JUNG

LB Management

21

MADE IN GERMANY SINCE 1912

Ernst Paris

Company founder Albrecht Jung

Progress as tradition. Every day.

When Albrecht Jung founded his company in 1912, three things were already important to him: progress, quality and design. These principles have characterised JUNG to date and are noticeable and can be experienced in all parts of the company.

"Progress as tradition" is an attitude, the commitment to constant new thinking. A commitment to the development of ideas that create something new, for easier use, better functionality, more attractive appearance and more customer-friendly service. This motivates and unites us at JUNG. Every day.

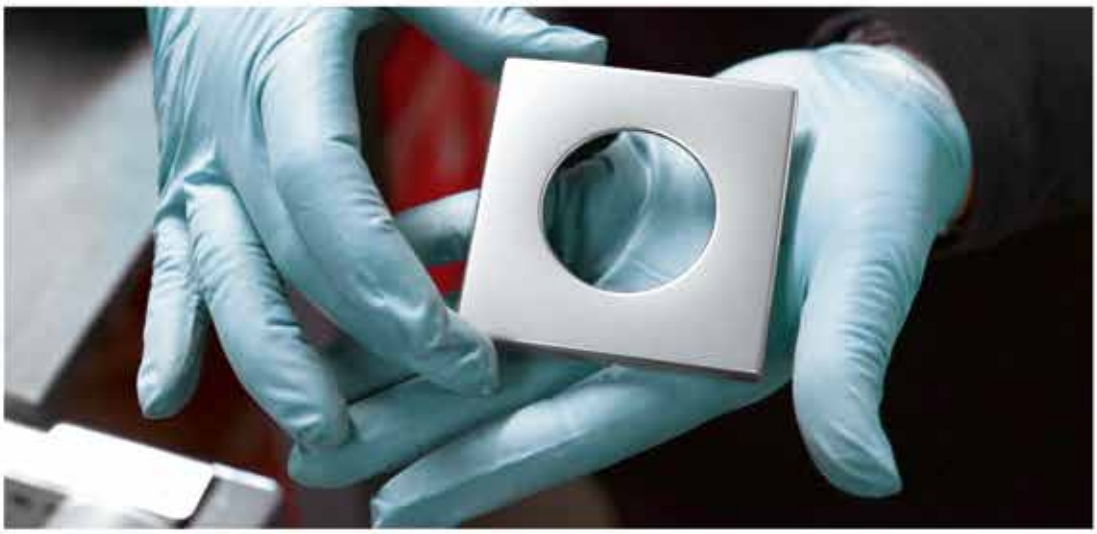
WE ARE JUNG:

1912 Medium-sized third generation family company

"Made in Germany" for more than 100 years

Around 1,200 employees

17 subsidiaries and over 70 agencies worldwide



Preface

For more than 100 years, the name JUNG has stood for components and systems that are impressive due to modern technology, sophisticated design and wide functional diversity. Living is now even more comfortable, secure and energy-efficient with the new LB Management system. A comprehensive range of products that can be individually combined according to a modular principle makes possible the control of lighting and shade in a house or apartment.

JUNG manufactures its products in Germany. The company manufactures high-quality products that worldwide customers rely on at the Schalksmühle and Lünen sites.

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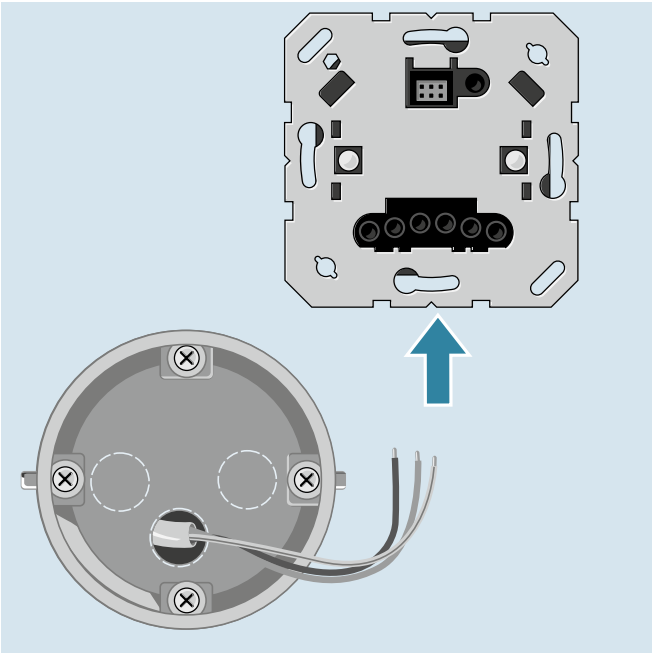
1. The JUNG LB Management

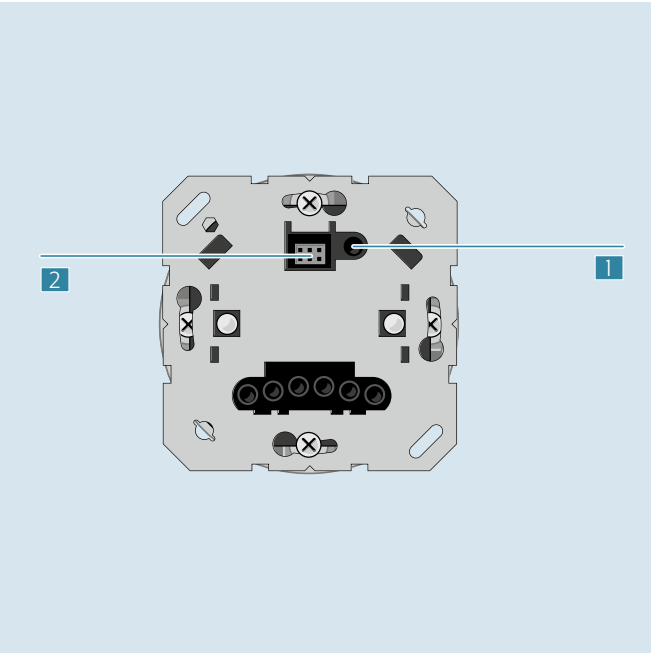
The daily control of lighting and shade is easier and more convenient than ever before with the new LB Management system. Using the combination of various inserts and attachments, the modular system provides a solution for almost every desired function. It is possible to control the LB Management manually on the device, automatically using sensors and/or timers and using the JUNG smart phone app. The easy to install inserts have a low installation depth – this makes the mounting easier and shortens the installation times. All inserts from the LB Management system can be freely combined with the JUNG attachments in the AS A, CD and LS ranges.

1.1 Easy to install

The installation of the LB Management components is now even easier. The low installation depth of the inserts provides more space for the wiring. The galvanised steel supporting plate creates sufficient stability. The enclosed mounting claws enable easy and quick installation and ensure a secure hold in the flush-mounted box and cavity wall box.

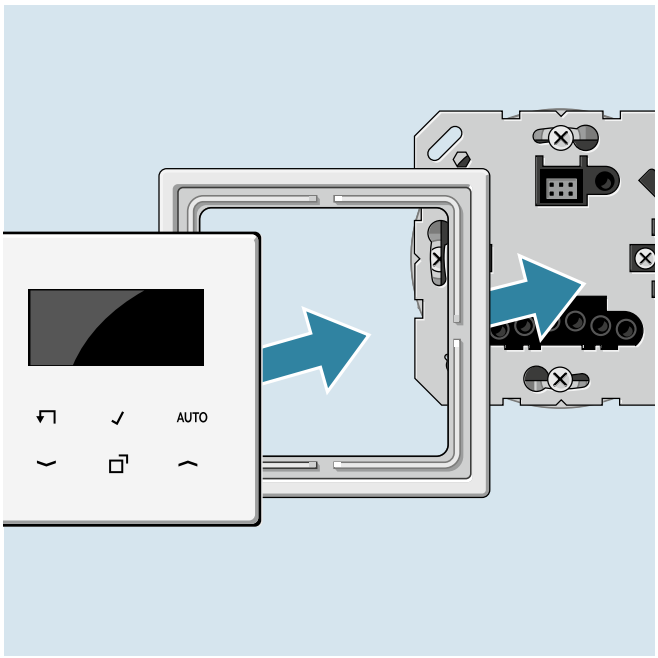


The space saving inserts can be wired easily in every commercially available flush mounting box and cavity wall box.

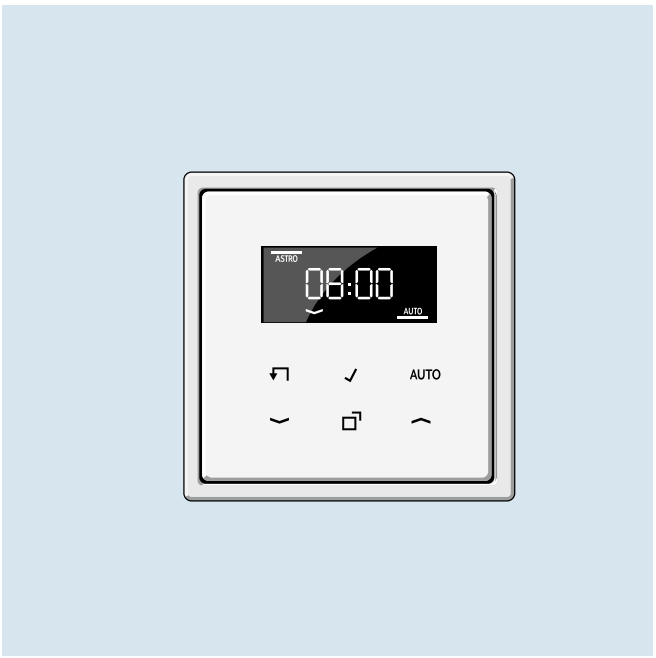


The new inserts enable checking of the installation using the test button (1), also without attachments. You can also make further settings using the test button. An LED (2) provides feedback about the currently set function.

The commissioning is particularly reliable due to the plug-in attachments with stable retaining springs made of stainless steel.
Mix-up protection signals by LED or using the display if the attachment has been plugged in to the wrong insert, e.g. after a renovation.



The mounting of the frames and attachments is particularly easy thanks to stable supporting plates and retaining springs made of stainless steel. Mix-up protection helps to find the correct insert again after any renovation.



After successful mounting, the attachment with all its functions is available for you.

1.2 Intuitive operation

In addition to the manual operation, the Bluetooth components of the new LB Management system are conveniently operated and configured using a smart phone with the JUNG Clever Config App.


07:39
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1.3 Clear advantages

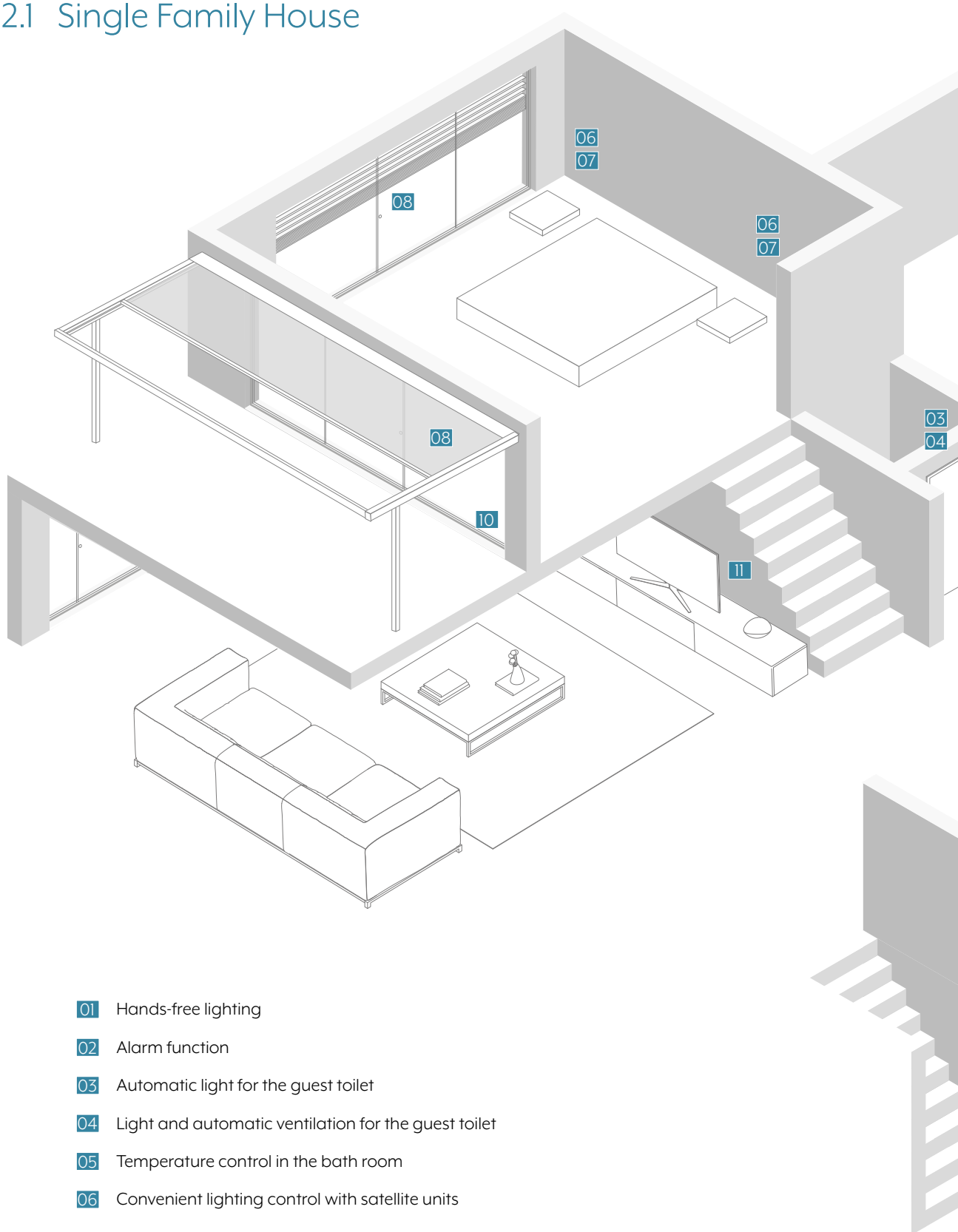
The LB Management system with the modular principle supports the specialist tradesman as well as building owners and modernisers.

SPECIALIST TRADESMAN
A growing, future-proof system creates customer loyalty.
Easy and quick installation
Backwards compatible for supplementing existing systems.
Test button and operating mode selection button shorten the installation time.
Voltage measurement in the installed state is possible.
Commissioning with Clever Config App.

BUILDING OWNERS AND MODERNISERS
Components for different applications (switching, dimming, roller shutters, blinds etc.).
Simple and intuitive operation for all age groups.
Optionally, control using Clever Config App is possible.
Use of Bluetooth technology; therefore own WLAN is not required.
Colour and material of the attachments can be selected from the extensive JUNG range.
All inserts can be freely combined with the JUNG attachments in the AS, A, CD and LS ranges.
Low installation effort saves time and money.
Depending on the operating attachment, the standby power consumption is only 0.2 to 0.5 watts.
Backwards compatibility for supplementing existing systems, Blind and Lighting Management.

2. Usage scenarios

2.1 Single Family House



01 Hands-free lighting

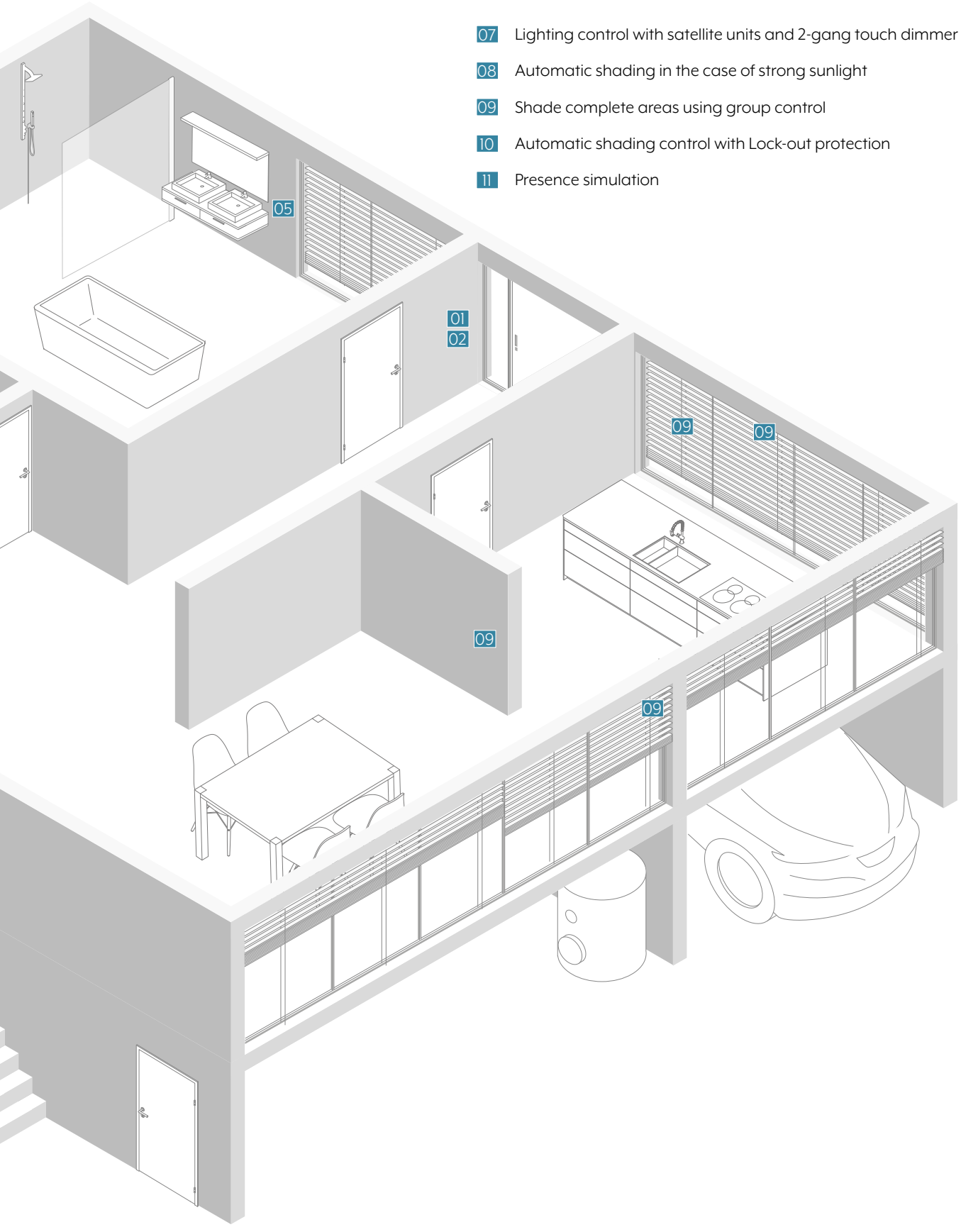
02 Alarm function

03 Automatic light for the guest toilet

04 Light and automatic ventilation for the guest toilet

05 Temperature control in the bath room

06 Convenient lighting control with satellite units



07 Lighting control with satellite units and 2-gang touch dimmer

08 Automatic shading in the case of strong sunlight

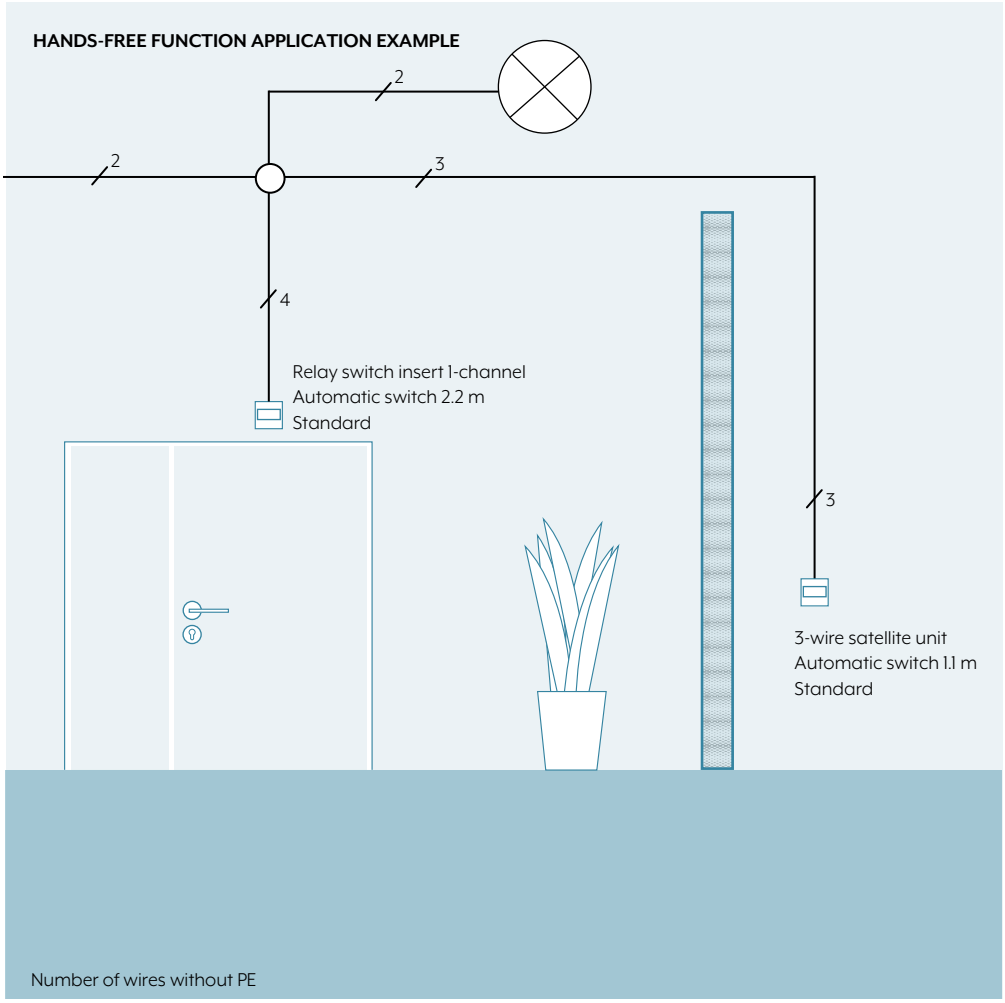
09 Shade complete areas using group control

10 Automatic shading control with Lock-out protection

11 Presence simulation

2.1.1 Hands-free lighting

Coming home in the dark and the hall light switches on automatically. You can set up this function in no time using a JUNG automatic switch or ceiling observer / presence detector. In the case of long or angled hallways, you extend the detection area easily with a 3-wire satellite unit and another automatic switch. The lighting switches off again automatically when nobody is present any more in the detection area.
It goes without saying that the JUNG automatic switches also take account of the ambient brightness. The light stays off if there is sufficient daylight. It's that simple.

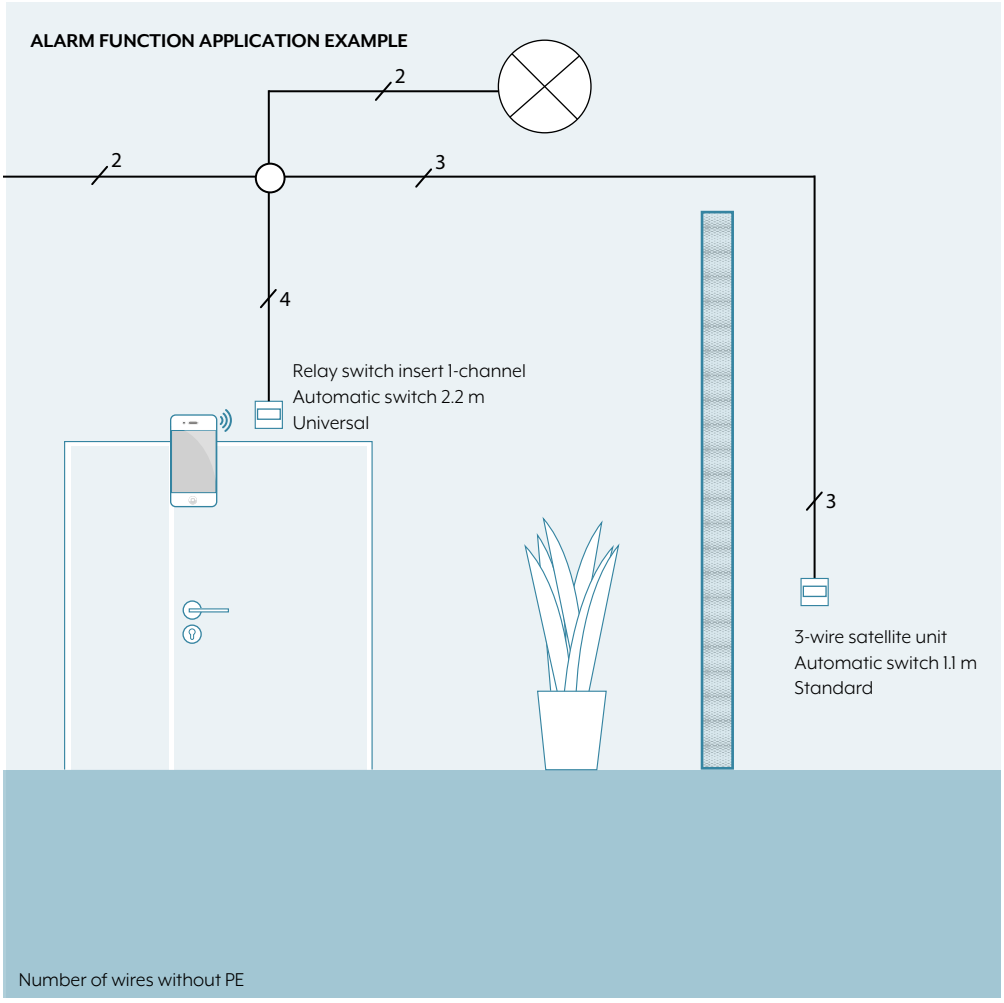


COMPONENTS	REF. NO.	QUANTITY	DETAILS
Relay switch insert 1-channel	1701 SE	1	see page 53
3-wire satellite unit	1723 NE	1	see page 66
Standard automatic switch 1.1 m	..17180..	1	see page 69
Standard automatic switch 2.2 m	..17280..	1	see page 70

Notes for the use of satellite units: No Standard centre plate may be used on the master unit if a 3-wire satellite unit is used.
Maximum number of 3-wire satellite units is 10. Maximum total cable length 100 metres.

2.1.2 Alarm function

The automatic switching becomes a watchdog with a tap in the JUNG Clever Config app. The activated alarm function detects movement by persons and makes the lighting flash. Burglars are unsettled and deterred. If required, the light signal also makes neighbours aware. The alarm function is initiated independent of brightness and can be used with other additional functions such as presence simulation. It goes without saying that you can also expand the detection area here with up to 10 satellites.



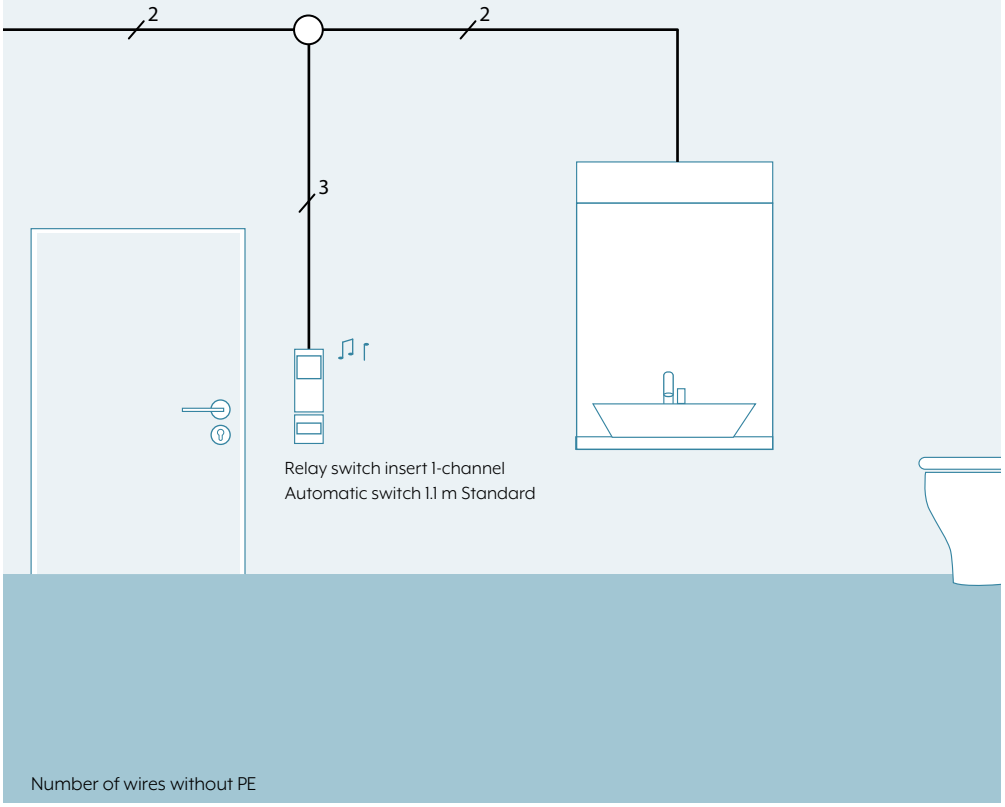
COMPONENTS	REF. NO.	QUANTITY	DETAILS
Relay switch insert 1-channel	1701 SE	1	see page 53
3-wire satellite unit	1723 NE	1	see page 66
Standard automatic switch 1.1 m	..17180..	1	see page 69
Universal automatic switch 2.2 m	..17281..	1	see page 72

Notes for the use of satellite units: No Standard centre plate may be used on the master unit if a 3-wire satellite unit is used.
Maximum number of 3-wire satellite units is 10. Maximum total cable length 100 metres.

2.1.3 Automatic light for the guest toilet

Rooms without windows merit a movement detector; for example in the cellar, in the attic or in the garage. Thanks to automatic light, the guest toilet without windows also saves the search for the light switch. Would you like further added value? How about if the radio also plays music? This is not a problem with the JUNG Smart Radio! The movement detector switches off lighting and radio again automatically if movement is no longer detected.

GUEST TOILET APPLICATION EXAMPLE



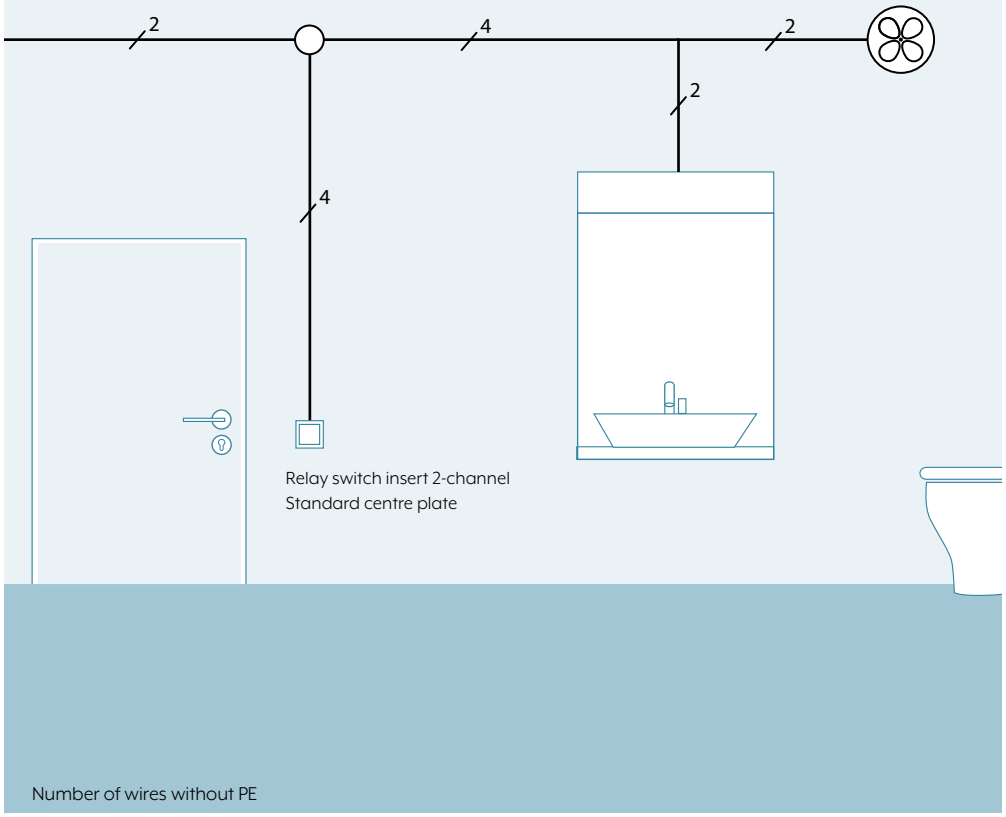
Number of wires without PE

COMPONENTS	REF. NO.	QUANTITY	DETAILS
Relay switch insert 1-channel	1701 SE	1	see page 53
Standard automatic switch 1.1 m	..17180..	1	see page 69
Smart Radio Set	RAD..518..	1	see www.jung.de

2.1.4 Light and automatic ventilation for the guest toilet

After manual operation of the light switch, the fan is switched on for a certain time and switched off again automatically.
The fan switches on three minutes after switching off the lighting. The programmable shut-off delay ensures the best possible air circulation.

