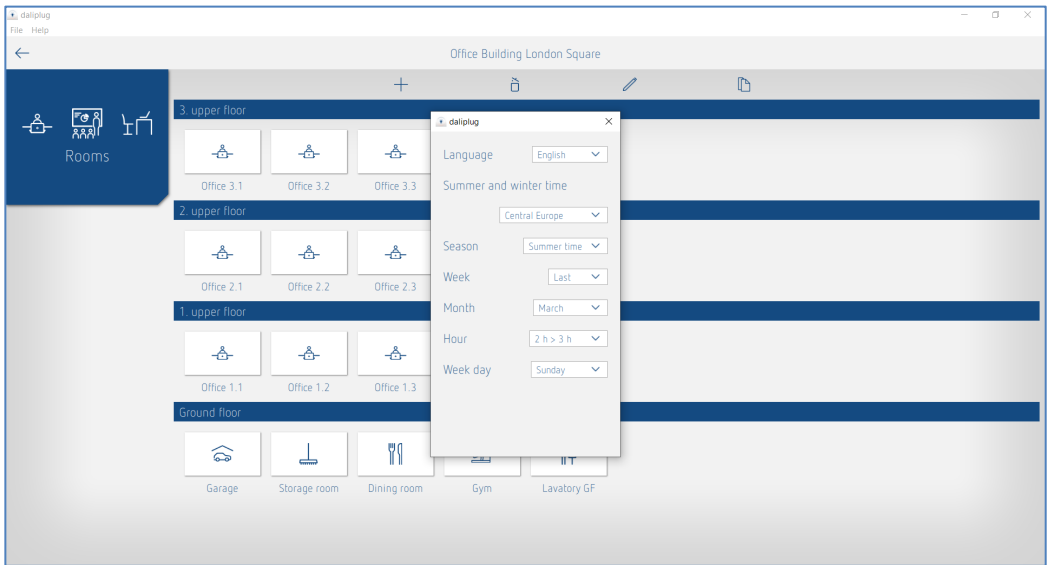
➢ Select the desired file on the PC and copy it to the app by using Open.

Settings...
The desired language can be selected in the settings.



Language
The following languages are supported:
- German
- English
- French
- Italian
- Dutch
- Swedish

When **Settings...** is opened in the "Rooms" window, the settings for daylight saving time changeover also appear.



Example: Daylight saving time automatically changes from 02:00 to 03:00 a.m. on Sunday in the last week of March.

The selections are:

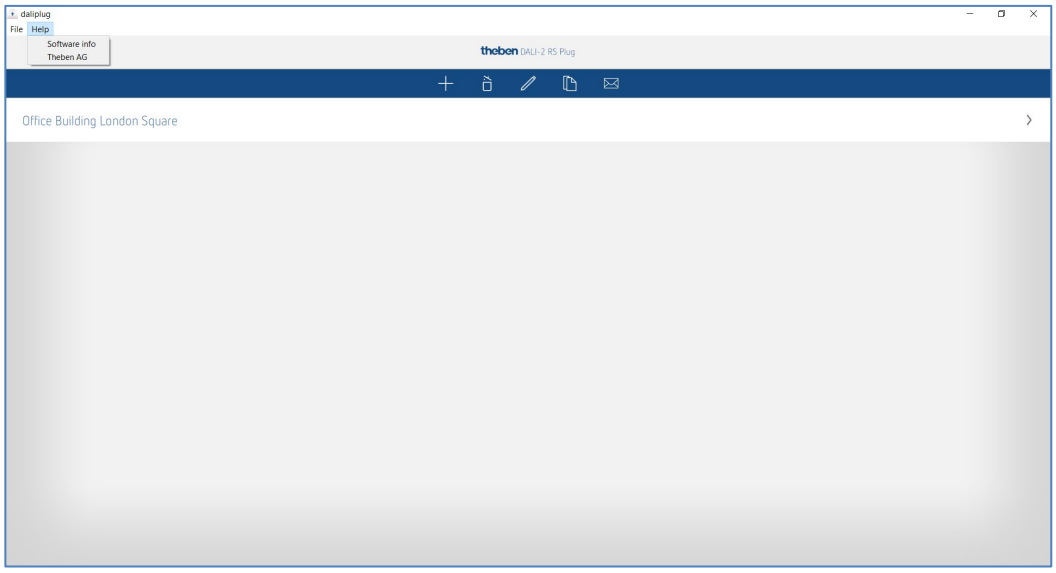
- No SU/WI: There is no automatic daylight saving time changeover
- Central Europe: template for Central Europe
- Western Europe: template for Western Europe
- Eastern Europe: template for Eastern Europe

Customised settings are also possible.

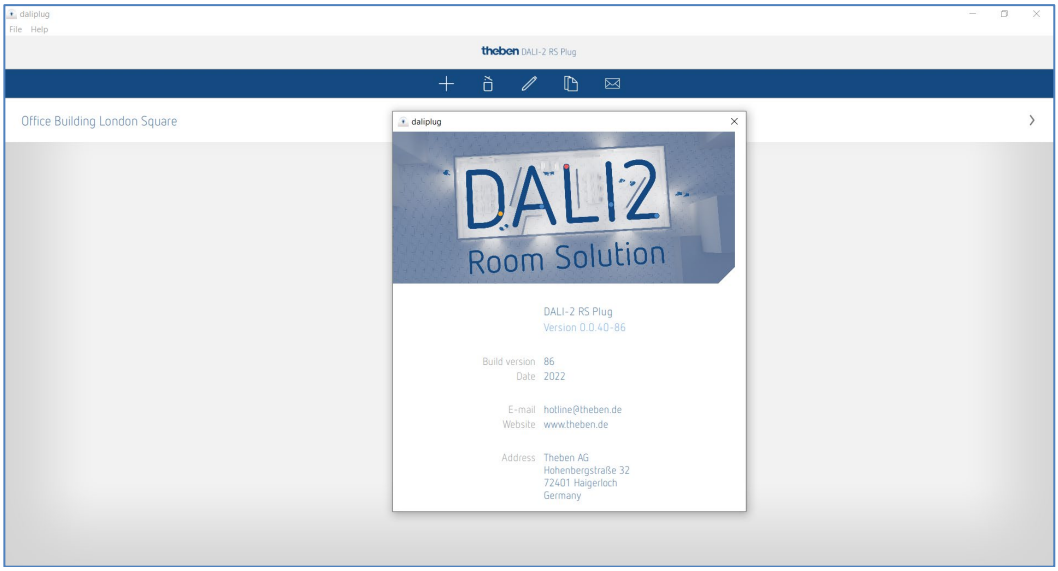
Quit

The app is closed properly.

Help



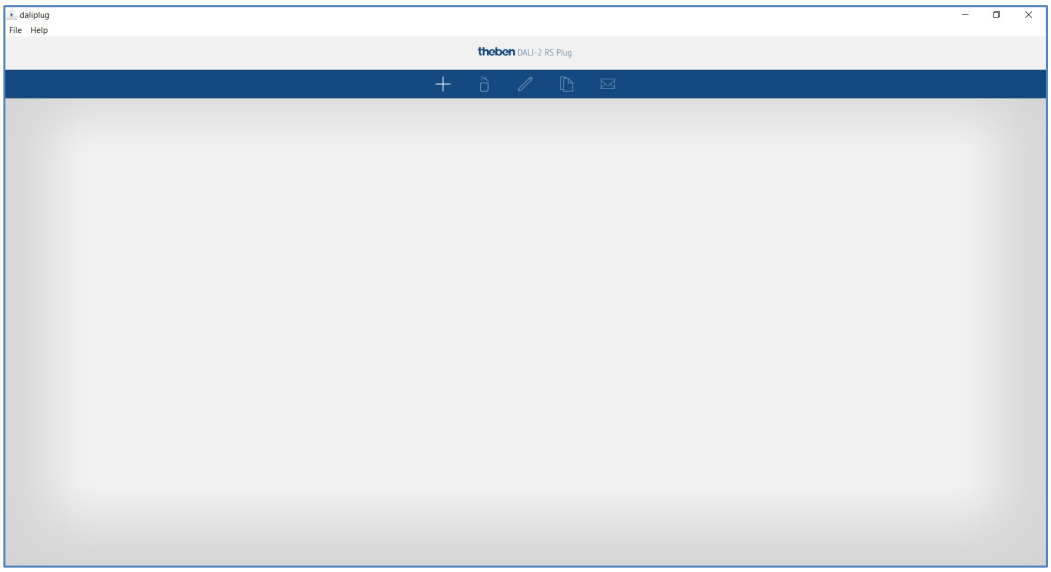
Software info



Theben AG
www.theben.de/product/2080095
www.theben.de/dali2-en

7.2 Create project

When the app is opened for the first time, the following main menu appears:



A new project is created and named.

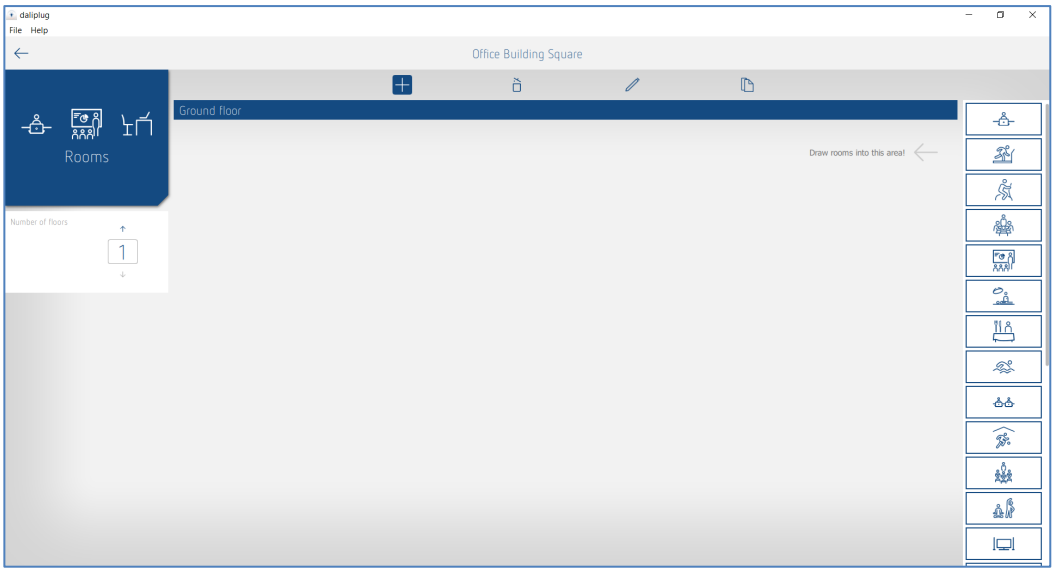
Delete project

Change project name

Copy project

Export project

A project can easily be imported, see Chapter 7.1 App basic settings, Import project.



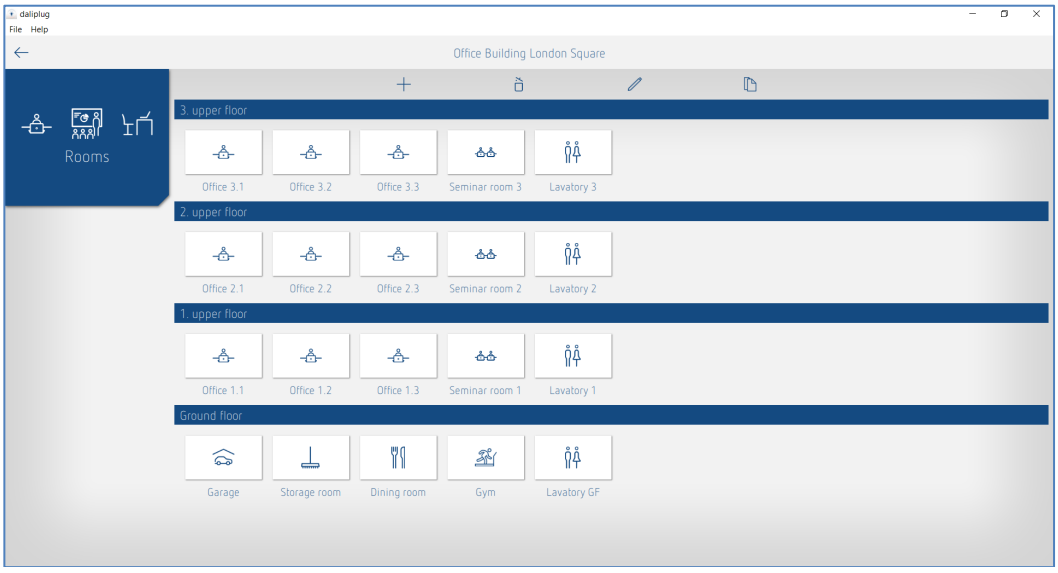
Define the number of floors and rooms. Floors and rooms can also be moved.

Delete floor or room.

Change the labelling of the floor or room. Floors and rooms can also be moved.

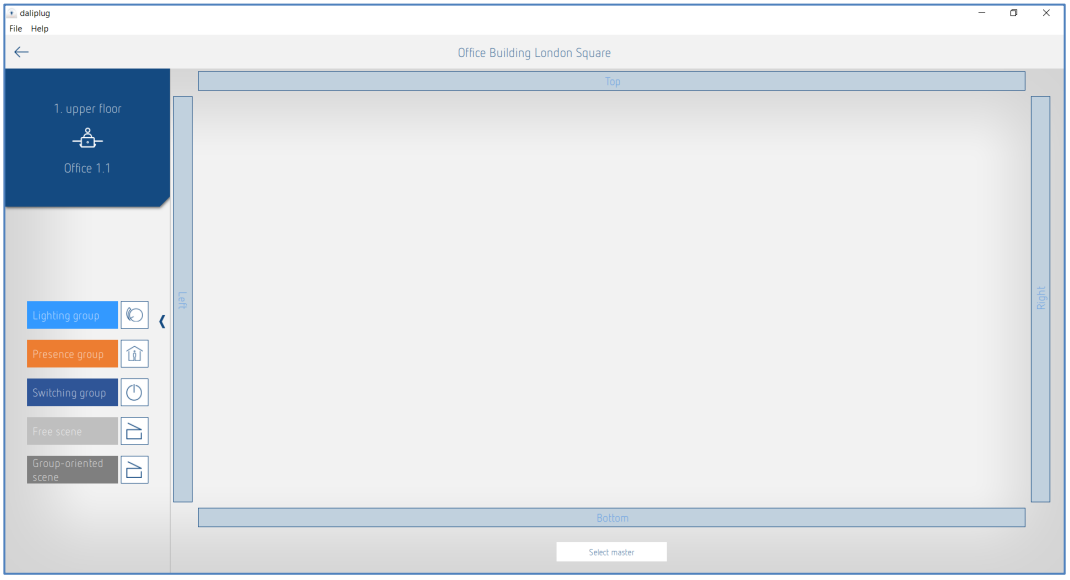
Copy room. The structure and parameter settings are copied.

A set-up project looks like this:

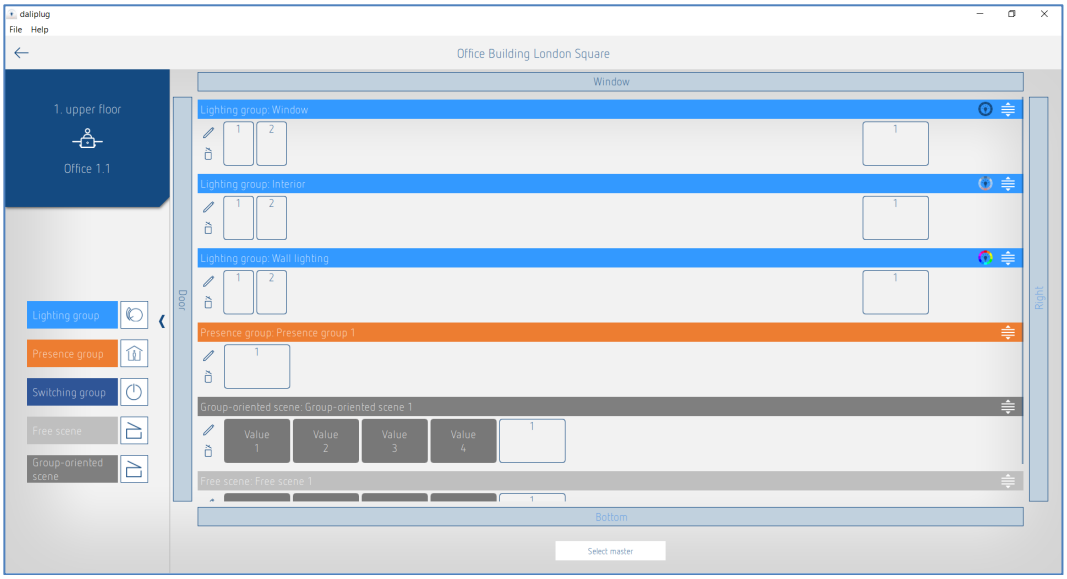


In order to get into the rooms, the + sign must first be deactivated. Then you can click on any room.

The following window appears:



The labelling of the bars "Top", "Bottom", "Left" and "Right" can be customised.
By tapping or dragging and dropping the groups and scenes, the desired structure can be created.



For the lighting group, some parameters can already be preset and the name assigned:

Depending on the selection of the control, the corresponding icons already appear in the top right of the blue bar of the lighting group:

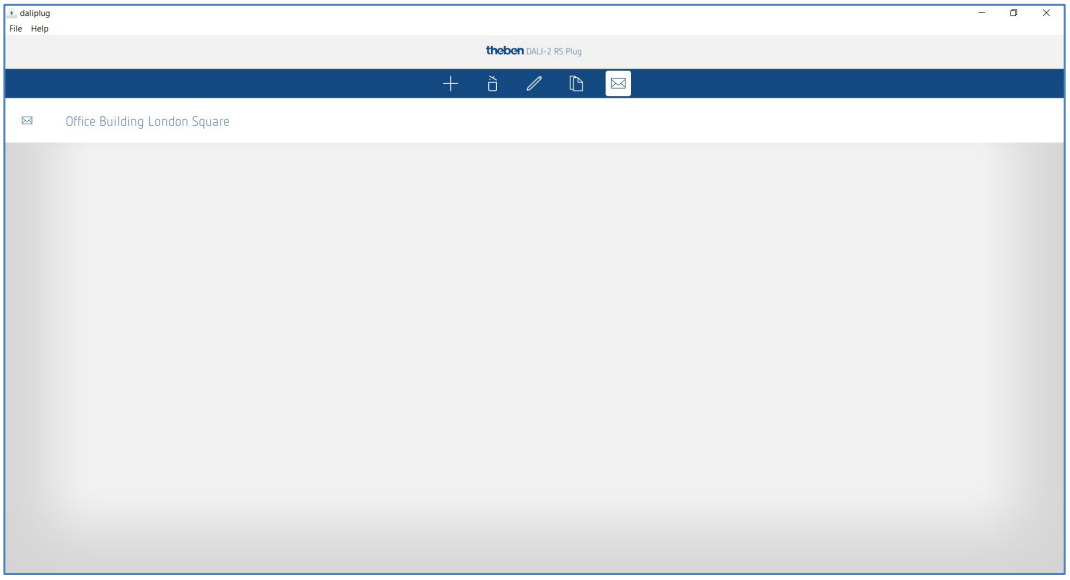
Standard
Tunable White
RGB / RGBW

The DALI-2 Room Solution permits the following settings:
max. 4 lighting groups
max. 2 presence groups
max. 4 switching groups
max. 8 scenes

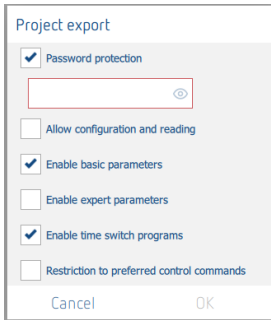
The parameters and other settings of the groups and scenes can also be created in this phase. This offers the advantage that only the assignment of the DALI participants has to be carried out during start-up.