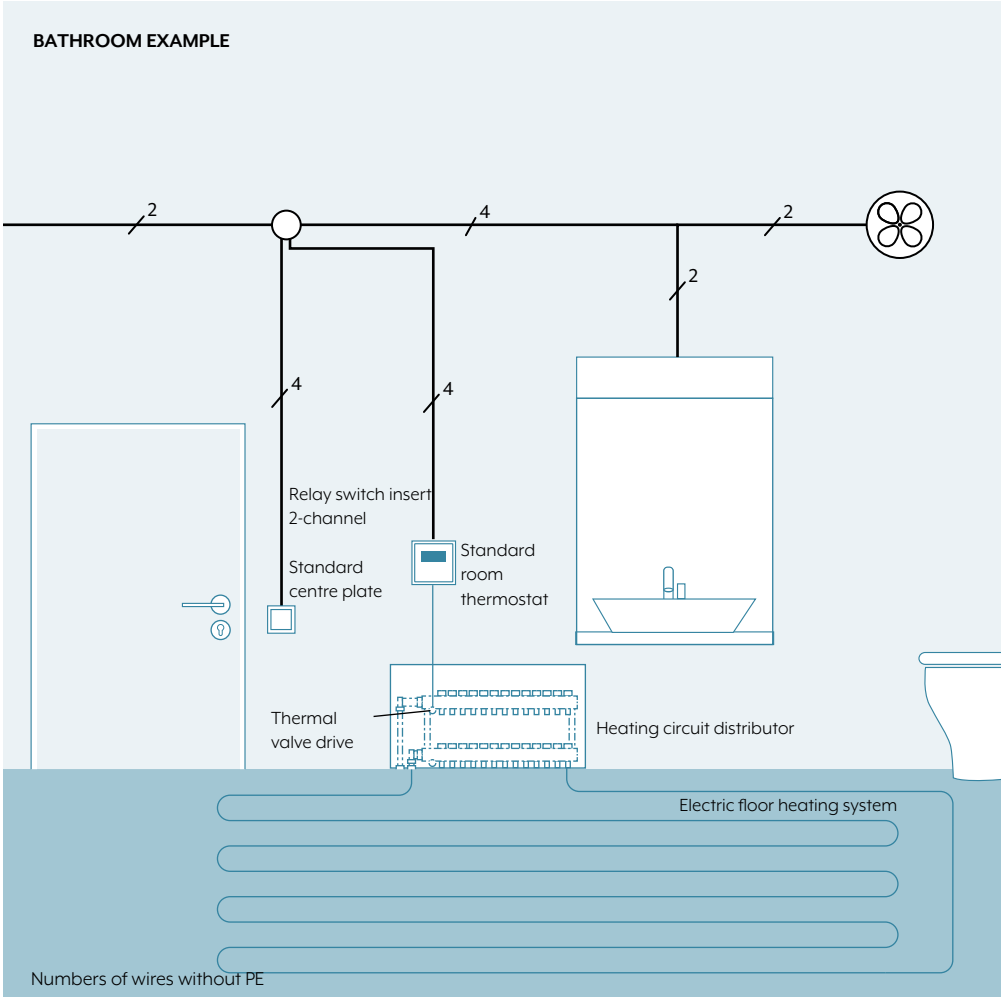
GUEST TOILET APPLICATION EXAMPLE



COMPONENTS	REF. NO.	QUANTITY	DETAILS
Relay switch insert 2-channel	1702 SE	1	see page 54
Standard centre plate	..1700..	1	see page 74

2.1.5 Temperature control in the bathroom

With the JUNG Standard room thermostat, you control your bathroom temperature not only via intelligent time programs (daytime reduction, night-time reduction) but also individually as required, for example via the short-term timer. For even more comfort, an external room temperature sensor and a floor temperature sensor can be connected. A frost protection function and valve protection are of course included.

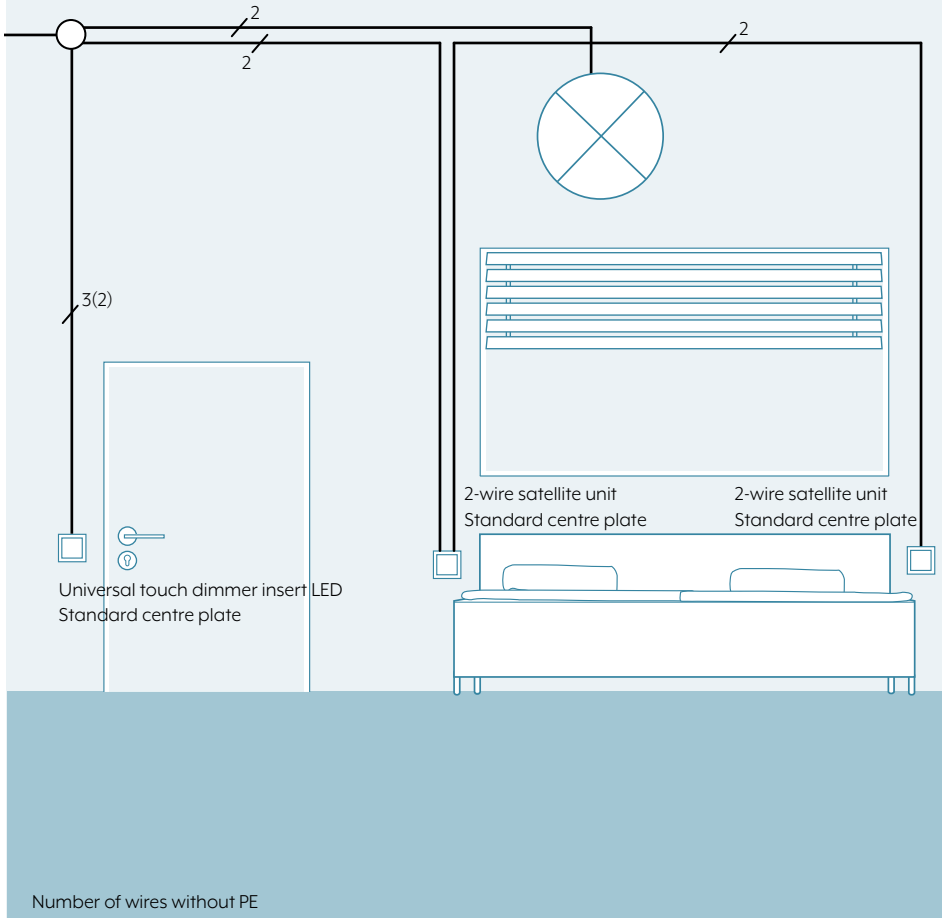


COMPONENTS	REF. NO.	QUANTITY	DETAILS
Relay switch insert 2-channel	1702 SE	1	see page 54
Standard centre plate	..1700..	1	see page 74
Room thermostat insert	1790 RTR	1	see page 141
Standard display for room temperature control	.. 1790 D..	1	see page 144
Thermal valve drive.	TVA 230 NC WW	1	see www.jung.de

2.1.6 Convenient lighting control with satellite unit

Getting up again to switch off the main lighting in the bedroom?
You add further control points to the master unit using the 2-wire satellite unit.
The range of functions is predefined by the master unit. Would you like even more comfort?
The bedroom lighting can be dimmed with the Universal Touch Dimmer as master unit.
Also using the satellite units.

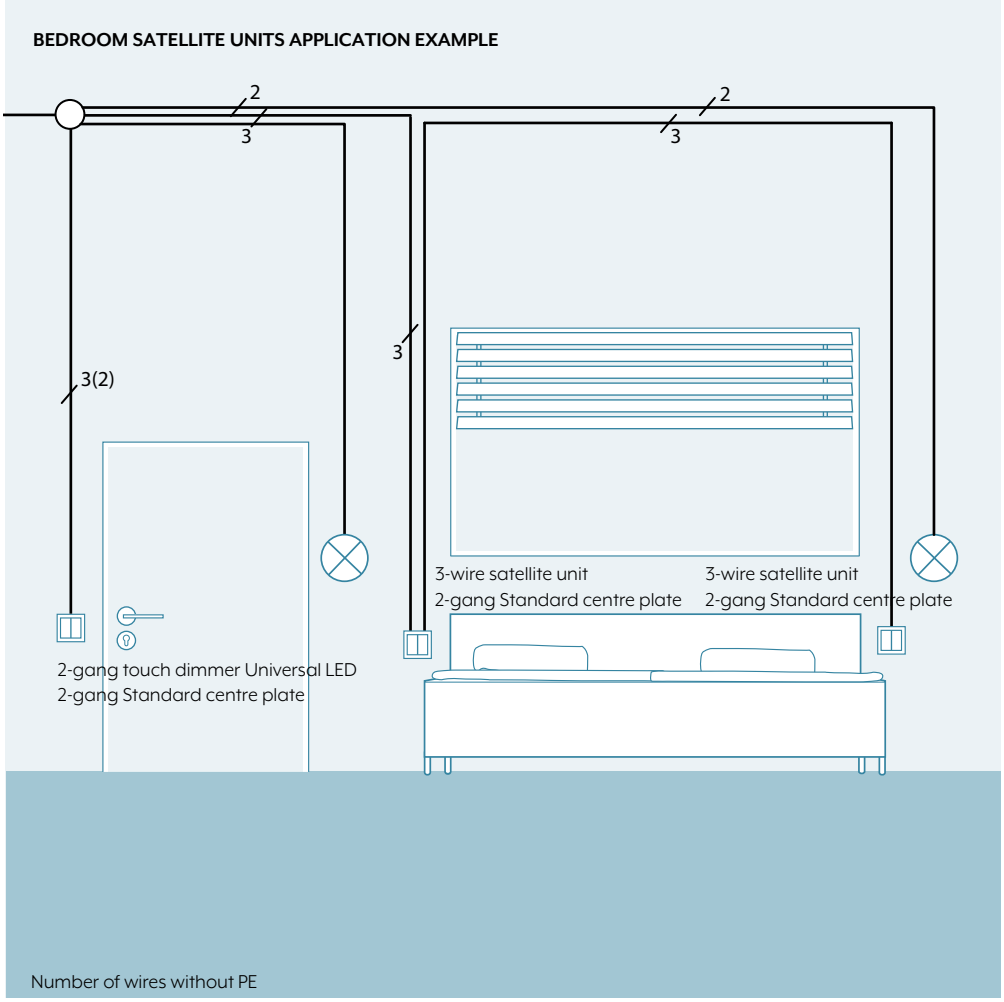
BEDROOM SATELLITE UNIT APPLICATION EXAMPLE



COMPONENTS	REF. NO.	QUANTITY	DETAILS
Universal touch dimmer	1711 DE	1	see page 58
2-wire satellite unit	1720 NE	1	see page 66
Standard centre plate	..1700..	3	see page 74

2.1.7 Convenient lighting control with satellite units

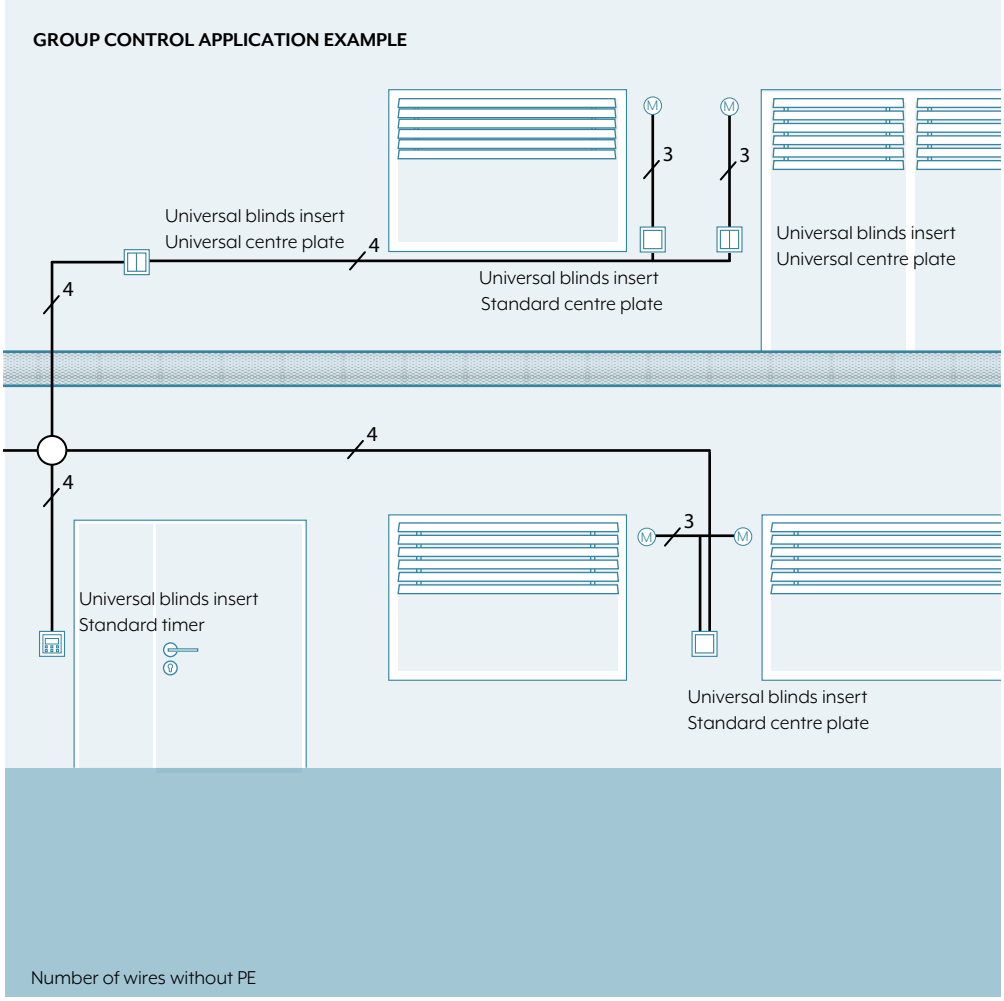
Control the lighting in the bedroom without getting up? You add further control points to the master unit using the 3-wire satellite unit. You can thus also conveniently switch the lamp on the other side of the bed. Would you like even more comfort? The bedroom lighting can be dimmed with the Universal Touch Dimmer as master unit.
Also via the satellite units, and separately for each luminaire if a 2-gang touch dimmer is used.



COMPONENTS	REF. NO.	QUANTITY	DETAILS
2-gang touch dimmer Universal LED	1712 DE	1	see page 59
3-wire satellite unit	1723 NE	2	see page 66
Standard 2-gang centre plate	..1702..	3	see page 74

2.1.8 Switching complete areas using group control

Using the Universal blinds insert, you cascade the shading so that the blinds can be controlled flexibly individually, per room, per floor or per building — individually and conveniently.
One Universal blinds insert controls one or more shading motors[1], another Universal blinds insert compiles multiple controls to a group. With the Standard timer with display as group controller, you control the entire shading installation automatically if required. Individually programmed or analogous to sunrise and sunset thanks to the astro function. The time program also takes over the raising and lowering of the blinds during holiday time. The automatic lowering of the shutter can be suppressed using a Universal centre plate. Furthermore, a memory function enables two additional movement times for the connected motors.



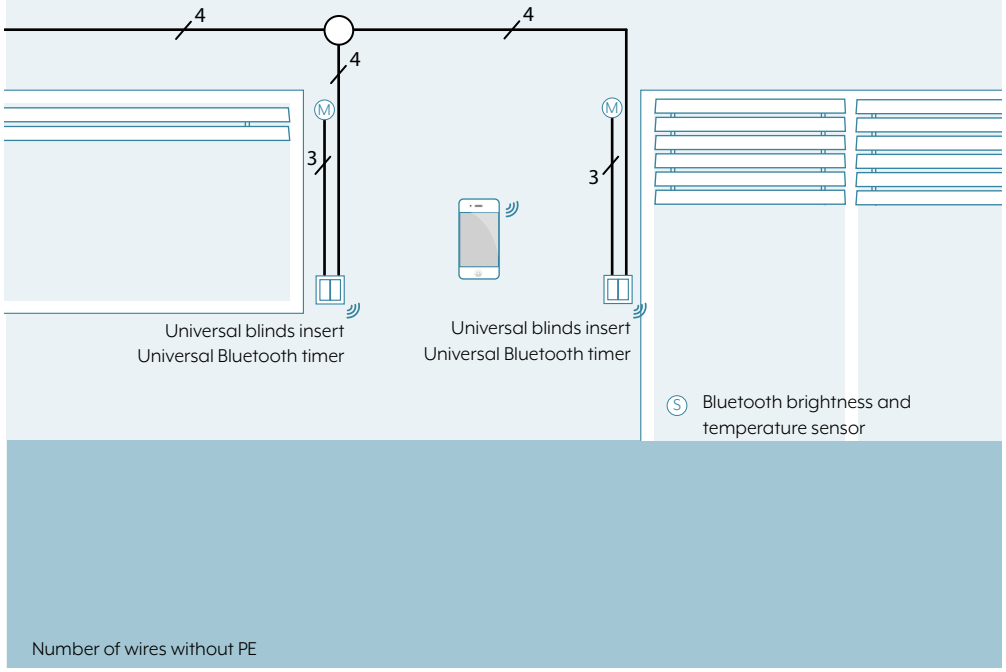
COMPONENTS	REF. NO.	QUANTITY	DETAILS
Universal blinds insert	1731 JE	5	see page 114
Standard centre plate	..1700 P..	2	see page 115
Universal centre plate	..1701 P..	2	see page 115
Standard Timer	..1750 D..	1	see page 116

1) Note the maximum motor connected load of 700 W, also for the control of multiple motors using one blind insert. If you want to switch multiple motors in parallel, the motors must be suitable for this. Alternatively, use isolating relays.

2.1.9 Automatic shading in the case of strong sunlight

You shade your living area comfortably and time-controlled with the JUNG timer attachments. Thanks to the astro function, nobody has to think any more about the programming or any changeover to summer or winter time. Your automated shading is complete if you also install a Bluetooth brightness and temperature sensor. The Bluetooth brightness and temperature sensors monitor the windows facing South and West. If a specified brightness is exceeded, the shading moves down to protect the room against overheating and strong ultraviolet radiation. The brightness threshold, the shading position and the schedule can be set individually using the JUNG Clever Config app.

SUN SENSOR APPLICATION EXAMPLE

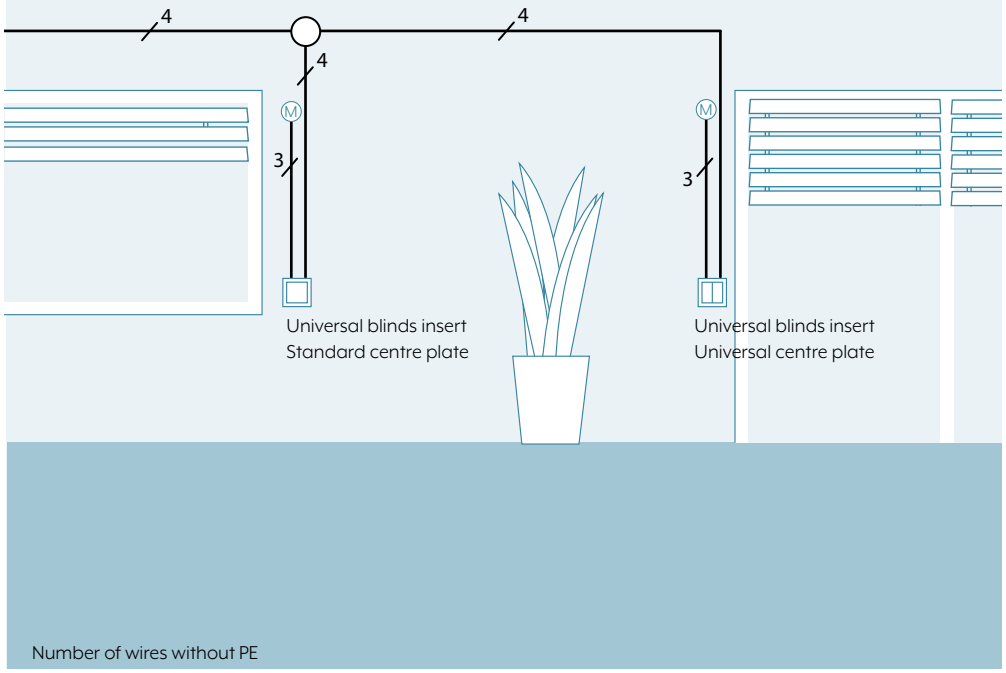


COMPONENTS	REF. NO.	QUANTITY	DETAILS
Universal blinds insert	1730 JE	2	see page 114
Universal timer Bluetooth	..1751 PBT..	2	see page 117
Brightness / temperature sensor Bluetooth	1792 HTBT	1	see page 118

2.1.10 Lock-out protection

Have you thought of everything? Can the shading be controlled individually, does it shade automatically in the case of strong sunlight and does it follow the astro function daily? We think a step further for you: With the practical lock-out prevention, you prevent the shutters closing automatically while there is still somebody present outdoors. You activate the lock-out prevention simply by pressing a button on the Universal centre plate.

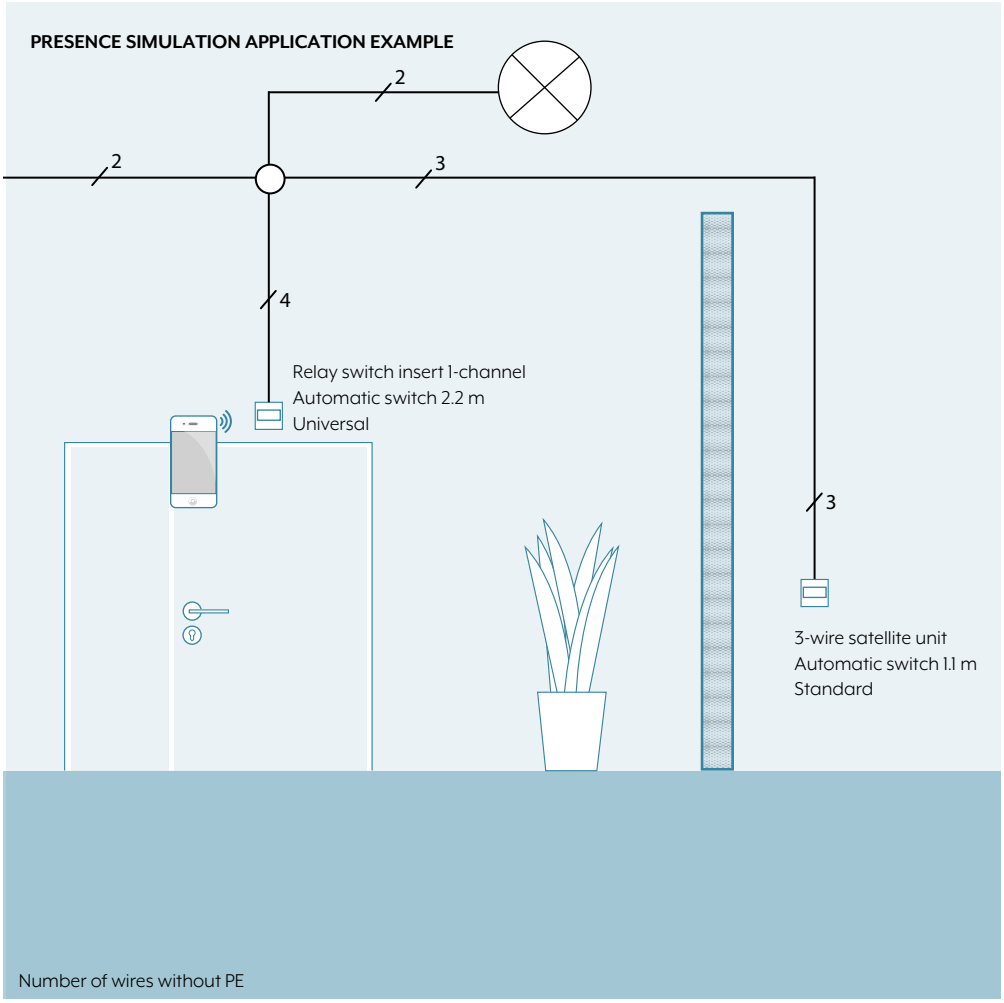
LOCK-OUT PROTECTION APPLICATION EXAMPLE



COMPONENTS	REF. NO.	QUANTITY	DETAILS
Universal blinds insert	1731 JE	2	see page 114
Universal centre plate	..1701 P..	1	see page 115
Standard centre plate	..1700 P..	1	see page 115

2.1.11 Presence simulation

With the JUNG presence simulation, the house or apartment has the effect of being occupied when the occupants are not at home. In normal operation, the individual switching times of the last 24 hours are stored permanently in the automatic switch. The oldest ones are overwritten if there are more than 60 switching operations. If the presence simulation has been activated using the Clever Config app, the lighting is switched on, depending on the brightness, at the times stored for the previous day. The switch-off takes place as usual after expiry of the shut-off delay. If any movement is detected, the light is also switched on or the delay time is extended. The automatic shading control can also be automated easily using the Clever Config app so that nobody has to look after the house during your holiday.

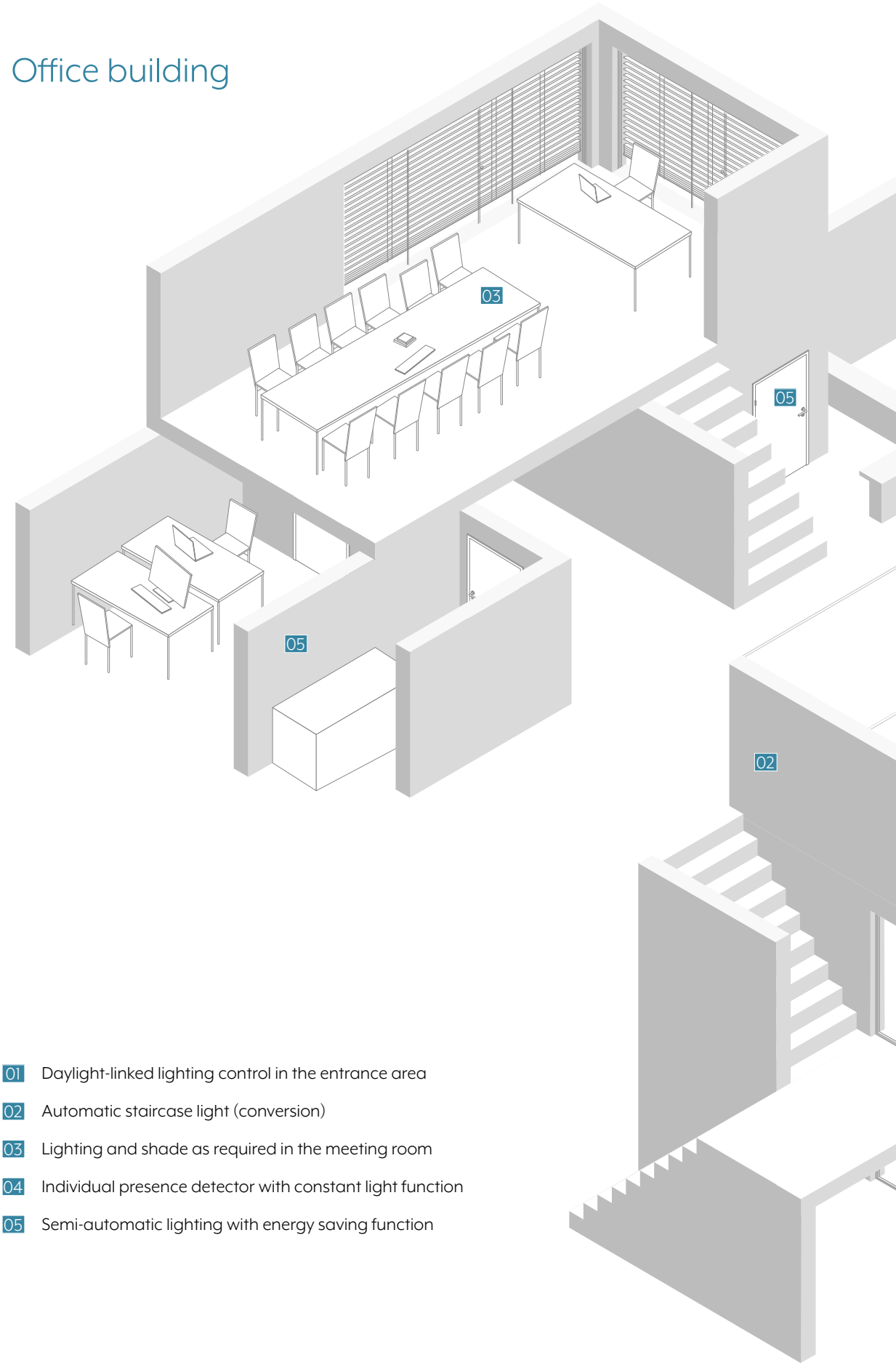


COMPONENTS	REF. NO.	QUANTITY	DETAILS
Relay switch insert 1-channel	1701 SE	1	see page 53
3-wire satellite unit	1723 NE	1	see page 66
Standard automatic switch 1.1 m	..17180..	1	see page 69
Universal automatic switch 2.2 m	..17281..	1	see page 72

Notes for the use of satellite units: No Standard centre plate may be used on the master unit if a 3-wire satellite unit is used.
Maximum number of 3-wire satellite units is 10. Maximum total cable length 100 metres.

Casa Fonte Boa, Portugal Photos: Jose Campos

2.2 Office building



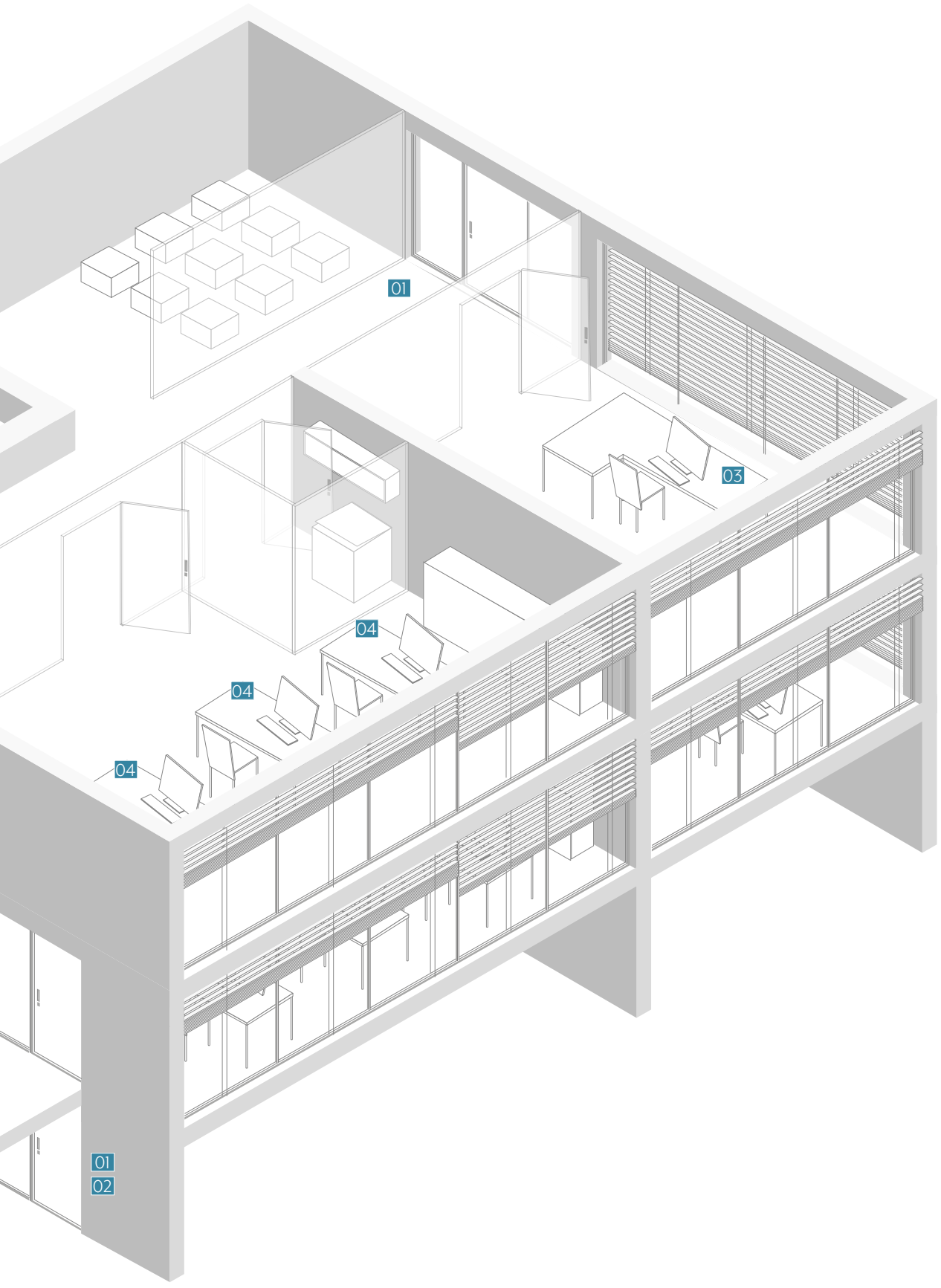
01 Daylight-linked lighting control in the entrance area

02 Automatic staircase light (conversion)

03 Lighting and shade as required in the meeting room

04 Individual presence detector with constant light function

05 Semi-automatic lighting with energy saving function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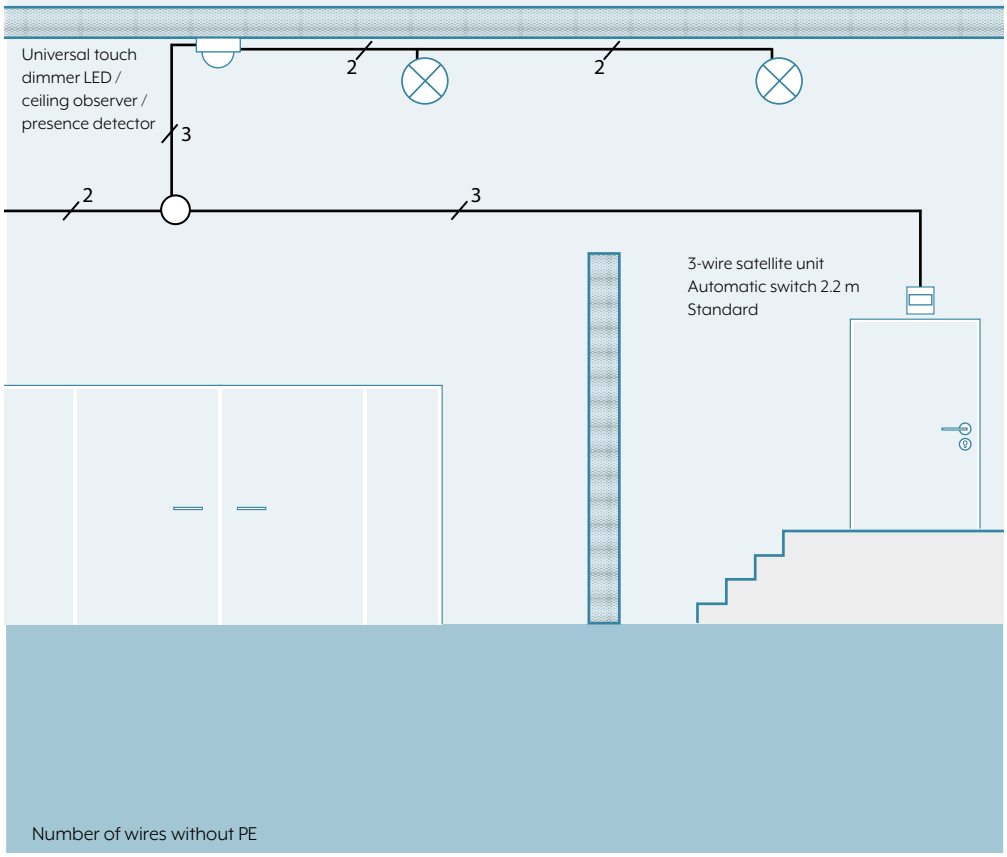
02

2.2.1 Daylight-linked lighting control in the entrance area

The entrance area of office buildings is generally particularly busy at the start and end of work. With the JUNG LB Management, you adjust the lighting control using the Clever Config app by the combination of different functions and time programs: At the start of work, the lighting switches to CONTINUOUS ON from 08:00 to 10:00 with a brightness of 80 percent. Between 10:00 and 16:00, the lighting provides a base brightness of 20 percent and brightens to 80 percent as soon any movement is detected. The lamps light again to CONTINUOUS ON with a brightness of 80 percent from 16:00 to 18:00. After the end of work, starting from 18:00, the base brightness is switched off and the lighting is only switched on if movement is detected. The base brightness also remains switched off at weekends and the lighting only reacts to movement.

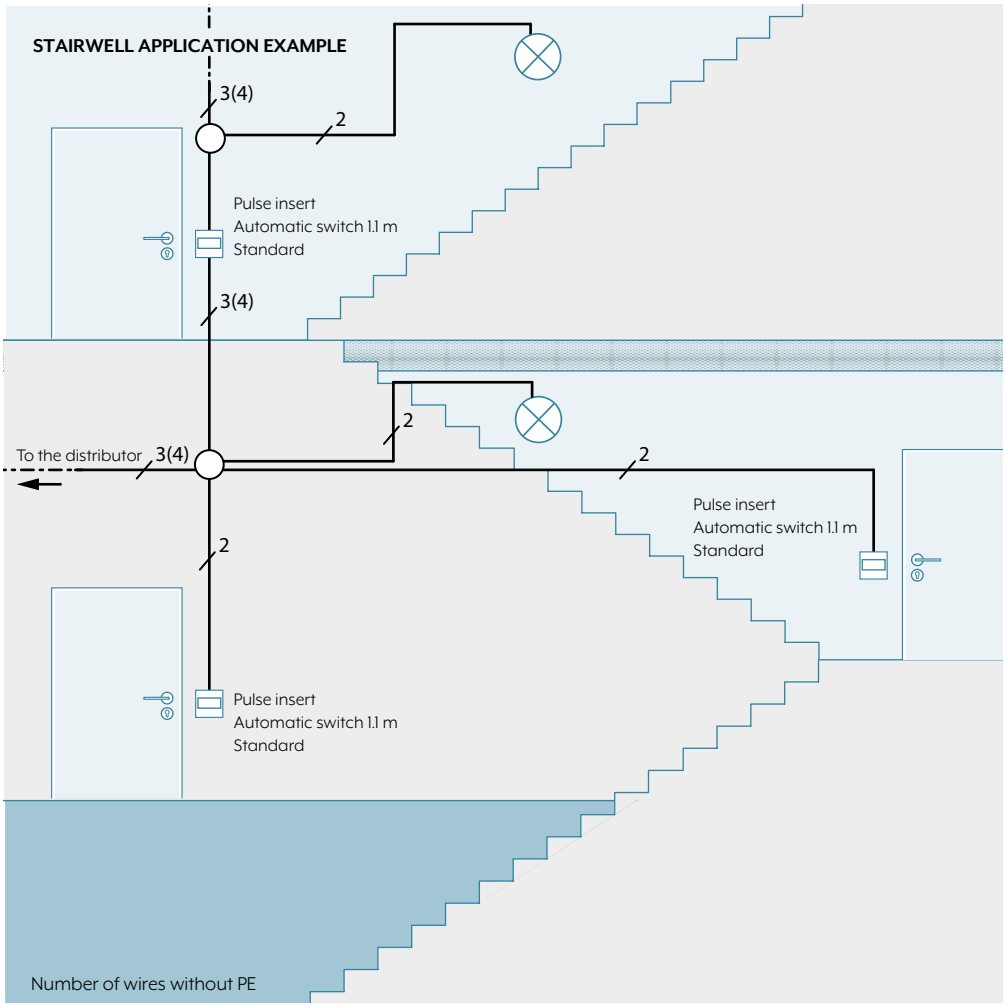
ENTRANCE AREA APPLICATION EXAMPLE



COMPONENTS	REF. NO.	QUANTITY	DETAILS
Universal touch dimmer LED	1711 DE	1	see page 58
Ceiling observer/presence detector	DWPM 17360..	1	see page 73
3-wire satellite unit	1723 NE	1	see page 66
Standard automatic switch 2.2 m	..17280..	1	see page 70

2.2.2 Automatic stairwell light (conversion of existing stairwell relay circuits)

With the JUNG LB Management, you bring more security and convenience into the stairwells without having to install new cables. Because, with the combination of pulse insert, automatic switch and stairwell timer, you simply build on the existing cable structure (3-wire or 4-wire system). This saves installation costs for the implementation and energy costs during operation. Illuminated or non-illuminated buttons can be installed in combination with the automatic switches as required.

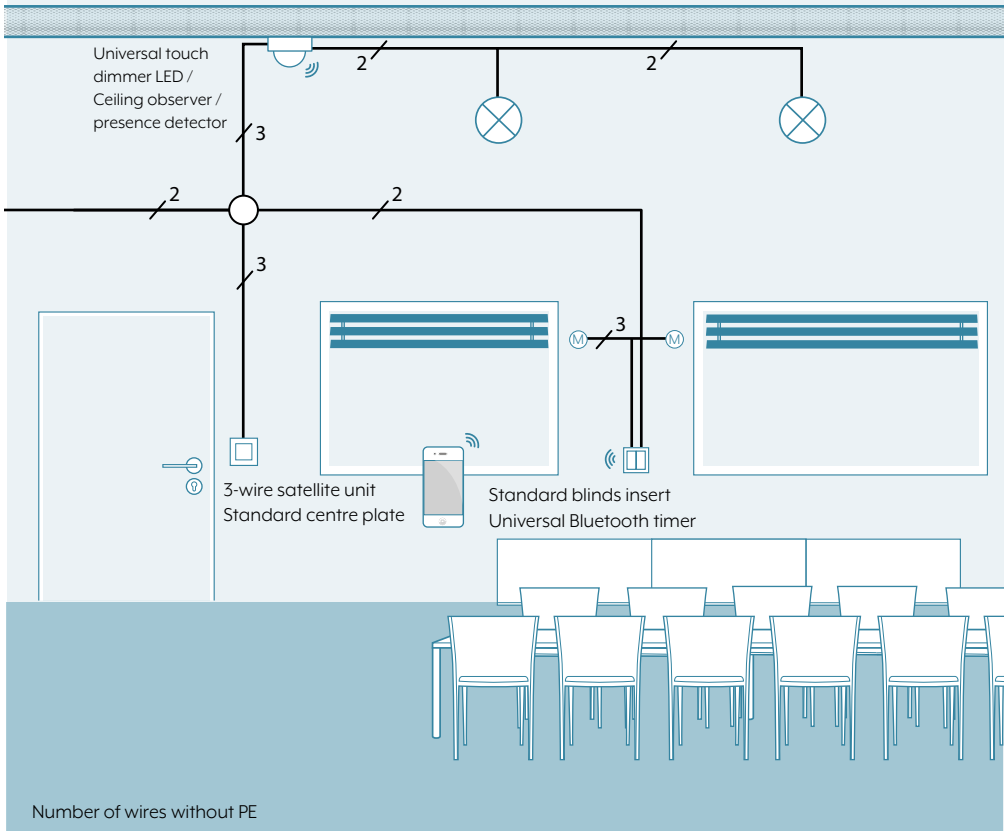


COMPONENTS	REF. NO.	QUANTITY	DETAILS
Pulse insert	1708 IE	1	see page 56
Standard automatic switch 1.1 m	..17180..	1	see page 69
Stairwell timer for rail mounting	1208 REG	1	see www.jung.de

2.2.3 Light and shade as required in the meeting room

Never again too bright for a presentation; never again too dark for a meeting. With the combination of light and shading control, you comfortably adapt the light conditions to the current need by tapping buttons in the Clever Config app. If the lighting is not needed during a presentation, it is switched off for the entire room using a satellite unit or a smart phone. In the case of too much daylight, the windows can be shaded according to the same principle. The available daylight is measured for the lighting during a meeting. Based on this, the lighting intensity adapts itself to the actual light requirement. When the meeting is finished, the lighting is completely switched off after a specified delay time.

MEETING ROOM APPLICATION EXAMPLE

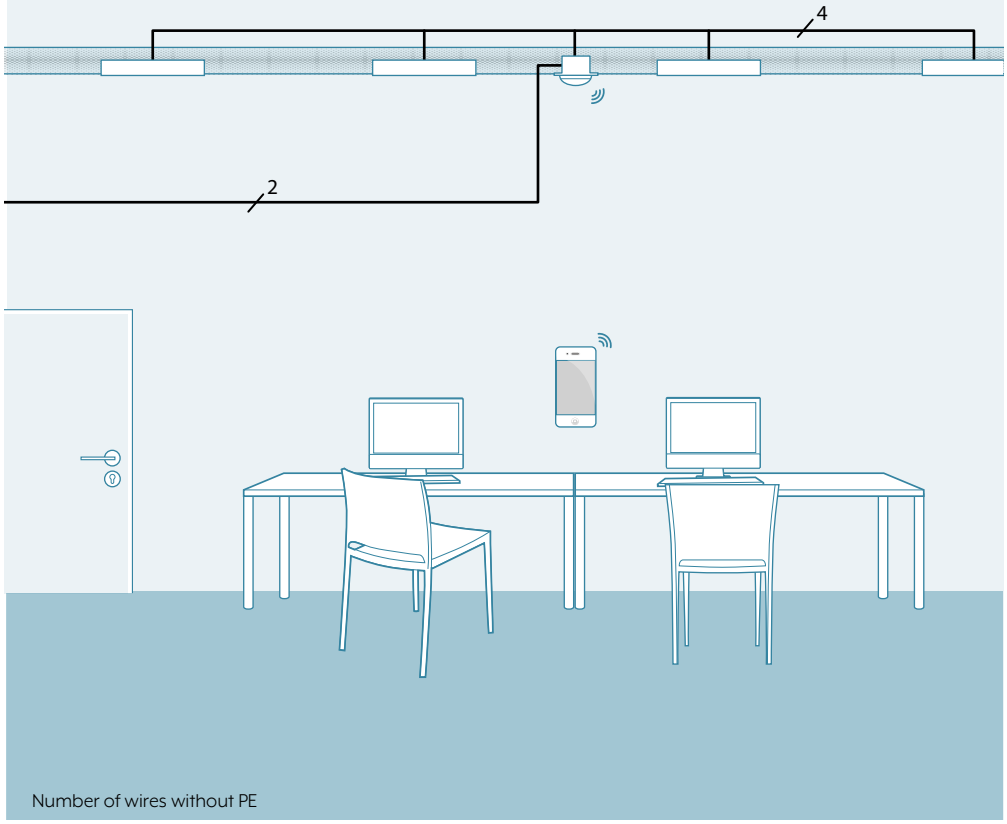


COMPONENTS	REF. NO.	QUANTITY	DETAILS
Universal touch dimmer LED	1711 DE	1	see page 58
Ceiling observer/presence detector	DWPM 17360..	1	see page 73
Standard blinds insert	1730 JE	1	see page 113
Universal timer Bluetooth	1751 PBT	1	see page 117
3-wire satellite unit	1723 NE	1	see page 66
Standard centre plate	..1700 P..	1	see page 74

2.2.4 Individual presence detector with constant light function

You meet the different light requirements in open plan offices using the combination of JUNG presence detectors and POWER DALI push-button controllers. The presence detectors recognise the smallest movement, measure the current brightness on the spot and switch as much light as is currently needed via the constant light control. If an office is not occupied, the lighting is also switched off. The desired brightness and other settings can be adjusted individually using the JUNG Clever Config app. Comfortably via Bluetooth, without having to set up a ladder. Also subsequently. And completely without network.

PRESENCE DETECTOR WITH CONSTANT LIGHT FUNCTION APPLICATION EXAMPLE



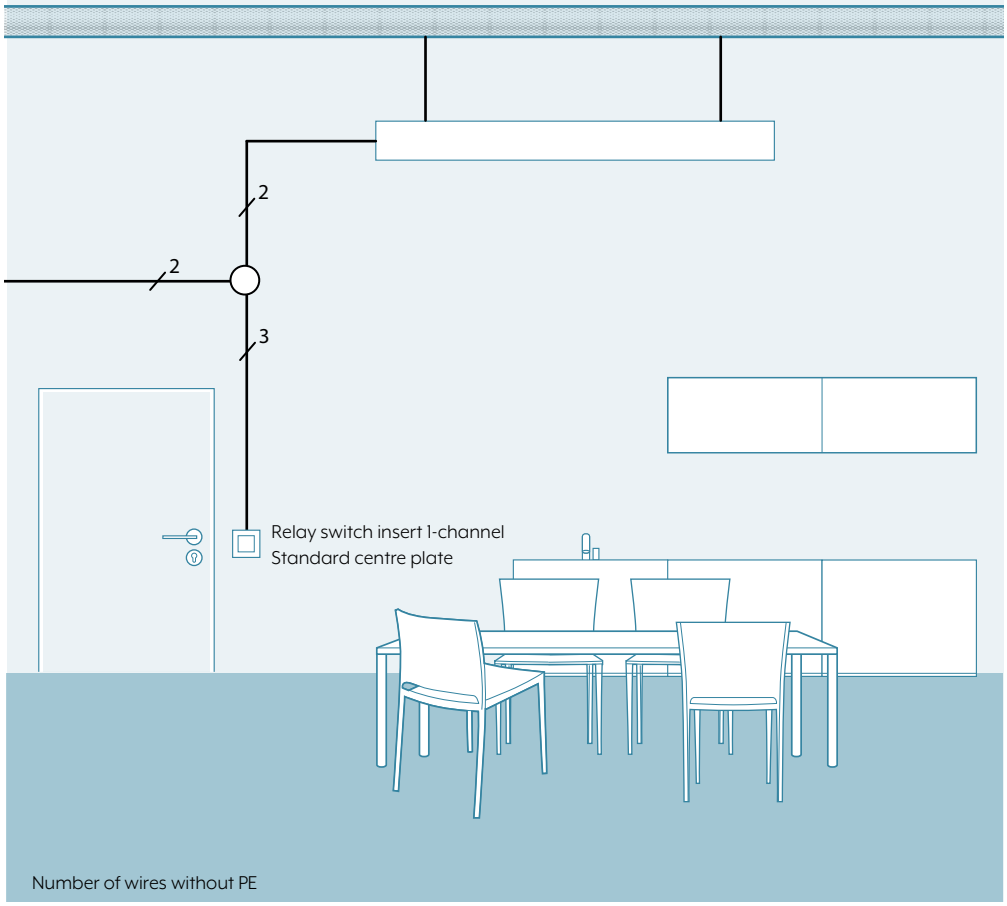
Number of wires without PE

COMPONENTS	REF. NO.	QUANTITY	DETAILS
Power DALI push-button controller TW	1713 DSTE	1	see page 60
Ceiling observer/presence detector	DWPM 17360..	1	see page 73

2.2.5 Semi-automatic light with energy saving function

There are rooms in which the light is always on although nobody is present. The problem is already solved with the simplest LB Management switch insert. The 1-channel relay switch insert has an integrated and adjustable delay time, after which the light is automatically switched off as required. The function is particularly suitable for rooms in which nobody stays for a long time such as office kitchens, server rooms, WC or copier room. The lighting is switched on with the Standard centre plate and optionally switches off automatically after five, ten or 30 minutes. The functions can be conveniently adjusted using the integrated operating mode selection button (BAWT). The light can of course also be switched off manually at any time.

SEMI-AUTOMATIC LIGHTING WITH ENERGY SAVING FUNCTION APPLICATION EXAMPLE

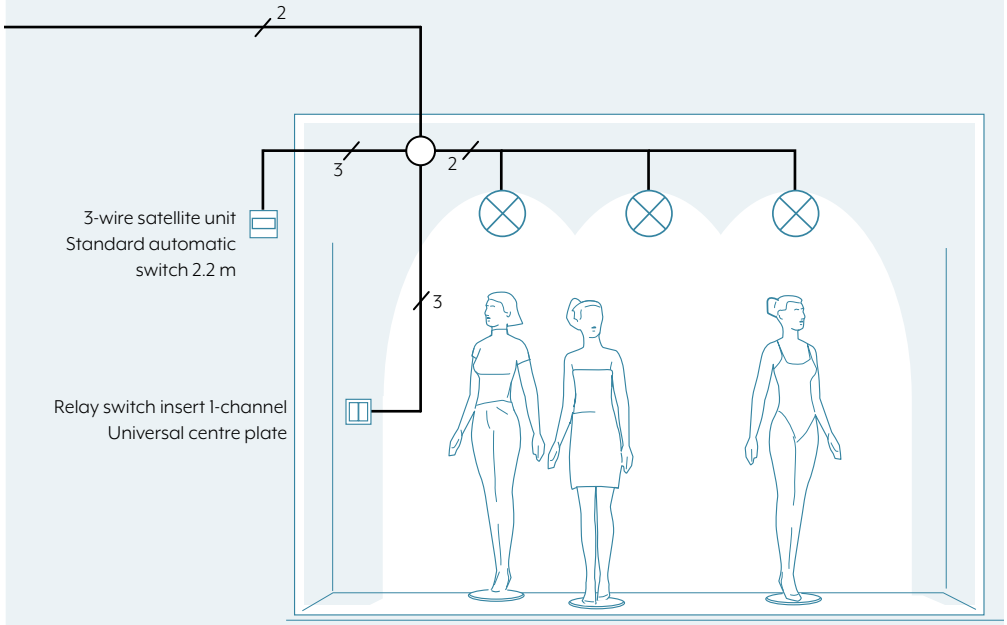


COMPONENTS	REF. NO.	QUANTITY	DETAILS
Relay switch insert 1-channel	1701 SE	1	see page 53
Standard centre plate	..1700..	1	see page 74

2.2.6 Display window

Would you like to illuminate your display window during darkness more efficiently using a time control? Using the memory function of the Universal centre plate, you set the lighting in your display window to CONTINUOUS ON for the period from 17:00 to 24:00. As the manual operation always has priority over the automatic operation, you can of course switch the light on or off at any time manually using the left rocker. Then the lighting is controlled depending on movement via the automatic switch. With the lock function of the Universal centre plate, you deactivate both the automatic as well as the memory functions and as a result can control the light of the display window completely manually.

SHOP WINDOW APPLICATION EXAMPLE

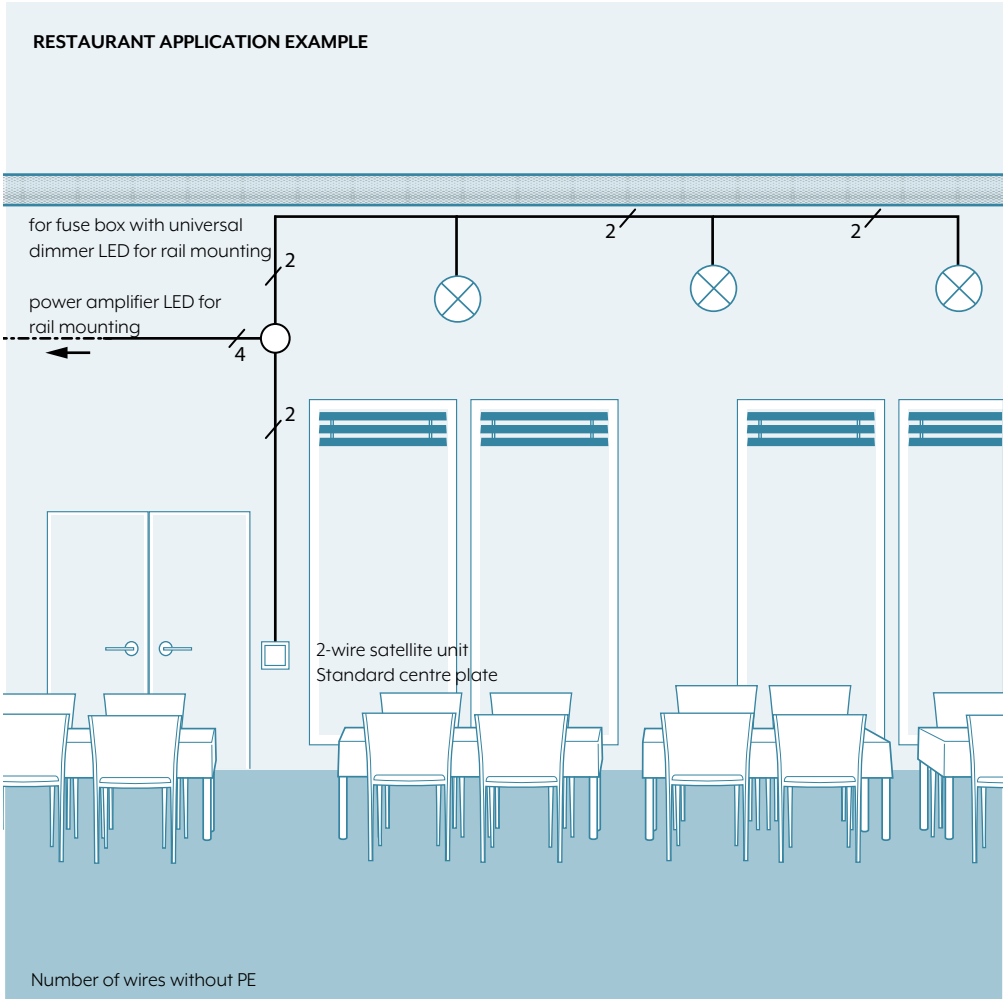


Number of wires without PE

COMPONENTS	REF. NO.	QUANTITY	DETAILS
Relay switch insert 1-channel	1701 SE	1	see page 53
3-wire satellite unit	1723 NE	1	see page 66
Standard automatic switch 2.2 m	..17280..	1	see page 70
Universal centre plate	..1701..	1	see page 75

2.2.7 Switch restaurant lighting centrally

As owner of a restaurant or tavern, do you want to switch your lighting centrally from one place and not have to constantly operate multiple switches in various areas? Using the Dimmer for rail mounting, you switch and dim the complete lighting installation using the Standard centre plate on 2-wire satellite unit. The power boosters enable the connection of LED lighting up to 800 W. The standardised brightness of the entire lighting installation provides a harmonious well-being ambiance.

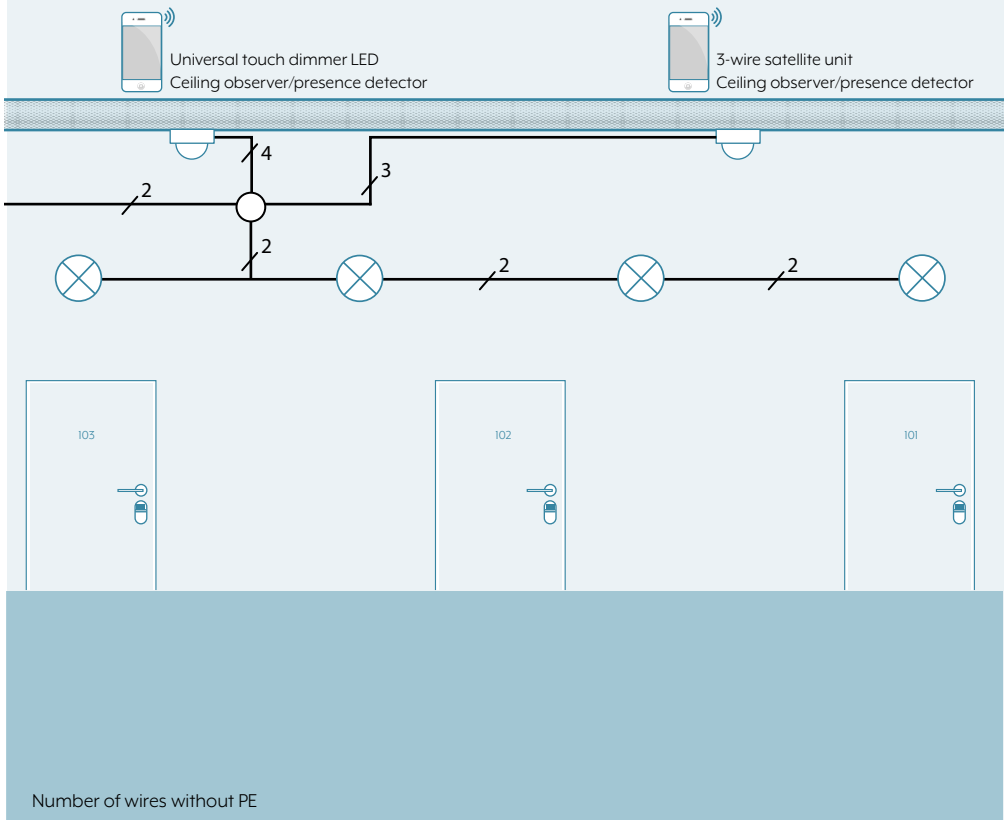


COMPONENTS	REF. NO.	QUANTITY	DETAILS
Universal LED dimmer for rail mounting	UD 1755 REG	1	see page 67
LED power booster for rail mounting	ULZ 1755 REG	1	see page 68
Standard centre plate	..1700..	1	see page 74
2-wire satellite unit	1720 NE	1	see page 66

2.2.8 The hotel corridor – check-in and arrival

Basic lighting is required in hotel corridors. The ceiling observer / presence detector in combination with dimmers from the JUNG LB Management provides this function and even more: When a guest enters the detection area, the lighting in the hotel corridor switches from the preselected basic brightness (40 percent) to the switch-on brightness (100 percent) and the guest walks to his hotel room in the light. The settings for the detection area of the ceiling observer as well as the delay time and switch-on brightness can be comfortably adjusted using the Clever Config app. Once you have optimally parametrised a device, you can copy the settings and transfer them to all other devices in the hotel.

HOTEL CORRIDOR APPLICATION EXAMPLE



Number of wires without PE

COMPONENTS	REF. NO.	QUANTITY	DETAILS
Universal touch dimmer LED	1711 DE	1	see page 58
3-wire satellite unit	1723 NE	1	see page 66
Ceiling observer	DWPM 17360..	1	see page 73

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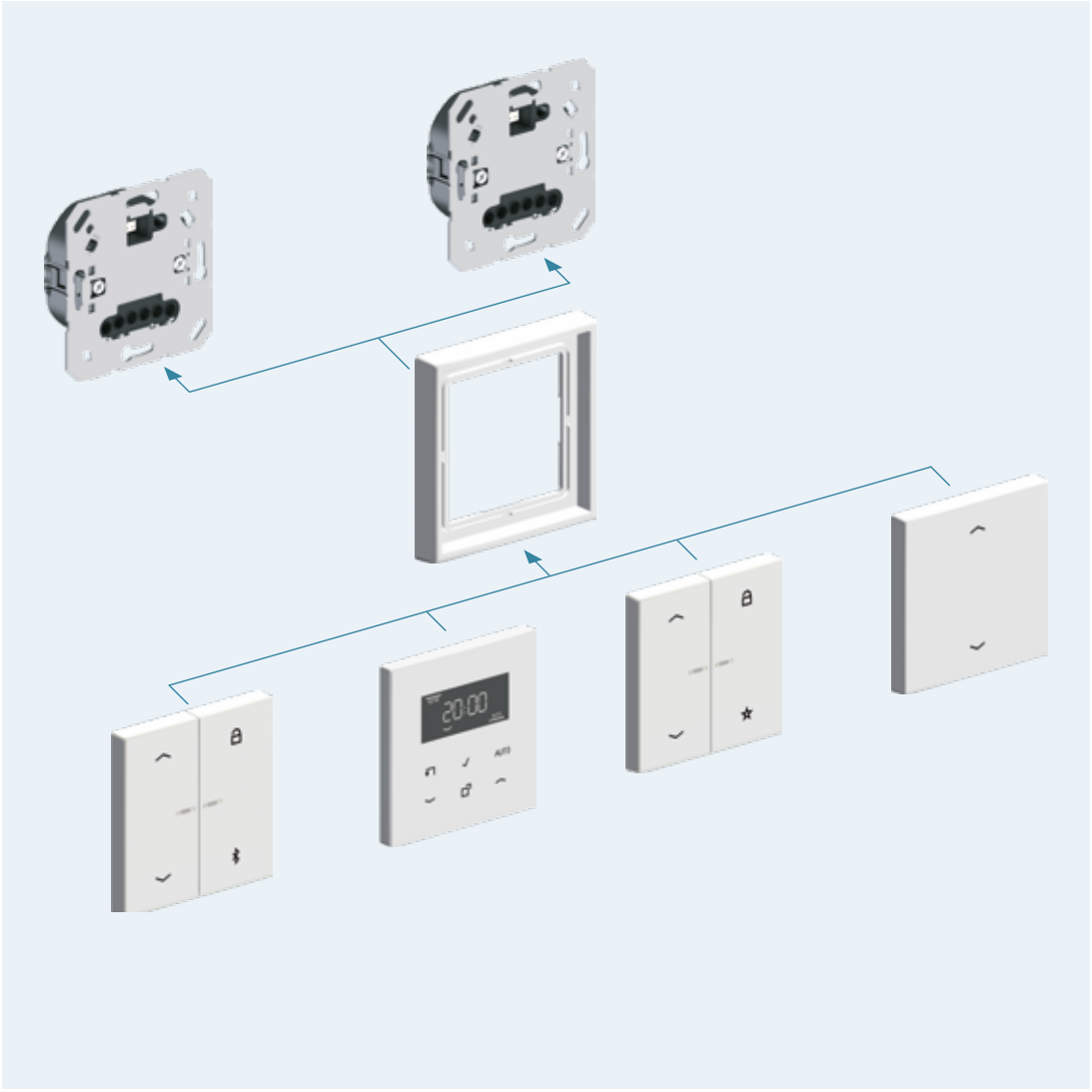
3. Equipment Overview

Completely in accordance with the modular principle, the LB Management system provides different inserts and attachments that can be combined for individual control of lighting and shade.



3.1 Inserts

INSERTS	LIGHT	SHADE	TEMPERATURE CONTROL	REFERENCE NUMBER
Standard blinds insert		•		1730 JE
Universal blinds insert		•		1731 JE
Relay switch insert 1-channel	•		•	1701 SE
Electronic switch insert 1-channel	•		•	1704 ESE
Relay switch insert 2-channel	•			1702 SE
Standard touch dimmer LED	•			1710 DE
Universal touch dimmer LED	•			1711 DE
Universal touch dimmer LED	•			1712 DE
Universal dimmer LED built-in	•			1724 DEB
Power DALI push-button controller TW	•			1713 DSTE
2-wire satellite unit	•			1720 NE
3-wire satellite unit	•			1723 NE
Pulse insert	•			1708 IE
Mini universal dimmer LED	•			1724 DM
Standard rotary dimmer LED	•			1730 DD
Universal rotary dimmer LED	•			1731 DD
3-wire rotary satellite unit	•			1733 DNE
Universal LED dimmer for rail mounting	•			UD 1755 REG
LED power booster for rail mounting	•			ULZ 1755 REG
Room thermostat insert with sensor connection			•	1790 RTR

3.2 Attachments

ATTACHMENTS	LIGHT	SHADE	TEMPERATURE CONTROL	REFERENCE NUMBER
Standard centre plate	•	•		..1700.. /..1700 P..
Standard 2-gang centre plate	•			..1702..
Universal centre plate	•	•		..1701.. /..1701 P..
eNet Radio centre plate	•	•		FM..1700.. / FM..1701..
Standard timer with display	•	•		..1750 D..
Universal timer Bluetooth	•	•		..1751.. /..1751 P..
Bluetooth brightness / temperature sensor	•	•		1792 HTBT
Standard automatic switch 1.1 m	•			..17180..
Standard automatic switch 2.2 m	•			..17280..
Universal automatic switch 1.1 m	•			..17181..
Universal automatic switch 2.2 m	•			..17281..
Ceiling observer/presence detector	•			DWPM 17360..
Standard display for room temperature control			•	.. 1790D ..

3.3 Combination Possibilities

The following table shows you which inserts and attachments of the JUNG LB Management System can be combined with each other.