7.2.1 Export project

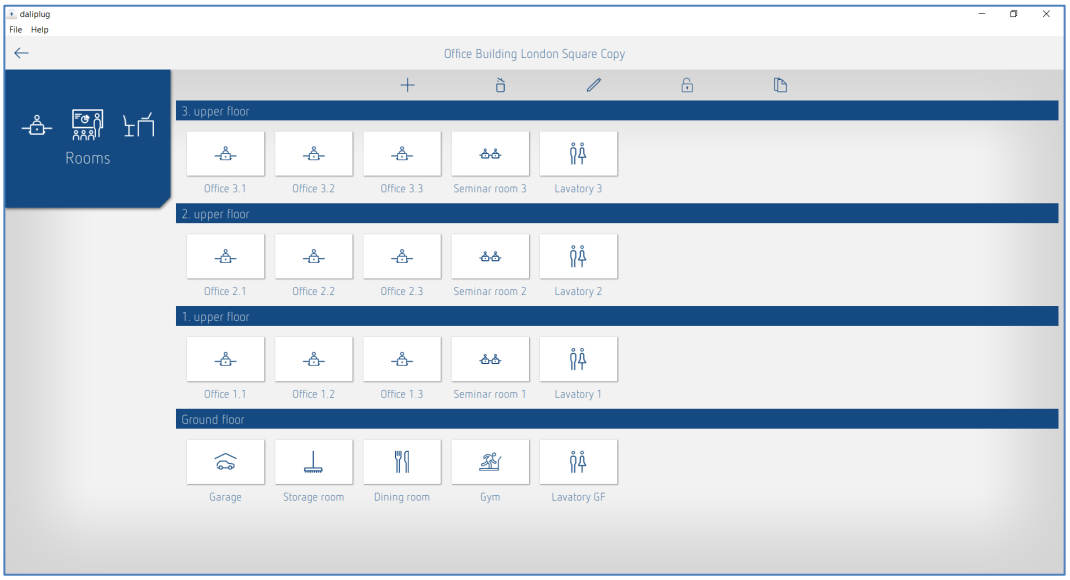
After briefly tapping the icon , the desired project can be selected on the left-hand side.



Then, a pop-up window appears:



The project can be exported with or without password protection. If password protection has been selected, an additional icon appears after the import of the project file .



After a short tap on the icon , the password can be entered. In the project, all parameters can again be changed, and the system can be configured.

If "Allow configuration and reading" is activated, the system can be configured with the exported project file. Otherwise, configuration and reading are blocked.

If "Release basic parameters" is activated, all basic parameters can be changed with the exported project file. Otherwise, changes to the basic parameters are blocked.

If "Expert parameters" is activated, all expert parameters can be changed with the exported project file. Otherwise, changes to the expert parameters are blocked.

If "Release time programs" is activated, all time programs can be changed or newly created with the exported project file. Otherwise, changes to the time programs are blocked.

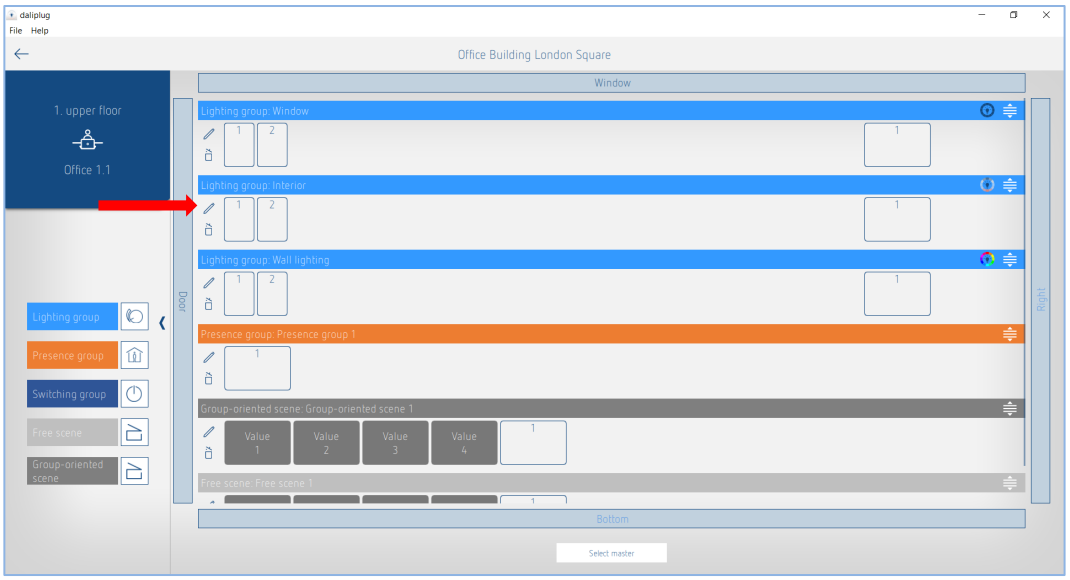
If "Restriction to preferred control commands" is activated, only control commands for which the asterisk has been activated can be executed with the exported project file. Otherwise, all control commands can be executed.

After confirming with OK appears:

- in Windows, the Explorer window where the project file can be saved at the desired location.
- in Android and iOS – a selection of e-mail services. We recommend using Microsoft Outlook.

7.3 Setting parameters of groups and scenes

The parameters are accessed by tapping the pencil icon 

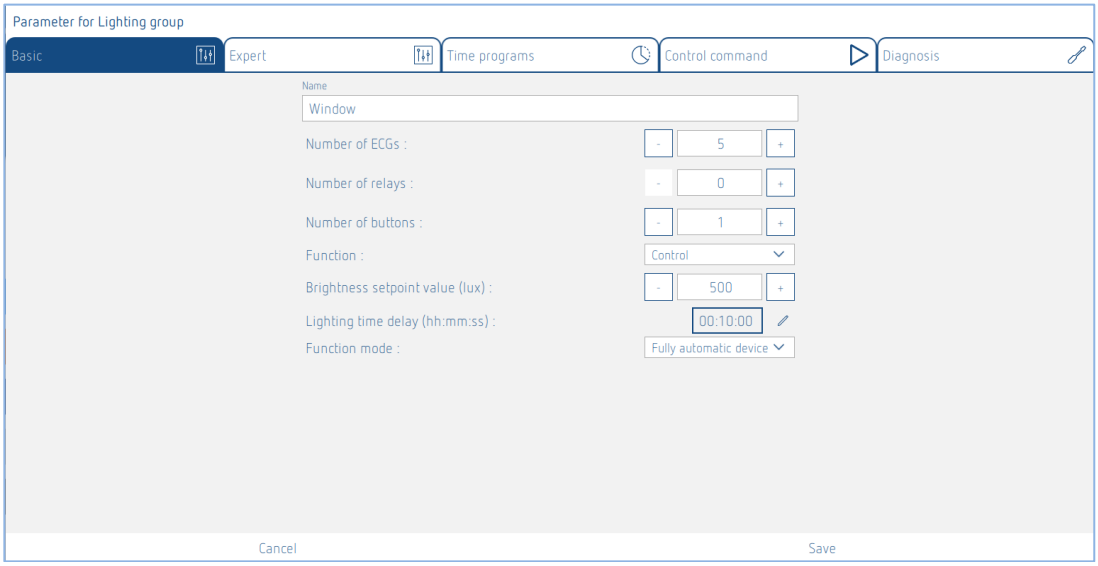


5 tabs are available for configuration:

- Basic – for the most important parameter settings
- Expert – some complex settings that should only be changed by a specialist
- Time programs – settings for time-dependent actions
- Control commands – execution of test functions, etc.
- Diagnosis – information for error analysis

7.3.1 Lighting group

Basic



Name
After creating the lighting group, the assigned light measurement is entered here as the default name. Then, the desired name of the lighting group can be entered.

Number of EBs
The number of required EBs to be displayed in the lighting group can be entered here. This number should match the real situation in the room. If there are fewer placeholders than intended, not all EBs can be assigned to this lighting group. However, too many placeholders do not interfere with the operation. The maximum input value is 64. Please also refer to Chapter 5. Connection.

Number of relays
The number of required relays to be displayed in the lighting group can be entered here. This number should match the real situation in the room. If there are fewer placeholders than intended, not all relays can be assigned to this lighting group. However, too many placeholders do not interfere with the operation. The maximum input value is 4.

Number of push buttons
The number of required push buttons can be entered here. The maximum input value is 10.

Function
The lighting group can be operated in switching mode or in constant lighting control.

> This setting is only possible in Basic if the control is set as "Standard" in Expert. If the control has been selected as "Tunable White (HCL)", "RGB" or "RGBW", the function cannot be changed in Basic.

Brightness setpoint value
The brightness setpoint value defines the minimum required brightness. The currently prevailing brightness is measured underneath the presence detector. If the prevailing brightness is below

the setpoint value, the light is switched on when a presence is detected (in configuration type fully automatic device). A separate brightness setpoint value is available for each lighting group.

With the switching mode function, the brightness measurement can also be deactivated (measurement off). The brightness has no influence, and the lighting groups only switch according to presence/absence.

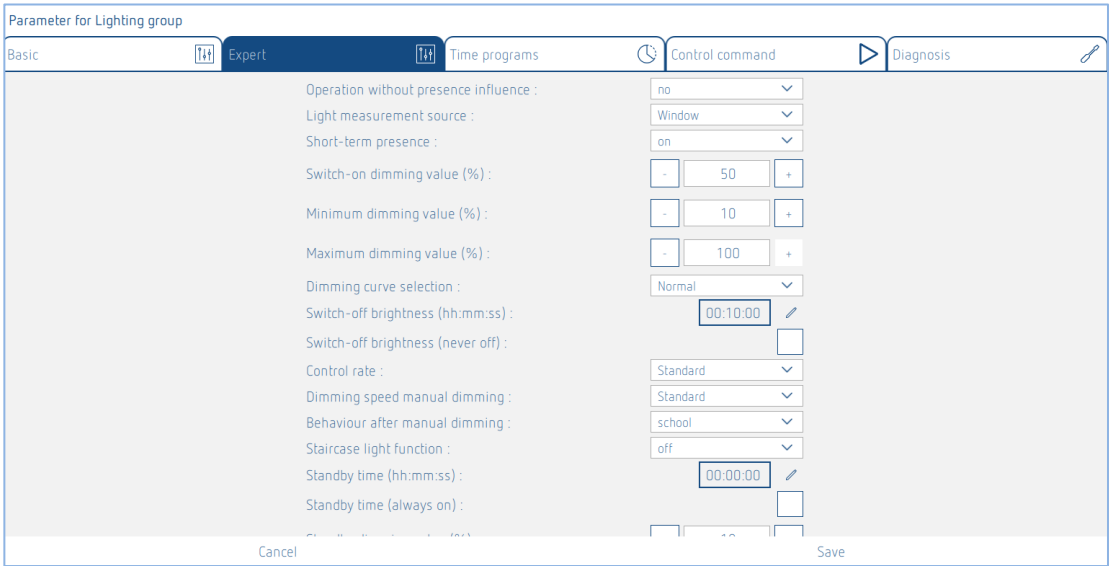
Lighting time delay

The time delay can be adjusted between 10 s and 120 min. It adjusts automatically to the user's behaviour and can increase to max. 30 minutes or drop back to the set time.
With settings ≤ 2 min or ≥ 30 min, the time delay remains unchanged at the set value.

Configuration type

Lighting control via the presence detector operates fully automatically for increased comfort or semi-automatically for greater energy savings. The lighting switches on and off automatically as a "fully automatic device". As a "semi-automatic device", the lighting must always be switched on manually. The lighting is switched off automatically.

Expert



Operation without presence influence

Setting no: The lighting group is controlled by presence and brightness.
Setting yes: The lighting group is controlled by brightness only, independent of motion.

Light measurement source

The presence detector measures artificial light and daylight by means of three directed light measurements, see Chapter 7.4. Setting master parameters, Expert.
The selections are:

- Light measurement interior
- Light measurement centre
- Light measurement window
- Light measurement integral (average of all 3 light measurements)

When assigning the light measurement, make sure that the lamps are in the area of the selected light measurement. Further information, see Chapter 7.4. Setting master parameters, Expert.

Short-term presence

If someone enters an unoccupied room only briefly and leaves within 30 s, the lighting is switched off early after 2 min (short-term presence). Short-term presence can be used for the fully automatic device and semi-automatic device configuration type.

Switch-on dimming value

In switching mode and in constant lighting control, the lighting is switched on with the switch-on dimming value.

Minimum dimming value / maximum dimming value

The upper and lower limits of the output value of the lighting group can be set with both the <minimum dimming value> and <maximum dimming value> parameters.

ⓘ The scenes and time programs are an exception. Here, the dimming values can be set independently of this setting.

Dimming curve selection

There are 2 dimming curves to choose from for controlling the DALI EB – Normal (logarithmic) and Linear.

ⓘ The DALI-2 EB must be able to support the linear dimming curve!

Switch-off at brightness

In constant lighting control, the lighting can be switched off if the brightness is sufficient. If the lighting is turned down to the set <minimum dimming value>, the lighting will be switched off after the time set in the parameter <switch off at brightness>. With the selection "never off", the lighting will never be switched off. This behaviour is valid, as long as persons are present.

ⓘ This parameter is not available with function = switching mode and with the selection control = RGB / RGBW! At these settings, the parameter <switch off at brightness> is hidden.

Control speed

In the constant lighting control function, the speed of the constant lighting control can be set with the <control speed> parameter. 3 values are available:

- **Standard**: The behaviour is optimally set. The control function is slow and barely perceptible.
- **Medium**: The control is a little faster.
- **Fast**: The control is fast.

Dimming speed of manual dimming

When dimming by push button or remote control, 2 speeds can be selected with this parameter.

Response after manual dimming

In constant lighting control, the response after manual dimming can be selected using this parameter.

- **office**: Constant lighting control remains temporarily active as the new setpoint after manual dimming to the current brightness value. After the lighting time delay, the set setpoint value is restored.
- **school**: Constant lighting control is temporarily interrupted by manual dimming. The setpoint remains unchanged.

Staircase light function

When the staircase light function is activated, it is not possible to switch off the lighting group manually. If the staircase light function is deactivated, the lighting can be switched on and off manually.

Standby time/standby dimming value

When the standby time is activated, the lighting is not switched off after the lighting time delay has elapsed but remains set to the standby dimming value as an orientation light.

The standby function acts as an orientation light. After the lighting time delay, the lighting is set to the standby dimming value (1–75% of the lamp output). The standby time can be set between 0 s and 60 min or permanently. If the room brightness is above the brightness setpoint value, the lighting switches off. The lighting automatically returns to the standby brightness if the room brightness falls below the brightness setpoint value. When the room is entered again, the presence detector returns to the set brightness setpoint value, either automatically (fully automatic device) or after the push button is pressed (semi-automatic device).

IR group addresses

This parameter is applied when using the user remote control "theSenda B" or "theSenda S".

Any and several group addresses can be assigned to each lighting group. The remote control can only switch or dim lighting groups if the remote control button and the lighting group have the same IR group address. With the selection of IR group addresses, adjacent lighting groups that are controlled with the user remote control can be separated from each other.

The IR group addresses I and II are permanently assigned on theSenda S to the 4 buttons and 2 scene buttons and cannot be changed. Further information can be found in the operating instructions for theSenda S. On theSenda B remote control, the IR group addresses can be freely assigned to the buttons.

Control selection

For the lighting group, 3 different control modes are available:

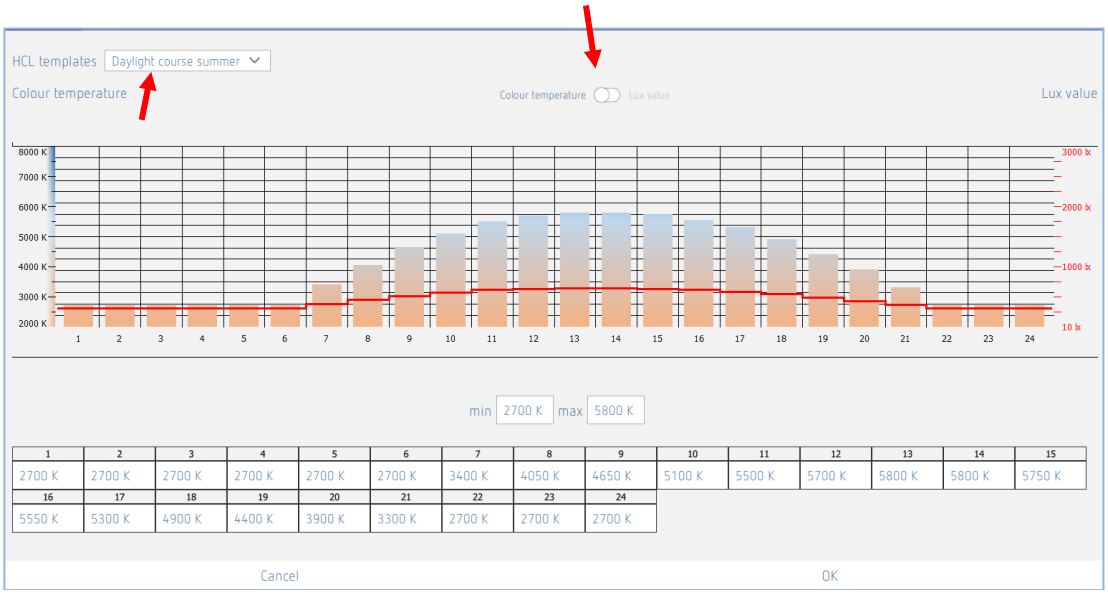
- Standard
- Tunable White (HCL)
- RGB
- RGBW

Setting the colour gradient

Tunable White (HCL)

If "Tunable White (HCL)" was selected in the control selection, the following window appears when clicking the "Edit" button:

Changeover for input of colour temperature - lux value



11 HCL templates are available:

- Daylight winter
- Daylight summer
- Office
- Open-plan office
- School
- Industry 1-shift operation
- Industry 2-shift operation
- Care homes
- Hospital
- Hallways/corridors
- Private

The HCL templates were created in accordance with the DIN SPEC 67600:2013-04 standard.

All lighting groups follow the selected HCL profile. The transitions are interpolated.
The templates can be customised by dragging the bar in the diagram or by entering the values in the table. With the min./max. values, it is very easy to adjust the range to the lamp.
The button in the middle can be used to switch between colour temperature and lux value for adjustment.
A customised template is saved under "User-defined".

CAUTION

Only specialists are allowed to adjust the HCL profiles. If HCL profiles are changed, a warning appears.

CAUTION

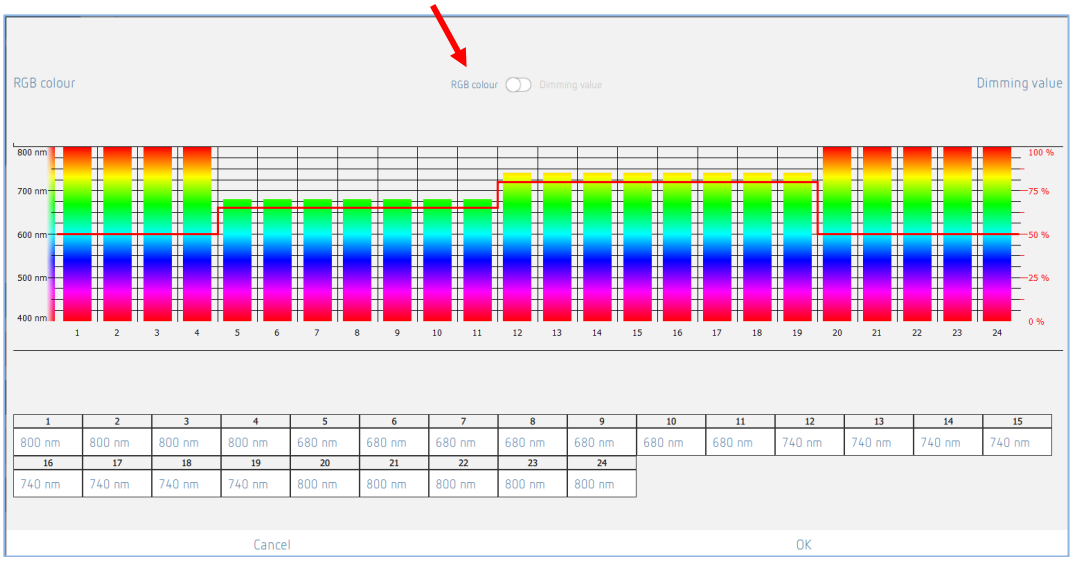
In the period from 2 hours after sunset to a maximum of 1 hour before sunrise, the colour temperature should not exceed 4100 K.

Only one HCL profile can be run in a room. If there is more than one lighting group with HCL, the settings are automatically adopted for all lighting groups.