	CENTRE PLATE BLINDS INSERT	STANDARD 2-GANG CENTRE PLATE	UNIVERSAL CENTRE PLATE	STANDARD TIMER	UNIVERSAL TIMER BLUETOOTH
STANDARD BLINDS INSERT	•		•	•	•
UNIVERSAL BLINDS INSERT	•		•	•	•
RELAY SWITCH INSERT 1-CHANNEL	•		•	•	•
ELECTRONIC SWITCH INSERT 1-CHANNEL	•		•	•	•
STANDARD TOUCH DIMMER LED	•		•	•	•
UNIVERSAL TOUCH DIMMER LED	•		•	•	•
POWER DALI PUSH-BUTTON CONTROLLER TW	•	•	•	•	•
2-WIRE SATELLITE UNIT	•				
3-WIRE SATELLITE UNIT The 3-wire satellite unit generally functions with many attachments. However, the range of functions depends on the combination of master unit and attachment.	•	•	•	•	•
PULSE INSERT	•				
RELAY SWITCH INSERT 2-CHANNEL	•	•			
UNIVERSAL 2-GANG TOUCH DIMMER LED		•			
ROOM THERMOSTAT WITH SENSOR CONNECTION					

eNET RADIO CENTRE PLATE	AUTOMATIC SWITCH 1.1M BLINDS INSERT	AUTOMATIC SWITCH 2.2 M BLINDS INSERT	AUTOMATIC SWITCH 1.1M UNIVERSAL	AUTOMATIC SWITCH 2.2 M UNIVERSAL	CEILING OBSERVER / PRESENCE DETECTOR	STANDARD ROOM THERMOSTAT WITH DISPLAY
•						
•						
•	•	•	•	•	•	•
•	•	•	•	•	•	•
•	•	•	•	•	•	
•	•	•	•	•	•	
•	•	•	•	•	•	
•	•	•	•	•	•	
	•	•	•	•	•	
	•	•	•	•	•	
						•

3.4 Satellite Units

Satellite units are a simple and low cost variant for expansion of your control possibilities and provide a variety of operating options. For example, with a satellite unit, you extend the detection area of automatic switches or set up further control points for the control of light or shade.
You can also realise group or central control of your entire shading system using a satellite unit. Many case differences arise from the combination of different inserts and attachments, and from the different control variants that cannot all be listed in this system manual. We have compiled the basic rules for the use of satellites for you.

- Satellite units always have only as many functions as the master unit and the attachment placed there.
- 2-wire satellite units can only be combined with the Standard centre plate.
- Any number of 2-wire satellite units can be connected to a master unit.
- Non-illuminated push buttons can be used as alternative to the 2-wire satellite unit with attachments. The operation and the setting options of master unit and satellite unit are then different depending on the master unit.
- A maximum of ten 3-wire satellite units can be connected to one or more master units.
- The maximum total cable length is 100 metres.

3.5 Mix-up Protection

Our intelligent attachments in the JUNG LB Management system can detect whether they have been placed again on the same insert type or even on the identical insert after they have been removed and collected in a carton, for example for renovation of the inserts. The following rules apply so that the attachments can be assigned to the correct inserts in each case:

1. **Standard centre plates and Standard automatic switches** do not have any mix-up protection. They always function and immediately on every suitable insert.
2. **Intelligent attachments without Bluetooth networking** (for example Standard Timer) have mix-up protection that detects whether the attachment has been placed on a suitable insert type (light management or shading management). For example, if the Standard Timer was installed on a blind insert and is now attached to a lighting insert, the display “Err” is shown on the timer.
   The protection against mix-up is deactivated by pressing and holding the “Up” and “Down” buttons simultaneously for more than four seconds, and the combination of insert and attachment functions again.
3. **Intelligent attachments with Bluetooth networking** (for example Universal Automatic Switch, Universal Timer Bluetooth, ceiling observer / presence detector) detect whether the attachment has been replaced on the insert with which the attachment was put into operation. If the attachment has not been placed on the same insert as previously, an error message is generated. Therefore, you ensure that different attachments of the same type that are, however, different in their parametrisation are replaced on their original insert. If the status LED of the Universal Timer Bluetooth, Universal Automatic Switch, ceiling observer / presence detector or Universal centre plate flashes red three times, the attachment was previously connected to another insert. The Standard Timer signals the mix-up protection using an indicator in the display.

4. Plug the attachment in to the associated insert or alternatively reset the attachment by simultaneously pressing and holding the operating buttons for switching, moving or dimming for longer than 4 seconds (e.g. press and hold “Up” and “Down” simultaneously).

3.6 Backwards Compatibility

The following principles apply if buildings are equipped with the “Lighting Management” and “Blind Management” systems and should now be modernised using components from the new LB Management system:

- Installation buttons as satellite unit can be maintained without change.
- 2-wire Lighting Management satellite units (attachment and insert) can be maintained without change.
- 3-wire Lighting Management satellite units can no longer be used and must be replaced with inserts and attachments from the new LB Management system. The master units must also be replaced with master units from the LB Management system.
- Inserts and attachments must always be from the same system.
- Existing device combinations (insert and attachment) in an existing Blind Management system can be replaced with individual LB Management combinations.

LB Management Light

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4. LB Management Light

4.1 Equipment Overview

INSERTS	REFERENCE NUMBER
Mini universal dimmer LED	1724 DM
Universal dimmer LED built-in	1724 DEB
Standard rotary dimmer LED	1730 DD
Universal rotary dimmer LED	1731 DD
3-wire rotary satellite unit	1733 DNE
Power DALI push-button controller TW	1713 DSTE
Pulse insert	1708 IE
Standard touch dimmer LED	1710 DE
Universal touch dimmer LED	1711 DE
2-gang touch dimmer Universal LED	1712 DE
Relay switch insert 1-channel	1701 SE
Relay switch insert 2-channel	1702 SE
Electronic switch insert 1-channel	1704 ESE
2-wire satellite unit	1720 NE
3-wire satellite unit	1723 NE
Universal LED dimmer for rail mounting	UD 1755 REG
LED power booster for rail mounting	ULZ 1755 REG

ATTACHMENTS	REFERENCE NUMBER
Standard centre plate	..1700../ ..1700 P..
Standard 2-gang centre plate	1702..
Universalcentre plate	..1701../ ..1701 P..
Standard timer with display	..1750 D..
Universal timer Bluetooth	..1751../ ..1751 P..
eNet Radio centre plate	FM ..1700.. / FM ..1701..
Brightness / temperature sensor Bluetooth	1792 HTBT
Standard automatic switch 1.1 m	..17180..
Standard automatic switch 2.2 m	..17280..
Universal automatic switch 1.1 m	..17181..
Universal automatic switch 2.2 m	..17281..
Ceiling observer	DWPM 17360..

Relay switch insert 1-channel

The 1-channel relay switch insert switches different lamps, e.g. LED, halogen bulbs or fluorescent lamps. Using the operating mode selection button (BAWT) with LED indicator, you can conveniently set delay times if desired. The switch insert can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.

Overview of the functions:

- Connection of satellite units is possible
- Delay times can be adjusted when using the Standard centre plate
- Satellite unit input for 2/3-wire satellite unit
- Suitable for switching the following loads per channel:
  - 2,300 W AGL, 2,300 W HV halogen,
  - 1,000 W LV halogen with conventional transformers
  - 1,500 W LV halogen with Tronic transformers
  - 1,200 W fluorescent lamps, uncompensated
  - Type 500 W HV LED lamps
- The following functions can be set using the operating mode selector (BAWT):
  - Test (On / Off using short press of the BAWT)
  - None / 1 min / 5 min / 30 min / 60 min delay time (automatic Off after manual On)
- 230 V AC, 50/60 Hz
- Screw terminals

Relay switch insert 2-channel

The 2-channel relay switch insert switches different lamps, e.g. LED, halogen bulbs or fluorescent lamps, also the programmable ventilation.
Using the operating mode selection button (BAWT) with LED indicator, you can conveniently set delay times if desired.
The switch insert can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.

Overview of the functions:

- Connection of satellite units is possible
- Delay times can be adjusted when using the Standard centre plate
- Satellite unit input for 2/3-wire satellite unit
- Suitable for switching the following loads per channel:
  - 2,300 W AGL, 2,300 W HV halogen,
  - 1,000 W LV halogen with conventional transformers
  - 1,500 W LV halogen with Tronic transformers
  - 1,200 W fluorescent lamps, uncompensated
  - Type 500 W HV LED lamps
- The following functions can be set using the operating mode selector (BAWT):
  - Test (On / Off using short press of the BAWT)
  - None / 1 min / 5 min / 30 min / 60 min delay time (automatic Off after manual On)
- 230 V AC, 50/60 Hz
- Screw terminals

Electronic switch insert

The electronic switch insert is optimised for 230 V LED lamps. It also switches incandescent lamps, high-voltage halogen bulbs, dimmable inductive transformers or Tronic transformers with halogen lamps.
The integrated soft start is particularly gentle on lamps here. The switch insert can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.

Overview of the functions:

- Device can be operated without neutral conductor
- Switching on uses a soft start that is gentle on the lamp
- Connection of satellite units is possible
- Electronic short-circuit protection with permanent switch-off after 7 seconds at the latest
- Electronic overtemperature protection
- The device uses the leading edge phase control or trailing edge phase control principle
- Automatic or manual setting of the appropriate operating mode for the load
- Display of the set operating mode using LED
- Use dimmable HV LED lamps
- Suitable for switching the following loads
  - Mixed load
  - 20 – 400 W ohmic-capacitive
  - capacitive-inductive: not permitted
  - 20 – 400 VA ohmic-inductive
  - 3 – 100 W HV LED
  - 3 – 100 W ohmic and compact fluorescent lamp
- Trailing edge phase control operating mode:
  - 3 – 200 W connected load for HV LED lamps
  - 20 – 200 W electronic transformers for LV LED
- 230 V AC, 50/60 Hz
- Screw terminals

Pulse insert

You can set up stairwell light controls with the pulse insert.
In combination with a Standard centre plate or automatic switches you can control the light manually or automatically floor by floor.
In connection with the stairwell timers for rail mounting, you convert the existing stairwell installations to automatic light control without having to do rewiring.

Overview of the functions:

- Installation or retrofitting of motion detectors in the stairwell
- Simple retrofitting of existing 3-wire or 4-wire installations
- Operation with the 1208 REG stairwell timers for rail mounting
- Can be combined with the Standard centre plate, movement detectors and ceiling observers/ presence detectors from LB Management
- Retriggering of the delay time by repeated operation of the centre plate and/or by repeated acquisition by the presence detector
- 230 V AC, 50/60 Hz
- Screw terminals
- Power systems: see operating manual of the 1208 REG stairwell timers

Standard touch dimmer LED

You can switch and dim the lighting with the Standard touch dimmer LED. As an LED dimmer, the dimmer specifically sets itself automatically to leading edge or trailing edge phase control. The dimmer is implemented as 2-wire / 3-wire device and is supplied with 230 V mains power.
Therefore, operation without neutral conductor is also possible. Using the operating mode selection button (BAWT) with LED indicator, you can conveniently adjust the dimmer. The standard touch dimmer can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.

Overview of the functions:

- LED dimmer with 2-wire / 3-wire detection (automatic N connection detection)
- 20 – 210 W RLC loads (lower limit: 20 W for 3-wire connection, 50 W for 2-wire)
- 20 – 60 W dimmable electronic transformers with LED
- 3 – 60 W HV LED lamps with leading edge phase control
- 3 – 120 W HV LED lamps with trailing edge phase control
- Basic brightness can be adjusted
- Switch-on brightness or last brightness can be saved
- Connection of satellite units is not possible
- 230 V AC, 50/60 Hz
- Screw terminals

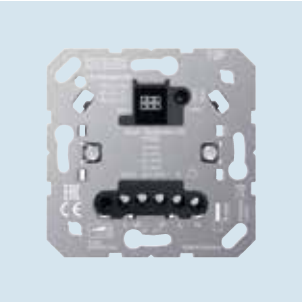
Universal touch dimmer LED

You can switch and dim the lighting with the Universal touch dimmer LED. As LED dimmer, you can set it specifically to leading or trailing edge phase control. The dimmer is implemented as 2-wire / 3-wire device and is supplied with 230 V mains power. Therefore, operation without neutral conductor is also possible. It has a satellite unit input for the 2-wire / 3-wire satellite unit and installation button.
Using the operating mode selection button (BAWT) with LED indicator, you can conveniently adjust the dimmer. The Universal touch dimmer can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.

Overview of the functions:

- LED dimmer with 2-wire / 3-wire detection (automatic N connection detection)
- 20 – 420 W RLC loads (lower limit: 20 W for 3-wire connection, 50 W for 2-wire)
- 20 – 100 W dimmable electronic transformers with LED
- 3 – 100 W HV LED lamps with leading edge phase control
- 3 – 200 W HV LED lamps with trailing edge phase control
- Basic brightness can be adjusted
- Satellite unit input can also be used for 2-wire satellite unit and push-button
- Satellite unit input can also be used for extended 3-wire satellite unit
- Switch-on brightness or last brightness can be saved
- 230 V AC, 50/60 Hz
- Screw terminals

2-gang touch dimmer Universal LED



You can switch and dim lighting with the 2-gang touch dimmer Universal LED. As LED dimmer, you can set it specifically to leading or trailing edge phase control. The dimmer is implemented as 2-wire / 3-wire device and is supplied with 230 V mains power. Therefore, operation without neutral conductor is also possible. It has a satellite unit input for the 2-wire / 3-wire satellite unit and installation button.
Using the operating mode selection button (BAWT) with LED indicator, you can conveniently adjust the dimmer. The Universal touch dimmer can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.

Overview of the functions:

- LED dimmer with 2-wire / 3-wire detection (automatic N connection detection)
- 20 – 210 W mixed load per output ohmic-capacitive, capacitive-inductive not permitted
- 20 – 210 VA ohmic-inductive
- 3 – 50 W ohmic and HV LED typical
- 3 – 50 W ohmic and compact fluorescent lamp typical
- 3 – 50 W HV LED lamps with leading edge phase control
- 3 – 100 W HV LED lamps with trailing edge phase control
- Basic brightness can be adjusted
- Satellite unit input can also be used for 2-wire satellite unit and push-button
- Satellite unit input can also be used for extended 3-wire satellite unit
- Switch-on brightness or last brightness can be saved
- 230 V AC, 50/60 Hz
- Screw terminals

Power DALI push-button controller TW

Using the 1-channel Power DALI push-button controller TW insert, you control luminaires with DALI interface and DALI ballasts.
The operation is performed using the JUNG centre plates or timers and/or using automatic switches and ceiling Seiling observers / presence detectors.
The Power DALI push-button controller TW can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.

Overview of the functions:

- Operation with mains power (active operation)
- The device provides the necessary control current in active operation for 18 DALI nodes
- Increase of the number of nodes to 72 DALI nodes using connection in parallel of up to 4 active DALI inserts
- Connection of buttons and/or 2-wire / 3-wire satellite unit as monitoring systems via satellite unit input
- Optionally with colour light control (DALI Device Type 8 for Tunable White according to IEC 62386-209).
- Memory function for set basic brightness, fixed colour temperature, fixed switch-on brightness and minimum and maximum colour temperature (2 k to 10 k)
- 230 V AC, 50/60 Hz
- Screw terminals

Mini universal dimmer LED

You can switch and dim incandescent lamps, HV halogen lamps and electronic or dimmable inductive transformers for halogen or LED lamps using the Mini Universal Dimmer LED. The Mini Universal Dimmer LED is operated using a 2-wire satellite unit with button attachment, push-buttons with normally open contact or the 3-wire rotary satellite unit. The Mini Universal Dimmer LED can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073 in combination with an appropriate cover.

Overview of the functions:

- The device uses the leading edge phase control or trailing edge phase control principle
- The appropriate dimming principle for the load is set automatically or manually
- The set operating mode is indicated by an LED
- Switching on is performed using a soft start that is gentle on the lamp
- Switching on with the last set brightness or with the saved switch-on brightness
- Switch-on and minimum brightness can be saved permanently
- Electronic short-circuit protection with permanent switch-off after 7 seconds at the latest
- Electronic overtemperature protection
- Capacity expansion possible using power boosters.
- Device can be operated without neutral conductor
- Operating mode: HV LED
  - 20 – 50 W electronic transformers with LV LED
  - 3 – 50 W connected load for HV LED lamps
  - 3 – 50 W HV LED lamps with leading edge phase control
  - 3 – 100 W HV LED lamps with trailing edge phase control
- Load type: Mixed load
  - 20 – 210 W ohmic-capacitive
  - capacitive-inductive: not permitted
  - 20 – 210 VA ohmic-inductive
  - 3 – 50 W ohmic and HV LED
  - 3 – 50 W ohmic and compact fluorescent lamp
- 230 V AC, 50/60 Hz
- Screw terminals

Universal dimmer LED built-in

You can switch and dim incandescent lamps, HV halogen lamps and electronic or dimmable inductive transformers for halogen or LED lamps using the Universal Dimmer LED built-in. The Mini Universal Dimmer LED built-in is operated using a 2-wire satellite unit with button attachment, push-buttons with normally open contact or the 3-wire rotary satellite unit. The Universal Dimmer LED built-in can be installed easily, quickly and safely in false ceilings and hollow spaces (IP20).

Overview of the functions:

- The device uses the leading edge phase control or trailing edge phase control principle
- The appropriate dimming principle for the load is set automatically or manually
- The set operating mode is indicated by an LED
- Switching on is performed using a soft start that is gentle on the lamp
- Switching on with the last set brightness or with the saved switch-on brightness
- Switch-on and minimum brightness can be saved permanently
- Electronic short-circuit protection with permanent switch-off after 7 seconds at the latest
- Electronic overtemperature protection
- Capacity expansion possible using power boosters.
- Device can be operated without neutral conductor
- Operating mode: HV LED
  - 20 – 50 W electronic transformers with LV LED
  - 3 – 50 W connected load for HV LED lamps
  - 3 – 50 W HV LED lamps with leading edge phase control
  - 3 – 100 W HV LED lamps with trailing edge phase control
- Load type: Mixed load
  - 20 – 210 W ohmic-capacitive
  - capacitive-inductive: not permitted
  - 20 – 210 VA ohmic-inductive
  - 3 – 50 W ohmic and HV LED
  - 3 – 50 W ohmic and compact fluorescent lamp
- 230 V AC, 50/60 Hz
- Screw terminals

Standard rotary dimmer LED

You switch and dim the LEDs using the Standard Rotary Dimmer LED. The switching on is performed by soft start that is gentle on the lamp, and the operation of the device is also possible without a neutral conductor. The standard rotary dimmer is mounted in device sockets according to DIN 49073 with an appropriate cover.

Overview of the functions:

- The device uses the leading edge phase control or trailing edge phase control principle
- The appropriate dimming principle for the load is set automatically or manually
- Switching on with the last set brightness or with the saved switch-on brightness
- Switch-on and minimum brightness can be saved permanently
- Electronic short-circuit protection with permanent switch-off after 7 seconds at the latest
- Capacity expansion possible using power boosters.
- Load:
  - 20 – 210 W ohmic-capacitive
  - capacitive-inductive: not permitted
  - 20 – 210 VA ohmic-inductive
  - 3 – 60 W ohmic and HV LED
  - 3 – 60 W ohmic and compact fluorescent lamp
  - 3 – 60 W dimmable electronic transformers with 12 V LED
  - 3 – 60 W HV LED lamps
- Device can be operated without neutral conductor
- 230 V AC, 50/60 Hz
- Screw terminals

Universal rotary dimmer LED

You switch and dim LEDs using the Universal Rotary Dimmer LED. The operation of the device is also possible without a neutral conductor. You can also connect satellite units to the rotary universal dimmer.
The rotary universal dimmer is mounted in device sockets according to DIN 49073 with an appropriate cover.

Overview of the functions:

- The device uses the leading edge phase control or trailing edge phase control principle
- The appropriate dimming principle for the load is set automatically or manually
- The set operating mode is indicated by an LED
- Switching on is performed using a soft start that is gentle on the lamp
- Switching on with the last set brightness or with the saved switch-on brightness
- Switch-on and minimum brightness can be saved permanently
- Electronic short-circuit protection with permanent switch-off after 7 seconds at the latest
- Electronic overtemperature protection
- Capacity expansion possible using power boosters.
- Load:
  - 20 – 420 W ohmic-capacitive
  - capacitive-inductive: not permitted
  - 20 – 420 VA ohmic-inductive
  - 3 – 100 W ohmic and HV LED
  - 3 – 100 W ohmic and compact fluorescent lamp
  - 3 – 100 W dimmable electronic transformers with 12 V LED
  - 3 – 100 W HV LED lamps with leading edge phase control
  - 3 – 200 W HV LED lamps with trailing edge phase control
- Device can also be operated without neutral conductor
- 230 V AC, 50/60 Hz
- Screw terminals

3-wire rotary satellite unit

You control the Universal Rotary Dimmer LED and the Mini Universal Dimmer LED with the rotary satellite unit.
The 3-wire rotary satellite unit is mounted in device sockets according to DIN 49073 with an appropriate cover.

Overview of the functions:

- Operation is identical to that of the universal rotary dimmer
- A maximum of ten 3-wire rotary satellite units can be connected to one or more master units.
- Maximum total cable length 100 m
- 230 V AC, 50/60 Hz
- Screw terminals

2-wire satellite unit

You switch and dim your lighting with the 2-wire satellite unit.
In total, the satellite unit has exactly as many functions as those of the attachment placed on the master unit.
The operation is performed in combination with the Standard centre plate.
The 2-wire satellite unit is mounted in device sockets according to DIN 49073.

Overview of the functions:

- Can only be combined with the Standard centre plate
- Low-cost control point
- Installation of other control points for the control of LB Management Light
- Any number of 2-wire satellite units can be connected to a master unit
- Maximum total cable length 100 metres
- 230 V AC, 50/60 Hz
- Screw terminals

3-wire satellite unit

The 3-wire satellite unit provides you with many different functions independently of the insert and attachment at the master unit.
In total, the satellite unit has exactly as many functions as those of the attachment placed on the master unit.
The operation is performed using LB Management attachments.
The 3-wire satellite unit is mounted in device sockets according to DIN 49073.

Overview of the functions:

- Can be combined with all attachments
- Different applications are possible due to various possible combinations of the LB Management attachments and inserts
- Extension of the detection area of automatic switches
- Installation of other control points for the control of LB Management Light
- Switching on with the last set brightness or with the saved switch-on brightness
- A maximum of ten 3-wire satellite units can be connected to one or more master units
- Maximum total cable length 100 metres
- 230 V AC, 50/60 Hz
- Screw terminals

Universal dimmer for rail mounting LED

Switch and dim the lighting in your house using the dimmer for rail mounting. The major benefit: You do not have to lay any new cables for a renovation, but attach directly to the existing installation. Thereby, the necessary components disappear centrally in a distribution box.
Operation is performed via the integrated buttons on the dimmer for rail mounting or via a 2/3-wire satellite unit with attachments or a button with normally open contact.
The dimmer for rail mounting is installed in the sub-distribution on DIN rails according to DIN 60715.

Overview of the functions:

- The device uses the leading edge phase control or trailing edge phase control principle
- The appropriate dimming principle for the load is set manually or automatically
- LED indicates the selected operating mode
- Switching on is performed using a soft start that is gentle on the lamp
- Switching on with the last set brightness or with the saved switch-on brightness
- Switch-on and minimum brightness can be saved permanently
- Electronic short-circuit protection with permanent switch-off after 7 seconds at the latest
- Electronic overtemperature protection
- Capacity expansion possible using power boosters.
- Load type: Mixed load
  - 20 – 500 VA ohmic-inductive
  - 20 – 500 W ohmic-capacitive
  - capacitive-inductive: not permitted
  - 3 – 100 W ohmic and HV LED
  - 3 – 100 W dimmable electronic transformers with 12 V LED
  - 3 – 100 W HV LED lamps with leading edge phase control
  - 3 – 200 W HV LED lamps with trailing edge phase control
- Device can be operated without neutral conductor
- 230 V AC, 50/60 Hz
- Screw terminals

Dimmer power booster for rail mounting LED

Using the dimmer power booster for rail mounting, you expand dimmers modularly depending on power requirements. Many different power boosters can be connected depending on the dimmer. You can also conveniently switch and dim large LED loads.
The power booster is operated via the upstream dimmer.
The dimmer power booster for rail mounting is installed in the sub-distribution on DIN rails according to DIN 60715.

Overview of the functions:

- Multiple dimmer power boosters for rail mounting can be connected to a dimmer
- Total power of the connected loads is distributed on dimmers and power boosters.
- Connected loads are supplied using a common load line
- Electronic overtemperature protection
- Load per power booster: Mixed load
  - 20 – 500 VA ohmic-inductive
  - 20 – 500 W ohmic-capacitive
  - capacitive-inductive: not permitted
  - 3 – 100 W ohmic and HV LED
  - 3 – 100 W dimmable electronic transformers with 12 V LED
  - 3 – 100 W HV LED lamps with leading edge phase control
  - 3 – 200 W HV LED lamps with trailing edge phase control
- Device can be operated without neutral conductor
- 230 V AC, 50/60 Hz
- Screw terminals

Standard automatic switch 1.1 m

The automatic switch controls the lighting in interior rooms depending on movement. If motion is detected in the detection area, it switches on the lighting automatically and off again after expiry of a delay time of two minutes – convenient and energy-saving. Thanks to the special lens design, the automatic switch has a large detection area.

Overview of the functions:

- Automatic switching of lighting, depending on the heat of moving objects and ambient brightness
- Detection range 180°
- Extended detection range using satellite units
- also available in IP 44 (spray water protection)
- Switch-on brightness and sensitivity can be set using potentiometer
- Installation height 1.10 metres
- Tangential movement direction detection area: max. 30 x 30 metres (W x D)
- Radial movement direction detection area: max. 16 x 11 metres (W x D)

Standard automatic switch 2.2 m

The automatic switch controls the lighting in interior rooms depending on movement. If motion is detected in the detection area, it switches on the lighting automatically and off again after expiry of a delay time of two minutes – convenient and energy-saving. Thanks to its special lens design, the automatic switch has a large detection area that also includes the perpendicular downward area.
At the intended installation height of 2.20 metres, e.g. installed above a door, it switches on the lighting during the first step of a person through the door.

Overview of the functions:

- Automatic switching of lighting, depending on the heat of moving objects and ambient brightness
- Detection range 180°
- Extended detection range using satellite units
- also available in IP 44 (spray water protection)
- Switch-on brightness and sensitivity can be set using potentiometer
- Installation height 2.20 metres
- Tangential movement direction detection area: max. 22 x 15 metres (W x D)
- Radial movement direction detection area: 10 x 8 metres (W x D)

Universal automatic switch 1.1 m

The automatic switch controls the lighting in interior rooms depending on movement. If motion is detected in the detection area, it switches on the lighting automatically and off again after expiry of a specified delay time – convenient and energy-saving. Thanks to its special lens design, the automatic switch has a large detection area that also includes the perpendicular downward area.
You can make the settings conveniently using your smart phone and the Clever Config app.

Overview of the functions:

- Automatic switching of lighting, depending on the heat of moving objects and ambient brightness
- Detection range 180°
- Extended detection range using satellite units
- Settings using smart phone and Clever Config app
- also available in IP 44 (spray water protection)
- Sliding button for Continuous On/Off
- Activation of the pairing mode for teach-in in the Clever Config app
  - The sliding button must be set to Continuous On/Off for this and the lens must be darkened manually for four seconds with your hand
- Installation height 1.10 metres
- Tangential movement direction detection area: max. 30 x 30 metres (W x D)
- Radial movement direction detection area: max. 16 x 11 metres (W x D)

Universal automatic switch 2.2 m

The automatic switch controls the lighting in interior rooms depending on movement. If motion is detected in the detection area, it switches on the lighting automatically and off again after expiry of a specified delay time – convenient and energy-saving. Thanks to its special lens design, the automatic switch has a large detection area that also includes the perpendicular downward area.
At the intended installation height of 2.20 metres, e.g. installed above a door, it switches on the lighting during the first step of a person through the door.
You can make the settings conveniently using your smart phone and the Clever Config app.

Overview of the functions:

- Automatic switching of lighting, depending on the heat of moving objects and ambient brightness – can be set using infrared remote control
- Detection range 180°
- Extended detection range using satellite units
- Settings using smart phone and Clever Config app
- also available in IP 44 (spray water protection)
- Buttons for Continuous On/Off
- Activation of the pairing mode for teach-in in the Clever Config app
  - The Bluetooth button must be kept pressed for longer than four seconds for this
- Installation height 2.20 metres
- Tangential movement direction detection area: max. 22 x 15 metres (W x D)
- Radial movement direction detection area: max. 10 x 8 metres (W x D)

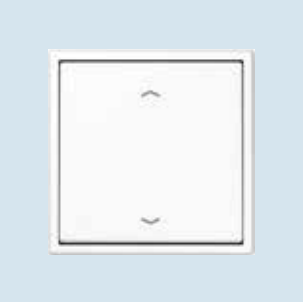
Ceiling observer/presence detector

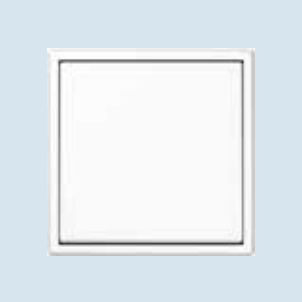
The ceiling observer / presence detector controls the lighting in interior rooms depending on movement. If motion is detected in the detection area, it switches on the lighting automatically and off again after expiry of a specified delay time – convenient and energy-saving. Thanks to its special lens design, the ceiling observer / presence detector has a large detection area that also includes the perpendicular downward area.
Installation heights of up to 6 metres enable the use in corridors or stairwells.
You can make the settings conveniently using your smart phone and the Clever Config app.

Overview of the functions:

- Automatic switching of lighting, depending on brightness and movement
- 360° Detection range for installation heights up to 6 metres
- Thee PIR sensors independent of each other that can be adjusted individually.
- Extension of the detection range by grouping up to five devices
- Stairwell function with switch-off advance warning
- Optimised break-in prevention using presence simulation
- Constant light regulation in combination with dimmer inserts
- Can be used as observer and as presence detector
- Alarm function
- Basic brightness can be adjusted
- Settings using smart phone and Clever Config app
- Installation height 3.0 metres
- Tangential movement direction detection area: Ø 20 metres
- Radial movement direction detection area: Ø 12 metres

Standard centre plate



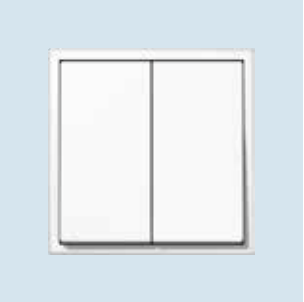


The Standard centre plate is a 1-channel attachment for all LB Management inserts.
It can be actuated at the top, bottom and also full surface.

Overview of the functions:

- Lighting control using appropriate inserts
- Automatic shading control using appropriate inserts
- Consistent operating concept
- Attachment for the 2/3-wire satellite unit

Standard 2-gang centre plate



The Standard 2-gang centre plate is a 2-channel attachment for 2-channel inserts.
It can be actuated at the top, bottom and also full surface.

Overview of the functions:

- Switching and dimming lighting control with appropriate functions
- Operation with 2-channel switching or dimming insert
- Dimming and colour temperature adjustment of lighting with appropriate DALI inserts
- 3-wire satellite unit
- Consistent operating concept

Universal centre plate

The Universal centre plate with memory and lock-out functions is a 1-channel attachment for all inserts.
The attachment consists of a divided rocker that looks like a 2-gang rocker. A coloured LED is assigned to each rocker half that is used for the function display, status display and as pilot light. It can be actuated at the top, bottom and also full surface.

Overview of the functions:

- Lighting control using appropriate inserts
- Automatic shading control using appropriate inserts
- Consistent operating concept
- Operation is performed manually and automatically
- Lock function to deactivate all automatic functions, satellite units and the memory function
- Includes a memory function with two switching times that are repeated every 24 hours

Standard timer with display

The standard timer with display is a 1-channel timer for all inserts. It consists of a genuine glass surface in the typical JUNG design with a backlit display and six operating buttons.

Overview of the functions:

- Lighting control using appropriate inserts
- Automatic shading control using appropriate inserts
- Dialogue-guide menu control
- Two time blocks: Mon – Fri, Sat – Sun:
  - A time block for switching and dimming inserts consists of two On / Off time combinations
  - A time block for blind inserts consists of one Up / Down time combination
- Astro function:
  - 18 countries can be selected
  - Morning / evening offset setting
- Quick save: Takeover of the current time as switching time
- Automatic setting of summer or winter time that can be disabled by the user
- Backlit segment display: Enables reliable reading at dark installation locations
- Touch surface: Operation using six operating surfaces with printed symbols
- Evaluation of the satellite unit
- Display switches off after two minutes or to permanent display of the time
- Lock function: To deactivate automatic functions, satellite units and time schedules
- Power failure: Date and time are retained for four hours in the event of power failure. All other values are stored in non-volatile memory
- Quick changeover between automatic and manual modes
- Display of the next switching time

Universal timer Bluetooth

The Universal Timer Bluetooth is a 1-channel attachment for all inserts. The attachment consists of a divided rocker that looks like a 2-gang rocker. The rocker can be actuated at the top, on the bottom and also full surface. The left side of the rocker contains a coloured LED for various indicators. The right side also contains a coloured LED to indicate different functions (see Overview of functions). The operation and programming are performed via Bluetooth using a mobile device.

Overview of the functions:

- Lighting control and parametrisation using appropriate inserts
- Automatic shading control and parametrisation using appropriate inserts
- Attachment for the 3-wire satellite unit
  - With sun protection and twilight function linked to brightness / temperature sensor
- 40 switching times that are set for every day with an individual brightness value (0 – 100 percent blind height of the slats for blind inserts; On/Off for a relay insert)
- Lock function: Deactivation of automatic functions, satellite units and time schedules
- Operation of the LB Management inserts via Clever Config app with status feedback in values (0 – 100 percent, On/Off)
- Switch-on brightness with dimming insert can be saved
- Copying of switching times via Clever Config app to other Universal Timers Bluetooth
- Astro function using GPS data of the Clever Config app for each switching time point
- Automatic setting of summer and winter time and automatic time synchronisation using Clever Config app
- Random function
- Presence simulation
- Other parameters can be set depending on the LB Management insert

eNet Radio centre plate

The eNet Radio centre plates are available as full surface and 2-gang rocker. It is an attachment for all switching and dimming inserts or 3-wire satellite units from LB Management Light. The attachment consists of a divided rocker that looks like a 2-gang rocker. The rocker can be actuated at the top, bottom and also full surface. Every rocker contains a colour LED for various displays. The 2-gang rocker design offers additional functions. (See feature overview).