RGB

If "RGB" was selected in the control selection, the following window appears when clicking the "Edit" button:

Changeover for input RGB colour – dimming value

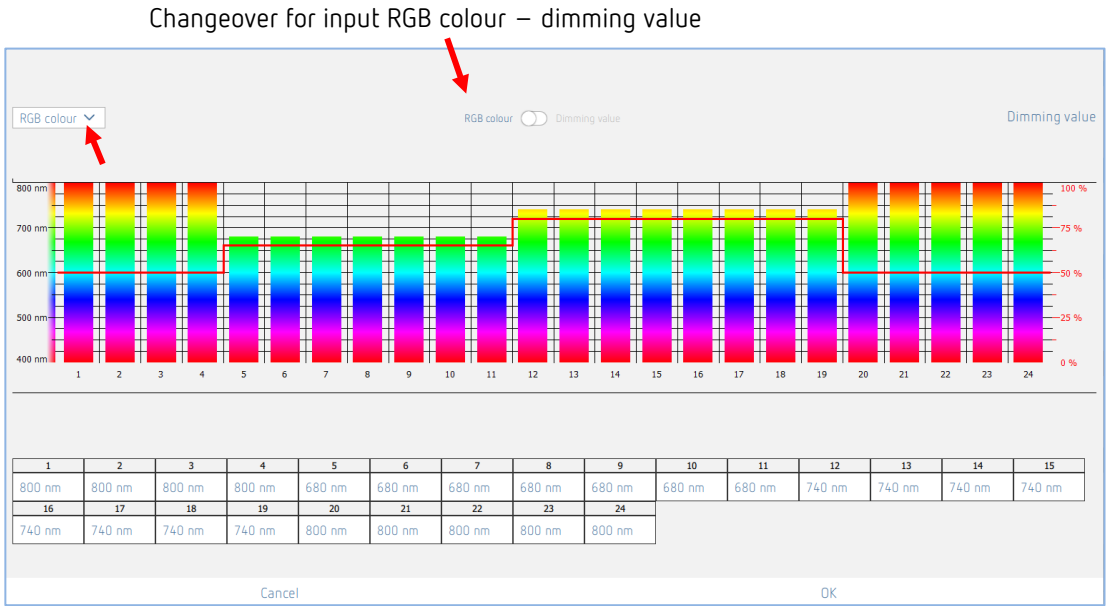


Colour gradient and dimming values are set as desired by dragging the bar in the diagram or by entering the values in the table.
The button in the middle can be used to switch between colour and dimming value for adjustment. Each lighting group can have its individual setting.

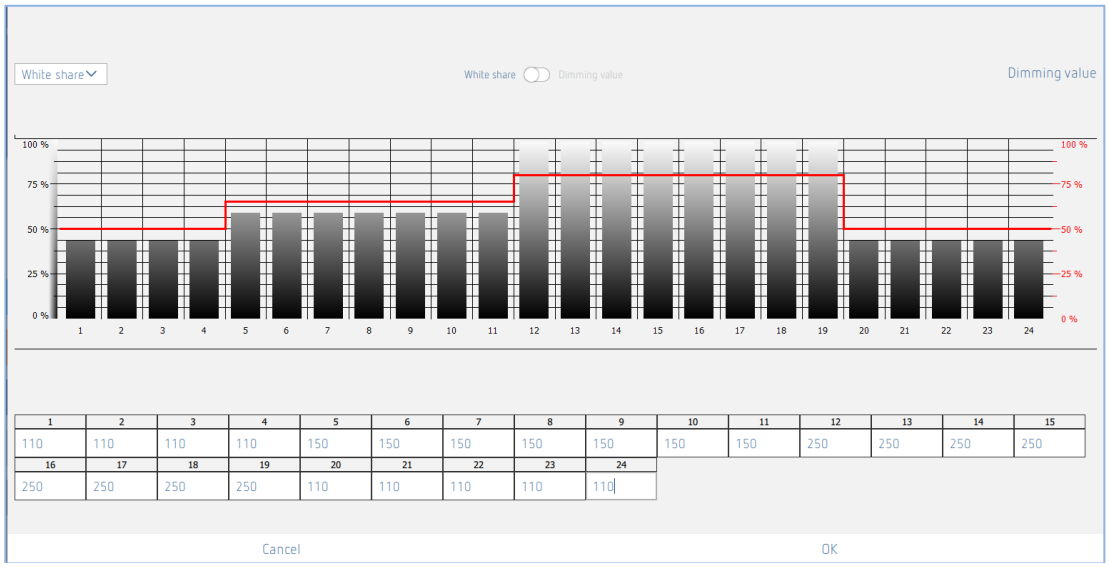
The colour of the lighting group changes every minute, but there is only one bar for every hour. The transitions are interpolated.

RGBW

If "RGBW" was selected in the control selection, the following window appears when clicking the "Edit" button:



The drop-down menu can be used to switch between the RGB colour curve and the white component curve:



The colour gradient or white component gradient and the dimming values are set as desired by dragging the bar in the diagram or by entering the values in the table.

The button in the middle can be used to switch between colour gradient and dimming value or white component and dimming value for adjustment. Each lighting group can have its individual setting.

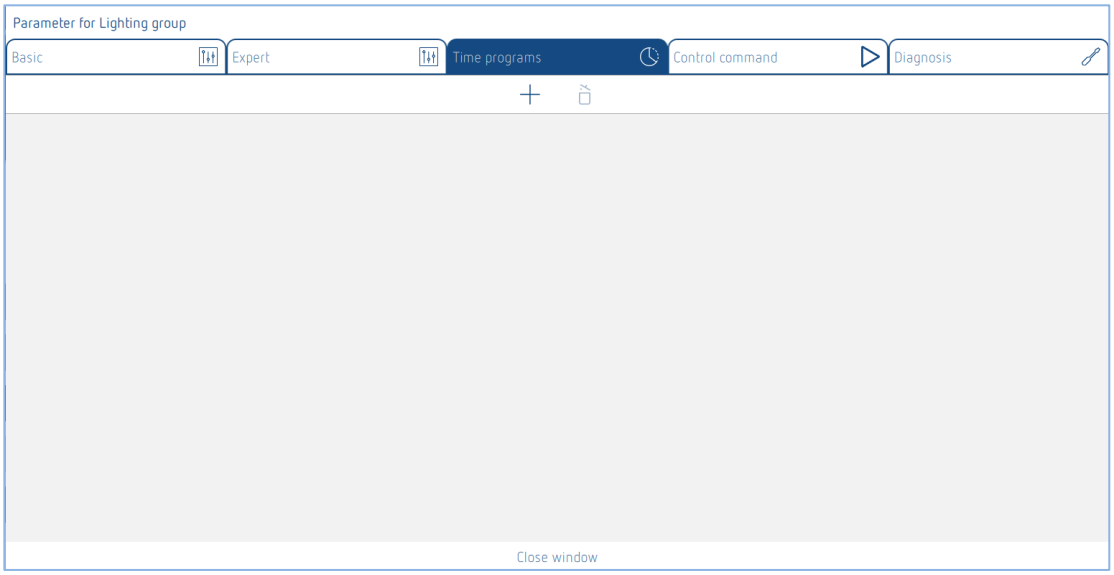
The colour of the lighting group including the white component changes every minute, but there is only one bar for every hour. The transitions are interpolated.

Time programs

The time switch is a weekly clock accurate to the minute. It is event-driven and does not do any review. Commands are only executed if the time of the time switch corresponds to the time of the switch program.
The time switch triggers one action at a time. This remains active until it is overwritten by another time switch command, push button, scene, or the detector.

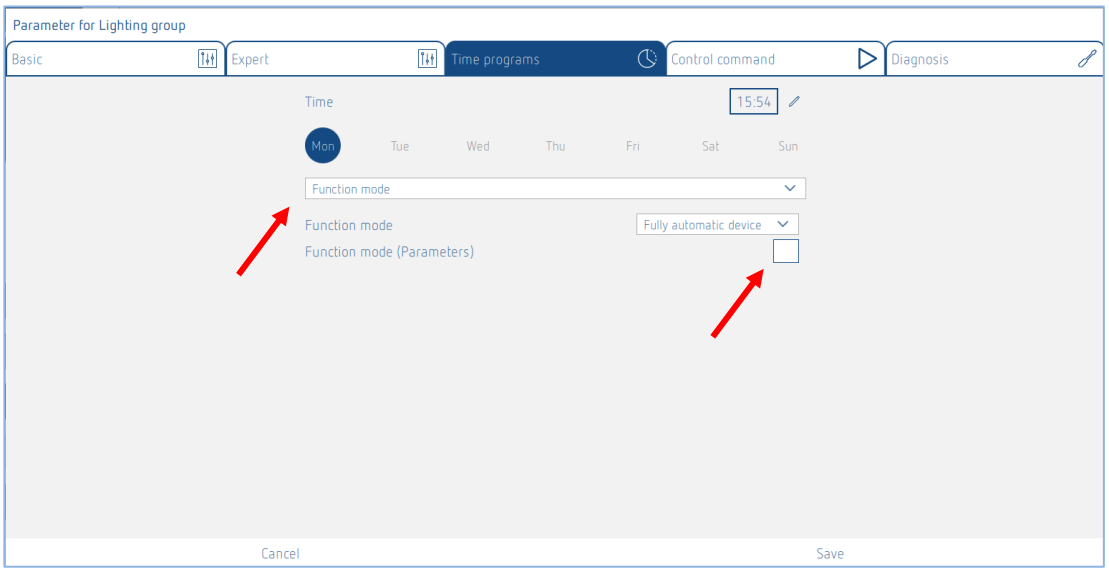
If several time programs are triggered at the same time, the order of the calls cannot be determined.

Summer/winter changeover see Chapter 7.1 App basic settings.



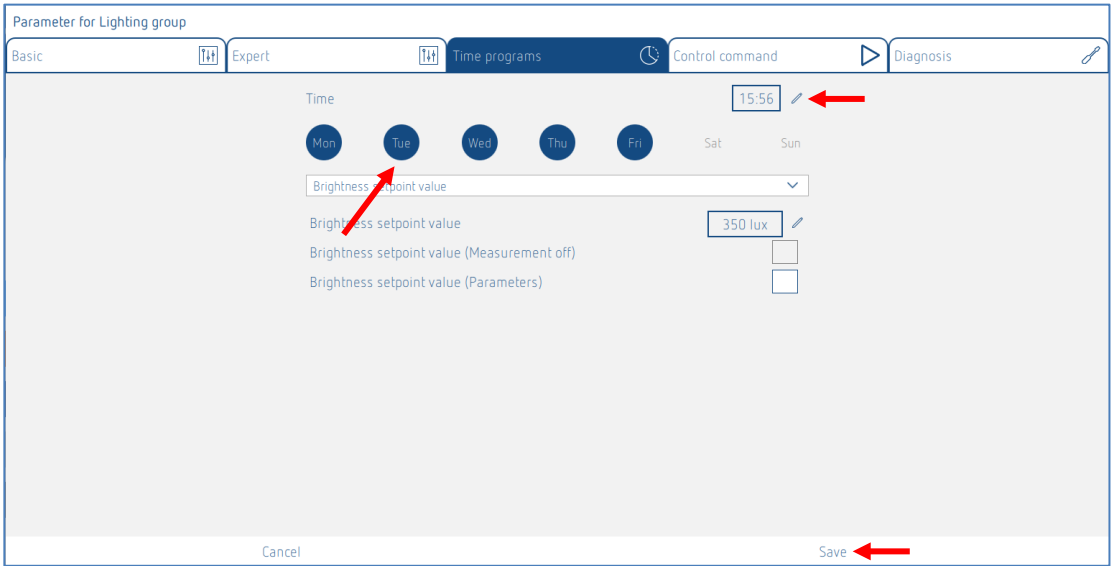
By tapping the + sign, a time program can be created.

Delete the desired time program.



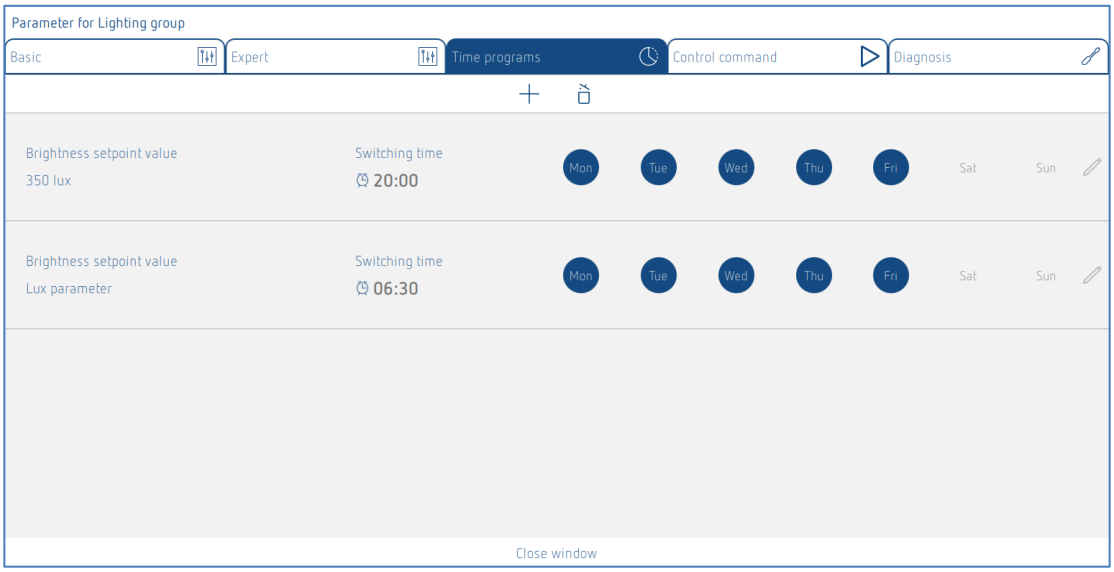
10 parameters or actions are available, which can be changed depending on time:

- **Operation without presence influence**
  - no: The lighting group is controlled by presence.
  - yes: The lighting group is controlled independently of presence.
  - Parameter activated: The set parameter value at Expert is used.
- **Configuration type**
  - Fully automatic device: The lighting is switched on and off automatically.
  - Semi-automatic device: The lighting must always be switched on manually. The lighting is switched off automatically.
  - Parameter activated: The set parameter value at Basic is used.
- **Brightness setpoint value** (parameter selection control = **standard**)
  - Change the brightness setpoint value or switch off the light measurement [10..3000 lux].
  - Parameter activated: The set parameter value at Basic is used.
- **Brightness setpoint value and colour temperature** (parameter selection control = **Tunable White HCL**)
  - Change the brightness setpoint value [10..3000 lux].
  - Parameter activated: The set parameter value at Basic is used.
  - Change colour temperature [2700..8000 K]. After 2 hours, the colour temperature follows the selected HCL template again!
  - Parameter activated: The colour temperature follows the selected HCL template again.
- **Change RGB colour** (parameter selection control = **RGB**)
  - Change the RGB colour.
  - Parameter activated: The RGB colour follows the selected curve again.
- **Change RGBW colour** (parameter selection control = **RGBW**)
  - Change the RGB colour and white component.
  - Parameter activated: The RGBW colour follows the selected curve again.
- **Standby dimming value**
  - Change the dimming value [1..75%].
  - Parameter activated: The set parameter value at Expert is used.
- **Standby time**
  - Change the stand-by time or activate permanently on [0 s..3 h].
  - Parameter activated: The set parameter value at Expert is used.
- **Switch-on dimming value**
  - Change the switch-on dimming value [1..100%].
  - Parameter activated: The set parameter value at Expert is used.
- **Override lighting group**
  - Change the dimming value of the entire lighting group [0..100%]. This override is active as long as people are present. When the time delay has elapsed, the lighting group is in automatic mode again.
- **Activate automatic lighting group**
  - The entire lighting group goes into automatic mode and the RGB/RGBW colour or HCL follows the selected curve again.
- **Change function**
  - Control: The lighting group is operated in constant lighting control.
  - Switching: The lighting group is operated in switching mode.
  - Parameter activated: The set parameter value at Basic is used.
- **Lighting time delay**
  - Change the time delay [10 s ...120 min].
  - Parameter activated: The set parameter value at Basic is used.



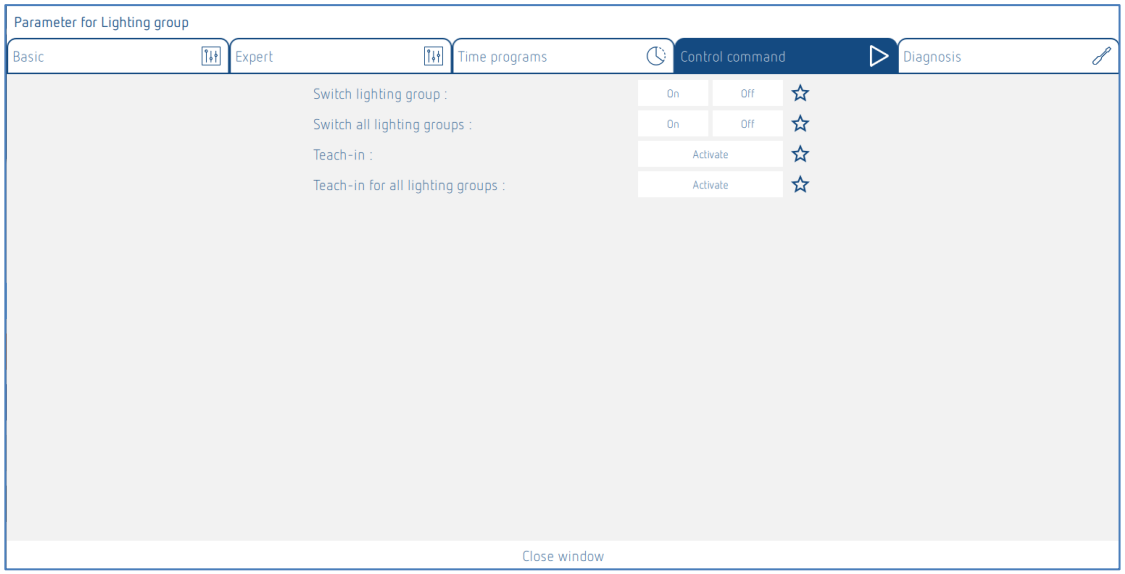
The desired day of the week can be selected by tapping and the time can be entered.
The time program record is created by pressing the "Save" button.

Example:



During the night from 8:00 p.m. to 6:30 a.m., the brightness setpoint is reduced to 350 lux. Every working day from 6:30 a.m. to 8:00 p.m., the brightness setpoint (500 lux) is changed to the set parameter value in Basic. At the weekend, the brightness setpoint remains at 350 lux all day.

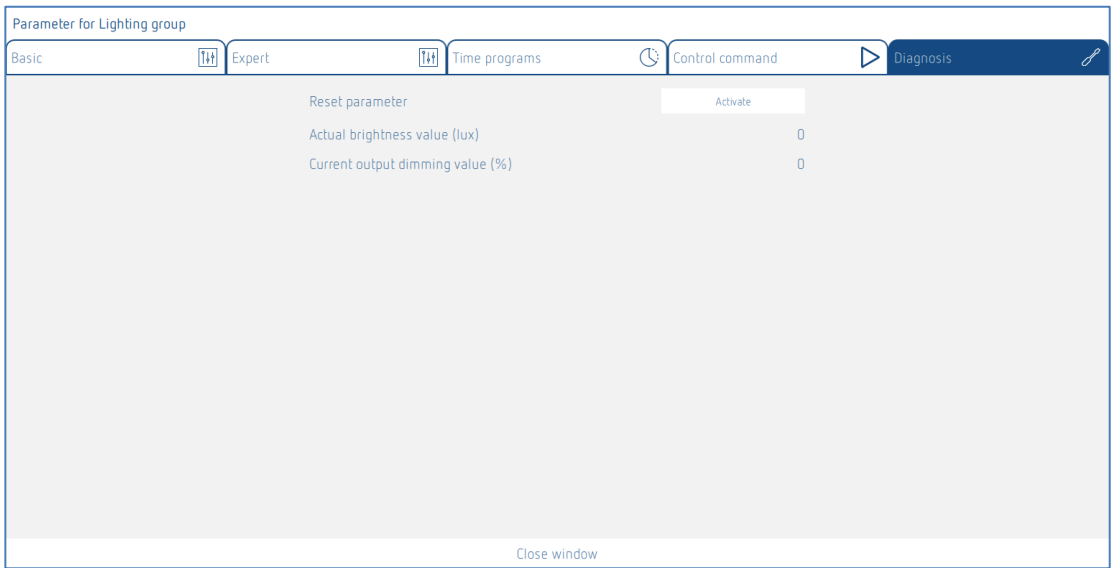
Control commands



Switch lighting group
This override is active as long as people are present. When the time delay has elapsed, the lighting group is in automatic mode again.

Teach-in
During the teach-in process, the currently measured brightness value is adopted as brightness setpoint value. Values outside the permitted range are automatically set to the appropriate limit value.

Diagnosis



Brightness actual value (lux)
Display of the current brightness value of the selected light measurement. This value is adjusted with the corresponding room correction factor. The value is updated every second.

Current output dimming value (%)
Display of the current output dimming value of the corresponding lighting group. The value is updated every second.

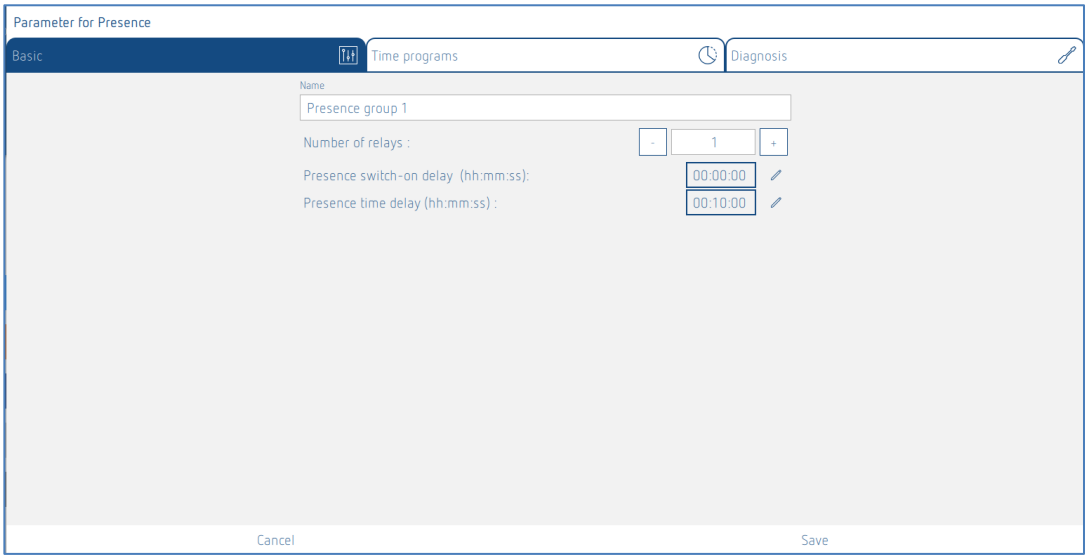
Reset parameter
All parameters of the corresponding lighting group are set to factory settings.
The presence detector is supplied with the following parameter values:

Basic	Number of EBs	5
	Number of relays	0
	Number of push buttons/sliders	1
	Function	Control
	Brightness setpoint value (lux)	500
	Brightness setpoint value (measurement off)	<inactive>
	Lighting time delay (hh:mm:ss)	00:10:00
	Configuration type	Auto
Expert	Operation without presence influence	no
	Light measurement source	according to the import dialogue window
	Room correction factor	0.3
	Brightness measurement value (lux)	500
	Short-term presence	on
	Switch-on dimming value (%)	50
	Minimum dimming value (%)	10
	Maximum dimming value (%)	100
	Dimming curve selection	normal
	Switch-off at brightness (hh:mm:ss)	00:10:00
	Switch-off at brightness (never off)	<inactive>
	Control speed	Standard
	Dimming speed of manual dimming	Standard
	Response after manual dimming	school
	Staircase light function	off
	Standby time: (hh:mm:ss)	00:00:00
	Standby time (always on)	<inactive>
	Standby dimming value (%)	10
	IR group address	according to factory setting "source light measurement": Window: I Centre: II, Interior: III Integral: I + II + III
	Control selection	Standard
	Brightness setpoint value (lux)	500
	HCL gradient	HCL template "Office"
	Colour gradient	Red: 800 nm
	Colour gradient	White: 0
Time programs	Function	Control
	Function (parameter)	<inactive>
	Operation without presence influence	on
	Operation without presence influence (parameter)	<inactive>
	Brightness setpoint value (lux)	500
	Brightness setpoint value (measurement off)	<inactive>
	Brightness setpoint value (parameter)	<inactive>
	Brightness setpoint value (lux)	500
	Brightness setpoint value (measurement off)	<inactive>

	Brightness setpoint value (parameter)	<inactive>
	Tunable White colour temperature (K)	5000
	Tunable White colour temperature (parameter)	<inactive>
	Brightness setpoint value (lux)	500
	Brightness setpoint value (measurement off)	<inactive>
	Brightness setpoint value (parameter)	<inactive>
	RGB colour	Red: 0 Green: 0 Blue: 254
	RGB colour	White: 0
	RGB colour (parameter)	<inactive>
	Lighting time delay (hh:mm:ss)	00:10:00
	Lighting time delay (parameter)	<inactive>
	Configuration type	Auto
	Configuration type (parameter)	<inactive>
	Switch-on dimming value (%)	50
	Switch-on dimming value (parameter)	<inactive>
	Standby time: (hh:mm:ss)	00:00:00
	Standby time (always on)	<inactive>
	Standby time (parameter)	<inactive>
	Standby dimming value (%)	10
	Standby dimming value (parameter)	<inactive>
	Override lighting group	100

7.3.2 Presence group

Basic



Name
After creating the presence group, "Presence group 1" will automatically be entered here as the default name. Then, the desired name of the presence group can be entered.

Number of relays
The number of required relays to be displayed in the presence group can be entered here. This number should match the real situation in the room. If there are fewer placeholders than intended, not all relays can be assigned to this presence group. Too many placeholders do not interfere with the operation. The maximum input value is 4.

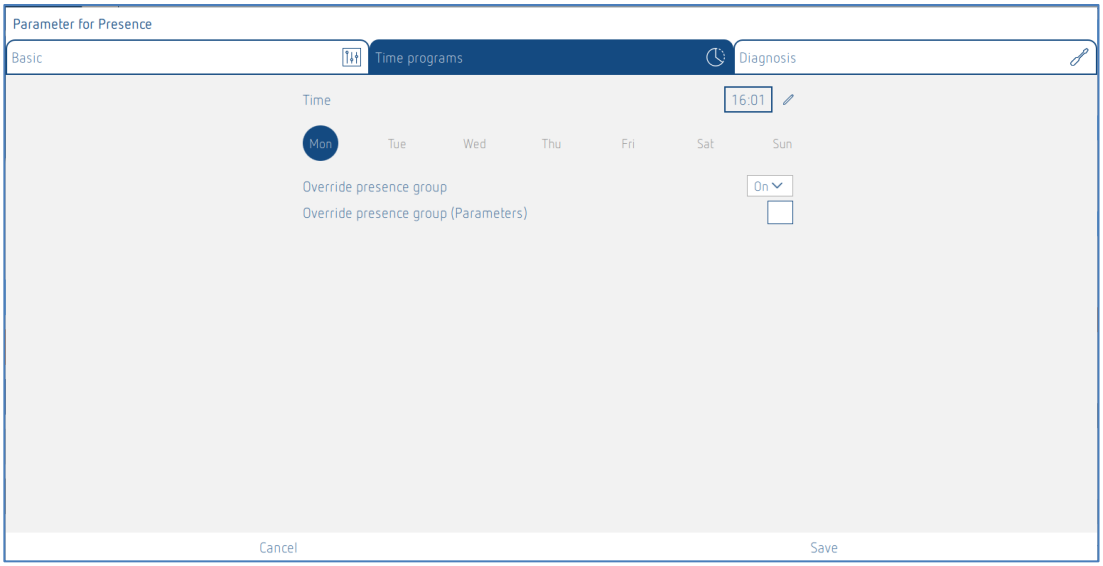
Presence switch-on delay

The DALI relay assigned to the presence group closes when someone is present, regardless of brightness and after the set switch-on delay has elapsed. Push buttons and configuration type (fully automatic device/semi-automatic device) do not affect the relay contact. The switch-on delay is adjustable from 0 s - 30 min.

Presence time delay

The DALI relay assigned to the presence group only opens in case of absence after the set time delay has elapsed. The switch-on delay is adjustable from 10 s - 120 min.

Time programs

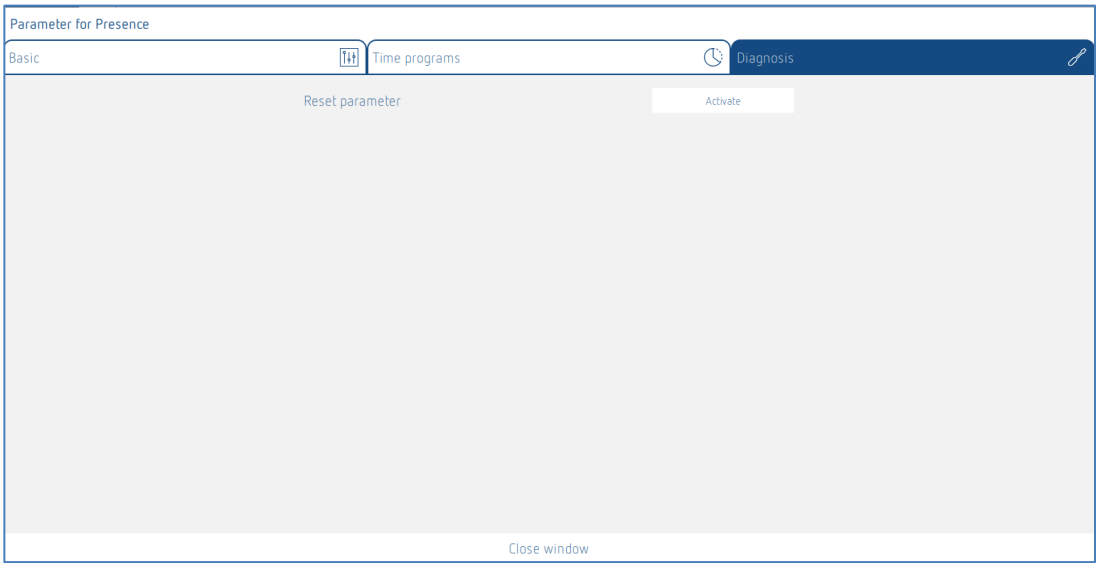


The presence group can be overridden depending on time:

- **Override presence group**
  - **On**: The presence group is switched on. The DALI relay assigned to the presence group closes.
  - **Off**: The presence group is switched off. The DALI relay assigned to the presence group opens.
  - Parameter activated: The presence group returns to automatic mode.
  - This override is active as long as people are present. When the time delay has elapsed, the presence group is in automatic mode again.

ⓘ Observe the switching thresholds for the relay! Further information can be found in Chapter 7.6.2 Relay.

Diagnosis



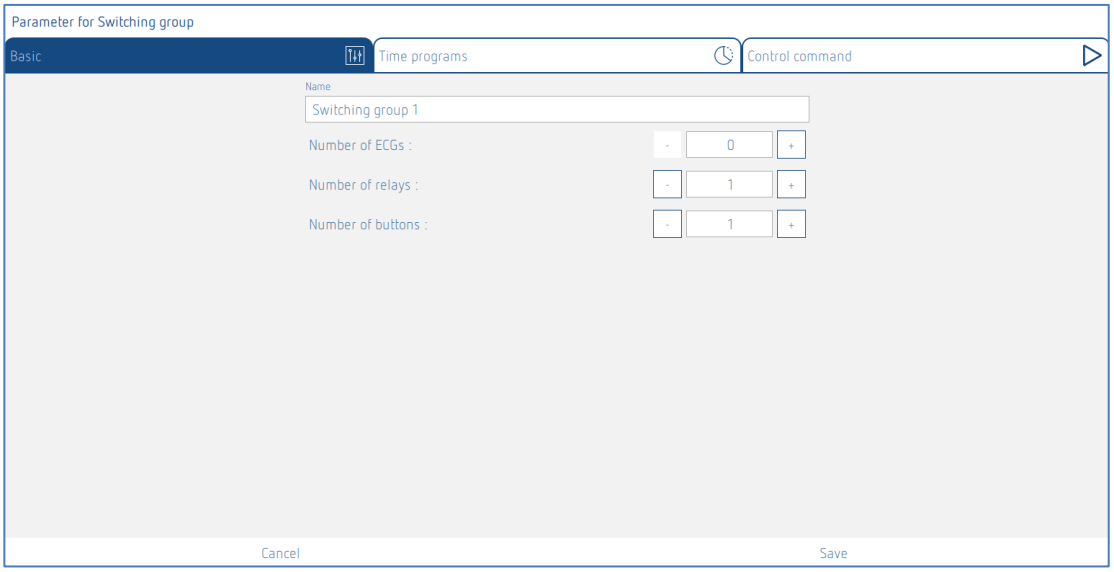
Reset parameter
All parameters of the corresponding presence group are set to factory settings.
The presence detector is supplied with the following parameter values:

Basic	Number of relays	1
	Presence switch-on delay	0 s
	Presence time delay	10 min
Time programs	Override time programs	on

7.3.3 Switching group

The switching group is independent of presence and does not respond to light measurement.
The switching group can be controlled by using push buttons or time programs.

Basic



DALI relays and EBs can be integrated into a switching group.

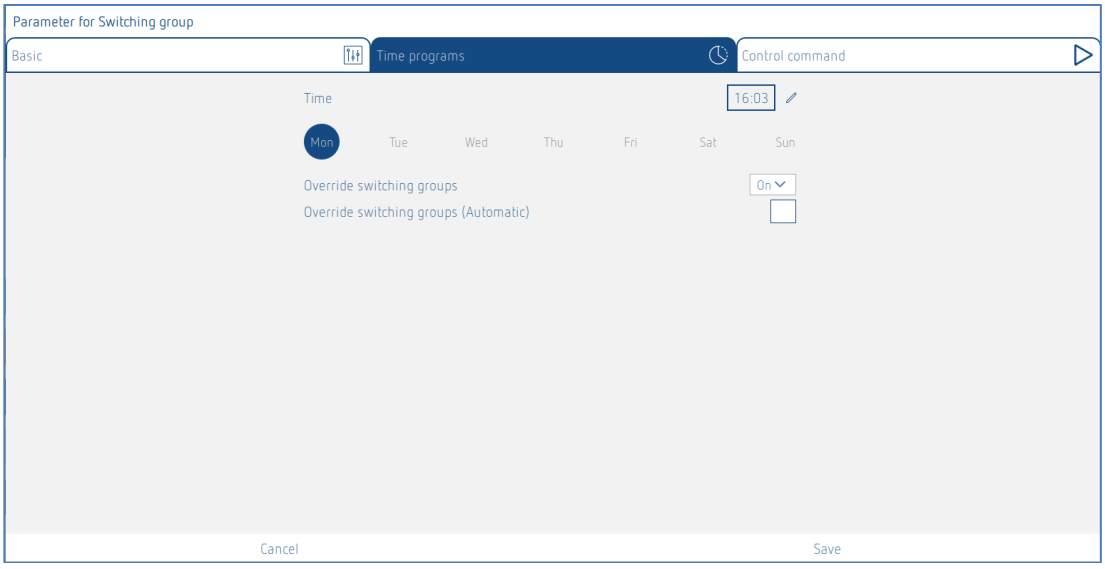
Name
After creating the switching group, "Switching group 1" is entered here as the default name. Then, the desired name of the switching group can be entered.

Number of EBs
The number of required EBs to be displayed in the switching group can be entered here. This number should match the real situation in the room. If there are fewer placeholders than intended, not all EBs can be assigned to this switching group. However, too many placeholders do not interfere with the operation. The maximum input value is 64. Please also refer to Chapter 5. Connection.

Number of relays
The number of required relays to be displayed in the switching group can be entered here. This number should match the real situation in the room. If there are fewer placeholders than intended, not all relays can be assigned to this switching group. However, too many placeholders do not interfere with the operation. The maximum input value is 4.

Number of push buttons
The number of required push buttons can be entered here. The maximum input value is 10.

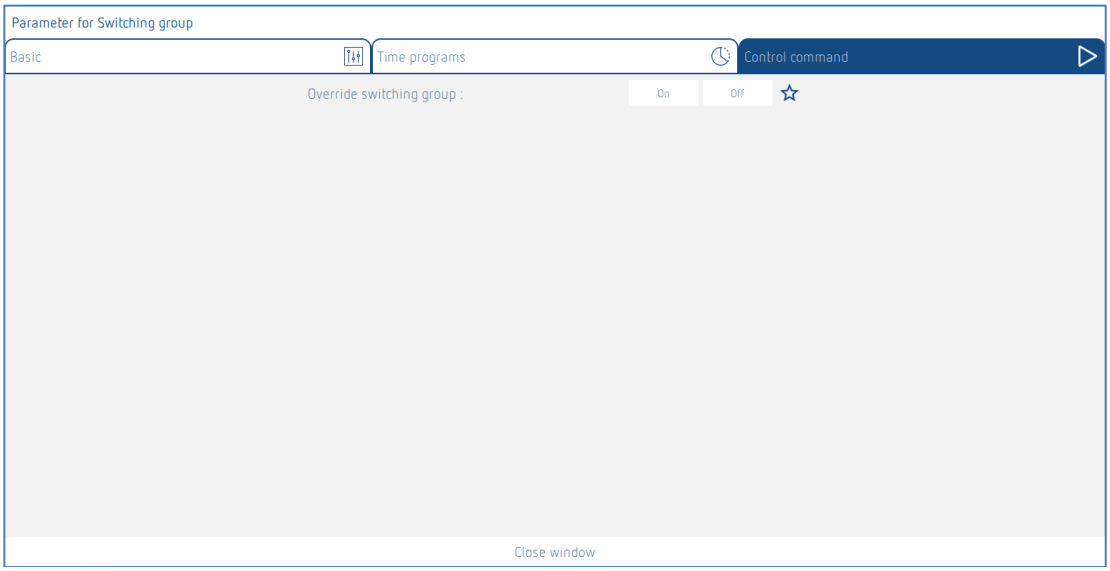
Time programs



The switching group can be overridden depending on time:

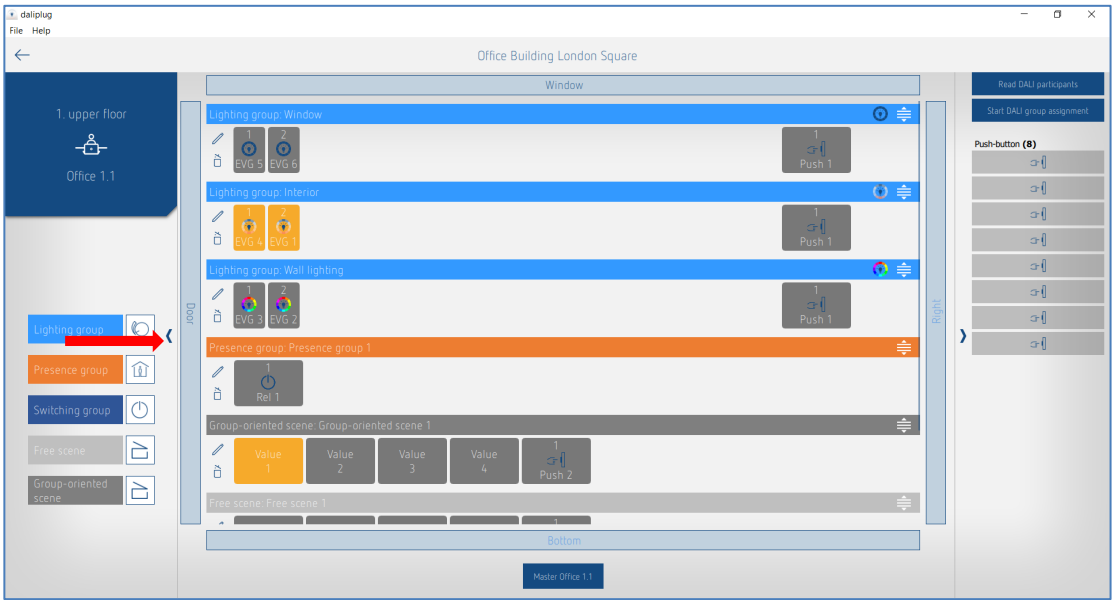
- **Override switching group**
  - **On**: The switching group is switched on.
  - **Off**: The switching group is switched off.
  - **Automatic** activated: The switching group returns to the state that was triggered with the push button before the time program.
  - This override is active until an action is carried out again by push button, scene or time program.

Control commands



Manual override of the switching group. This override is active until an action is carried out again by push button, scene or time program.