Overview of the functions:

- Manual, wireless and time-controlled operation of e.g. lighting, blinds, shutters, awnings
- Transmitter for wireless transmission of switching, dimming and blind commands
- Operation on switching, dimming or blind insert or 3-wire satellite unit from LB Management
- 2 switching times can be saved that are repeated every 24 hours (only applies to the eNet Radio centre plate and not to the eNet Standard Radio centre plate)
- Locking function (only applies to the eNet Radio centre plate and not to the eNet Standard Radio centre plate)
- Status feedback to radio transmitter
- Status indicator using LED
- Night Mode
- Evaluation of the satellite unit inputs
- Functions in combination with lighting insert
  - Scene operation possible
  - Switch-on brightness can be permanently stored when combined with flush-mounted inserts for dimming
- Functions in combination with blind insert
  - Positioning of blinds via scene recall
  - Position for sun protection and twilight
  - Running time and ventilation position of the blind can be stored
- Functions in combination with 2-channel relay switching insert
  - Output a2 switches depending on output a1 e.g. to switch on ventilation depending on the lighting and to switch it off with delay; switch-on delay for output a2 can be set; delay time for output a2 can be set

Can be adjusted with the eNet Server (depending on insert):

- Slat reversal time / fabric tightening time, reversal time for change of direction,
- Direction of travel can be inverted
- Operating locks
- Deactivate satellite unit evaluation
- Position for sun protection, twilight, lockout protection and wind alarm
- Maximum brightness, minimum brightness
- Dimming speed, switch-on/ switch-off delay
- Up/down dimming ramp
- Switch-off prewarning, continuous ON, continuous OFF
- Hotel function, delay time
- Fully encrypted wireless transmission (AES-CCM)
- Operation with eNet Server Version 2.2 and higher
- Update of the device software
- Repeater function

Refer to the eNet System Manual for more information:
https://service.enet-smarthome.com/de/support/downloads/

4.2 Switching and button operation

LB Management provides switch and pulse inserts for the simple switching of lighting. All our inserts are functional without attachment. The setting of the inserts also functions with the operating mode selector if no attachment is attached.
The outputs of the switching inserts have short-circuit and overload protection. The switch inserts are protected against transient overvoltages and are resistant to overtemperature.
If the device needs a device fuse, this is implemented electronically.
The switching inserts are approved for a temperature range of-25 °C – 45 °C.
The inserts are not suitable for safety-critical applications.

4.2.1 Components

INSERTS	REFERENCE NUMBER
Relay switch insert 1-channel	1701 SE
Relay switch insert 2-channel	1702 SE
Electronic switch insert 1-channel	1704 ESE
Pulse insert	1708 IE

ATTACHMENTS	REFERENCE NUMBER
Standard centre plate	..1700../ ..1700 P..
Standard 2-gang centre plate	..1702..
Universal centre plate	..1701../ ..1701 P..
Standard timer with display	..1750 D..
Universal timer Bluetooth	..1751../ ..1751 P..
eNet Standard Radio centre plate	FM ..1700.. / FM ..1700 P..
eNet Radio centre plate	FM ..1701.. / FM ..1701 P..
Bluetooth brightness / temperature sensor	1792 HTBT
Standard automatic switch 1.1 m	..17180..
Standard automatic switch 2.2 m	..17280..
Universal automatic switch 1.1 m	..17181..
Universal automatic switch 2.2 m	..17281..
Ceiling observer/presence detector	DWPM 17360..

4.2.2 Definitions

SWITCH
A device of the electrical installation with an operating element that is actuated by pressing, turning or tilting. The electrical contact is closed by any actuation and remains in this state until the operating element is actuated again.

An example for this is the actuation of a light switch. If this is pressed, the living room lamp switches on and lights continuously. If the light switch is actuated a second time, the living room lamp switches off again.

BUTTON
A device of the electrical installation that is actuated by pressing and then returns to the starting position. The electrical contact is only closed for the duration of the actuation.

An example for this is the actuation of a bell button. The doorbell can be heard while the bell button is kept pressed. As soon as the bell button is released, the doorbell can also no longer be heard.

DELAY TIME
The 1-channel relay and electronic 1-channel switch inserts operate as switches. This means they switch on the lighting for the first actuation and off again for the subsequent actuation. A delay time can optionally be set for the 1-channel relay switch insert. After expiry of the delay time, the switch insert switches off the lighting again automatically. The load can also be switched off manually using the centre plate during this delay time.
Proceed as follows to set the delay times of the 1-channel relay switch insert:
- Switch (no delay time)
- 1 minute
- 5 minutes
- 30 minutes
- 60 minutes

The delay time function is primarily an energy saving function: Particularly for rooms in which nobody is continuously present (for example office kitchens), the light is switched off automatically after a specific time. However, the function can also be used so that, for example when leaving the house, the light in the hallway continues to light to give the impression that there is still a person in the house.
Extension of the delay time by repeated pressing is not possible.

4.2.3 Switches as master and satellite units

The relay switch insert and the electronic switch insert become a light switch with the Standard centre plate.
The pulse insert can be operated manually with the Standard centre plate. Automated stairwell switching results from the combination with an automatic switch. When it is dark, this automatically switches on the lighting and also off again in combination with the stairwell relay 1208 URE for every detected movement.

LB master units
The master unit consists of one device insert and an appropriate centre plate.
Any number of non-illuminated installation buttons can be connected to the satellite unit terminal 1 of the master unit.

LB satellite units
The satellite unit consists of one satellite unit insert or an installation button and an appropriate attachment.

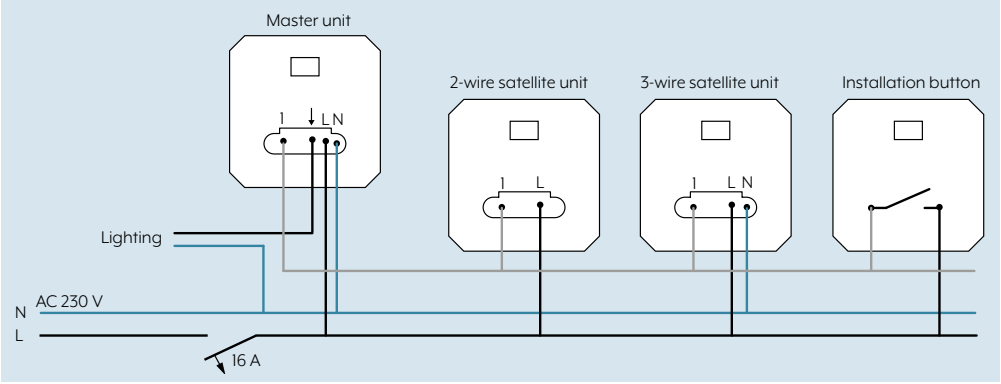
An LB master unit can be controlled by LB satellite units by the LB satellite unit, when it is activated, putting a signal on terminal 1 of the insert of the master unit.
The functionality produced at the master unit depends on the device selection.
The following devices can be used as satellite unit:
- A 230 V installation button as normally open contact
- A 2-wire LB satellite unit with centre plate
- A 3-wire LB satellite unit with any of the LB Management attachments

4.2.4 Installation and settings

Our switch inserts and pulse inserts already provide functions to automate the lighting. The following chapter gives an overview of the installation steps and the configurable operating modes and functions.

RELAY SWITCH INSERT 1-CHANNEL

Connecting and installing insert



Note the following for the installation:

- Illuminated buttons must have a separate N terminal.
- Do not attach or replace the attachment under voltage, otherwise a malfunction can occur.

Proceed as follows to set the delay time:

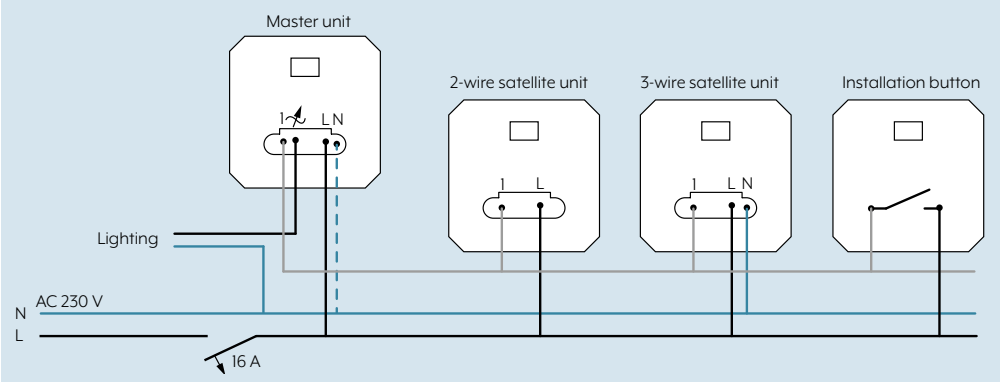
1. Press and hold the TEST button for longer than four seconds.
   After pressing the TEST button, the LED lights in the colour of the specified delay time.
2. Release the TEST button briefly and then press the button so often until it lights in the colour of the desired delay time.

LED COLOUR	SPECIFIED DELAY TIME
green	Switch without delay time
ivory	Delay time: 1 minute
Blue	Delay time: 5 minutes
Yellow	Delay time: 30 minutes
red	Delay time: 60 minutes

The selected delay time is saved automatically after 30 seconds. The save process was successful if the LED extinguishes.

ELECTRONIC SWITCH INSERT

Connecting and installing insert



Note the following for the installation:

- If non-dimmable LED lamps are used, the neutral conductor must strictly be connected. Operation without neutral conductor is possible if other lamps are used.
- Maximum 600 W LED or compact fluorescent lamps can be connected per 16 A circuit breaker.

Setting operating mode

The operating mode must be appropriate for the load for any operation without neutral conductor. The setting of the operating mode is usually performed automatically. However, it can be necessary to set the operating mode manually.
The operating mode cannot be set for any operation with neutral conductor. In this case, the LED indicator has no function.

You can set the following operating modes:

Universal, R, L, C, LED
- Factory defaults
- Automatic calibration to the load, trailing edge phase control, leading edge phase control or LED leading edge phase control
- Load type:
  - Incandescent lamps
  - HV halogen lamps
  - dimmable HV LED or compact fluorescent lamps
  - dimmable electronic or inductive transformers for halogen or LED lamps

LED trailing edge phase control
- Connection of inductive transformers is not permitted
- Load type:
  - Incandescent lamps
  - HV halogen lamps
  - trailing edge phase control dimmable HV LED or compact fluorescent lamps
  - trailing edge phase control dimmable electronic transformers for halogen or LED lamps

LED leading edge phase control
- Connection of inductive transformers is not permitted
- Load type:
  - Incandescent lamps
  - HV halogen lamps
  - leading edge phase control dimmable HV LED or compact fluorescent lamps
  - leading edge phase control dimmable electronic transformers for halogen or LED lamps

Proceed as follows to set the operating mode:
1. Ensure that the load is switched off.
2. Press and hold the TEST button for longer than four seconds until the LED indicator lights.
3. Press the TEST button so often for less than one second until the required operating mode is selected.

LED COLOUR	MODE
green	R, L, C, LED
red	LED trailing edge phase control
Blue	LED leading edge phase control

The LED indicator lights in the colour of the selected operating mode.

4. Press and hold the TEST button for longer than one second within the next 30 seconds.

The LED indicator extinguishes and the light is switched on. The operating mode is saved. The operating mode is not saved and the LED extinguishes if the TEST button is not pressed and held for longer than one second within 30 seconds.

PULSE INSERT

The pulse insert is exclusively used for the establishment of stairwell light controls. The pulse insert gives control signals for this to a stairwell timer for rail mounting that switches the stairwell light centrally.

You can install one or more pulse inserts in every floor of a stairwell. Either the Standard centre plate or the Standard automatic switch are mounted on the pulse inserts. A switch-on signal is sent to the stairwell timers either via the manual operation of the centre plate or due to detection of movement.

The stairwell light is switched on for the specified delay time.

The pulse insert enables the retriggering of the delay time by repeated operation of the centre plate or by repeated detection of a person by the automatic switch. Due to the retriggering, the delay time is reset to the start time point and the light time of the stairwell light is extended.

4.3 Dimming

A lighting system is initially always designed for the maximum required brightness. However, in practice there is the requirement in many situations to reduce the lighting and adapt to the individual needs.
Dimmed light improves the lighting and living quality, creates individual lighting conditions in everyday working and makes a significant contribution to energy saving.

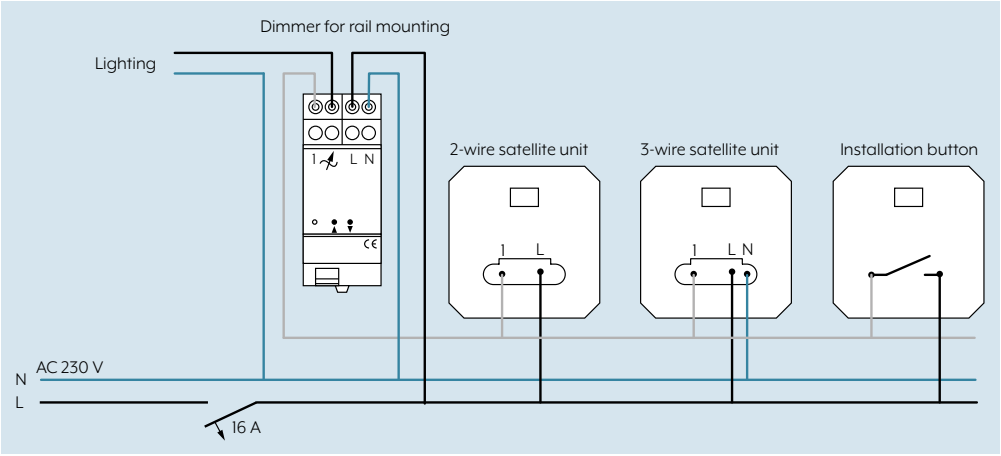
4.3.1 Components

INSERTS	REFERENCE NUMBER
Standard touch dimmer LED	1710 DE
Universal touch dimmer LED	1711 DE
2-gang touch dimmer Universal LED	1712 DE
Power DALI push-button controller TW	1713 DSTE
Mini universal dimmer LED	1724 DN
Universal dimmer LED built-in	1724 DEB
Standard rotary dimmer LED	1730 DD
Universal rotary dimmer LED	1731 DD
Universal LED dimmer for rail mounting	UD 1755 REG

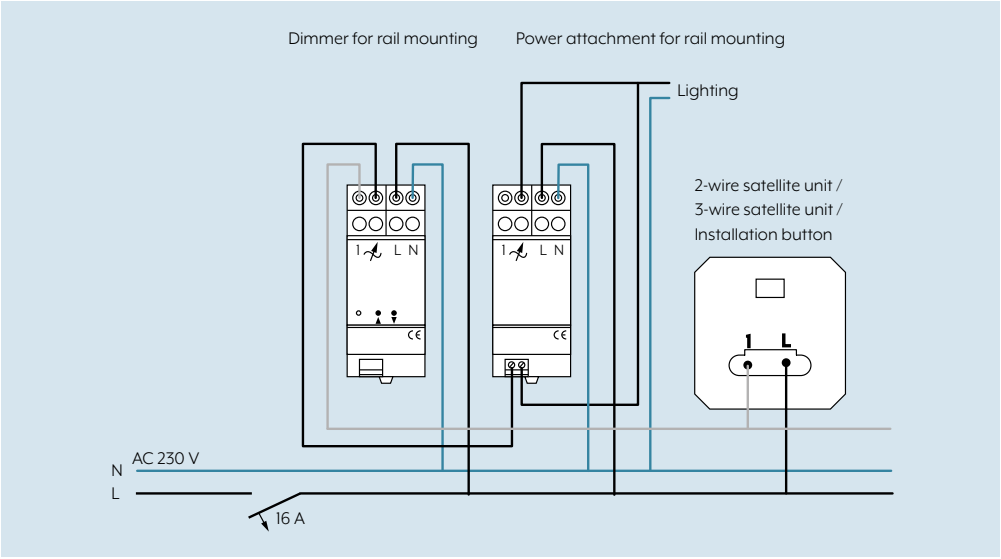
ATTACHMENTS	REFERENCE NUMBER
Standard centre plate	..1700../ ..1700 P..
Standard 2-gang centre plate	1702..
Universalcentre plate	..1701../ ..1701 P..
Standard timer with display	..1750 D..
Universal timer Bluetooth	..1751../ ..1751 P..
eNet Standard Radio centre plate	FM ..1700.. / FM ..1700 P..
eNet Radio centre plate	FM ..1701.. / FM ..1701 P..
Brightness / temperature sensor Bluetooth	1792 HTBT
Standard automatic switch 1.1 m	..17180..
Standard automatic switch 2.2 m	..17280..
Universal automatic switch 1.1 m	..17181..
Universal automatic switch 2.2 m	..17281..
Ceiling observer/presence detector	DWPM 17360..

4.3.2 Installation and settings

Connecting and installing dimmer for rail mounting



Connecting and installing dimmer for rail mounting and power booster for rail mounting



Note the following for the installation:

- For the operation of multiple dimmers or power boosters in one sub-distribution, maintain a clearance of 1 TE (approx. 18 millimetres) between the rail mountings to prevent any overheating.
- Connect maximum 600 W LED or compact fluorescent lamps per 16 A circuit breaker.
- Observe the information of the transformer manufacturer for the connection of transformers.
- Only connect illuminated buttons if these have a separate N terminal.

Setting operating mode

The operating mode must be appropriate for the load. The setting of the operating mode is usually performed automatically. However, it can be necessary to set the operating mode manually.

You can set the following operating modes:

Universal, R, L, C, LED
- Factory defaults
- Automatic calibration to the load, trailing edge phase control, leading edge phase control
- Load type:
  - Incandescent lamps
  - HV halogen lamps
  - dimmable HV LED or compact fluorescent lamps
  - dimmable electronic or inductive transformers for halogen or LED lamps

LED trailing edge phase control
- Connection of inductive transformers is not permitted
- Load type:
  - Incandescent lamps
  - HV halogen lamps
  - trailing edge phase control dimmable HV LED or compact fluorescent lamps
  - trailing edge phase control dimmable electronic transformers for halogen or LED lamps

LED leading edge phase control
- Connection of inductive transformers is not permitted
- Load type:
  - Incandescent lamps
  - HV halogen lamps
  - leading edge phase control dimmable HV LED or compact fluorescent lamps
  - leading edge phase control dimmable electronic transformers for halogen or LED lamps

Proceed as follows to set the operating mode:
1. Ensure that the load is switched off.
2. Press and hold both buttons simultaneously for longer than four seconds until the LED indicator lights.
3. Press any of the two buttons so often for less than one second until the required operating mode is selected.

LED COLOUR	MODE
green	R, L, C, LED
red	LED trailing edge phase control
Blue	LED leading edge phase control

The LED indicator lights in the colour of the selected operating mode.

4. Press and hold both buttons simultaneously for longer than one second.

The LED indicator extinguishes and the light is switched on. The operating mode is saved.
The operating mode is not saved and the LED extinguishes if any of the two buttons is not pressed and held for longer than one second within 30 seconds.

4.3.3 Dimmability of light sources

INCANDESCENT LAMPS
The incandescent lamp is a so-called “thermal radiator”. Current flows in the incandescent lamp through a thin thread that consists of conductive material – the filament. The filament is heated until it radiates yellow or white light.

HALOGEN BULBS
The halogen bulb is a special design of the incandescent lamp. These exist in the high-voltage (HV) for mains power or low-voltage (LV) for low voltage.

High-voltage halogen bulbs are relatively easy to dim. Using a phase dimmer (leading edge phase control or trailing edge phase control, see Page 90) , a part of the sinusoidal mains voltage is capped in each half-wave and thus the lamp is supplied with less effective voltage. Thereby, gaps occur in the power supply for a few milliseconds; however, these do not have any noticeable effects due to the thermal inertia of the filament.
High-voltage halogen lamps can theoretically be dimmed without limitations.
During dimming, high-voltage halogen lamps change their colour temperature to warmer (lower) values and the lamp life usually increases significantly.
The low-voltage halogen lamps can also be dimmed well according to the same principle. However, it must be taken into account here that the ballast (transformer) that generates the required low voltage is also dimmable. Details for the compatibility can be found in the product documentation of the transformer manufacturers.

LED LAMPS
Last but not least, due to the EU-wide ban of incandescent lamps in the framework of the Energy Saving Ordinance, LED lamps have spread rapidly in recent years. The actual light sources in LED lamps are light-emitting diodes that consist of semiconductor materials. LED lamps require significantly less energy than the classic incandescent lamp.
LED lamps also last significantly longer: Assuming approx. 1,000 operating hours for incandescent lamps, the manufacturers of LED lamps typically state a lamp life of 20,000 – 50,000 operating hours.

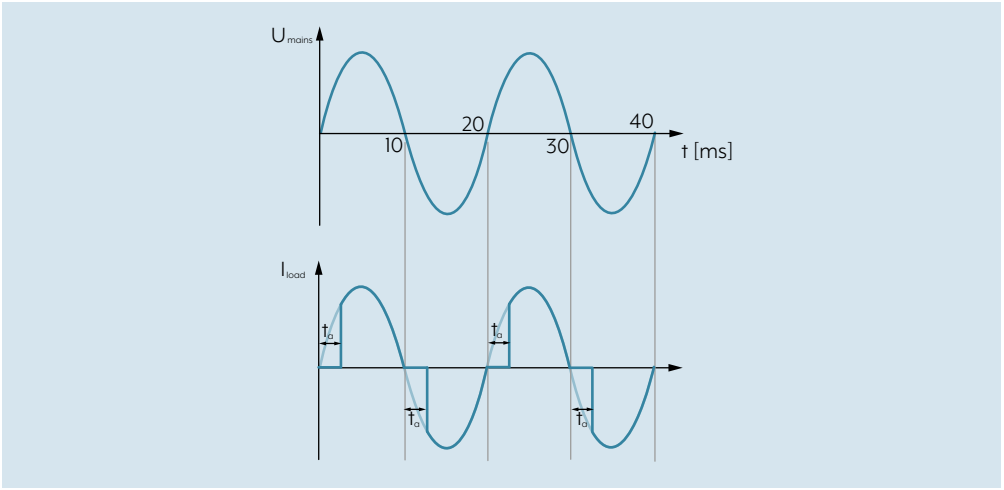
In contrast to incandescent lamps, LED lamps are very fast lamps that start to light immediately when the current is applied and extinguish without luminescence when the current is switched off. LED lamps can also be dimmed. While halogen lamps and incandescent lamps operate with alternating current, LED lamps need direct current. Light-emitting diodes are operated with operating voltages below 1 V. Therefore, LED lamps need a ballast –either as separate device or integrated in the lamp.
The tasks of the ballast on the one hand are reducing the mains voltage to LED-compatible values. On the other hand, the continuous voltage supply of the LED during the unavoidable supply gaps for leading or trailing edge phase control. If necessary the dimming process is also controlled via the ballast (PWM, for dimmable LED lamps) and the colour temperature adjusted.

Dimmable LED lamps must be expressly labelled as “dimmable” to be able to be operated on leading and trailing edge phase control dimmers.

4.3.4 Dimming principles

LEADING EDGE PHASE CONTROL

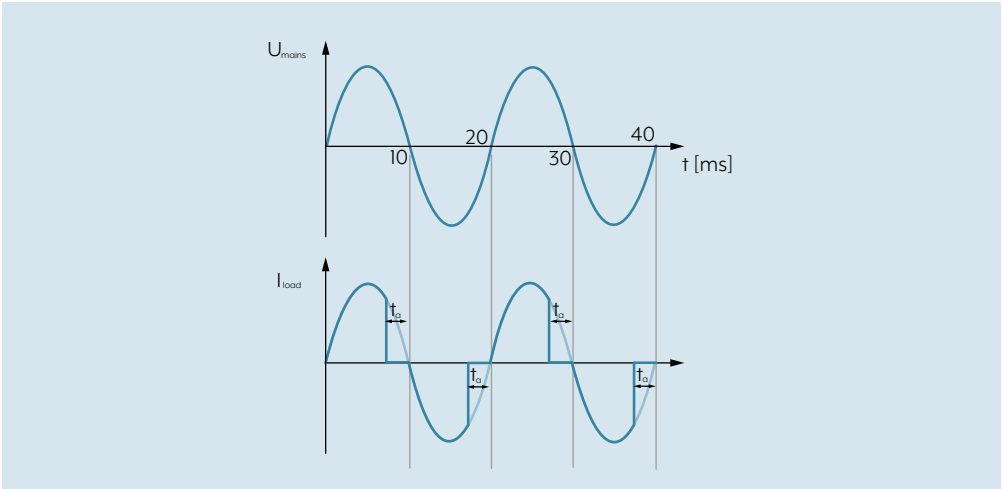
In the case of the leading edge phase control principle, the dimmer blocks the current to the lamp at the beginning of every sine half-wave. It is not conductive. The electronic switch in the dimmer is not switched through until after expiry of a configurable delay time and the connected lamps are energised. The current is removed with the next sine zero point and the lamp is switched off. This process is repeated in every sine half-wave, i.e. 1,000 times per second. The brightness of the connected lamps can be continuously adjusted using the delay time.



The leading edge phase control principle is suitable for ohmic and inductive loads, incandescent lamps or low-voltage halogen bulbs with conventional (wound) transformer. There are also specially approved LED lamps for dimming according to the leading edge phase control principle.

TRAILING EDGE PHASE CONTROL

In the case of the trailing edge phase control principle, the lamps are switched on in the zero transition of the sine half-wave and switched off again after a configurable delay time. The advantage here is that no interference voltage occurs during switching on because the voltage at the time point equals zero.



The trailing edge phase control principle is suitable for all incandescent lamps and loads with capacitive input behaviour, e.g. electronic transformers.
There are also LED laps that are only suitable for the trailing edge phase control principle. For example, these are lamps that have a capacitor on the input side (e.g. for radio interference suppression). If this is discharged, it acts like a short-circuit for a short time during the switching on. This effect would produce high current peaks for leading edge phase control due to the steep switch-on edges.

4.3.5 Installation-related power reduction

In addition to the basic compatibility of the lamps and, if necessary, of the ballasts, the planned installation position must also be taken into account.

As dimmers develop a higher power loss than relays, particular attention must be paid to the occurring heat for the power loss. The occurring heat must be reliably dissipated to prevent damage. The heat is usually dissipated into the wall via the support plate. If this is not possible because the dimmer is installed, for example, in a surface-mounted box or in a cavity wall box in plasterboard stud frame, the rated load must be reduced.

Rules for reduction of the rated load

In the case of increased ambient temperature

Reduction by 10% for each 5 °C exceedance of the ambient temperature above 25 °C.
Example: Installation of a dimmer with 500 watts in an ambient temperature of 40 °C
40 °C – 25 °C = 15 °C
15 °C / 5 °C = 3
3 x 10 percent = 30 percent
Reduction of the rated load by 30 percent

The 500 W dimmer may only be loaded with 70 percent of the specified rated power,
i.e. with **350 W**.

For installation in cavity, plasterboard or wooden wall, for installation in furniture

Reduction by 15 percent.
Example: Installation of a dimmer with 500 watts in a cabinet wall
Reduction of the rated load by 15 percent

The 500 W dimmer may only be loaded with 85 percent of the specified rated power,
i.e. with **425 W**.

For installation of multiple dimmers above or next to each other

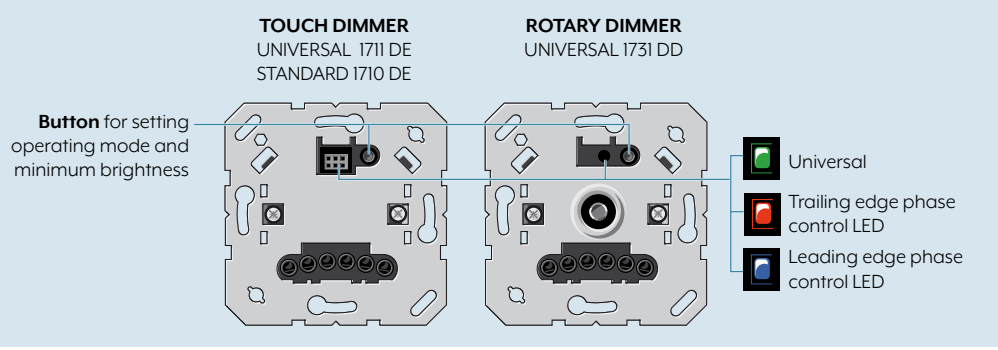
Reduction for the outer devices by 10 percent and by 20 percent for the inner devices
Example: Installation of 3 dimmers, each with 500 watts, in a multiple combination
Reduction of the rated load by 10 percent or 20 percent

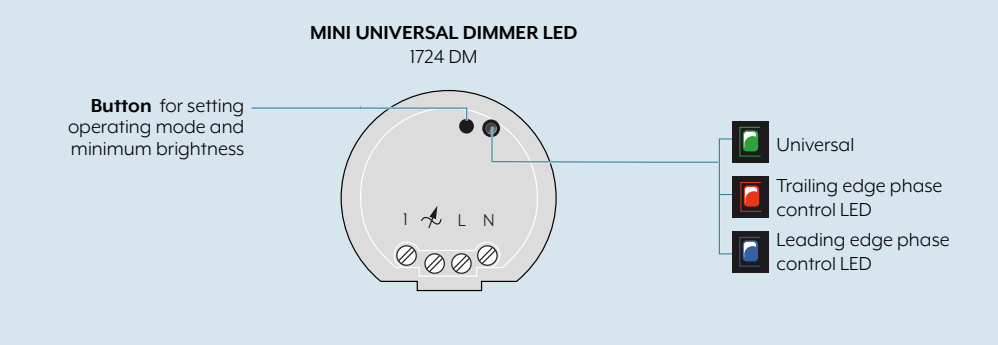
The two outer 500 W dimmers may only be loaded with 90 percent of the specified rated power, i.e. with **450 W**.
The inner 500 W dimmer may only be loaded with 80 percent of the specified rated power, i.e. with **400 W**.

If several of these conditions occur together in an installation, the rated power must be further reduced accordingly.

4.3.6 Setting operating mode and basic brightness

All our LB Management dimmers measure the characteristic of the connected load automatically and then select the best suitable dimming principle themselves.
For capacitive and ohmic loads,trailing edge phase control is usually set; for inductive loads leading edge phase control.
Using the operating mode selection button, the dimming principle and the basic brightness can also be specified manually during start-up. Thereby, an LED in the insert signals the current selection.





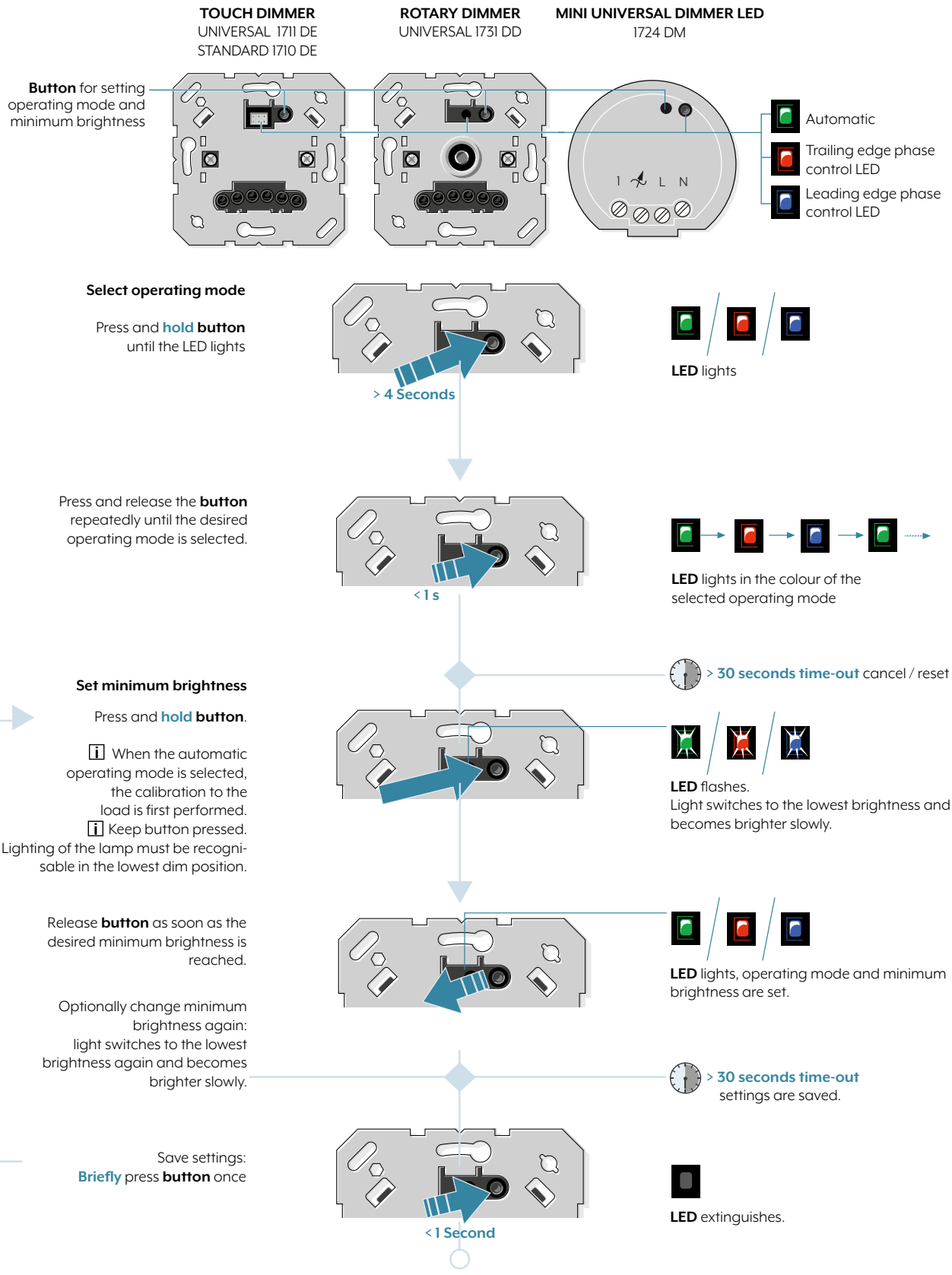
LED lights green
- Automatic calibration to the load
- Trailing edge phase control for incandescent lamps, dimmable HV LED or compact fluorescent lamps as well as dimmable electronic transformers with LV halogen or LV LED lamps
- Leading edge phase control for dimmable inductive transformers with halogen or dimmable LED lamps
- LED leading edge phase control for dimmable HV LED or compact fluorescent lamps

LED lights red
- The dimmer operates according to the trailing edge phase control principle
- Setting for incandescent lamps, HV halogen lamps, dimmable HV LED or compact fluorescent lamps that can be dimmed according to the trailing edge phase control principle
- Dimmable electronic transformers with halogen or LED lamps

LED lights blue
- The dimmer operates according to the leading edge phase control principle
- Setting for incandescent lamps, HV halogen lamps, dimmable HV LED or compact fluorescent lamps that can be dimmed according to the leading edge phase control principle
- Dimmable electronic transformers with halogen or LED lamps

Proceed as follows to set the operating mode and the basic brightness:

- First, ensure that the load is switched off.