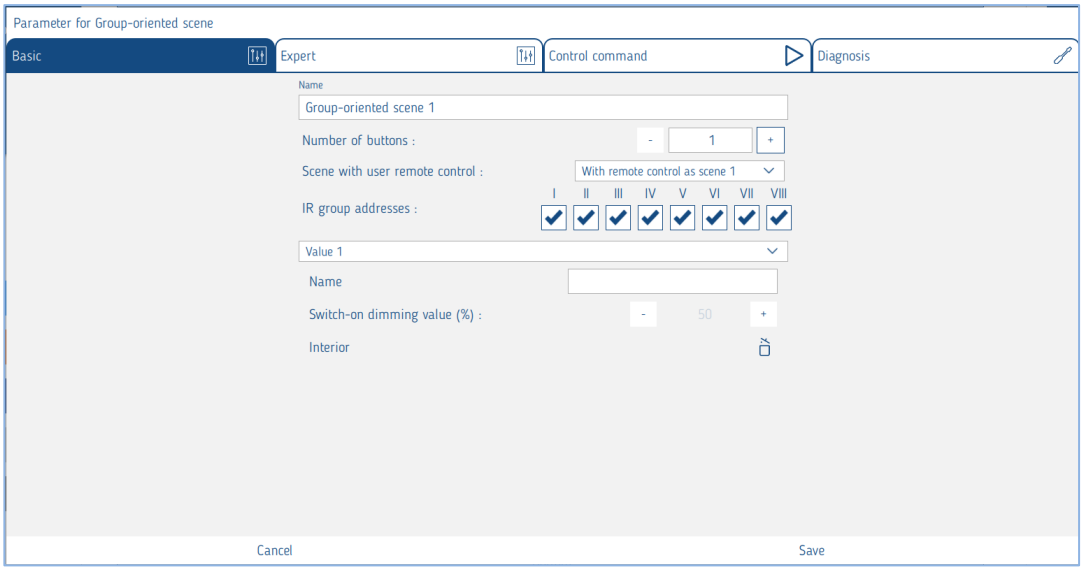
7.3.4 Group-oriented scene



The group-oriented scene controls an entire lighting group and/or switching group.
The scene is assigned to the lighting or switching group by drag and drop. Drag the desired value to the desired lighting group or switching group. In order to check, an already assigned value can be tapped. The corresponding lighting group or switching group lights up yellow.
A group-oriented scene can be called up via push button or remote control.
What the scene should do is determined by the parameters. The parameters are accessed by tapping the pencil icon .

A scene cannot be assigned in offline mode! The DALI participants must be assigned in the groups.

Basic



Name
After creating the scene, "Group oriented scene 1" will be entered here as the default name. Then, the desired name of the scene can be entered.

Number of push buttons
The number of required push buttons can be entered here. The maximum input value is 10.

Scene with user remote control
The following selection is available:

- Without remote control (scene can only be called up with the push button)
- With remote control as scene 1 (call up the scene with the Scene 1 button on the remote control)
- With remote control as scene 2 (call up the scene with the Scene 2 button on the remote control)

If "With remote control as Scene 1 or 2" has been selected, the following parameter also appears:

IR group addresses
Any one and several group addresses can be assigned for each scene. The remote control can only call up scenes if the remote control button and the scene have the same IR group address. With the selection of IR group addresses, scenes that are controlled with the user remote control can be separated from each other.

For the IR group addresses I and II, 4 buttons and 2 scene buttons are permanently assigned on theSenda S; they cannot be changed. Further information can be found in the operating instructions of theSenda S. On theSenda B remote control, the buttons for the IR group addresses can be freely selected. Further information can be found in Chapter 7.8 User remote control.

Important: Select the desired value!
The selections are:

- Value 1
- Value 2
- Value 3
- Value 4

Name
For better recognition on the room side, which setting the value has, a desired name can be entered here. For example, "Relaxed" if "Tunable White 2'700 K" was selected for Expert.

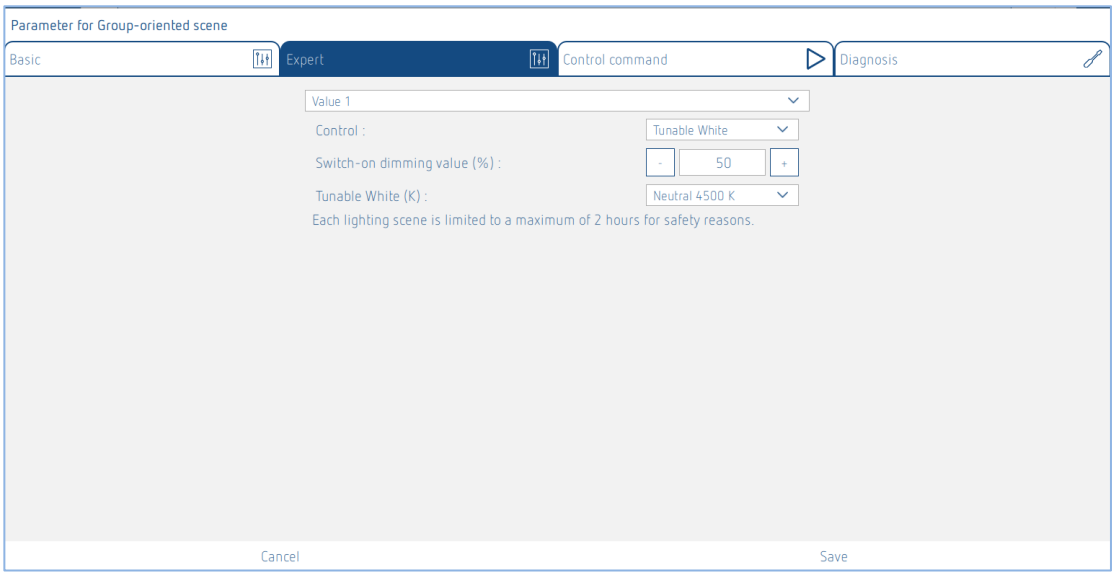
Switch-on dimming value (%)
Enter the desired switch-on dimming value. If the control has been selected as "Tunable White", "RGB" or "RGBW" at Expert, the setting of the switch-on dimming value is deactivated here. The setting is made at Expert.

> The settings of the "Minimum dimming value" and "Maximum dimming value" parameters in the lighting group do not influence the switch-on dimming value of the scene.

The assignment of the scene can be deleted via the "Trash can" icon (see example light group 'Window').

Expert

Tunable White control



Important: Select the desired value!

Tunable White (K)

The desired lighting mood can be selected here:
- Concentration 6500 K
- Alert 5500 K
- Neutral 4500 K
- Calm 3500 K
- Relaxed 2700 K
- User-defined

At "User-defined" any value from 2700 to 8000 K can be entered.

With a double click on the scene button, the lighting group goes into daylight automatic and follows the selected HCL profile.

When the scene is called up, it is limited to a maximum of 2 hours for security reasons.

7.3.5 Free scene

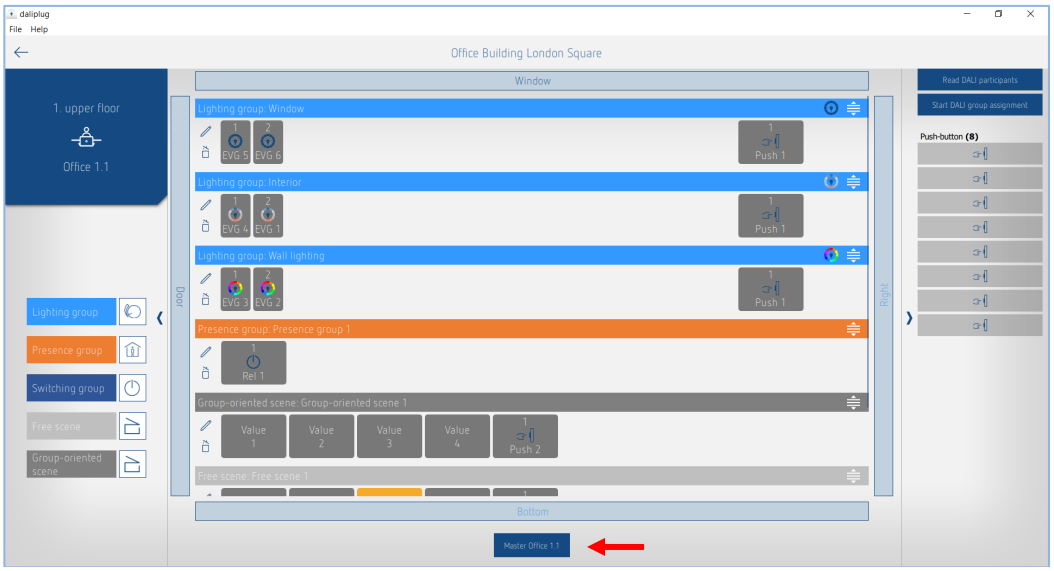
The free scene controls any selected EBs and/or relays. The scene is assigned to the EBs and relays by drag and drop.

➢ Drag the desired value to the desired EB or relay.

In order to check, an already assigned value can be tapped. The corresponding EBs and relays light up yellow.
A free scene can only be called up via push button or remote control.

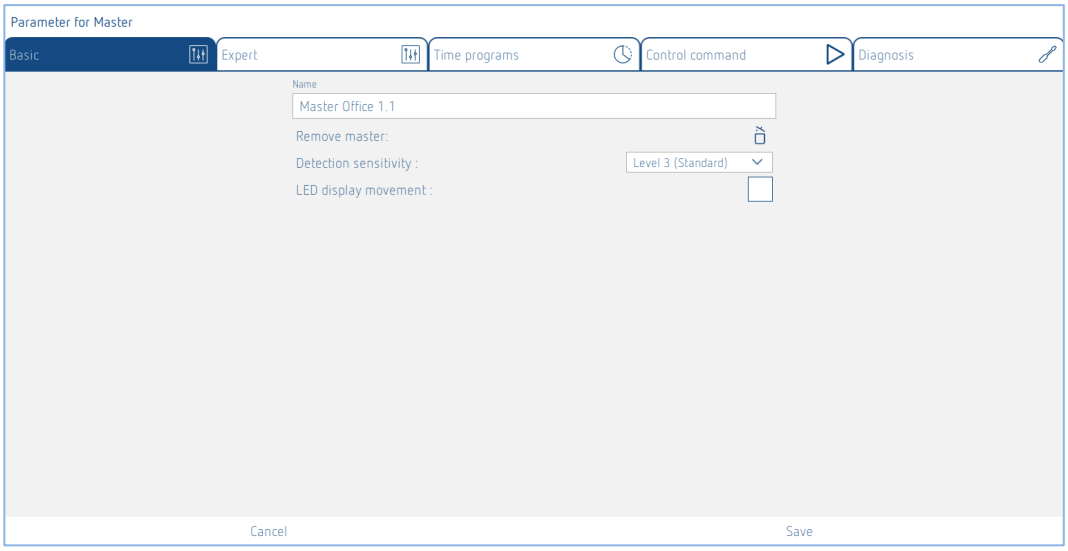
Otherwise, the settings and selection are the same as for the group-oriented scene, see Chapter 7.3.4 Group-oriented scene.

7.4 Setting master parameters



The parameters are accessed by tapping the master. The master must already be connected with the app!

Basic



Remove master
After clicking on the icon, a pop-up message appears asking whether the master should really be removed. After confirming with OK, all assignments of the group participants will be deleted! The start-up for this room must be carried out again.

Detection sensitivity
The presence detector has 5 sensitivity increments. The basic setting is the middle increment (3). The increments can be interpreted as follows:

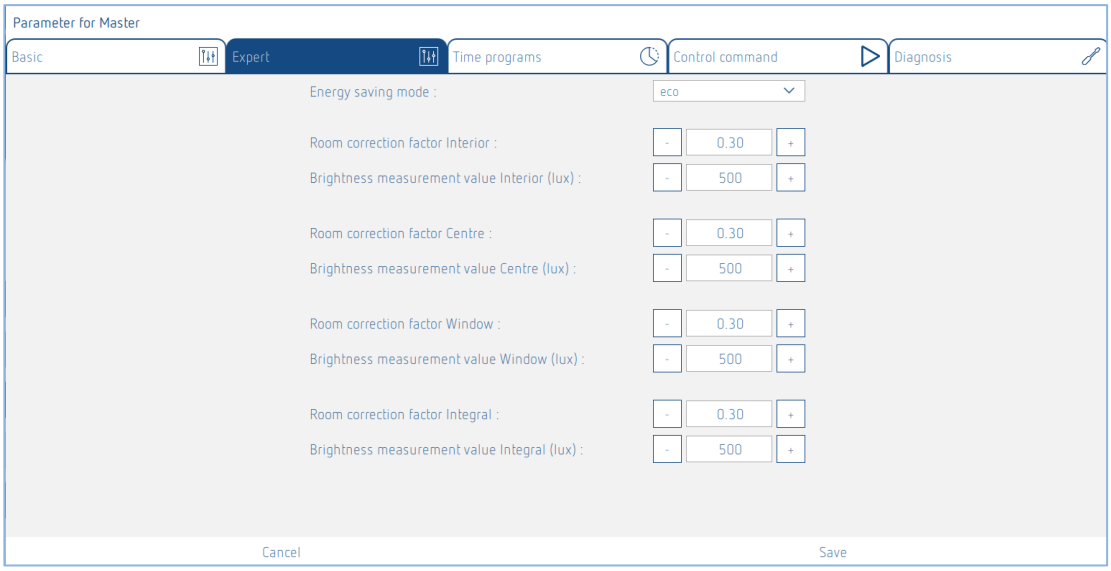
Increment	Sensitivity
1	Very insensitive
2	Insensitive
3	Standard
4	Sensitive
5	Very sensitive

By selecting the presence test mode, the set sensitivity increment is not changed.

LED motion display
Motion detection can be displayed via the RGB LED.

- Check box deactivated: No display of motion.
- Check box activated: When motion is detected, the RGB LED lights up briefly in green. Otherwise the RGB LED is switched off.

Expert



Energy saving mode

The "eco" selection stands for an ideal switching response, while "eco plus" stands for maximum energy savings.

- **eco:** The lighting time delay adapts to the user behaviour in a self-learning way. It does not drop below the set value.
- **eco plus:** The set lighting time delay remains unchanged (no self-learning effect). Faster response to brightness detection than with the eco mode.

Room correction factor/brightness measurement value

The room correction factor is a measurement for the difference between brightness measurements on the ceiling and on the work area. The brightness value on the ceiling is influenced by the installation location, the incidence of light, the position of the sun, the weather conditions, as well as the reflection properties of the room and the furniture.

With the room correction factor, the measured brightness value is adjusted to the conditions in the room and in this way can be matched to the luxmeter value (1) measured at the surface beneath theRonda S360 DALI-2 HCL.

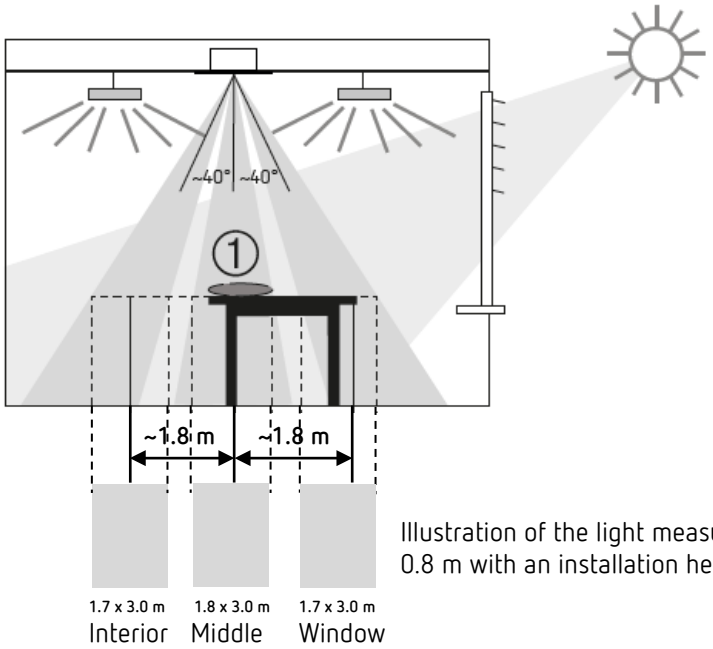


Illustration of the light measurement at table height of 0.8 m with an installation height of 3 m

$$\text{Room correction factor} = \frac{\text{Brightness value at the ceiling}}{\text{Brightness value on the work surface}}$$

We recommend the following procedure:

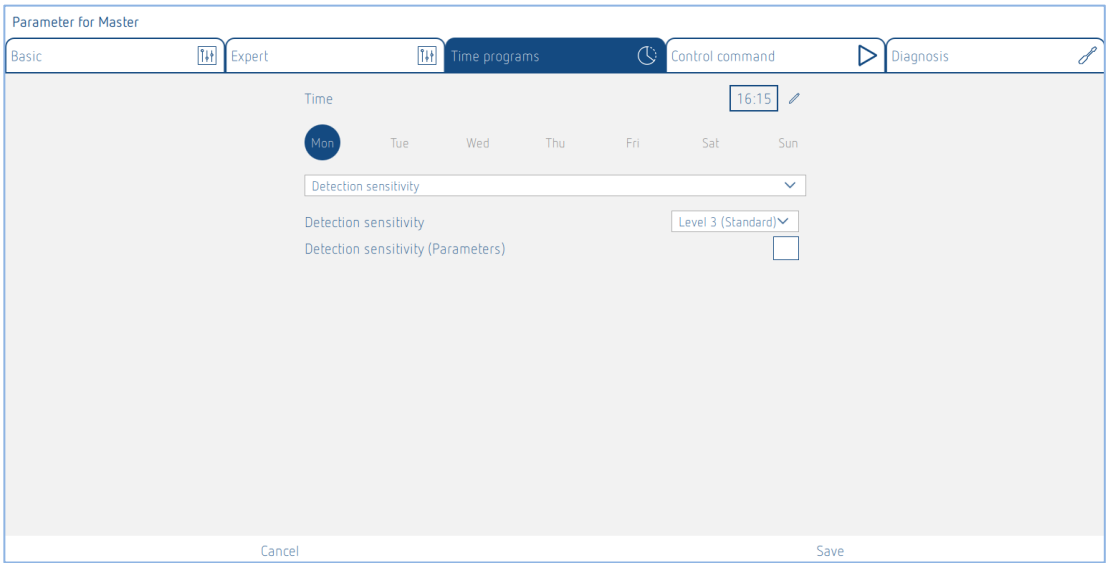
- Place the luxmeter or theSenda B remote control with integrated luxmeter on the work surface below theRonda P360 DALI-2 HCL and enter the measured lux value at parameters <Brightness measurement value> and send it to theRonda P360 DALI-2 HCL.
- The room correction factor is calculated from this automatically. Values between 0.05 and 2.0 are permitted. Calculated or entered values outside the permitted range are automatically set to the appropriate limit value.

ⓘ During lux measurements, observe the relevant distances (see illustration above).

- Carry out all measurements at table height. If Light measurement source has been selected:
  - Light measurement interior → Lux measurement in the direction of the interior area
  - Light measurement centre → Lux measurement in the centre (below the detector)
  - Light measurement window → Lux measurement in the direction of the window
  - Light measurement integral → Calculate average of all 3 lux measurements

ⓘ The standard value of the room correction factor is 0.3, which is suitable for most applications. Changes are only appropriate in strongly deviating situations.

Time programs

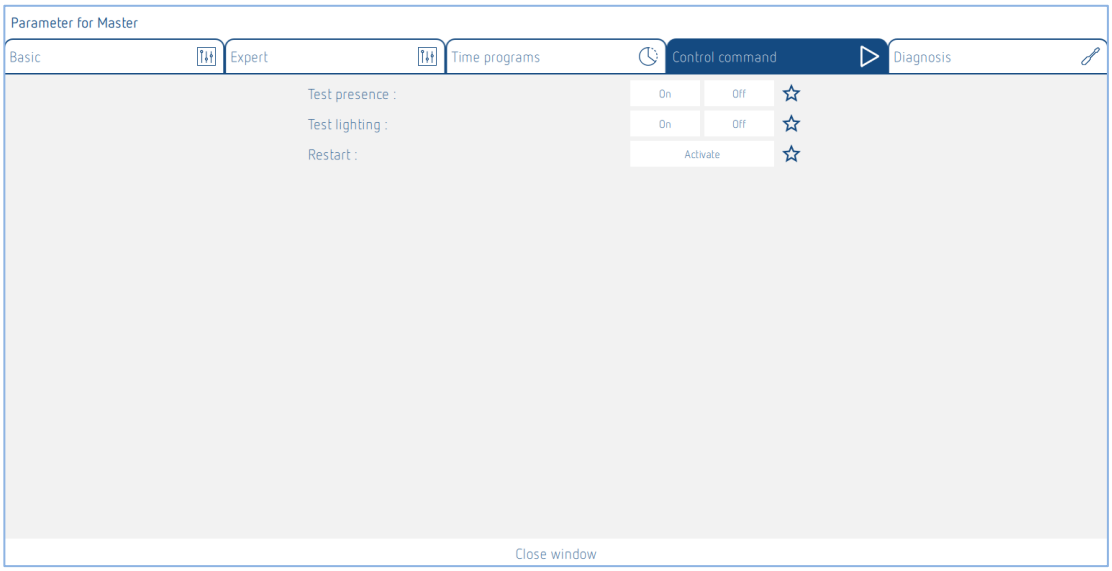


2 parameters or actions are available, which can be changed depending on time:

- **Override central light**
  - On: All lighting groups are switched on to the set switch-on dimming value. This override is active as long as people are present. When the time delay has elapsed, the lighting group is in automatic mode again.
  - Off: All light groups are switched off when no people are present.