4.3.7 DALI

DALI stands for “Digital Addressable Lighting Interface” and is a standard for the digital data transmission between components of a lighting system. DALI was developed at the beginning of the 21st century and has largely replaced the 1-10-V technology in buildings. The objective was the creation of an easy to use interface in a system with low component costs.

DALI originally arrived in international standardisation as Appendix E4 of DIN EN 60929. In the course of further development and implementation of further functions, DALI today is currently described in the DIN EN 62386 series of standards.

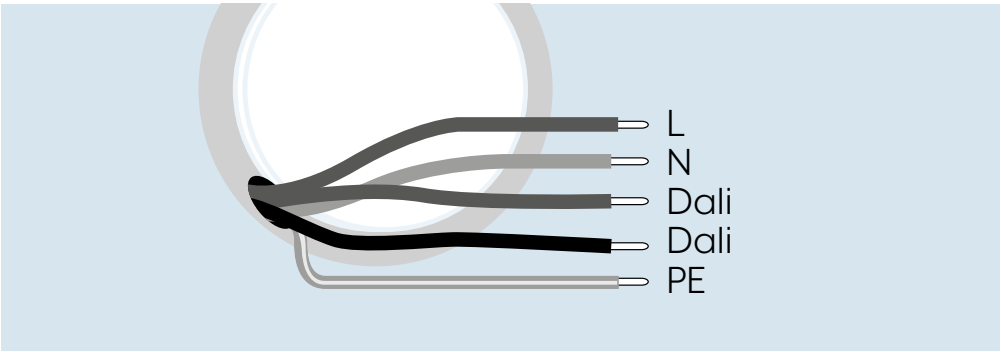
DALI provides the following functions and options:
- Switching and dimming from various places
- Control gear elements with different designs and from different manufacturers show the same dimming behaviour
- Standardised dimming characteristic curves for adaptation to the sensitivity of the human eye
- Selection between linear and logarithmic dimming behaviour
- Switching process is relocated to the electronic ballast (EVG) (no more wear in the relay, no dimensioning of switching currents is necessary, no separate contactors)
- Scene control
- Targeted approach or start-up of values
- Coordinated fading between scenes
- Individual, group or central control
- White point can be adjusted during operation (“tunable white”, TW)
- Colour control

DALI is particularly suitable for multi-purpose rooms or office rooms or open plan offices and training or presentation rooms and production halls.

DALI INSTALLATION RULES

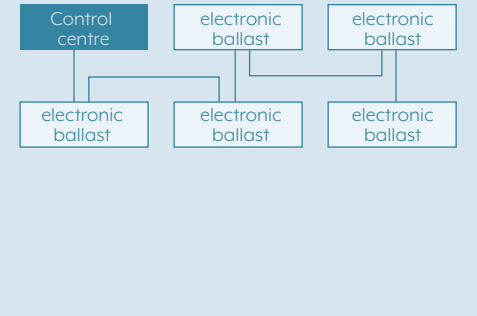
Note the following for the installation of a DALI system:

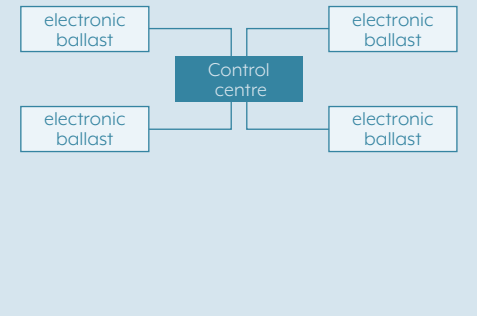
1. DALI is FELV (functional(ly) extra low voltage; .
2. No special data cables have to be used. For example, an NYM cable can be used.

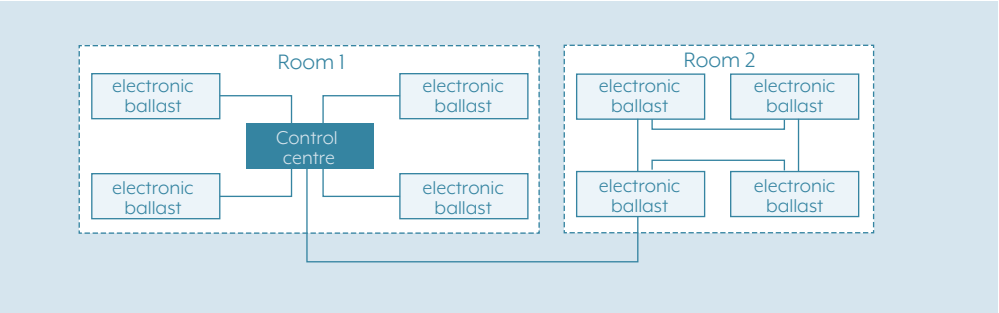


3. The same installation rules as for high-voltage installations are applicable for the cable installation of the DALI control cables.
4. DALI control cables and mains power cables may be under the same protective cover or drawn into the same tube.

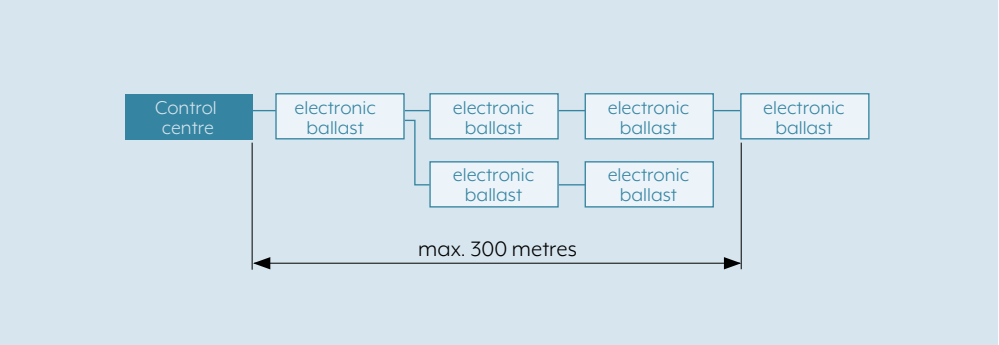
5. Earth conductor and neutral conductor must be present for a 5-core cable.
6. The connected nodes may be connected to any phases.
7. The wiring of the DALI nodes can be performed as series or star wiring or as mixed networking. A terminating resistor is not required.







8. The cable length between control unit and the furthest away node must not exceed 300 metres.



4.3.8 Tips for the planning of dimmers for LED lamps

SELECTING LAMPS

Ensure that the LED lamps can be dimmed.

Preferably only install lamps of the same manufacturer and from the same batch (same date of manufacture) in a system.

TAKE ACCOUNT OF INSTALLATION POSITION

Allow for the fact that you must reduce the maximum rated power of the dimmers depending on the intended installation position and the anticipated ambient temperature.

SETTING OPERATING MODE

Leave the operating mode set to “Universal” initially and test the installation.
In the event of problems: Set and check LED trailing edge phase control operating mode.
In the event of further problems: Set and check LED leading edge phase control operating mode.

For as high as possible connected load: Select LED trailing edge phase control.
For as wide as possible dimming range: Select LED leading edge phase control.

FOR COMPLEX INSTALLATIONS

The dimming of larger (LED) loads can be realised with power boosters (for rail mounting).

Check whether a DALI system represents a viable alternative.

4.3.9 Assistance in the event of problems

PROBLEM	CAUSE	REMEDY
Connected LED or compact fluorescent lamps switch off in the lowest dimming position or flicker.	Specified basic brightness is too low.	– Increase basic brightness.
Connected lamps do not switch on in the lowest dimming position or switch on after a delay.	Specified basic brightness is too low.	– Increase basic brightness.
Connected LED or compact fluorescent lamps flicker or hum, no correct dimming is possible, dimmer hums.	Lamps cannot be dimmed.	– Check manufacturer information. – Replace lamps with those of a different type.
	Operating mode (dimming principle) and lamps do not match optimally.	– Check operation in another operating mode, also reduce connected load if necessary. – Set operating mode manually. – Replace lamps with those of a different type.
	Dimmer is connected without neutral conductor.	– Connect neutral conductor if possible; otherwise replace lamp with one of a different type.
Connected LED or compact fluorescent lamps are too bright in the lowest dimming position; dimming range is too small.	Specified basic brightness is too high.	– Reduce basic brightness.
	Operating mode (dimming principle) does not optimally match the connected HV LED lamps.	– Check operation in another operating mode, also reduce connected load if necessary. – Set operating mode manually. – Replace HV LED lamps with those of a different type.
Dimmer switches off load briefly and then back on again.	Short-circuit protection has tripped; in the meantime there are no longer any errors.	– Check installation.

PROBLEM	CAUSE	REMEDY
Dimmer has switched off and cannot be switched on again.	Overtemperature protection has tripped.	– Disconnect dimmer from mains power supply, also switch off circuit breaker. – LED trailing edge phase control: Reduce connected load; replace lamps with those of a different type. – LED leading edge phase control: Reduce connected load; check operation in the LED leading edge phase control setting; replace lamps with those of another type. – Let dimmer cool down for at least 15 minutes. – Switch on dimmer and circuit breaker again.
	Overvoltage protection has tripped.	– LED trailing edge phase control: Check operation in the LED leading edge phase control setting; also reduce connected load if necessary. – Replace lamps with those of a different type.
	Short-circuit protection has tripped.	– Disconnect dimmer from mains power supply, also switch off circuit breaker. – Eliminate short-circuit. – Switch on dimmer and circuit breaker again. – **Note**: The short-circuit protection is based on an electronic fuse; the load circuit in the switched-off state is not galvanically isolated from the power supply.
	Load failure.	– Check load. – Replace lamp. – For inductive transformers: Check primary fuse.
LED lamp lights weakly when dimmer is switched off (“ghosting effect”).	LED lamp is not suitable for this dimmer.	– Use LED lamp of a different type or manufacturer. – Connect neutral conductor to dimmer.

4.4 Automatic Light

For more security and greater convenience, LB Management offers components for automatic, movement dependent lighting control. If movement is detected in the detection area, our automatic switches, observers and presence detectors switch on the lighting automatically and off again after expiry of a specified delay time – convenient and energy-saving.

The movement-dependent lighting control can basically be divided into two typical application areas:

Automatic switches and **observers** are movement detectors that are particularly suitable for passage zones such as stairs or corridors. The tasks of the observer are to switch on the light depending on the ambient brightness if any person enters the detection range and to switch off the light when the room is left again. The main focus here is the prevention of dangerous situations in the dark. In this application, it is not required to be able to switch off the light again manually. The desired delay time always expires here and the light switches off if the delay time is not restarted by movement again.

Presence detectors are movement detectors that are typically placed in rooms where people are present longer. The presence detector primarily has the objective to save energy and to switch off or dim the room lighting when no person is present. The presence detector must also be able to recognise small and sporadic movements for this. In this application, the light must also be able to be switched off manually. Presence detectors can be switched off as required and then ignore movements in the detection range.

All LB Management automatic switches and ceiling observers / presence detectors also measure the ambient brightness and thus make the control of automatic lighting even more intelligent: You can set that the lighting is only switched on for movement if a specified brightness threshold is undercut. Or you design more complex installations, in which the tripping of a movement detector switches other automatic switches or ceiling observers / presence detectors independently of the brightness.

JUNG ceiling observers / presence detectors can be used as observers and as presence detectors.

4.4.1 Components

INSERTS	REFERENCE NUMBER
Relay switch insert 1-channel	1701 SE
Relay switch insert 2-channel	1702 SE
Electronic switch insert 1-channel	1704 ESE
Standard touch dimmer LED	1710 DE
Universal touch dimmer LED	1711 DE
2-gang touch dimmer Universal LED	1712 DE
3-wire satellite unit	1723 NE
Power DALI push-button controller TW	1713 DSTE
Pulse insert	1708 IE

ATTACHMENTS	REFERENCE NUMBER
Standard automatic switch 1.1 m	..17180..
Standard automatic switch 2.2 m	..17280..
Universal automatic switch 1.1 m	..17181..
Universal automatic switch 2.2 m	..17281..
Ceiling observer/presence detector	DWPM 17360..

4.4.2 Operating modes and functions

Our automatic switches and presence detectors / ceiling observers provide a variety of functions to automate the lighting conveniently and as needed. The following chapter gives an overview of the individual operating modes and functions.

OBSERVER OPERATING MODE
The load is switched automatically in the observer mode, depending on thermal movement and ambient brightness. In the observer mode, the lighting cannot be switched off using a control point (switch, button or wireless networking).

Application area
Entrance and passage areas (corridors and stairs), garages, cellars, bathrooms or guest toilets.

PRESENCE DETECTION OPERATING MODE
The load is switched automatically in the presence detection mode, depending on thermal movement and ambient brightness. In the presence detection mode, the lighting can be switched off using a control point (3-wire satellite unit, push-button or wireless networking). Thereby, switching on again during active movement detection in the delay time is suppressed. In combination with the dimming inserts, you can regulate the lighting, depending on movement, to an individually specified brightness. In this combination, the automatic switch continuously measures the sum of artificial light and daylight on request. If the specified switching threshold is undercut, the automatic switch switches on the light when movement is detected and regulates this so that the desired brightness value is achieved. Thus the brightness in the room always remains constant independently of the amount of incident daylight. This is designated as constant light regulation.

Application area
Offices, conference rooms, toilets, sports halls, warehouses.
In combination with dimming inserts, particularly for offices, conference rooms and production areas.

The presence mode is activated and adjusted easily and conveniently by smart phone via Bluetooth in the Clever Config app.
The following parameters can be adjusted:
- Detection range
- Sensitivities of all sensors (e.g. PIR A – PIR C)
- Brightness threshold
- Fixed or dynamic delay time
- Switch-off advance warning
- Hotel /pilot light function
- Night light function
- Constant light regulation
- Alarm operation
- Walking test

CONTINUOUS ON FUNCTION

The load is switched on manually and continuously until the function is deactivated again. With this function and using the Clever Config app or a switch on the device, you can prevent the movement detector not detecting any presence for stationary activities and switching off the lighting.
Typical usage scenarios are preventing the light being switched off during classwork or when reading in the bathtub and during house moves in stairwells.

CONTINUOUS OFF FUNCTION

The load is switched off manually and continuously until the function is deactivated again. With this function and using the Clever Config app or a switch on the device, you can prevent the lighting being switched on even if the device detects the presence of a person.
A typical usage scenario is preventing the light being switched on due to movement, e.g. during film screenings or projector presentations.

0.5 – 5 HOURS CONTINUOUS ON FUNCTION

The load is switched on continuously for a time of 0.5 to 5 hours or until manual deactivation. The function behaves in principle like the “Continuous ON” function, with the difference that the function is automatically deactivated after a configurable time and switches to automatic operation (“AUTO” function). Manual deactivation is thus not strictly necessary.

0.5 – 5 HOURS CONTINUOUS OFF FUNCTION

The load is switched off continuously for a time of 0.5 to 5 hours (or until manual deactivation). The function behaves in principle like the “Continuous OFF” function, with the difference that the function is automatically deactivated after a configurable time and switches to automatic operation (“AUTO” function).
Manual deactivation is thus not strictly necessary.

PULSE OPERATION FUNCTION

If the pulse operation is activated, the load is only switched on for a short time (approx. 0.5 second) when presence is detected. Any longer lasting movement detection results in certain time intervals for repetition of the switch-on pulse. If the “day operation” setting is also selected, the movement evaluation is always performed independently of the brightness. This function can be used in the observer and presence detection modes to monitor other rooms, e.g. whether a customer is present in the sales areas, for example in combination with a bell.

SWITCH-OFF ADVANCE WARNING FUNCTION

For the switch-off advance warning, the lighting is not switched off immediately at the end of a movement detection and expiry of the delay time, but not until after a pre-warning by flashing three times at intervals of 10 seconds (switch insert) or by dimming the lighting (dimming insert). Any person in the room recognises that the lighting will soon be switched off due to the switch-off advance warning. The person thus has the opportunity to retrigger the delay time (e.g. by movement) to prevent any switch-off of the lighting (according to DIN 18015-2).

PRESENCE SIMULATION FUNCTION

In the recording mode (inactive mode), the switching processes in automatic mode that are tripped by presence of persons are recorded. The recorded switching processes are played in the playback mode. In doing so, the load in the playback mode is always only applied when the brightness condition (brightness < switch-on threshold) is met and switched off again after expiry of the specified delay time.
Thus, in the case of prolonged absence (e.g. holiday), you simulate that persons are present in the building and deter potential burglars.
If any movement is detected in playback mode, this is also evaluated and the lighting is switched accordingly. The alarm function can also be activated during the presence simulation.

ALARM OPERATION FUNCTION

When alarm operation is activated, the load is always only switched on for a short time (approx. 1 second) when movement is detected. Any longer lasting movement detection results in repetition of the switch-on pulse. The movement evaluation is always performed independently of brightness during alarm operation.
Alarm operation is usually activated for absence. If unauthorised persons gain access to the building, they are unsettled by the pulsed activation of the load. In this way, neighbours can also be made aware of the unauthorised entry.
The movement detector switches the load into the flashing operation (approx. 1 second ON, 1 second OFF) for the specified delay time. The status LED 2 (red LED) also signals the alarm tripping until the deactivation of the alarm function by fast flashing (0.5 second ON, 0.5 second OFF).

HOTEL LIGHT / PILOT LIGHT FUNCTION

The light is toggled between two brightness values for the hotel / pilot light function for movement detection.
The hotel / pilot light function is intended as comfort function, e.g. in hotels. The lighting is switched on continuously at low brightness as a pilot light. When any movement is detected, the movement detector switches the light to a saved higher brightness value. The device must be combined with a dimming insert to perform the hotel / pilot light (Hotel / Eco) function. The light switches to the saved memory dimming value for all switch-on commands. If movement is no longer detected, the lighting is dimmed again to the brightness of the pilot light after expiry of a delay time.
The value for the pilot light is set at the factory to 20 percent.
If the movement detector is in the presence detection mode, any switch-off command dims the lighting to the pilot light level and does not switch it off completely.

NIGHT LIGHT FUNCTION

Using the night light function, the light is switched on at a low brightness at programmable time intervals when movement is detected. A typical application is going to the bathroom during the night. The design of the living rooms is according to VDI/VDE 6008, Sheet 3 and VDE AR-E 2757-8.

The device must be combined with a dimming insert to perform the night light function. The movement detector switches the light to the value of the night light brightness for all switch-on commands. The value is set to 20 percent at the factory and can be adjusted using the Clever Config app.
A switched-on load can also be dimmed using the satellite units – also brighter or darker than the night light brightness.

CONSTANT LIGHT REGULATION FUNCTION
The movement detector constantly measures the sum of artificial light and daylight If the specified switching threshold is undercut, the movement detector switches on the light when movement is detected and regulates this so that the desired brightness value is achieved.
Thus the brightness in the room always remains constant independently of the incidence of daylight.
The brightness should remain constant over a monitored area (e.g. desk), also in the case of variable incidence of external light (e.g. sunlight / daylight).
This results in more comfort, constantly adapted illumination and energy saving.
Typical applications: Offices, conference rooms, production areas etc.

The device must be combined with a dimming insert to perform the constant light regulation function. The desired brightness value that the constant light regulation should be set to is adjusted using the Clever Config app. The constant light regulation always switches on with the saved switch-on value (memory value) and then regulates to the specified brightness setpoint.

Change brightness value temporarily: The light can be dimmed using the 2-wire satellite unit centre plate (on terminal 1). The value specified in this way is the new brightness value that the constant light regulation should adjust itself to. This is maintained until the device switches off after expiry of the delay time. At the next switch-on, the constant light regulation is performed again with the original brightness value.

TIMER FUNCTIONS
The hotel function, alarm operation, presence monitoring, On / Off etc. can be activated for a specific time of day.
Thus, you can create a schedule for the different operating modes and functions for every individual weekday.
Switching points can be defined. One function in each case per switching point can be activated, for example:
- Mon – Fri: 22:30 Night light function On
- Sat & Sun: 00:00 Alarm function On
- Mon – Sun: 06:00 Automatic

The saved programs and settings are stored in non-volatile memory.

LOCKING TIME
If a movement detector has switched off the lighting, the movement detection is suppressed for a short locking time in order to prevent the movement detector recognising the cooling down lamps in the monitoring area as thermal movement and switching on again immediately.
The required locking time is determined automatically by all movement detectors and is 0.3 to max. 3 seconds.

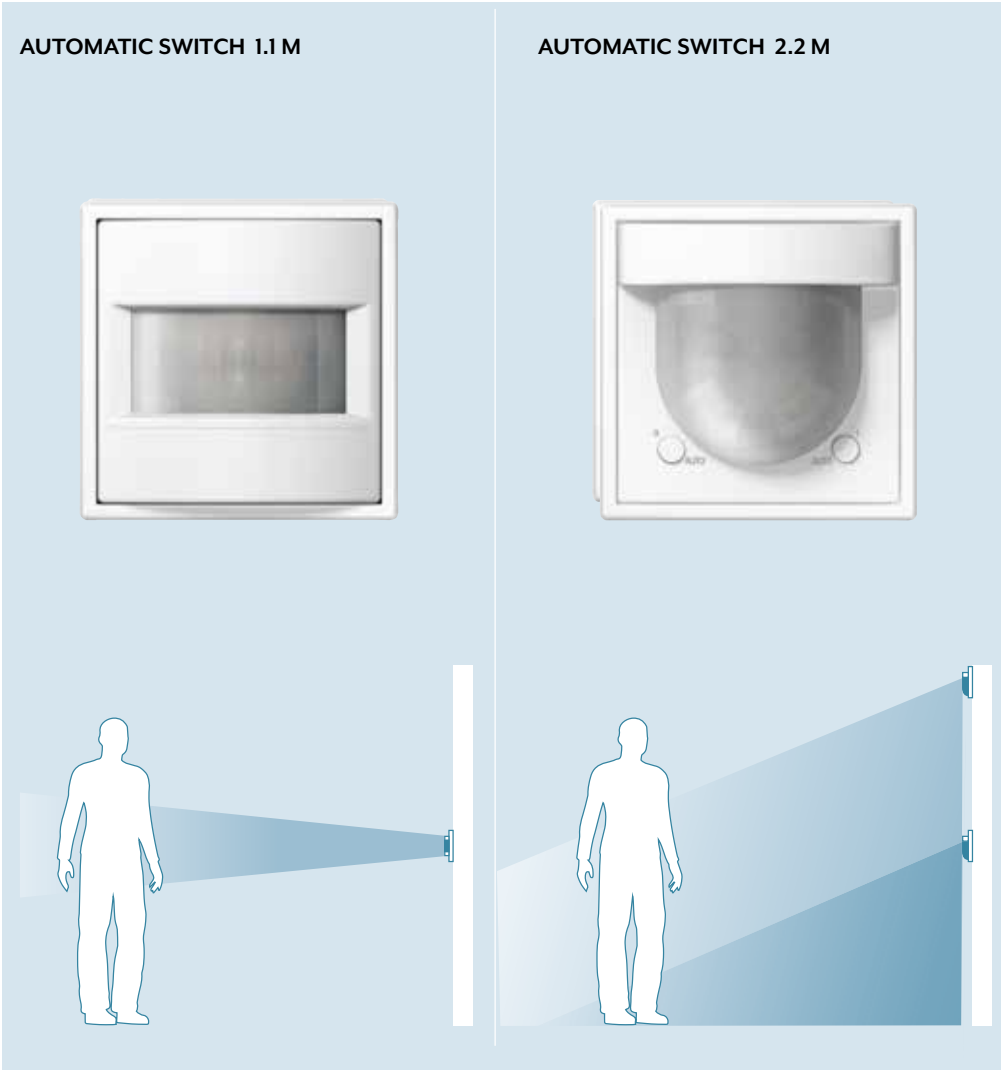
4.4.3 Setting up detection areas

If a movement detector is supplied with mains power, it starts a calibration process of the environment for max. 60 seconds. In this time, no movement is detected and no switching command is accepted. The lighting is switched on during the calibration.

STANDARD AND UNIVERSAL AUTOMATIC SWITCHES

In the case of nominal installation height of the movement detectors of 1.10 metres or 2.20 metres, the following results as seen from the mounting position:

- A detection area with a detection angle of 180°
- A frontal monitoring range of up to 30 metres
- A lateral monitoring range of up to 15 metres



Options for limitation of the detection area

The detection area of the automatic switches can be limited if required. This gives you more flexibility for the selection of the mounting location.

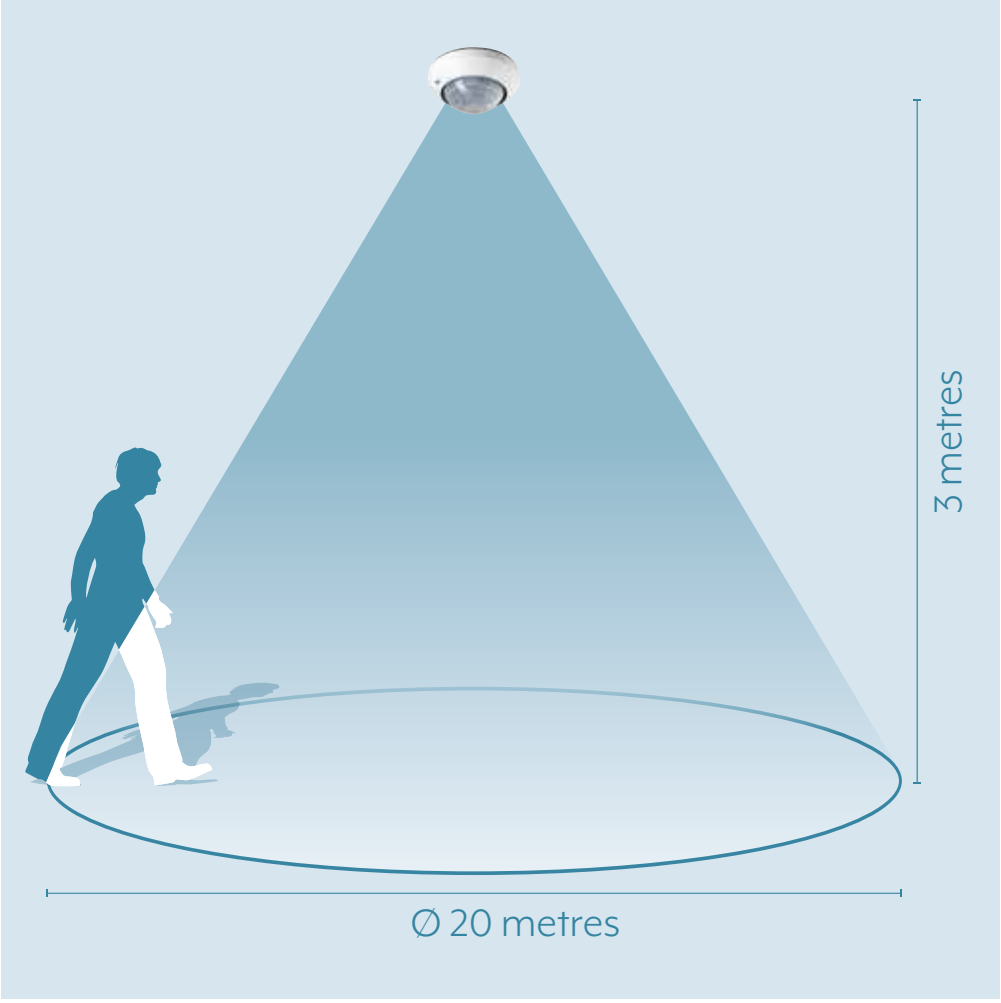
A shutter that limits the detection area to an angle of 90° is included in the scope of delivery of the 1.1 m automatic switches. The shutter can optionally be installed on the right or on the left.

For the 1.1 m Universal automatic switch, you can also activate / deactivate the individual sensors using the app. Thus, the detection range on the left and on the right can be restricted by 60°.

The detection area of the 2.2 m Universal automatic switch can also be individually adjusted using the app.

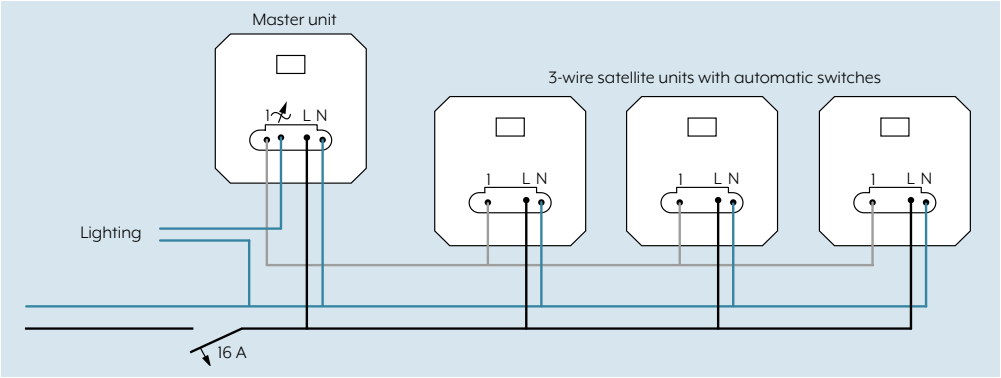
CEILING OBSERVER/PRESENCE DETECTOR

At a mounting height of 3 metres, the ceiling observer / presence detector has a monitoring area with diameter of 20 metres. The detection area of the ceiling observer / presence detector is adjusted using the Clever Config app.



CREATION OF AN EXTENDED MONITORING ZONE

If a room or property needs an extended monitoring zone, multiple movement detectors can be connected together. For this, you need a movement detector master unit (for example an LED Universal touch dimmer with 1.1 m Universal automatic switch or alternatively a presence detector / ceiling observer) that you connect one or more satellite units (3-wire satellite unit with automatic switch) to using the satellite unit terminal 1.



The movement detector satellite units extend the detection range and also initiate the lighting control via the master unit.

4.4.4 Settings

The automatic switches and presence detectors / ceiling observers can be installed for many different application purposes and at various positions. The setting parameters can be individually adjusted so that they precisely match the individual application purpose and installation location. Details for this can be found in the respective operating manual.

DELAY TIME

Using the delay time, you specify how long the lighting stays switched on after each detection. The delay time of the standard automatic switch is set to two minutes. The delay time for the universal automatic switch can be set between 10 seconds and 60 minutes using the Clever Config app.

The universal automatic switch also has a dynamic self-learning delay time. The function determines a delay time within specified limits from the movements detected in the past. The delay time is increased cyclically for prolonged presence and reduced cyclically for prolonged absence. This optimises energy efficiency and user comfort of the automatic switching.

SENSITIVITY

Using the sensitivity, you can adjust the range of the automatic switch and prevent incorrect switching due to too sensitive monitoring.

The sensitivity of the individual infrared sensors for the universal automatic switches can also be adjusted using the Clever Config app.

BRIGHTNESS THRESHOLD

With the brightness threshold setting, you can adapt the movement detectors to the required switch-on brightness for the respective application. A lower brightness than in work areas (e.g. office or workshop) is usually required in passage areas.

WALKING TEST

Using the walking test function, you can check the detection range and the detection behaviour and adjust if necessary using appropriate settings (detection area and sensitivities). The walking test is performed independently of brightness.

SAVE SWITCH-ON BRIGHTNESS (MEMORY VALUE)

In combination with a dimming insert, you can save an individual switch-on brightness. Thus you create your own standard. You can adjust the brightness as required using centre plates or conveniently using the Clever Config app on a smart phone.

SAVING AND RETRIEVING USER SETTINGS

The universal automatic switches provide the possibility to save the current configuration in the device and in the Clever Config app.
Tip: Save the configuration after commissioning. If the end customer changes the settings later, he always has the possibility to restore the settings of the installer.
The following settings can be saved:

- Operating function
- Operating mode
- Detection area settings (PIRs)
- Sensitivity settings (PIRs)
- Switch-on brightness (memory value)
- Brightness threshold
- Delay time
- Dynamic delay time
- Walking test
- Pulse operation
- Switch-off advance warning
- Presence simulation
- Hotel /pilot light function
- Night light function
- Constant light regulation
- Alarm operation function

4.4.5 Pairing universal automatic switches with mobile devices

The universal automatic switches can be paired with a smart phone via Bluetooth.
The commissioning and adjustment are child's play using the JUNG Clever Config app.