- **Detection sensitivity**
  - Increments 1 to 3 are available for selection.
  - For more information on detection sensitivity, see 7.4 Setting master parameters.

Control commands



Presence test
Presence test mode is used to test presence detection of the master and wiring. After activating with "On", the presence detector goes directly into test mode:
- Every movement is indicated in green by the RGB LED.
- The lighting is switched on when there is movement.
- Constant lighting control is deactivated (switching mode).
- Teach-in cannot be activated in test mode.
- If there is no movement, the lighting is switched off after 10 s.
- Brightness measurement is deactivated, presence detector does not respond to brightness.
- Standby function is deactivated.
- The presence detector responds as in the "fully automatic device" configuration type – even if "semi-automatic device" is set.
- Test mode ends automatically after 10 min. The presence detector restarts (see Chapter 7.4 Setting master parameters, control commands, restart).

Light test
The light test mode is used to check the brightness threshold and the constant lighting control. After activating with "On", the presence detector goes directly into test mode:
- The RGB LED indicates the light test mode with a green colour (4.8 s On; 0.32 s Off).
- The presence detector responds as in normal operating mode; it only responds faster to brightness/darkness.
- To simulate the response, either actuate the blinds or illuminate the area below the presence detector.
- Test mode ends automatically after 10 min. The presence detector restarts (see Chapter 7.4 Setting master parameters, control commands, restart).

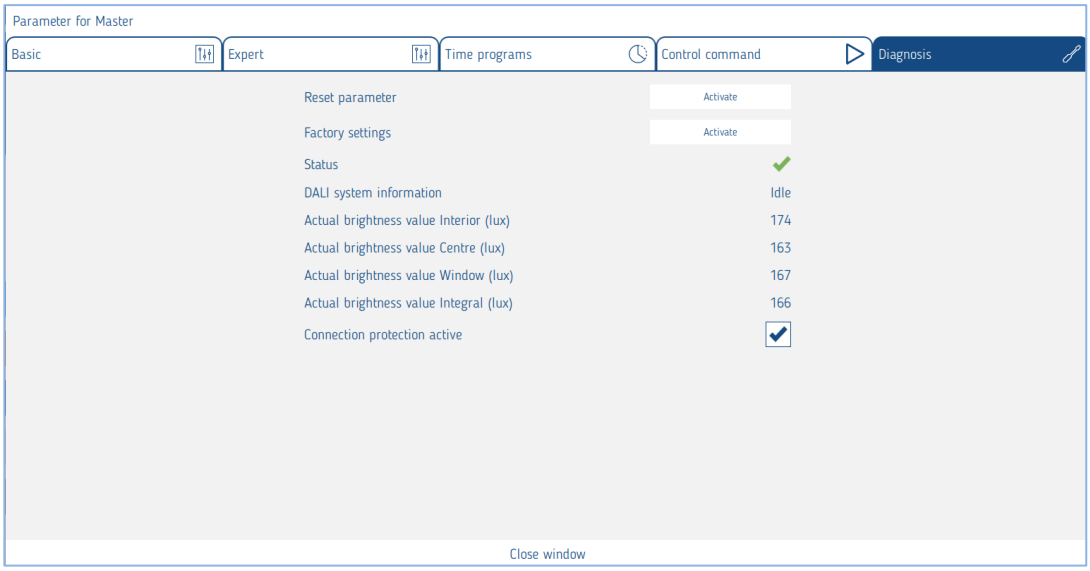

Do not use a torch to switch the presence detector! The adaptive light switching thresholds would be falsified!

Restart
After the restart is triggered, the presence detector goes through two phases, which are indicated by the RGB LED:

1. Start-up phase (30 s)
- First, the DALI bus is scanned and the RGB LED flashes blue. During this time, the master does not respond to all BLE telegrams.
- The RGB LED flashes violet at one-second intervals, the lighting is switched on with the switch-on dimming value.
- The presence detector does not respond to push button commands or user remote control.
- If there is no movement, the lighting is switched off after 30 s.

2. Operation
- The RGB LED is off. The constant light control or switching mode are started.
- The presence detector is ready for operation.

Diagnosis



Reset parameter
All parameters of the master are set to factory settings. The presence detector is supplied with the following parameter values:

Basic	Detection sensitivity	Increment 3
	LED motion display	off
Expert	Energy saving mode	eco
	Room correction factor interior	0.3
	Brightness measurement value interior (lux)	500
	Room correction factor centre	0.3
	Brightness measurement value centre (lux)	500
	Room correction factor window	0.3
	Brightness measurement value window (lux)	500
	Room correction factor integral	0.3
	Brightness measurement value integral (lux)	500
Time programs	Override central light	on
	Detection sensitivity	Increment 3

Factory settings
All connected DALI devices are reset to factory settings and the short address is deleted.

The assignment of the DALI participants will be deleted! The start-up for this room must be carried out again. The connection protection at the master will be reset. Factory settings allow the master to be connected to a new project.

Status
Display of master status:

- green check mark: Master is OK.
- red exclamation mark and error number: error at master.
  In case of error number 4, please reset the master to factory settings.
  In case of all other error numbers. Please return for repair.

The display is updated every second.

DALI system information
Display of status during DALI configuration:

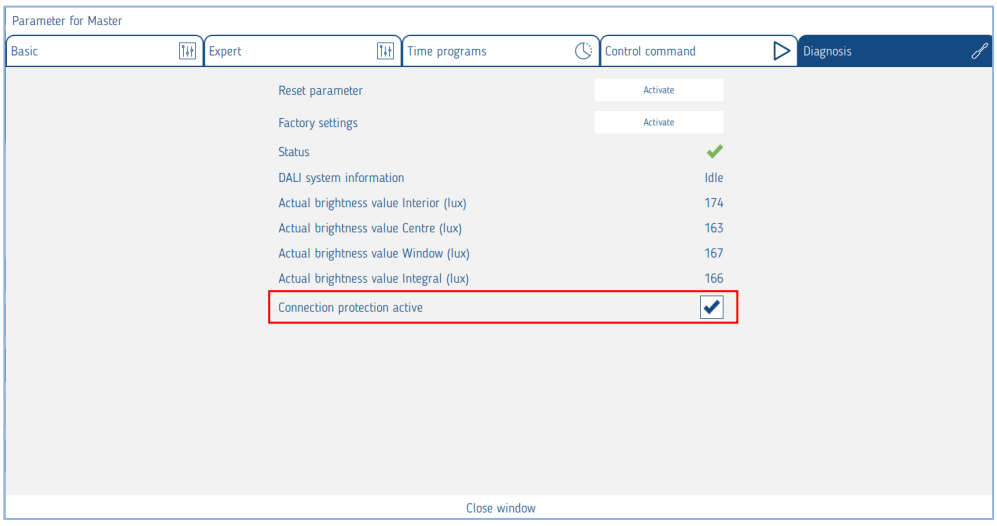
- **Idle**: Master is in normal operation
- **Busy**: Master scans the DALI bus
- **Emergency operation**: Not all DALI devices are assigned
- **DALI error**: Please check the current consumption of all DALI participants as well as the DALI line for correct wiring and short circuits. Another reason can be too many DALI participants. No more than 64 DALI operating devices or 64 DALI control devices are permitted on the DALI line.
- **Group assignment**: Detector is in Assign DALI Device mode.
- **Action required**: Change in the system structure; new or missing DALI participants were discovered. If missing DALI participants become addressable again, the master restarts automatically and goes into normal mode, if possible. If the maximum number of EBs, relays, push buttons or sensors has been exceeded, the corresponding device must be removed from the DALI bus.

The display is updated every second.

Brightness actual value (lux)
Display of the current brightness value of the corresponding light measurement. This value is adjusted with the corresponding room correction factor. The value is updated every second.

Connection protection active

The DALI-2 RS Plug app is available free of charge. In order to protect a system against third-party tampering, a separate password is generated for each master.
Projects may only connect to new devices (factory setting) or if the connection protection is not active, i.e. no password has been set. Afterwards, this device belongs to the project and can always be connected without being asked to enter a password. If a device is deleted from the project, the password or connection protection is removed again.
By default, the connection protection is active. If this is not desired, it can be changed individually for each master under Parameters for Master in the "Diagnosis" tab:



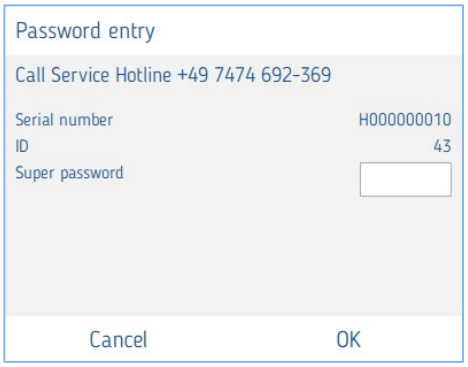
If the connection protection is active for at least one master, the following warning appears when deleting a project:

"Attention: Please export project first or disable connection protection on all devices. Otherwise, no connection can be established with the devices later without contacting the hotline!"

If a project is lost or someone wants to connect to a master in a different project, the hotline can generate a Super password using the serial number and ID. By entering the Super password, each master can be reconnected to the project. The Super password is valid from the time it is issued by the hotline until midnight.

If a master with active connection protection or set password is tapped in the list, the following pop-up menu appears:

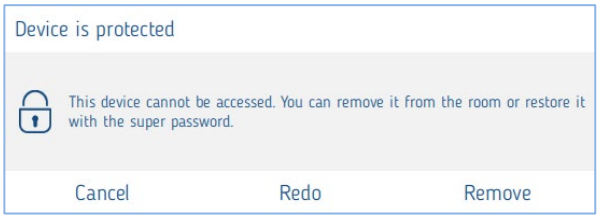
After tapping “Enter password”, the following appears



The hotline generates a Super password from the serial number and ID details. After entering the Super password and clicking "Connect", the following appears

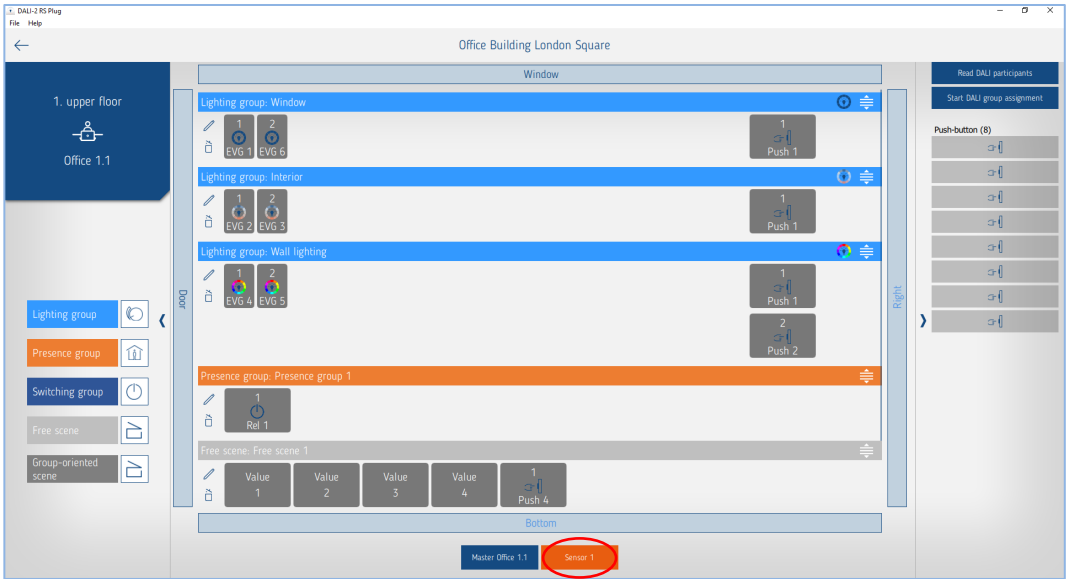
The available master devices and the desired master device without lock icon will be listed. Connecting is possible again.

If the original project is found again, the following window appears after connecting



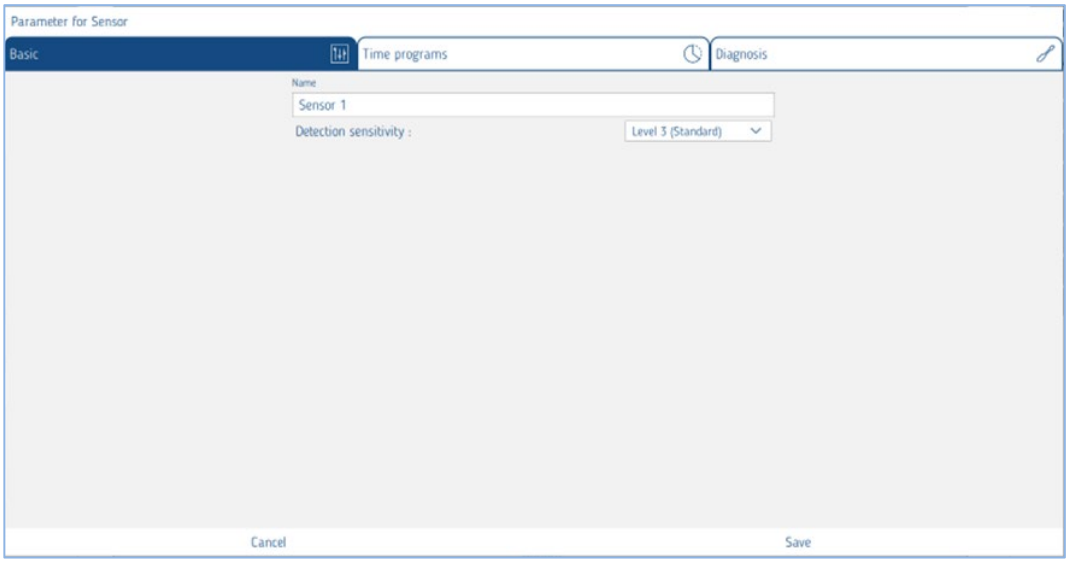
When restoring, the changes that have been made in the meantime will be lost.

7.5 Setting presence sensor parameters



The parameters are accessed by tapping the corresponding sensor.

Basic



Detection sensitivity
The presence sensor has 5 sensitivity increments. The basic setting is the middle increment (3). The increments can be interpreted as follows:

Increment	Sensitivity
1	Very insensitive
2	Insensitive
3	Standard
4	Sensitive
5	Very sensitive

If presence sensor PlanoSpot 360 DALI-2 S DE, 2030190 is connected, the following parameter also appears:

Detection zone
The presence sensor has 2 detection zones.
- Standard: Detection area lateral walking 7 m x 7 m at 3 m installation height
- Reduced: Detection area lateral walking 3.8 m x 3.8 m at 3 m installation height

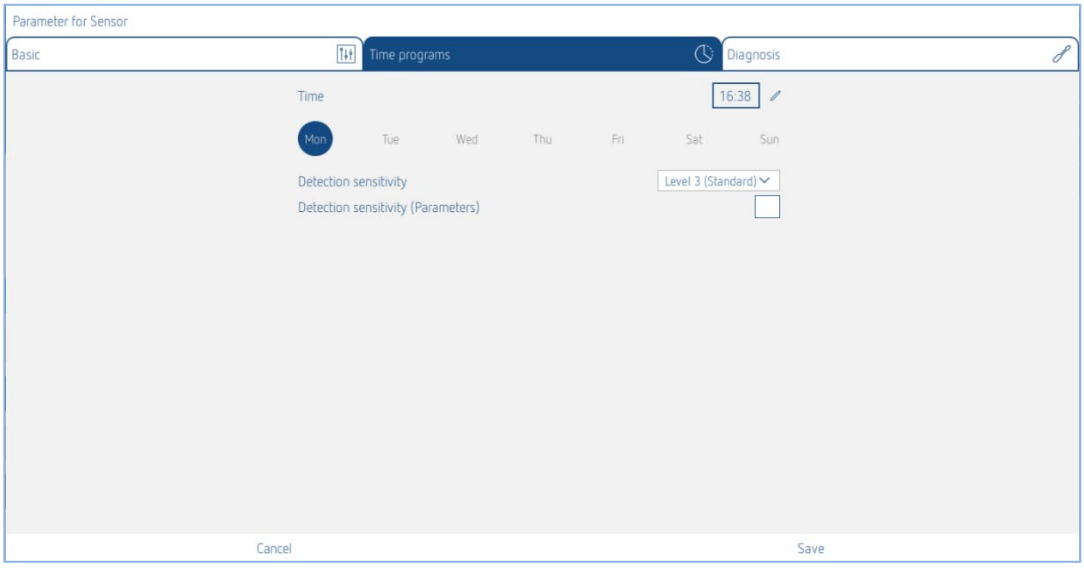
For further information, see manual PlanoSpot 360 DALI-2 S EN, 2030190.

If presence sensor thePassa P360 DALI-2 S UP, 2010390 is connected, the following parameter also appears:

Detection area
With this presence sensor, you can select from 3 detection zones.
- Zone 1 and Zone 2: The entire detection area is active (lateral walking 30 m x 4.5 m at 3 m installation height)
- Zone 1: Only the detection area in zone 1 is active (lateral walking 15 m x 4.5 m at 3 m installation height)
- Zone 2: Only the detection area in zone 2 is active (lateral walking 15 m x 4.5 m at 3 m installation height)

Observe the alignment of the presence sensor during installation! For further information, see manual thePassa P360 DALI-2 S UP, 2010390.

Time programs

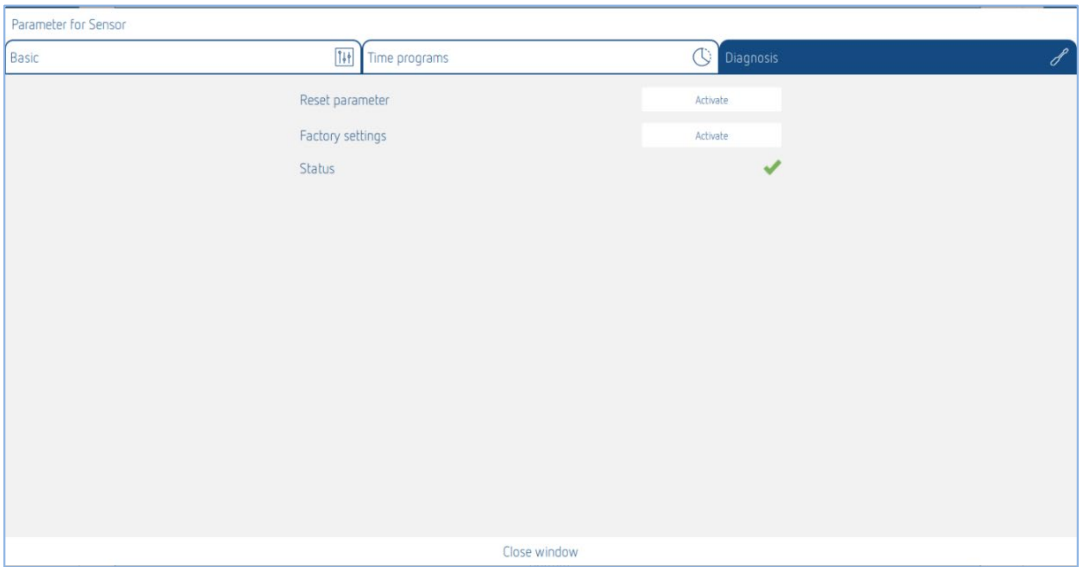


The detection sensitivity can be changed depending on time:

- **Detection sensitivity**
  - Increments 1 to 3 are available for selection.
  - Parameter activated: The set parameter value at BASIC is used.

  For further information on detection sensitivity, see Chapter 7.5 Setting master parameters, Basic.

Diagnosis



Reset parameter
All parameters of the presence sensor are set to factory settings. The presence sensor is supplied with the following parameter values:

Basic	Detection sensitivity	Increment 3
	Detection zone (PlanoSpot 360 DALI-2 S DE)	Standard
	Detection area (thePassa P360 DALI-2 S UP)	Zone 1 and zone 2
Time programs	Detection sensitivity	Increment 3

Factory settings
The corresponding presence sensor is reset to factory settings and its short address will be deleted.

ⓘ The assignment of the presence sensor will be deleted! The presence sensor must be read in again with "Read DALI participants".

Status
Display of master status:

- green check mark: everything is OK
- red exclamation mark with error number: error at presence sensor. Please read in DALI participants. If the problem is not solved, please contact the service with information on the error number.

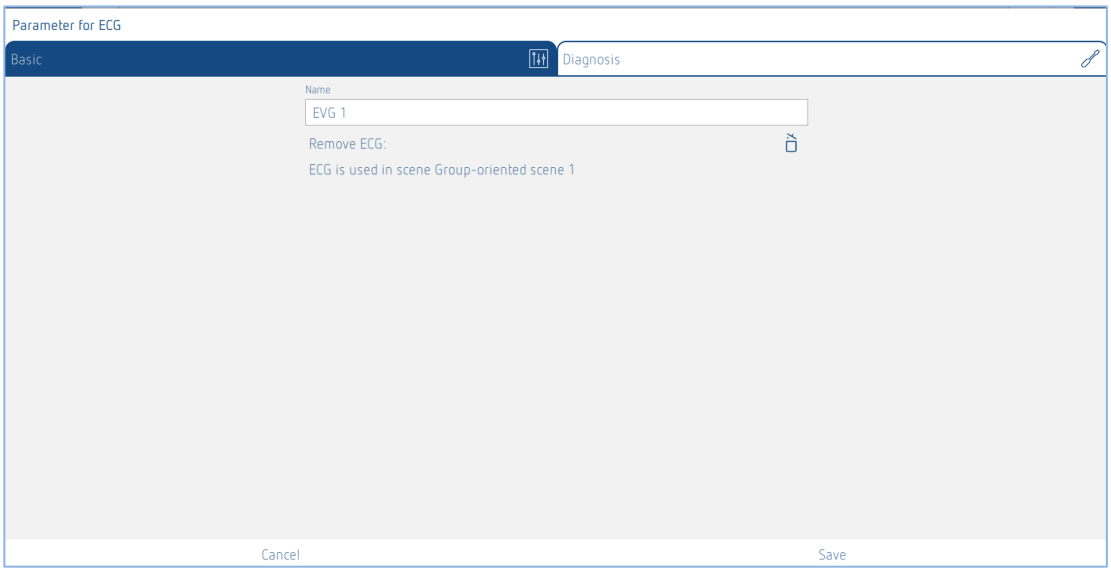
The display is updated every second.

7.6 Setting parameters of DALI participants

This Chapter describes the settings of the DALI participants. Briefly tapping the desired DALI participant brings up the parameter window. This is only possible if the corresponding DALI participant has already been assigned to a group or scene. The selected DALI participant identifies itself by flashing periodically (1.5 s on and 1.5 s off). Identification is stopped automatically after 12 s.

7.6.1 EB

Basic

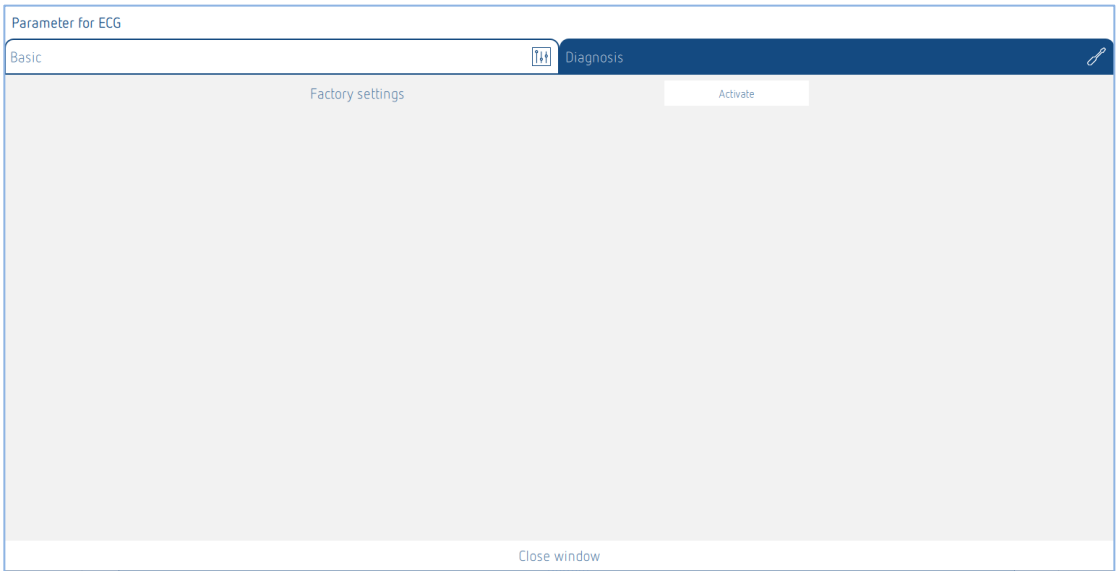


Remove EB

Clicking removes the EB from the group and moves it to the right column to the unassigned DALI participants. Afterwards, it can be assigned again to any group.

The name of the EB is not deleted after removal.

Diagnosis

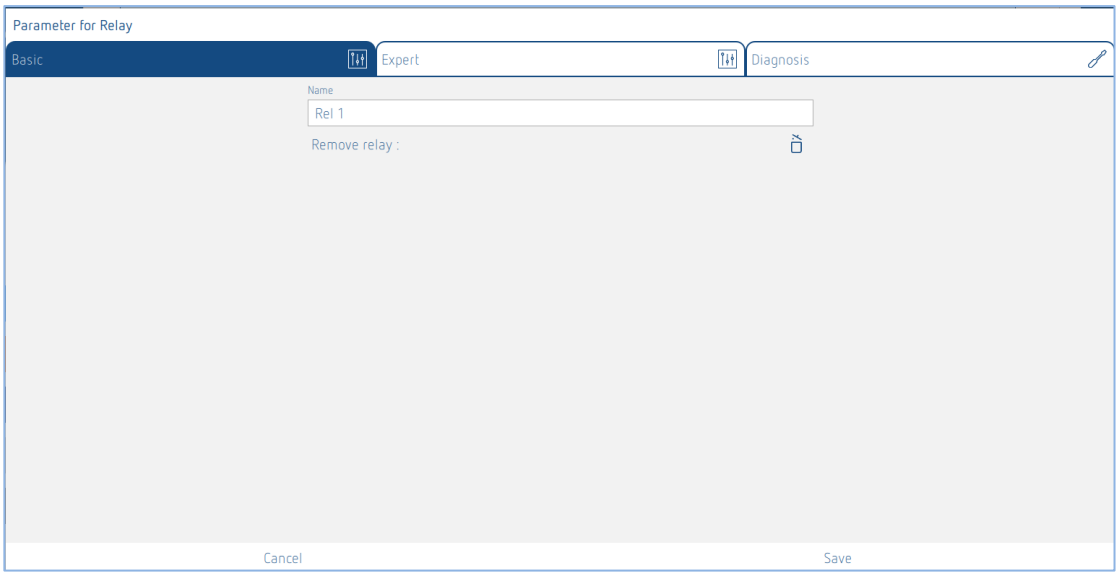


Factory settings
The selected EB is reset to factory settings, the short address is deleted, and it will be removed from the group. The EB must be read in again by "Read DALI participants".

The assignment of the EB is deleted and removed from the system!

7.6.2 Relay

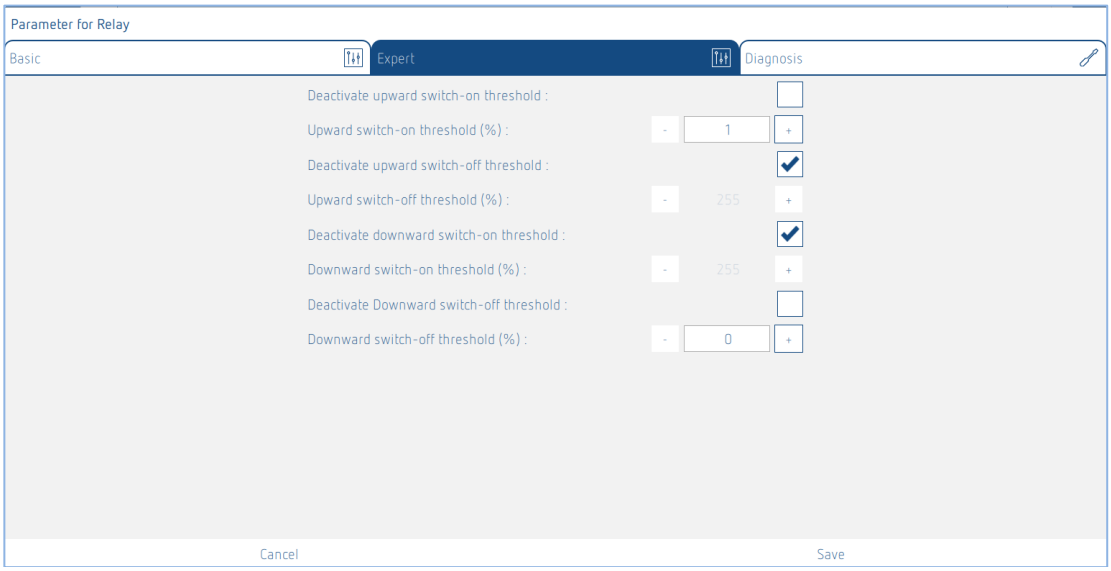
Basic



Remove relay
Clicking removes the relay from the group and moves it to the right column to the unassigned DALI participants. Afterwards, it can be assigned again to any group.

The name of the relay is not deleted after removal.

Expert



The desired behaviour of the relay can be set with the switch-on and switch-off thresholds.

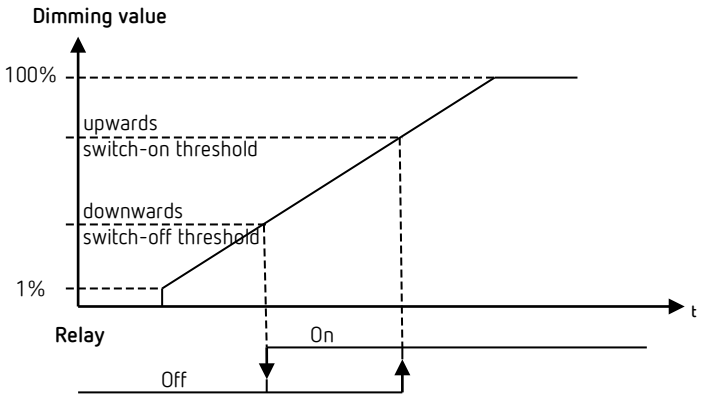
Upward switch-on threshold
Value to which the virtual lamp power level is continuously compared and at which the output of the device is switched on each time the virtual lamp power level reaches or exceeds this value during upward dimming.

Upward turn-off threshold
Value to which the virtual lamp power level is continuously compared and at which the output of the device is switched off each time the virtual lamp power level reaches or exceeds this value during upward dimming.

Downward switch-on threshold
Value to which the virtual lamp power level is continuously compared and at which the output of the device is switched on each time the virtual lamp power level reaches or falls below this value during downward dimming.

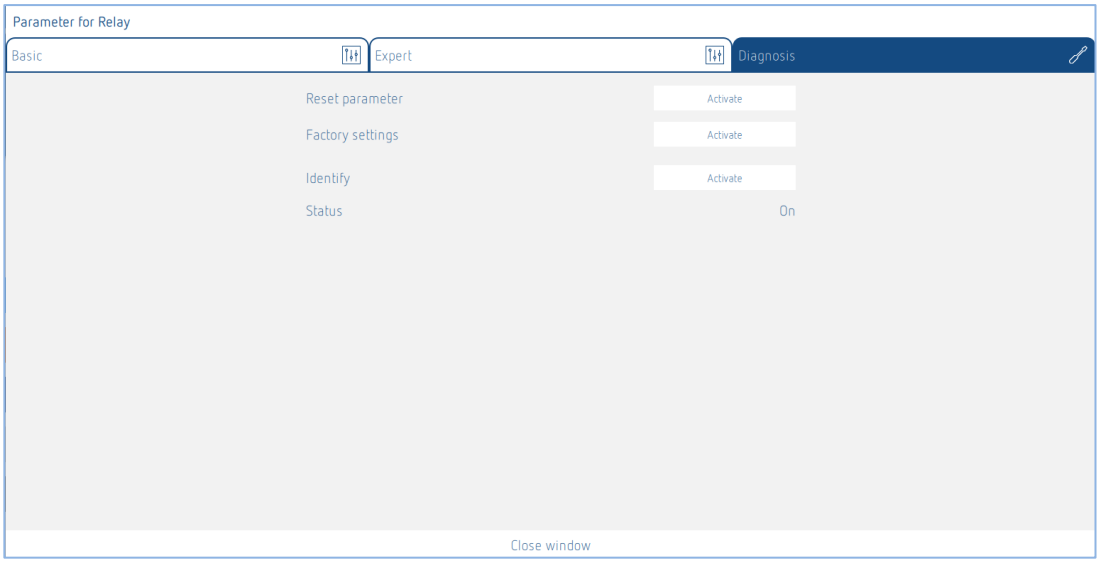
Downward turn-off threshold
Value to which the virtual lamp power level is continuously compared and at which the output of the device is switched off each time the virtual lamp power level reaches or falls below this value during downward dimming.

An example of a possible configuration:



With the factory settings "Upward switch-on threshold = 1%" and "Downward turn-off threshold = 0%", the relay switches on at dimming value 1% and switches off at dimming value 0%.

Diagnosis



Reset parameter

All parameters of the relay are set to factory settings. The relay is supplied with the following parameter values:

Expert	Deactivate upward switch-on threshold	<inactive>
	Upward switch-on threshold	1
	Deactivate upward turn-off threshold	<active>
	Upward turn-off threshold	<inactive>
	Deactivate downward switch-on threshold	<active>
	Downward switch-on threshold	<inactive>
	Deactivate downward turn-off threshold	<inactive>
	Downward turn-off threshold	0

Factory settings

The selected relay is reset to factory settings, the short address is deleted, and it will be removed from the group. The relay must be read in again by "Read DALI participants".

ⓘ The assignment of the relay is deleted and removed from the system!

Identify

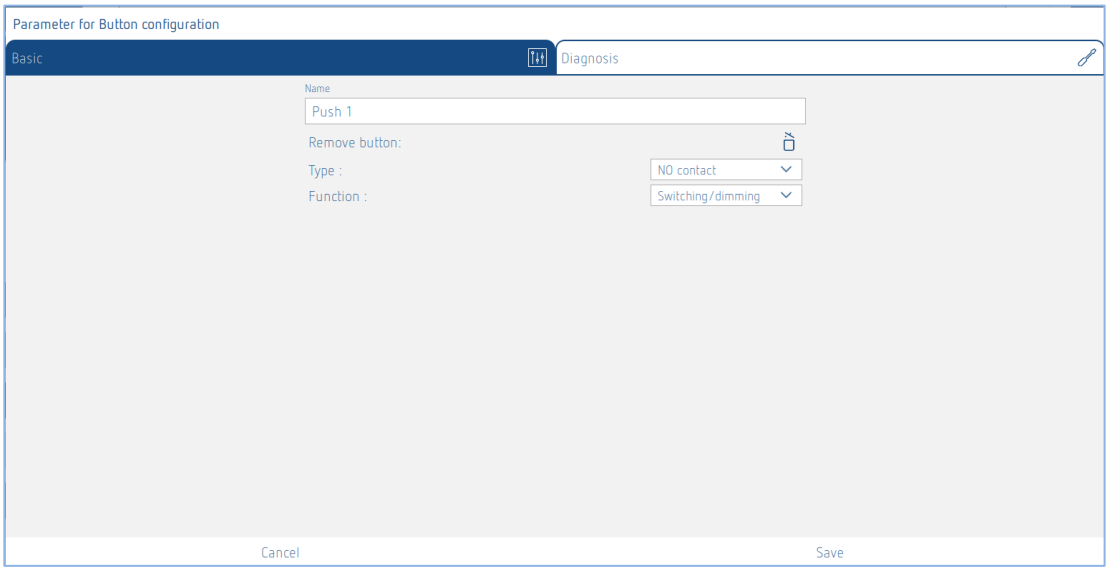
By tapping the "Trigger" button, the relay starts to switch on/off cyclically (1.5 s on and 1.5 s off) and can thus be identified. At the same time, the labelling of the button changes to Stop. Identification is stopped automatically after 12 s.

Status

The current switching status of the relay is indicated here with "On" or "Off". The display is updated every second.

7.6.3 Push button

Basic



Remove push button

Tapping removes the push button from the group or scene and moves it to the right column to the unassigned DALI participants. This push button can afterwards be assigned to any group or scene again.

The name of the push button is not deleted after removal.

Type

The type of the connected push button can be set here.

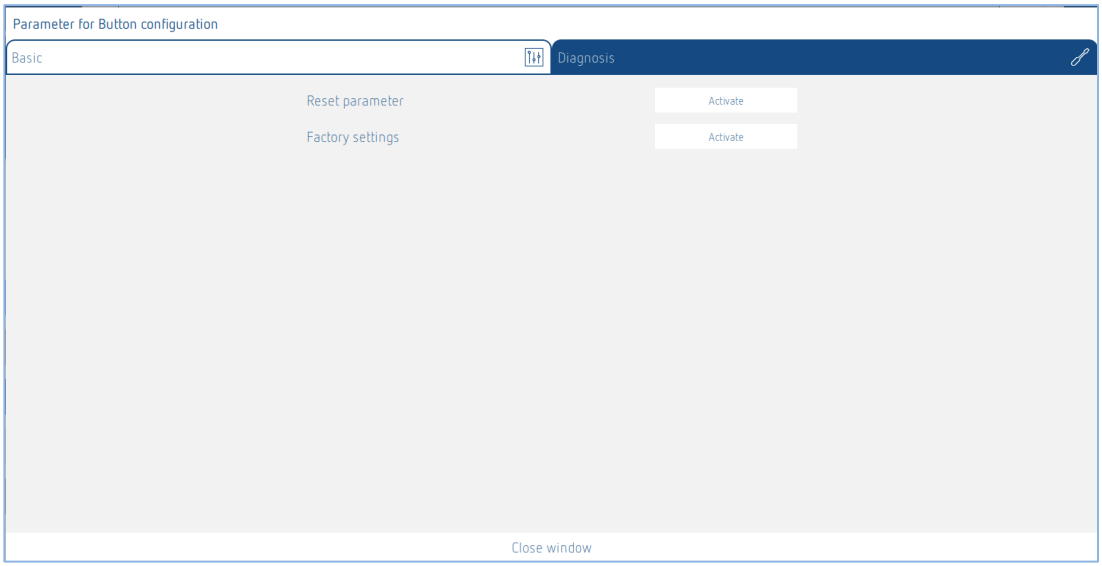
- **NO contact**: When the push button is pressed, the contact is closed (NO).
- **Opening contact**: When the push button is pressed, the contact is interrupted (NC).

Function

The desired function can be assigned to the push button.

- **Switching/dimming**: A short button press switches the group on/off, and a long button press dims it if the group allows it.
- **Tunable White**: A short button press switches the group on/off, and a long button press changes the colour temperature.
- **RGB colour**: A short button press switches the group on/off, and a long button press changes the colour.

Diagnosis



Reset parameter
All parameters of the push button are set to factory settings. The push button is supplied with the following parameter values:

Expert	Type	NO contact
	Function	Switching / dimming

Factory settings
The selected push button is reset to factory settings, the short address is deleted, and it will be removed from the group or scene. The push button must be read in again by "Read DALI participants".

ⓘ The assignment of the push button is deleted and removed from the system!

7.7 Start-up

After first switching on the system power supply, the presence detector is restarted, automatically identifies all connected DALI participants, assigns short addresses and manages them in a list. This stage is indicated by the LED flashing pattern "DALI system check" and, depending on the size of the system, can last up to 10 min.

If no DALI device is connected to the presence detector or a DALI line is interrupted, the presence detector indicates this with the LED flashing pattern "DALI system error". If the system is OK, the presence detector automatically enters configuration mode and waits for configuration. This is indicated by the LED flashing pattern "DALI emergency mode". As long as the configuration has not been carried out, the system is in the following operating state:

- Presence detector is in broadcast mode.
- Function is switching mode (only presence detection, no light measurement).
- All lights are controlled with 100% switch-on dimming value.
- The operating mode is as a fully automatic device.
- All connected push buttons are active. Switching on and off as well as dimming are possible.
- Time delay: 10 min.