Proceed as follows to pair the universal automatic switch with a mobile telephone:

1. Activate the pairing mode on the device.
   - Universal automatic switch 1.1 m: Switch the automatic switch to Continuous On and darken the sensors for at least four seconds.
   - Automatic switch 2.2 m and ceiling observer / presence detector: Press and hold the Bluetooth button for at least four seconds.
2. Search for available devices using the app and follow the instructions on the display.

Up to eight smart phones can manage each Bluetooth device.

LB Management Shading

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Foto: Dirk Beumer

5. LB Management Shading

As consistent further development of the well-known Blinds Management, the LB Management provides all components for modern lighting control as a modular system and easy to use for tradesmen.
The two blind inserts, Standard and Universal, can each be combined with the various covers: Standard centre plate, Universal centre plate, Standard Timer and Universal Timer.
Produced in the diverse JUNG design, they can be selected to fit in with the rest of the electrical installation.

5.1 Equipment Overview

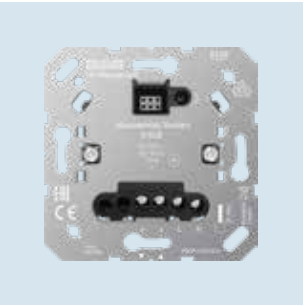
BLIND INSERTS	REFERENCE NUMBER
Standard blinds insert	1730 JE
Universal blinds insert	1731 JE

ATTACHMENTS	REFERENCE NUMBER
Standard centre plate	..1700.. /..1700 P..
Universal centre plate	..1701.. /..1701 P..
Standard Timer	..1750 D..
Universal timer Bluetooth	..1751.. /..1751 P..

ATTACHMENTS, RADIO	REFERENCE NUMBER
eNet Standard Radio centre plate	FM ..1700.. / FM ..1700 P..
eNet Radio centre plate	FM ..1701.. / FM ..1701 P..

SENSOR	REFERENCE NUMBER
Bluetooth brightness / temperature sensor	1792 HTBT

Standard blinds insert



With the Standard blinds insert, you control the blinds manually with mechanical centre plates, via Bluetooth, using a timer individually or centrally. With its low installation depth of only 24 millimetres, this insert provides optimal connection options. The stable support plate guarantees fast and secure installation.
The Standard blinds insert can control blinds, shutters and awnings.

Overview of the functions:

- Intelligent insert for operation with centre plate and timer from LB Management
- Data-based bidirectional communication of attachments and inserts
- Test operation without attachment is possible
- Polarity reversal function of the motor outputs (Up/Down) using the test button in the event of incorrect connection.
  This means removing the inserts again is not required.
- Energy saving power supply
- Blind insert can be operated remotely using wireless attachment
- Motors: maximum 700 W
- 230 V AC, 50/60 Hz
- Screw terminals
- For controlling a blind
- Not suitable for group or central controls

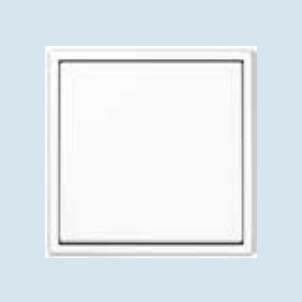
Universal blinds insert

With the Universal blinds insert, you control blinds manually with mechanical centre plates, wirelessly or, using a timer individually or centrally. With its low installation depth of only 24 millimetres, this insert provides optimal connection options, and despite this still has a stable support plate.
The Universal blinds insert can control blinds, shutters and awnings, and can be expanded via the satellite unit input to a group and central controller.
Wind or brightness sensors can be connected for even more intelligent control.

Overview of the functions:

- Intelligent insert for operation with centre plate and timer from LB Management
- Data-based bidirectional communication of attachments and inserts
- Test operation without attachment is possible
- Polarity reversal function of the motor outputs (Up/Down) using the test button in the event of incorrect connection.
  This means removing the inserts again is not required.
- Energy saving power supply
- Blind insert can be operated remotely using wireless attachment
- Installation on various outer conductor circuits for local and central control is possible.
  They do not have to consider any different protection circuits
- The installation can be performed via various residual current circuit breaker circuits
- Every blind insert can be used without limitations as master or satellite unit
- Motors: maximum 700 W
- 230 V AC, 50/60 Hz
- Screw terminals

Standard centre plate



The Standard centre plate is a 1-channel attachment for all LB Management inserts.
It can be actuated at the top, bottom and also full surface.

Overview of the functions:

- Automatic shading control using appropriate inserts
- Lighting control using appropriate inserts
- Consistent operating concept
- Attachment for the 2/3-wire satellite unit

Universal centre plate

The Universal centre plate with memory and lock-out functions is a 1-channel attachment for all inserts. The attachment consists of a divided rocker that looks like a 2-gang rocker.
A coloured LED is assigned to each rocker half that is used for the function display, status display and as pilot light.
It can be actuated at the top, bottom and also full surface.

Overview of the functions:

- Automatic shading control using appropriate inserts
- Lighting control using appropriate inserts
- Consistent operating concept
- Operation is performed manually and automatically
- Lock function to deactivate all automatic functions, satellite units and the memory function
- Includes a memory function with two switching times that are repeated every 24 hours

Standard timer with display

The standard timer with display is a 1-channel timer for all inserts. It consists of a genuine glass surface in the typical JUNG design with a backlit display and six operating buttons.

Overview of the functions:

- Automatic shading control using appropriate inserts
- Lighting control using appropriate inserts
- Dialogue-guide menu control
- Two time blocks: Mon – Fri, Sat – Sun:
  - A time block for switching and dimming inserts consists of two On / Off time combinations
  - A time block for blind inserts consists of one Up / Down time combination
- Astro function:
  - 18 countries can be selected
  - Morning / evening offset setting
- Quick save: Takeover of the current time as switching time
- Automatic setting of summer or winter time that can be disabled by the user
- Backlit segment display: Enables reliable reading at dark installation locations
- Touch surface: Operation using six operating surfaces with printed symbols
- Evaluation of the satellite unit
- Display switches off after two minutes or to permanent display of the time
- Lock function: To deactivate automatic functions, satellite units and time schedules
- Power failure: Date and time are retained for four hours in the event of power failure. All other values are stored in non-volatile memory
- Quick changeover between automatic and manual modes
- Display of the next switching time

Universal timer Bluetooth

The Universal Timer Bluetooth is a 1-channel attachment for all inserts. The attachment consists of a divided rocker that looks like a 2-gang rocker. The rocker can be actuated at the top, bottom and also full surface. The left side of the rocker contains a colour LED for various displays. The right side also contains a coloured LED to indicate different functions (see Overview of functions). The operation and programming are performed via Bluetooth using a mobile device.

Overview of the functions:

- Automatic shading control and parametrisation using appropriate inserts
- Lighting control and parametrisation using appropriate inserts
- Attachment for the 3-wire satellite unit
  - With sun protection and twilight function linked to brightness / temperature sensor
- 40 switching times that are set for every day with an individual brightness value (0 – 100 percent blind height of the slats for blind inserts; On/Off for a relay insert)
- Lock function: Deactivation of automatic functions, satellite units and time schedules
- Operation of the LB Management inserts via Clever Config app with status feedback in values (0 – 100 percent, On/Off)
- Switch-on brightness with dimming insert can be saved
- Copying of switching times via Clever Config app to other Universal Timers Bluetooth
- Astro function using GPS data of the Clever Config app for each switching time point
- Automatic setting of summer and winter time and automatic time synchronisation using Clever Config app
- Random function
- Presence simulation
- Alarm function
- Other parameters can be set depending on the LB Management insert

Bluetooth brightness / temperature sensor

The Bluetooth brightness / temperature sensor is used for recording brightness and temperature values. It can be adhered on window panes without tools using an adhesive pad and is operated with a lithium battery. It is thus independent of the mains power supply and can be attached everywhere in the room without interfering cables.
The wireless range in a room is approx. 10 metres.
The Universal Timer is expanded by various functions with the brightness / temperature sensor.

Overview of the functions:

- Measured brightness and temperature values can be transmitted via Bluetooth to one or more Universal Timers. Then the Universal Timer initiates the sun protection or the twilight function and lets the blinds move to a defined position or switches / dims the lighting.
- Sends the current brightness value (in the range of 5 – 80,000 lux) via Bluetooth to the Universal Timer
- Sends the current temperature value (in the range of -5 – +55 °C) via Bluetooth to the Universal Timer
- Sun protection function enables automatic lowering of a blind in the case of too strong sunlight:
  - Blind moves to the sun protection position if the brightness threshold is exceeded for longer than two minutes
  - Blind moves up again if the brightness drops below the threshold for longer than 15 minutes
- Brightness threshold can be linked with the temperature measurement. In this way, the shading is not initiated until a specified temperature and the brightness threshold are exceeded.
- Twilight function enables automatic lowering of the blind or switching / dimming of the lighting
  - Blind moves to the twilight position if the twilight threshold is undercut for longer than four minutes
  - Blind moves up again if the twilight threshold is exceeded for at least four minutes
  - Lighting switches on if twilight threshold is undercut for four minutes

eNet Radio centre plate

The eNet Radio centre plates are available as full surface and 2-gang rocker. It is an attachment for all switching and dimming inserts or 3-wire satellite units from LB Management Light. The attachment consists of a divided rocker that looks like a 2-gang rocker. The rocker can be actuated at the top, bottom and also full surface. Every rocker contains a colour LED for various displays. The 2-gang rocker design offers additional functions. (See feature overview).

Overview of the functions:

- Manual, wireless and time-controlled operation of e.g. lighting, blinds, shutters, awnings
- Transmitter for wireless transmission of switching, dimming and blind commands
- Operation on switching, dimming or blind insert or 3-wire satellite unit from LB Management
- 2 switching times can be saved that are repeated every 24 hours (only applies to the eNet Radio centre plate and not to the eNet Standard Radio centre plate)
- Locking function (only applies to the eNet Radio centre plate and not to the eNet Standard Radio centre plate)
- Status feedback to radio transmitter
- Status indicator using LED
- Night Mode
- Evaluation of the satellite unit inputs
- Functions in combination with lighting insert
  - Scene operation possible
  - Switch-on brightness can be permanently stored when combined with flush-mounted inserts for dimming
- Functions in combination with blind insert
  - Positioning of blinds via scene recall
  - Position for sun protection and twilight
  - Running time and ventilation position of the blind can be stored
- Functions in combination with 2-channel relay switching insert
  - Output a2 switches depending on output a1 e.g. to switch on ventilation depending on the lighting and to switch it off with delay; switch-on delay for output a2 can be set; delay time for output a2 can be set

Adjustable with eNet Server (depending on insert):

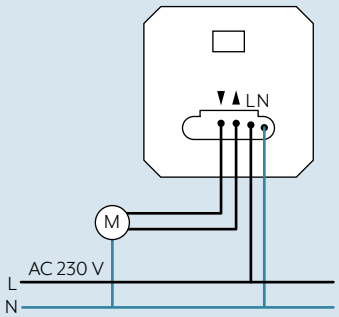
- Slat reversal time / fabric tightening time, reversal time for change of direction
- Direction of travel can be inverted
- Operating locks
- Deactivate satellite unit evaluation
- Position for sun protection, twilight, lockout protection and wind alarm
- Maximum brightness, minimum brightness
- Dimming speed, switch-on/ switch-off delay
- Up/down dimming ramp
- Switch-off prewarning, continuous ON, continuous OFF
- Hotel function, delay time
- Fully encrypted wireless transmission (AES-CCM)
- Operation with eNet Server Version 2.2 and higher
- Update of the device software
- Repeater function

Refer to the eNet System Manual for more information:
https://service.enet-smarthome.com/de/support/downloads/

5.2 Electrical connection

The blind inserts have four terminals **L**, **N**, **Up** and **Down** for the control of a motor for the shading system. The Universal Blind Insert has two additional terminals **1** and **2** available for the connection of satellite units.
The outer conductor is connected to **L** and the neutral conductor to **N**. The two terminals **Up** and **Down** are available for the connection of an on-site motor of the shading system.

5.2.1 Connecting insert



1. Connect the blind insert according to the connection plan.
2. Mount the blind insert in a device socket. In doing so, the connection terminals must be facing down. Sufficient connection space remains thanks to its installation depth of only 24 mm.
3. Switch on the mains power.
4. Using the TEST button, you can also control the connected motor without attachment to test the wiring and adjust the limit position of the motor.
   - If you keep the TEST button pressed for shorter than one second, the blind moves in the direction of the bottom limit position.
   - If you keep the TEST button pressed for longer than one second, the blind moves in the direction of the top limit position.
   - If you keep the TEST button pressed for longer than four seconds, the motor stops.
   - If the motor moves in the opposite direction, press and hold the TEST button for longer than ten seconds. This reverses the polarity of the motor outputs (Up/Down) and removal of the inserts again is not necessary.
5. Set the top and bottom positions depending on the blind type. Details for this can be found in the operating manuals of the motors. Set the desired limit position for the motor.
6. Then attach the frame and attachment in the de-energised state.

Note for connection of a wind alarm: The blind cannot be operated manually or automatically while an Up command is present at the satellite unit input 2 due to a wind alarm. The block of the manual operation provides protection of the blinds.

5.2.2 Requirements for the shading motor

The motors used must be fitted with a limit switch (mechanical or electronic) that de-energises the motor in the limit position. The mains power for moving the shading is available here after switching through the relays.
The relays of the shading control switch motors up to 700 W. Also note this value for the control of multiple motors.
Also note the maximum duration for being switched on (often referred to as “ED” in technical texts). It can happen due to frequent moving that the motors heat up too strongly so that they are switched off via an integrated thermal switch and do not function again until they have cooled down.
Depending on the design of the motor, the cooling down can take up to 30 minutes.
If you want to switch the motors in parallel, the motors must be suitable for this.
Or use isolating relays (item no.: TR-S, TR-SUP or TR-SREG).

5.3 Tips for operation

As well as the actual moving of the blinds, you can adjust slats if necessary depending on the blinds, and temporarily deactivate automatic or programmed switching processes using the lock function. You can also set an individual ventilation position, at which the blind stops automatically.

5.3.1 Moving blinds and slats

1. Press and hold the upper or lower half of the button for longer than one second so that the blind moves up or down.
2. Press the button again so that the blind stops at a desired position.
   Otherwise, the blind moves to the upper or lower limit position.
3. Press and hold the upper or lower half of the button for less than one second so that you can adjust the slats.

If a ventilation position is already saved, the blind stops when the ventilation position is reached when moving down from the upper limit position.

5.3.2 Lock function

The user can fix the blind in the upper limit position using the lock function. All automatic functions and also the operation via satellite units are deactivated until the lock function is deactivated again. For example, this prevents the shutters on the terrace door closing automatically while the resident of the house is still present in the garden.

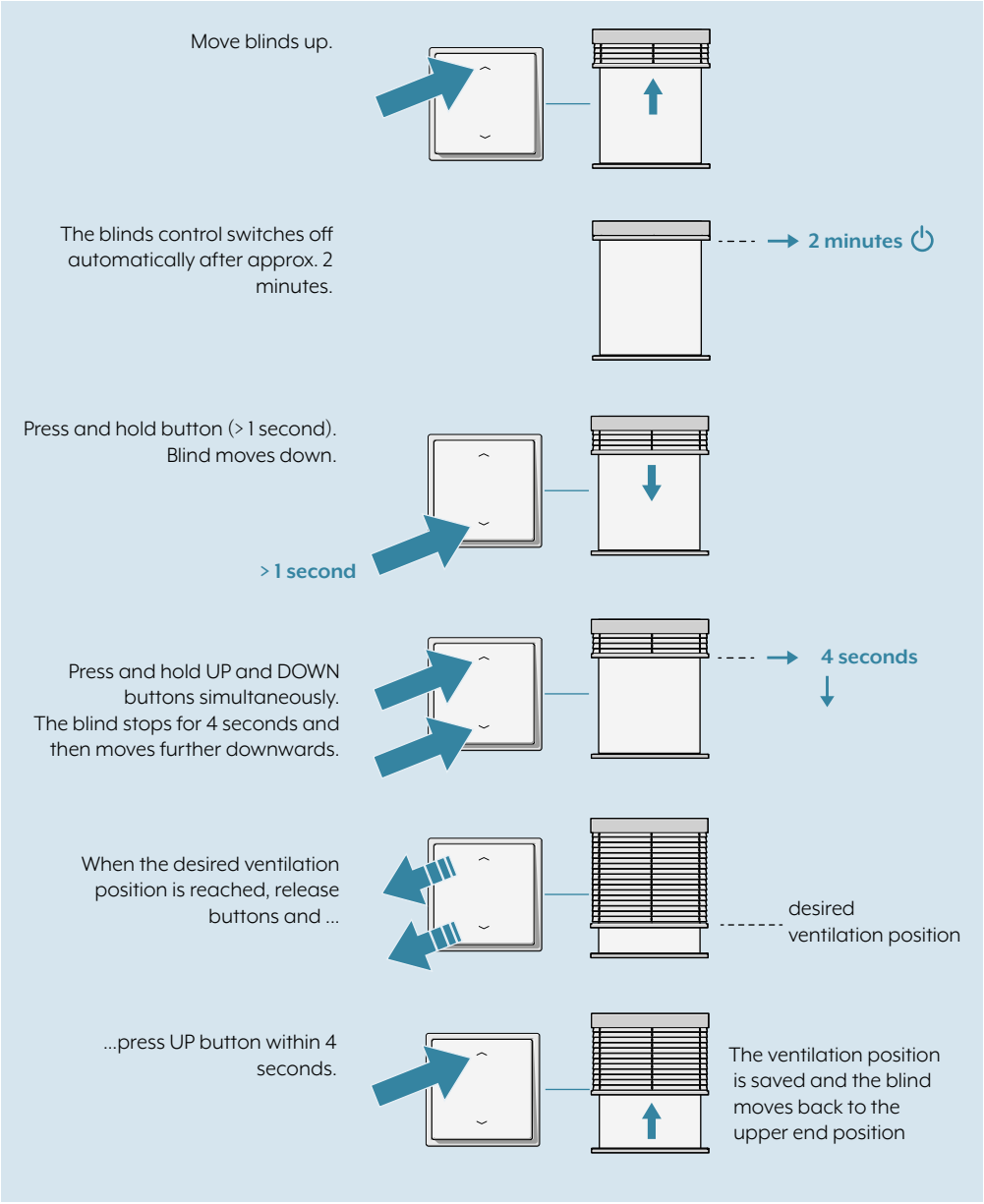
ACTIVATING AND DEACTIVATING LOCK FUNCTION
The lock function disables the satellite unit operation (wind alarm is not affected by this) and deactivates all automatic functions. Manual operation using the buttons continues to be possible. It is also still possible for satellite unit operation in the “Down” travel direction when using blinds. The lock function activates if the lock function button is kept pressed for longer than four seconds. The function LED lights red while the lock function is active.

5.3.3 Ventilation position

The ventilation position is any position between the upper and lower limit position, at which the blind stops automatically when descending. For example, the room can continue to be ventilated or is not completely darkened. After the blind has stopped in the ventilation position, it can also be moved down into the lower limit position with a new command. In combination with the Universal Timer Bluetooth attachment, the saved blind positions can be controlled from any position using the Clever Config app.

SETTING VENTILATION POSITION

Proceed as follows to set the ventilation position:



The saved value is overwritten when you save a new ventilation position.

5.3.4 Reversal time

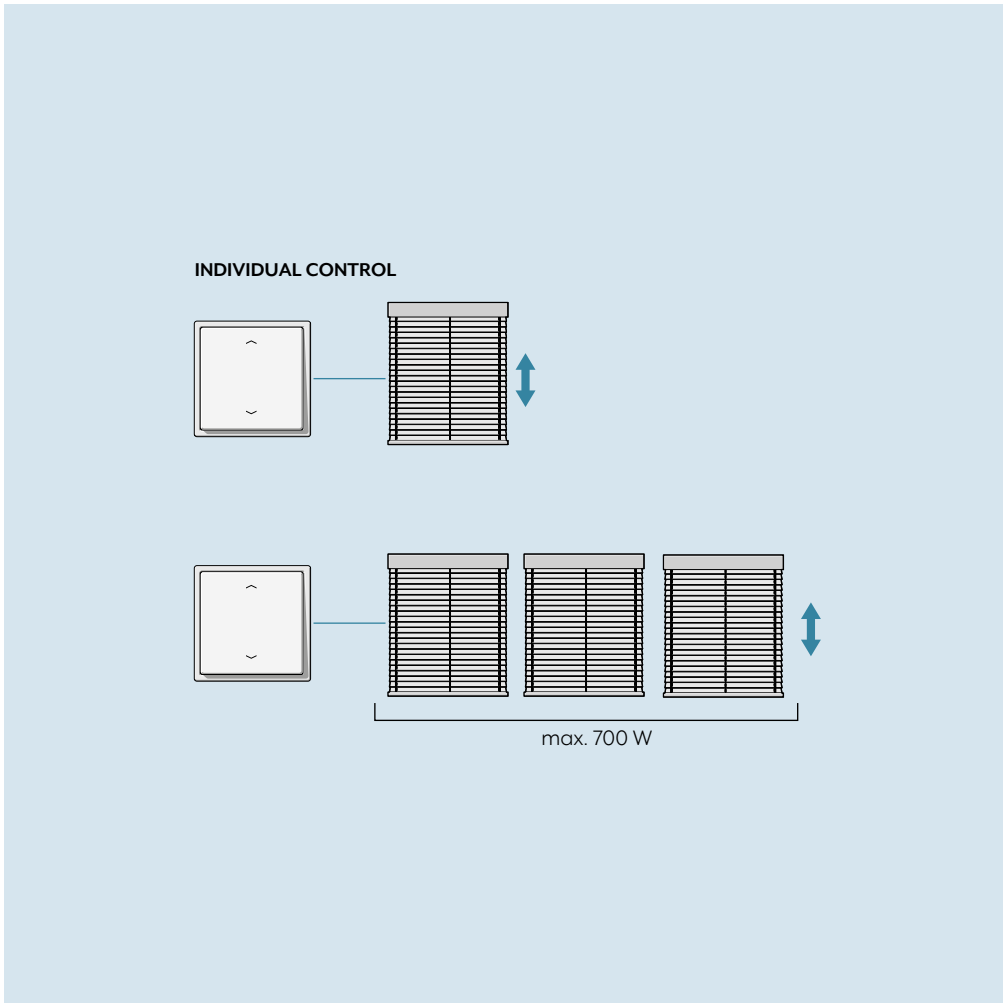
In order to prevent any overvoltages that can damage the insert and motor for any reversal of the travel direction during an upward or downward movement, there is a reversal pause of approx. one second between switching off and restarting the drive.

5.4 Control variants

5.4.1 Individual controller

The simplest variant of the automatic shading control is the individual control. If there are only a few blinds to operate, the individual controller presents itself as low-cost variant.

Individual controller

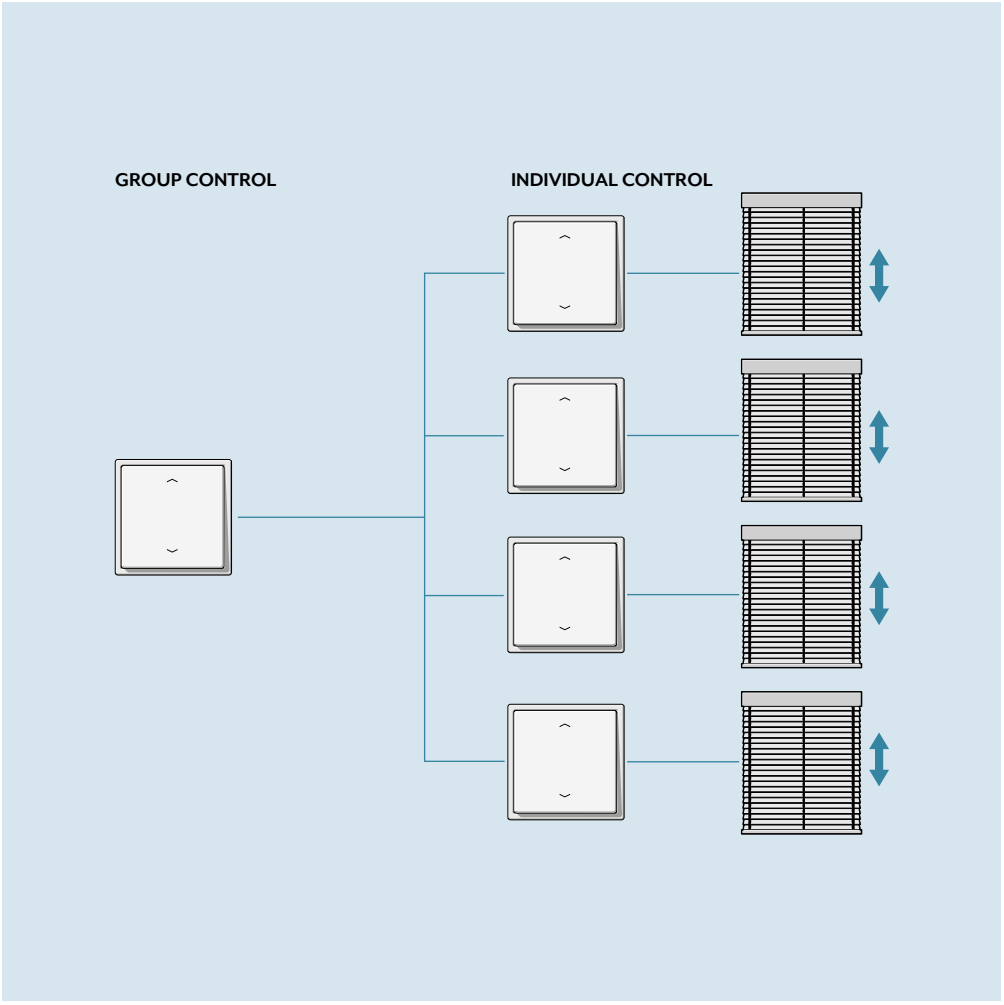


The individual controller (Standard blinds insert with any attachment) switches a shading system as a self-contained system. If multiple motors are connected to a blind insert, the maximum connected load of total 700 watts must also be taken into account here. The motors must be suitable for parallel operation. Otherwise, use isolating relays (item no.: TR-S, TR-SUP or TR-SREG). Due to the selection of the attachment, the individual controller can be realised as manual, remote controlled or sensor-controlled variant.

5.4.2 Group and central control

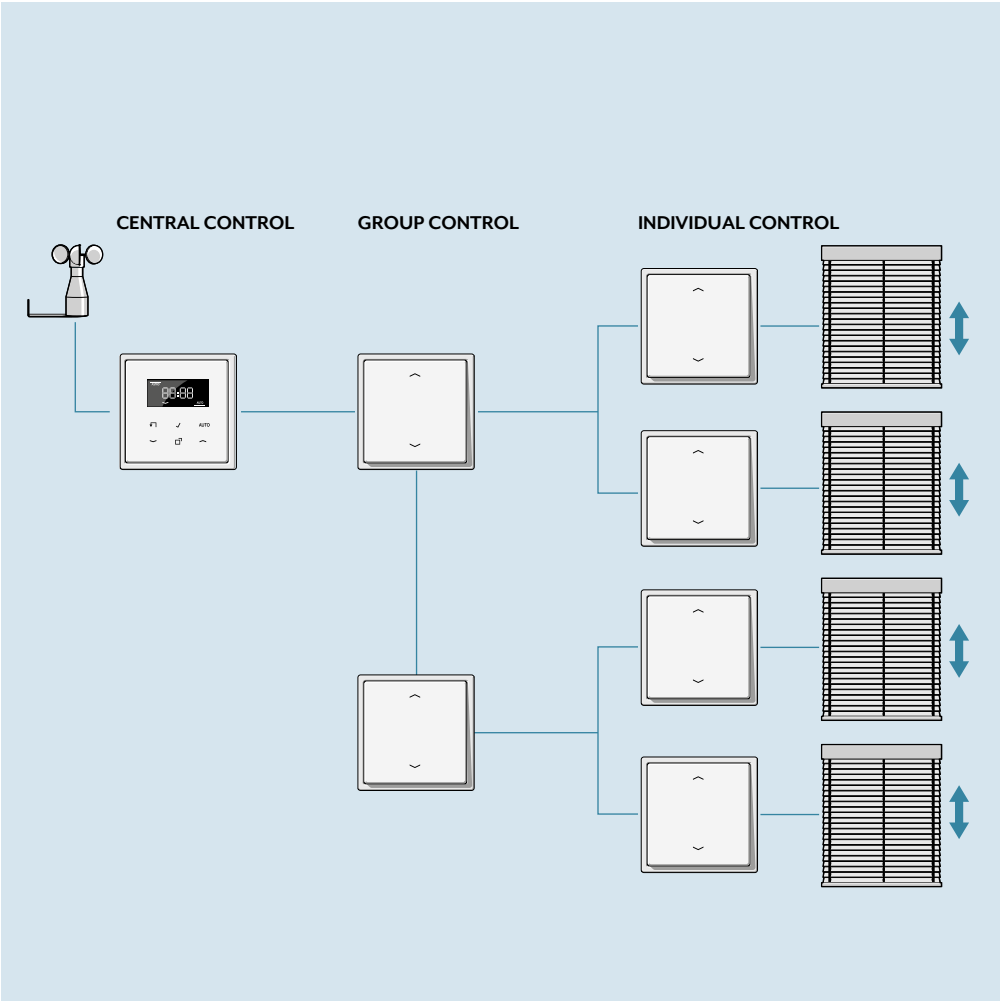
Group or central control is when individual blind inserts are interconnected via the satellite unit inputs. As only one satellite unit input is needed, group and central controls can only be realised with the Universal blinds insert.
One satellite unit can control multiple blind inserts simultaneously, and provides the advantage that it can be cascaded in any way so that the blinds can be controlled flexibly individually, per room, per floor or per building, also with more than three hierarchy levels.

Group control



In the case of group control, one blind insert with any attachment functions as master and transmits the control commands to all connected blind inserts, to which the motors are connected.
The blinds can be individually controlled locally using the downstream blind inserts.

Central control

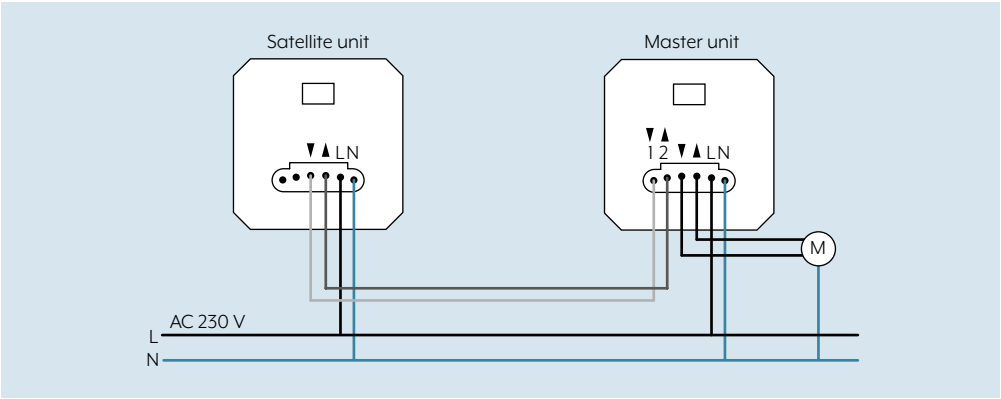


In the case of very large systems, for example in office buildings, all blinds can be controlled centrally. The entire system can be globally protected against storms if a wind sensor is connected. A group controller is installed on every floor and the respective master is centralised with a higher level master. This results in the following control options: Centrally via the master, floor by floor via the group controller and individually locally.

5.4.3 Connecting satellite units

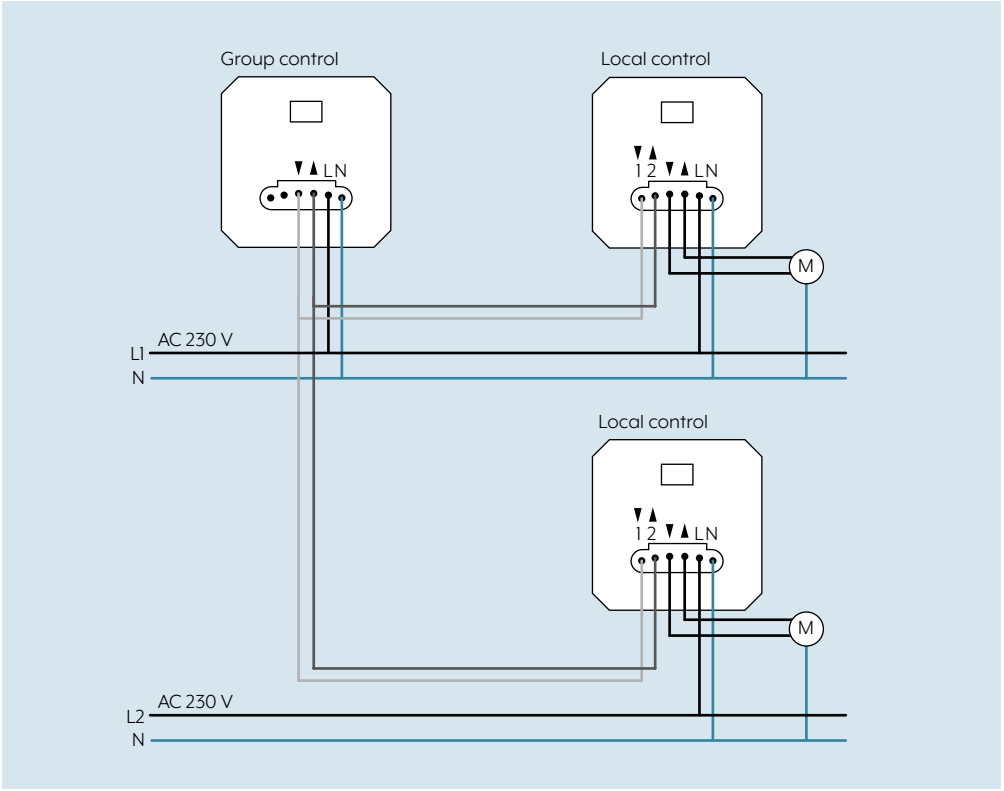
In addition to the terminals **L**, **N** and the motor connection, the Universal blinds insert also has two terminals **1** and **2** for the connection of satellite units. If the 230 V mains voltage is applied to one of these inputs, the corresponding travel direction of the motor is initiated. In this way, it is possible to control the blind with a second control element or to move multiple blinds individually or as a group. The motor runs while a mains voltage is applied to the satellite unit input. As the satellite unit input "Up" can also be used for the connection of a wind sensor, this has the highest priority, also above local control elements.
The 230 V satellite unit inputs are galvanically isolated from the electronics via optocoupler and are routed to the interface for the operating attachment. This enables the use of different phase conductors (e.g. L1 + L2).
Mechanical and electronic satellites can be connected to a satellite unit input. Mechanical satellites are blind buttons or switches. These are suitable for connection and provide protection against unauthorised actions. Drawbacks of the mechanical satellites are that the buttons can only be operated manually during the entire running time and switches have to be reset.
The LB Management satellite unit uses the same concept on both control points. Various operating concepts can also be combined with each other here, such as a Standard Timer and a Universal Centre Plate.