There are two procedures for start-up using the app:

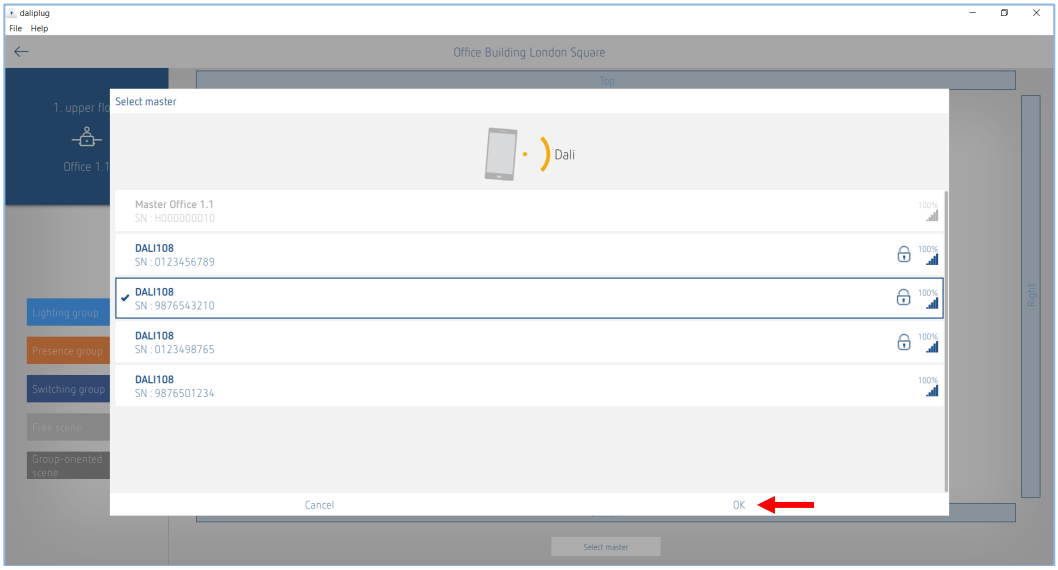
Preparing the project in offline mode

The entire building and room structure with the desired groups and parameter settings can already be created at the office, see from chapter 7.2 Create project. During start-up, only the DALI participants need to be assigned per room.

Preparing the project in online mode

During start-up, all steps per room can also be carried out at once. First, all DALI participants per room are read in. Then, the room structure is created with the desired groups and parameter settings, and finally the DALI participants are assigned per room.

In the app, the white "Select Master" button must first be tapped in a room. neu

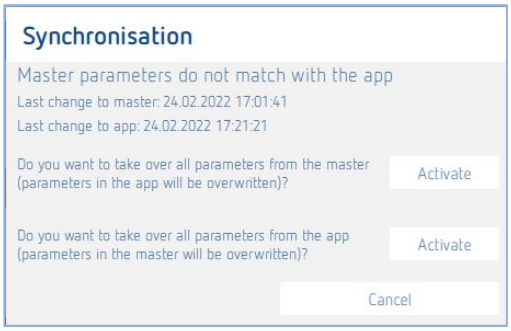


All masters located within the reception range will be listed. When a master in the list is tapped, the LED on the master device starts flashing blue (see flashing pattern in Chapter 4.7 Display/visualisation). If the desired master device was found, confirm with "Connect".

Too many BLE devices in the vicinity could cause problems. If possible, switch off unnecessary BLE devices.

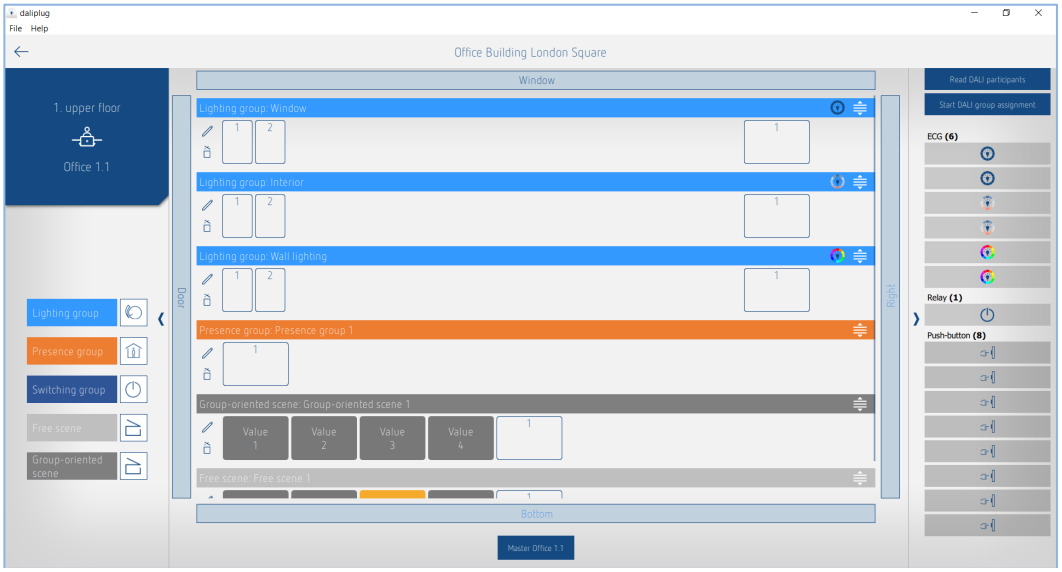
The masters marked with the lock icon have connection protection activated. A connection with the master is only possible with the associated project. For further information, see Connection protection active.

If the groups and parameter settings of the master do not match those of the app, one can choose whether to accept all settings from the master, or from the app.



Select the desired type. The subsequent synchronisation may take a few minutes.

A new window appears on the right-hand side, see the following illustration. With a brief tap on the "Read DALI participants" button, all DALI participants including presence sensors that are connected to the DALI line of the master will be read in and listed. Reading in may take a few minutes. In addition, a new button "Start DALI group assignment" appears.



7.7.1 Assigning DALI participants

With a short tap on the "Start DALI group assignment" button, the assignment process begins, see illustration above.

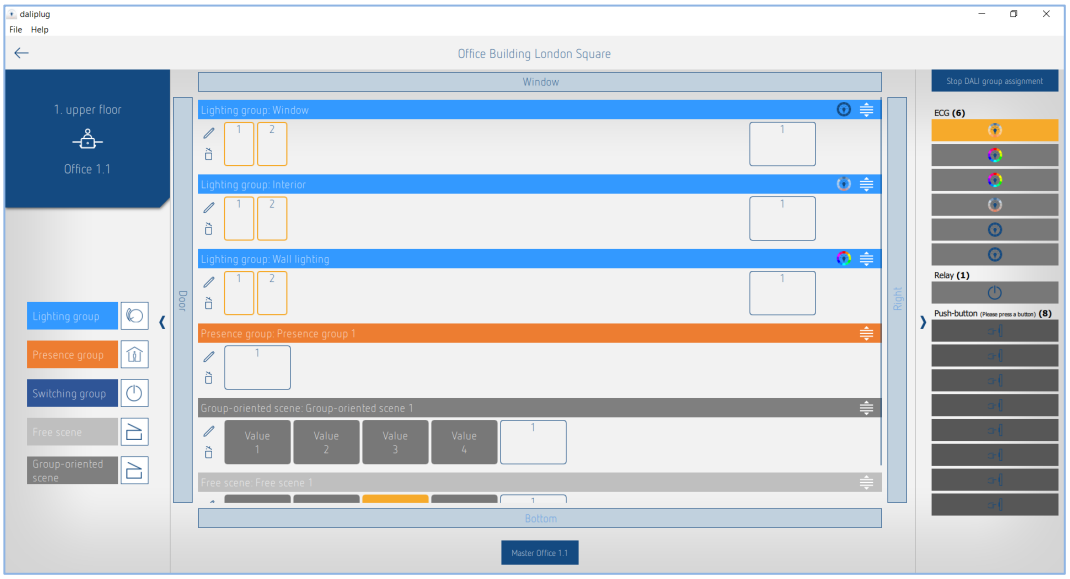
The type of DALI participants is identified during reading and marked with the corresponding icon.

Group assignment is automatically terminated after one hour.

Assignment of EBs/lamps

The presence detector starts with the EB at the top of the list. This lights up yellow and a light starts flashing. At the same time, all positions to which an EB can be assigned are marked with a yellow border on the left-hand side. Next, tap on the desired position to which the EB is to be assigned. The assigned EB changes its colour to grey and the lamp is dimmed to 20%. At the same time, the next EB lights up yellow on the right-hand side. Repeat the assignment accordingly until all EBs are assigned.

It is possible that a DALI device contains several DALI participants. If one of these is not needed, it must still be assigned to a group so that normal operation is possible.

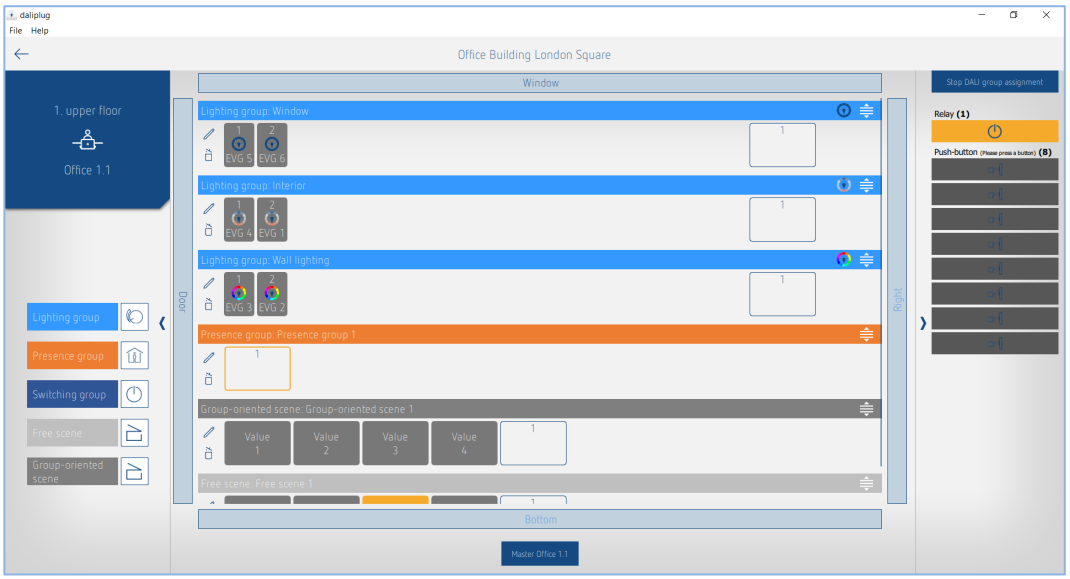


By tapping an EB in the right-hand window, the order of assignment can be freely selected.

EBs can be used in a lighting group or switching group.

Assignment of relays

If necessary, scroll down in the right-hand window until the relays appear. Tap one of the displayed relays. It lights up yellow and a relay starts to switch on/off cyclically. At the same time, all positions to which a relay can be assigned are marked with a yellow border on the left-hand side. Next, tap on the desired position to which the relay is to be assigned. The assigned relay changes its colour to grey and the relay stops switching on/off. Repeat the assignment accordingly until all relays are assigned.

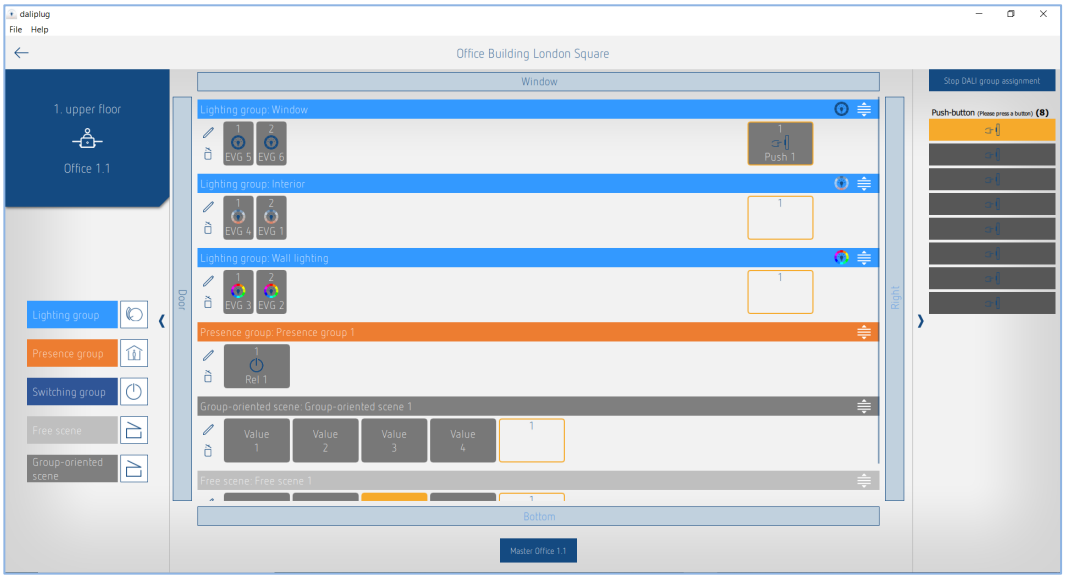


By tapping a relay in the right-hand window, the order of assignment can be freely selected.

Relays can be used in a lighting group, switching group, or presence group.

Assignment of push buttons

If necessary, scroll down in the right-hand window until the push buttons appear. †Briefly press the desired push button. On the right-hand window, a push button lights up yellow. At the same time, all push button positions to which a push button can be assigned are marked with a yellow border on the left-hand side. Next, tap on the desired position to which the push button is to be assigned. The assigned push button changes its colour to grey. Repeat the assignment accordingly until all required push buttons are assigned.



A single push button can be assigned to several lighting and switching groups at the same time.

A single push button can only be assigned to one scene type, i.e. "free scene" or "group-oriented scene".

If the push button has been assigned to one of the "free scene" or "group-oriented scene" scenes, it can no longer be assigned to a lighting or switching group. If the push button has been assigned to a lighting or switching group, this push button can no longer be used for "free scene" or "group-oriented scene".

If a push button of the type opening contact (NC) is used, it can be identified by double-clicking on it. After the type parameter of the push button has been set to opening contact, the push button responds normally to a short tap.

The assignment of the DALI participants is finished with a short tap on the "Stop DALI group assignment" button. The presence detector restarts. The right-hand window can be closed.

7.8 User remote control

The user remote control theSenda B or theSenda S can be used to switch the lighting groups on/off, or dim them, and call up scenes.

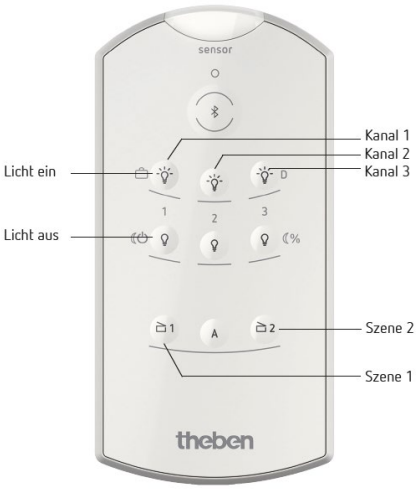
Only use the DALI-2 RS Plug app for configuration.

7.8.1 theSenda B

The presence detector channels and the theSenda B channels are linked via an IR group address. 8 IR group addresses are available for linking.
Operation of a lighting group requires that the presence detector channel IR group address and that of theSenda B channel match.
The IR group addresses on theSenda B user remote control can flexibly be allocated to channels 1 to 3 and scenes 1 + 2.

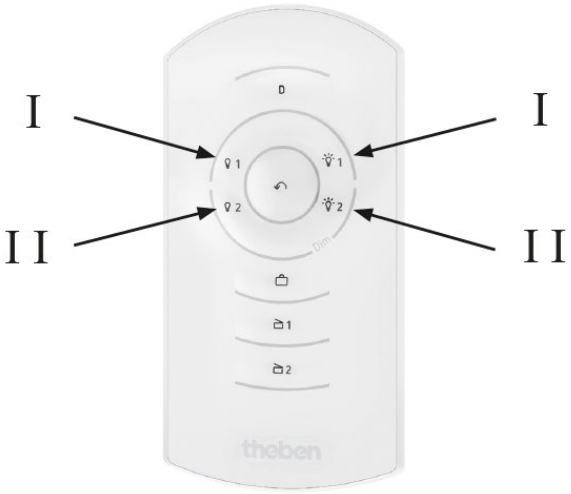
The setting can easily be made via "theSenda Plug" app, "Configure theSenda B" menu. IR group addresses I to VIII are available for selection. It is also possible to allocate several IR group addresses to the channels and scenes. The user remote control theSenda B is delivered with the following factory settings:

- Channel 1 light: IR group address I
- Channel 2 light: IR group address II
- Channel 3 light: IR group address III
- Scene 1: IR group address I, II and III
- Scene 2: IR group address I, II and III



7.8.2 theSenda S

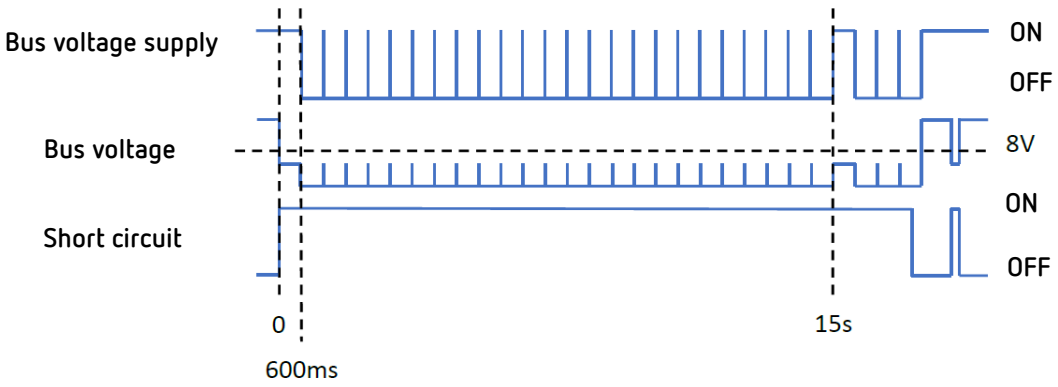
The presence detector channels and the theSenda S channels are linked via an IR group address. IR group addresses are available for linking.
Operation of a lighting group requires that the presence detector channel IR group address and that of theSenda S channel match.
IR group addresses I and II are allocated permanently to 4 buttons on theSenda S user remote control and cannot be changed. Further information can be found in the operating instructions of theSenda S.


I
I
I I
I I
theben

8 Appendix

8.1 Short circuit mechanism

If a short circuit is detected (bus voltage below 8 V for at least 600 ms), the bus voltage supply switches off for 600 ms. Afterwards, the bus voltage supply is switched on again for approx. 5 ms to check again for a short circuit. If a short circuit (bus voltage above 8 V) is no longer detected, the bus voltage supply remains switched on. Otherwise, the bus voltage supply is switched off again for 600 ms and afterwards it will be checked for a short circuit for 5 ms. This will be repeated until either the short circuit is removed or if 15 s have elapsed since the short circuit began. Then, the bus supply is switched on for 600 ms regardless of the short circuit and the mechanism starts again.



See also IEC 62386-101 6.6.2 Short circuit behaviour

8.2 Operating systems

The "DALI-2 RS Plug" app is compatible for tablets with the following operating systems

- Android 5.1 or higher
- iOS 9.0 or higher

For laptops, Bluetooth must be integrated and the current version of Windows 10 must be available.

8.3 Information about HCL

- licht.wissen 21
  https://www.licht.de/fileadmin/Publikationen_Downloads/1806_lw21_HCL_web.pdf
- DIN SPEC 67600
- DIN SPEC 5031-100
- PD CEN/TR 16791

9 Accessories

Surface frame 110A WH
Item no.: 9070912
Details > www.theben.de

Surface frame 110A GR
Item no.: 9070913
Details > www.theben.de

Ceiling installation box 68A
Item no.: 9070992
Details > www.theben.de

Cover 110 GR
Item no.: 9070591
Details > www.theben.de

Cover clip
Item no.: 9070921
Details > www.theben.de

theSenda B
Item no.: 9070985
Details > www.theben.de

theSenda S
Item no.: 9070911
Details > www.theben.de

10 Contact

Theben AG
Hohenbergstr. 32
72401 Haigerloch
GERMANY
Phone +49 7474 692-0
Fax +49 7474 692-150

Hotline
Phone +49 7474 692-369
hotline@theben.de
Addresses, telephone numbers, etc.
www.theben.de