Caution!
Damage to equipment from incorrect connection!
Do not connect any motors and satellite units in parallel as the high alternating voltages produced by the motors can damage the blind inserts.
Only connect the satellite units to the satellite unit inputs of the master. A satellite unit functions here either as group or central control unit or for the control of a motor.



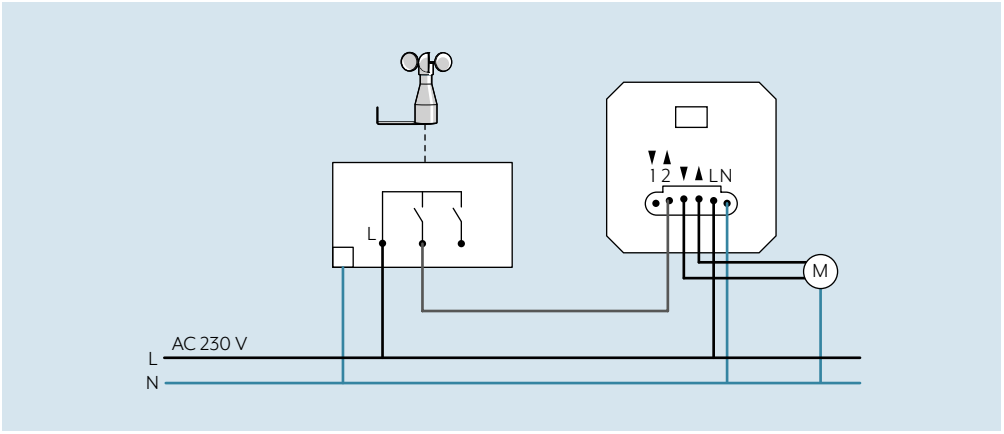
5.4.4 Integrating device in group control

Connect the blind inserts together with each other as follows for group control.
Note: In doing so, the blind inserts can also be present on different phase conductors.



5.4.5 Connecting wind sensor

Wind sensors protect the blinds against destruction from high wind. If the wind sensor signals high wind, the blind is moved to a safe upper limit position and locked there until the specified threshold has been undercut again.

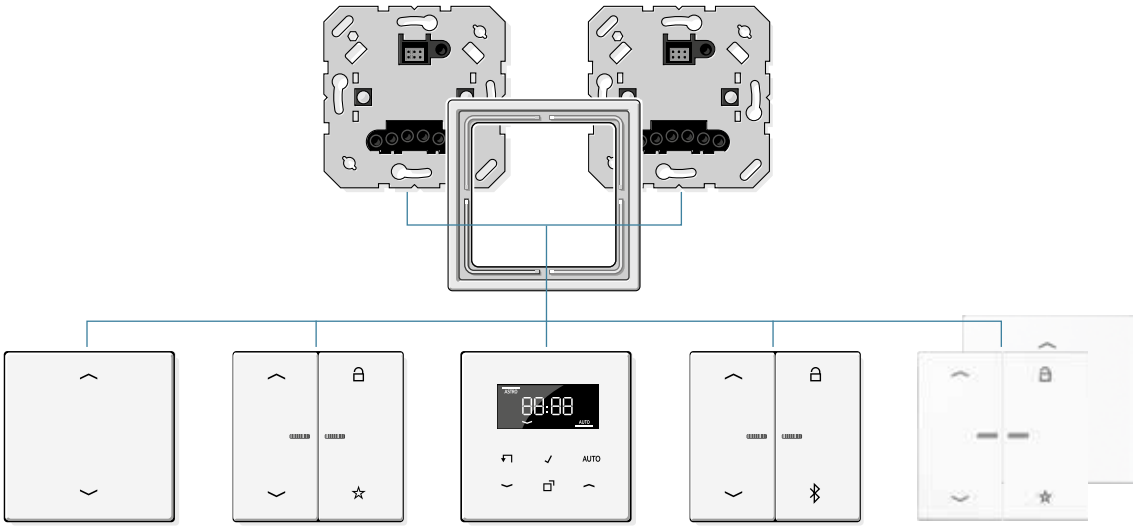


1. Connect the wind sensor to the satellite unit input 2 according to the above connection plan.
2. If you want to use the wind alarm for all outdoor blinds of a building, connect the wind sensor to the satellite unit input 2 of the central controller.

Note: The blind cannot be operated manually or automatically while an Up command is present at the satellite unit input 2.

Further details can be found in chapter “5.7 Wind alarm” on page 134.

5.5 Functionality depending on the attachment



Function	Standard centre plate	Universal centre plate	Standard Timer	Universal timer Bluetooth	eNet Standard Radio centre plate
UP, DOWN, STOP operation	●	●	●	●	●
Ventilation position can be stored	●	●	●	●	●
Travel time	120 seconds	120 seconds	120 seconds	can be saved (1–600 seconds)	via eNet Server
Lock function		●	●	●	●
Slat control time	●	●	●	can be saved (1–10 seconds)	via eNet Server
Memory function		2 switching times can be saved	2 switching times Mon-Fri and Sat-Sun can be saved	40 individual switching times can be saved*	2 switching times can be saved**; 100 switching times via eNet Server
Automatic adjustment for summer/winter time			can be disabled	Astro function (with coordinates input via location service)	via eNet Server
Astro function ASTRO			for 18 countries	Coordinates input via location service	via eNet Server
Random function				●	
Remote control				using Clever Config App	via eNet Server
Status feedbacks		LED	Display/LED	LED & Clever Config app	via eNet Server and eNet SMART HOME app
Switch to inverse operation				●	●
Sun protection function				with Bluetooth brightness sensor (4,000 – 80,000 Lux)	with eNet and sun sensor
Temperature-dependent sun protection				possible with Bluetooth brightness sensor (5 °C – 50 °C)	with eNet and sun sensor
Twilight function				possible with Bluetooth brightness sensor (5 – 4,000 Lux)	with eNet and sun sensor
Mix-up protection		●	●	●	●
Illuminated display			●		
Current time display 20:00			●		

*) using Clever Config App

**) only applies to eNet centre plates FM ..1701/1701 P..

5.6 Blind types

Blinds and shutters are summarised under the term “blinds” and can be used in many different variants in both the commercial as well as the private area.

HAZARDS WHEN USING BLIND CONTROL SYSTEMS

Some applications can be dangerous for the user. As a result, with heavy lattice roller shutters for example, there is a danger of injury through trapping of fingers or hands. The hazards must be ruled out by using additional, appropriate safety measures. Among other things, the measure can include light barriers or collision protection.

POSSIBLE APPLICATIONS

The various blinds can be used as glare and sun protection in the home and offices as well as in winter gardens and greenhouses:

- As plastic, metal or wooden shutters for the protection of interior rooms
- As strip curtain in the living room or in meeting rooms
- As awning on the terrace or balcony
- As lattice roller shutters on display windows
- As roller doors at the entrances of larger halls such as warehouses or sales rooms and car workshops

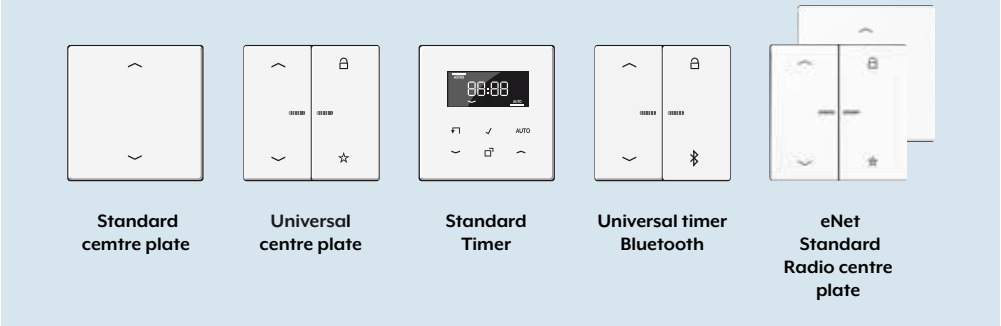
REQUIREMENTS FOR THE SHADING MANAGEMENT

Roller shutters are usually blinds that can be moved up and down using a strap or crank drive. Alternatively, the systems are equipped with a motor drive and are moved up and down with this. The JUNG LB Management is modern and convenient, and meets the following requirements:

- It can be used universally for most motor drives on the market.
- The system has one or more control points or satellite units
- The blind control system can be expanded to system controllers with individual, group and central control
- The system has a central wind alarm. It moves automatically to a safety position and locks itself.
- It has automatic sun protection and twilight function
- The operation is performed manually, time or wireless controlled
- The blind control system has a balanced price/performance ratio
- Many functionalities arise from various insert and attachment combinations

5.6.1 Selection of the attachment

The selection of the attachment depends on the type of blind and on the desired range of functions. Overall, there are various different attachment types available.



BLIND TYPES WITH AND WITHOUT SPECIAL REQUIREMENTS

There are various types of blinds that have different requirements:

can be controlled with all attachments:

- shutters and blinds that only move to the upper and lower limit positions and the ventilation position
- awnings that do not need any fabric tightening

Can only be controlled with the Universal Timer Bluetooth and the eNet Radio centre plate or eNet Standard Radio centre plate:

- any awning that needs fabric tightening
- blinds that protect against high sunlight and strictly need a brightness sensor as additional component
- blinds with targeted positioning

5.7 Wind alarm

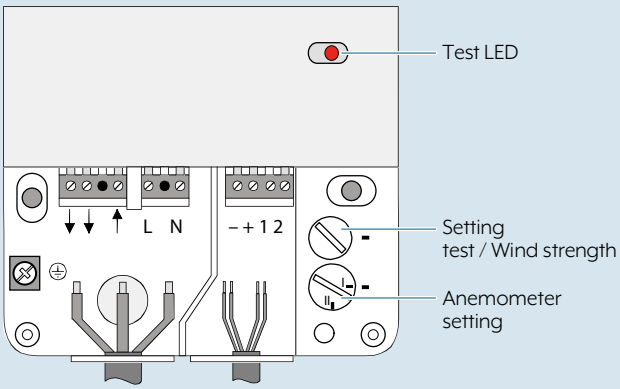
5.7.1 Wind sensor

The wind sensor moves the blinds automatically to a protection position when any previously defined threshold of the wind speed is exceeded. The sensitive blind slats or awnings are thus protected against possible destruction by high winds or storms.

CUP ANEMOMETER

The cup anemometer generally consists of three to four arms on a common axis with semi-spherical cups at the ends in each case. The wind sensor for the blind control system consists of two components: the cup cross and the wind sensor interface. It is installed on the roof or on a wall of the building. Note that the anemometer must be installed in a favourable position for the wind speed measurement and not in the lee.

5.7.2 Wind sensor interface

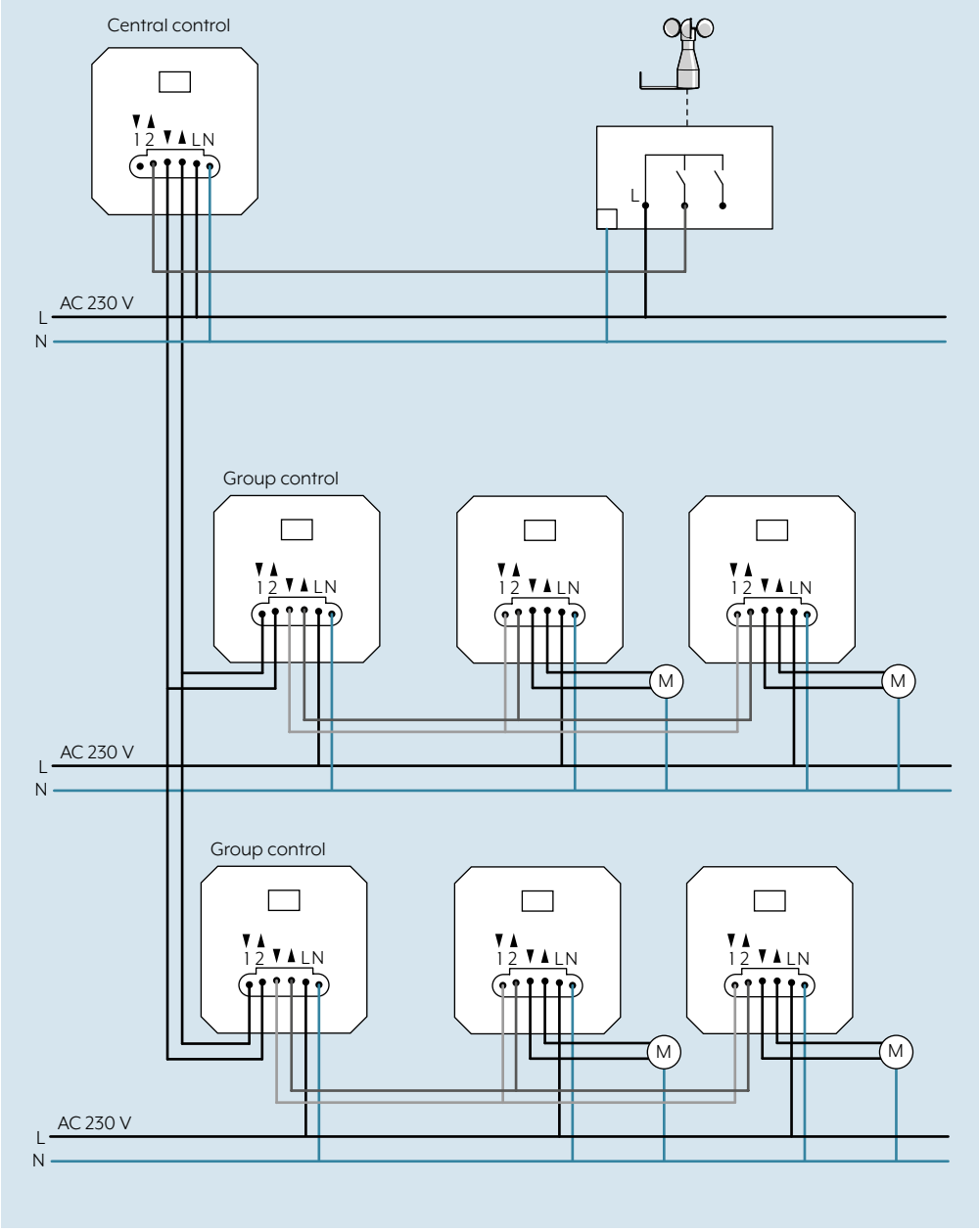


JUNG Art. No: 132 U WS
Wind sensor with converter

The wind sensor interface is the control gear of the cup cross. Depending on the level of the preselected wind speed, a floating output relay in the anemometer interface closes. A mains voltage of 230 V is applied to the satellite unit input 2 of the blind insert via this relay. The blinds are automatically moved up if the wind sensor establishes that the wind speed is too high.
In the group or central controller, all blinds whose satellite unit input has been wired to the wind sensor interface are firmly locked in the upper limit position and cannot be operated automatically or manually. The wind alarm is not revoked and the blinds cannot be operated again until the wind speed measured by the wind sensor has dropped again.

5.7.3 Central wind alarm

Thanks to the satellite unit principle of the LB Management, the anemometer can be used across all phases as central wind alarm for all blinds of an installation.



5.8 Sun protection function

5.8.1 Universal timer Bluetooth

You can expand your Universal Timer Bluetooth individually with sensors. This makes your blind insert a complex and nevertheless easy to use switching centre for the shading system of the building.

GENERAL DETAILS

You can expand your Universal Timer Bluetooth with the brightness / temperature sensors.
The sensor is paired with the Universal Timer Bluetooth using the Clever Config app and the pairing can be revoked at any time. You can pair any brightness / temperature sensor with the Universal Timer Bluetooth.
After the pairing, you retrieve the current temperature and brightness values using your Clever Config app. The brightness sensor transmits brightness values in the range of 5 – 80,000 lux, while the temperature sensor transmits temperatures in the range of -5 °C – +55 °C to the Universal Timer Bluetooth. If brightness changes of more than 10 percent of the current value occur, these are transmitted from the sensor to the Universal Timer Bluetooth so that this initiates the shading or twilight function.

SUN PROTECTION

The Universal Timer Bluetooth has a sun protection function that you can activate or deactivate as required. The sun protection function is deactivated at the factory.
You specify a threshold for the sun brightness using the Clever Config app.
The setting range of the threshold is 4,000 – 80,000 lux. The blinds move down automatically if the specified threshold is exceeded. However, this does not happen until after a time delay of two minutes in order to ensure that the value has not been exceeded only on account of temporary light interference. Analogously, the blinds are automatically moved up when the threshold is undercut. In this case, the time delay is 15 minutes in order to ensure that the threshold, for example, is not influenced on account of temporary cloud fields so that the blinds are not moved up again incorrectly.

TWILIGHT

The Universal Timer Bluetooth also has a twilight function in addition to the sun protection function. You can activate or deactivate this as required for the morning and evening twilight.
The twilight function for the morning and evening twilight is deactivated at the factory.
You specify a threshold for the twilight using the Clever Config app. The setting range of the threshold is 5 – 4,000 lux. If this value is undercut, the Universal Timer Bluetooth executes the twilight function with a delay time of four minutes.
Note when using the twilight function that the sun sensor cannot recognise, when morning twilight occurs, when the blinds are moved down completely.

TEMPERATURE

The evaluation of the temperature and brightness values is not performed in the brightness / temperature sensor but in the devices paired via Bluetooth.

You specify a threshold for the temperature using the Clever Config app. The setting range of the threshold is 5 – 50 °C and also has an Off position. The brightness function is executed if the brightness threshold specified in the sun protection function and the configurable temperature threshold are now exceeded. However, the function is not executed if only the brightness threshold is exceeded and the temperature threshold remains in the defined range. In this case, the temperature continues to be monitored precisely so that the brightness function can be executed immediately as soon as the temperature is exceeded.

Note that the measured temperature on a window pane can be different from the actual room temperature.

5.8.2 Bluetooth brightness / temperature sensor

The Bluetooth brightness / temperature sensor is a battery-powered device and therefore has no interfering cable. Using an adhesive pad, it can be fixed very easily and without tools on the interior side of any window pane. The Bluetooth brightness / temperature sensor has a wireless range of up to 10 metres in closed rooms.

The sensor measures the brightness and temperature values and sends the currently measured values to the Universal Timer Bluetooth. Depending on the recorded actual values and the specified values, the Universal Timer Bluetooth executes the sun protection or twilight function to move the blinds to a defined position or switch on the lighting.

Temperature-dependent shading is started by the Universal Timer Bluetooth if any temperature change of more than one degree occurs. For example, a winter garden can be automatically shaded as soon as a previously defined temperature is exceeded in order to prevent the winter garden heating up too strongly.

You can make all settings of the Universal Timer Bluetooth in the Clever Config app. You can also read out all current temperature and brightness values in the app, and as a result know at any time whether the values are within the defined limits and whether any threshold will soon be exceeded or undercut.

Note that the brightness / temperature sensor does not take over the evaluation of the recorded values. This continues to be done in the devices paired via Bluetooth.

5.8.3 Coupling sensors to the Universal Timer

The serial number is located on the brightness / temperature sensor. The Universal Timer and the brightness / temperature sensor are connected with each other using the Clever Config app by the entry of the serial number. Each Universal Timer Bluetooth can only work together with one sensor.

Temperature Control

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21.5°C
AUTO

6. Temperature Control

In addition to the control of light and shade, LB Management system, thanks to its components, allows manual and time-controlled regulation of the room temperature.
Using the Standard display and the room thermostat insert with sensor connection, temperature control is technically very easy to implement.
Produced in the diverse JUNG design, they can be selected to fit in with the rest of the electrical installation.

6.1 Equipment Overview

INSERTS	REFERENCE NUMBER
Room thermostat insert with sensor connection	1790 RTR
Relay switch insert 1-channel	1701 SE
Electronic switch insert 1-channel	1704 ESE

ATTACHMENTS	REFERENCE NUMBER
Standard display for room temperature control	..1790 D..

Room thermostat insert with sensor connection

With the room thermostat insert, you can control electric floor heating systems and electrothermal drives. The room thermostat insert is operated together with the room thermostat attachment of LB Management.
An external sensor can also be connected to the room thermostat.
The room temperature insert is mounted in wall boxes according to DIN 49073.

Overview of the functions:

- Control of electric underfloor heating systems
- Control of electrothermal drives
- Connection of an external sensor (Ref. No.: FF7.8) is possible
- Input for switching to cooling
- 230 V AC, 50/60 Hz
- Standby power (depending on attachment): approx. 0.1 – 0.5 W
- Connected load: max. 3,600 W
- Pulse width modulation (PWM) or two-point control (On/Off)

Relay switch insert 1-channel

The 1-channel relay switch insert switches different lamps, e.g. LED, halogen bulbs or fluorescent lamps. Using the operating mode selection button (BAWT) with LED indicator, you can conveniently set delay times if desired. The switch insert can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.
Electric underfloor heating systems or electrothermal drives are controlled in combination with room thermostat displays.

Overview of the functions:

- Connection of satellite units is possible
- Shut-off delays can be adjusted when using the Standard centre plate
- Satellite unit input for 2/3-wire satellite unit
- Suitable for switching the following loads per channel:
  - 2,300 W AGL, 2,300 W HV halogen,
  - 1,000 W LV halogen with conventional transformers
  - 1,500 W LV halogen with Tronic transformers
  - 1,200 W fluorescent lamps, uncompensated
  - Type 500 W HV LED lamps
- The following functions can be set using the operating mode selector (BAWT):
  - Test (On / Off using short press of the BAWT)
  - None / 1 min / 5 min / 30 min / 60 min delay time (automatic Off after manual On)
- 230 V AC, 50/60 Hz
- Screw terminals
- 3,600 W room thermostat for electric floor thermostat
- 1 to 5 electrothermal drives

Electronic switch insert

The electronic switch insert is optimised for 230 V LED lamps. It also switches incandescent lamps, high-voltage halogen bulbs, dimmable inductive transformers or Tronic transformers with halogen lamps.
The integrated soft start is particularly gentle on lamps here.
The switch insert can be installed in a commercially available device socket (e.g. Kaiser 1055-02) according to DIN 49073.
Electric underfloor heating systems or electrothermal drives are controlled in combination with room thermostat displays.

Overview of the functions:

- Device can be operated without neutral conductor
- Switching on uses a soft start that is gentle on the lamp
- Connection of satellite units is possible
- Electronic short-circuit protection with permanent switch-off after 7 seconds at the latest
- Electronic overtemperature protection
- The device uses the leading edge phase control or trailing edge phase control principle
- Automatic or manual setting of the appropriate operating mode for the load
- Display of the set operating mode using LED
- Use dimmable HV LED lamps
- Suitable for switching the following loads
  - Mixed load
  - 20 – 400 W ohmic-capacitive
  - capacitive-inductive: not permitted
  - 20 – 400 VA ohmic-inductive
  - 3 – 100 W HV LED
  - 3 – 100 W ohmic and compact fluorescent lamp
- Trailing edge phase control operating mode:
  - 3 – 200 W connected load for HV LED lamps
  - 20 – 200 W electronic transformers for LV LED
- 230 V AC, 50/60 Hz
- Screw terminals
- 400 W room thermostat for electric floor thermostat
- 1 to 5 electrothermal drives

Standard display for room temperature control

The Standard display for room temperature control is an attachment for the room thermostat insert and the switch inserts from LB Management. It consists of a genuine glass surface in the typical JUNG design with a backlit display and six operating buttons.

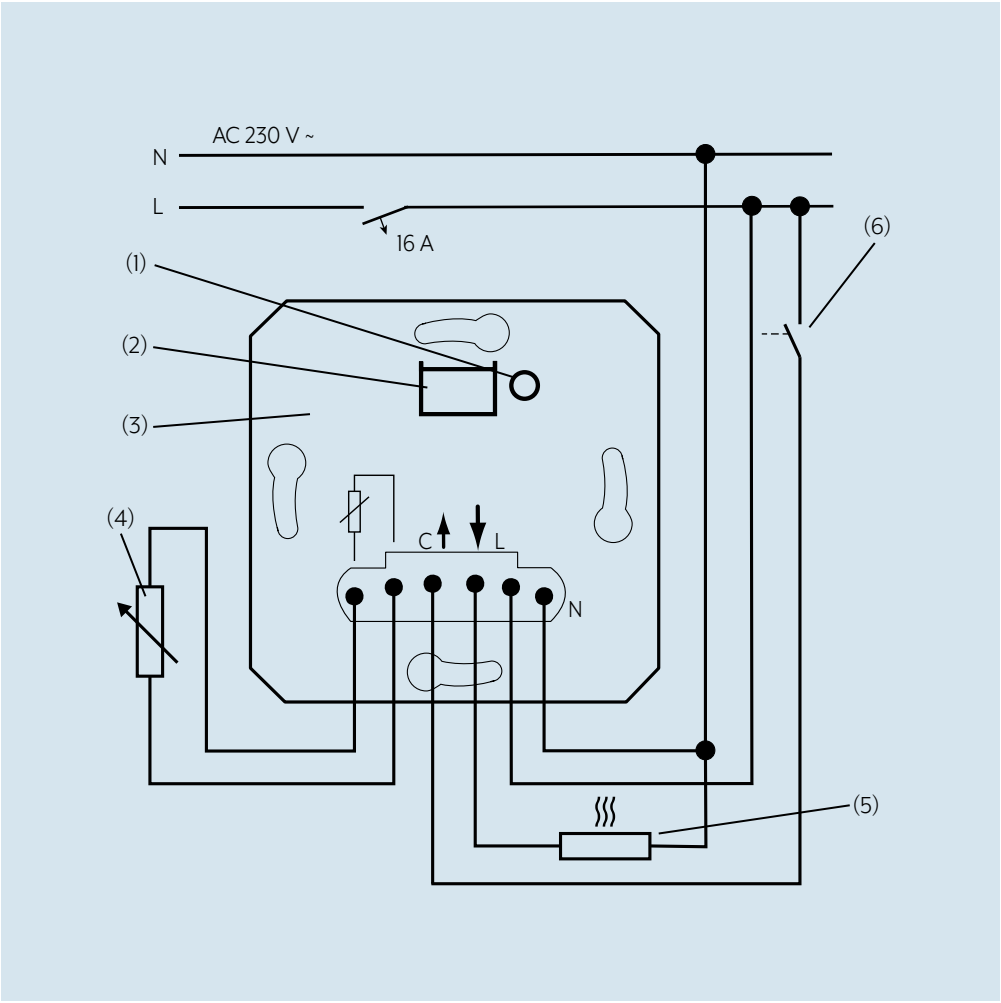
Overview of the functions:

- Manual and time-controlled regulation of the room temperature
- Timer switch with three memory areas
  - For each memory area, there is one comfort and ECO time in each case for Mon – Fri and Sat – Sun
- Setting of a comfort, ECO, cooling and frost protection temperature
- Quick save; acceptance of the current time as switching time
- Automatic setting of summer or winter time that can be disabled by the user
- Illuminated segment display: enables reliable reading at dark installation locations
- Operating lock
- Heating optimisation, where a fixed temperature is reached at a set time, which can be disabled by the user
- Adaptation to valves (normally open or normally closed)
- Cooling possible
- Supports internal and external temperature sensor
- Temperature drop detection: the frost protection temperature is retrieved when windows are opened
- Offset setting (correction value for the measured temperature)
- Controller output operates with pulse width modulation (PWM) or two-point control
- Valve protection function
  - A valve is opened and closed once a week
- Display switches off after two minutes or to permanent display of the setpoint or actual temperature

6.2 Electrical connection

The room thermostat insert has six terminals **N**, **L**, **heating** (output), C (cooling input, 2x **external sensor connection** for external temperature measurement and for switching from heating to cooling.
The outer conductor is connected to **L** and the neutral conductor to **N**. The connector for cooling is connected to **C**, and the connector for heating is connected to **heating**. The external sensors for external temperature measurement are connected to the two **external sensor connections**.

6.2.1 Connecting insert



(1) Test push-button
(2) Attachment interface with LED
(3) Insert
(4) External sensor for external temperature measurement (variable resistance)
(5) Electric underfloor heating system or electrothermal drive
(6) Switching contact for switching to cooling

1. Connect the room thermostat insert according to the wiring diagram.
2. Mount the insert in a wall box. In doing so, the connection terminals must be facing down. Sufficient connection space remains thanks to its installation depth of only 24 mm.
3. Attach the frame and attachment to the insert.
4. Switch on the mains power.
5. The load can be switched using the TEST push-button.
   - The attachment LED lights when the load is switched on.
   - Cooling is active if 230 V is applied to input C.

Note: The insert only functions with room thermostat attachments. All other attachments have no function.

6.3 Functional description

With the Standard display for room temperature control, you control the room temperature manually and time-controlled according to your wishes. The other functions such as temperature drop detection or heating optimisation are described below.

6.3.1 Heating or cooling operating mode

Modern heat pump heating systems often also enable rooms to be cooled. The room thermostat attachment supports this function with the “heating or cooling” operating mode.
In this operating mode, continuous regulation to the specified cooling temperature takes place. There are no time programs in cooling mode. Any change of the cooling temperature can only be made via the temperature parameters and not via the Plus and Minus buttons.
In combination with a room thermostat insert, cooling mode is activated by applying mains vol-tage to input terminal **C**. For switch inserts, cooling mode is activated by applying mains voltage to the satellite unit input “1”. The heat pump usually has a corresponding output or an installation switch can be used.

6.3.2 Frost protection and temperature drop detection

The frost protection temperature is the minimum temperature that is regulated to prevent frost damage. In the event of a sharp drop in temperature, e.g. after a window is opened, the insert regulates the temperature to the frost protection temperature for a maximum of 30 minutes. The temperature drop detection parameter must be activated for this.

6.3.3 Heating optimisation

Heating of the room starts a maximum of four hours before the switching time, so that the desired temperature in the room is reached when the switching time is reached and the heating process does not have to be started first. The **OPT** symbol in the display of the attachment flashes during the heating phase.
Note: The heating optimisation is designed for space heaters / radiators.

6.3.4 Offset

If it is established that the displayed actual temperature deviates from the general room temperature, a correction value can be entered in steps of 0.5 °C using this parameter. The actual temperature is then corrected by this offset value.

6.3.5 Controller adjustment

The control principle should be set depending on the heating system and the insert used.

TWO-POINT CONTROL
With two-point control, the output remains switched on until the specified setpoint temperature is exceeded by approx. 0.5 °C. The output is not switched on again until the setpoint is undercut by approx. 0.5 °C. As most heating systems are very sluggish, temperature overshoots can occur with this control.

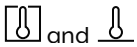
PULSE WIDTH MODULATED CONTROL
The pulse width modulated control is optimised for electrothermal drives, e.g. TVA 230 NC WW. This means that the output is not continuously activated, but for a certain time (pulse width), which depends on the temperature difference between the setpoint and actual temperature. With this method, the actual temperature is increasingly approaching the setpoint temperature. The cycle time is 15 minutes.

6.3.6 Valve adjustment

This parameter is used to adapt to the electrothermal drives used. There are actuators which are open (normally open, setting **NO**) or closed (normally closed, setting **NC**) when no supply voltage is present.

6.3.7 Temperature sensor

The room thermostat attachment has a built-in temperature sensor which is used to measure the room temperature.
In combination with a room thermostat insert, an external sensor can be connected, which is used either to measure the room temperature or to limit the maximum floor temperature.
The following settings are possible:

	The room temperature is measured by the internal temperature sensor.
	The room temperature is measured by the external temperature sensor. The internal temperature sensor is deactivated.
	The room temperature is measured by the internal temperature sensor and the floor temperature by the external sensor to monitor the floor temperature. If the maximum floor temperature is exceeded, the underfloor heating is switched off until the floor temperature falls below the maximum temperature again. This prevents an unpleasantly hot floor.

6.3.8 Behaviour after power failure

If a power failure occurs, the behaviour of the attachment depends on whether the power failure is longer or shorter than the power reserve.

Power failure shorter than the power reserve
- All data and settings are retained.

Power failure longer than the power reserve
- The date and time are reset and must be set again.
- The temperature control is performed as before the power failure.
- All times of the week timer switch are retained.
- All settings are retained.

6.3.9 Factory settings

The following settings are stored as factory settings on the standard display:
- Times for comfort and ECO temperature

	MON – FRI		SAT – SUN	
	COMFORT	**ECO**	**COMFORT**	**ECO**
T1	06:00	08:30	07:00	22:00
T2	12:00	14:00		
T3	17:00	22:00		

- Automatic operation is active
- Automatic summer time changeover is active
- Controller output depends on the insert:
  - Room thermostat insert = pulse width modulation
  - Switch insert = two-point control
- Output of the actuator is normally closed (**NC**)
- Heating optimisation is not active
- Temperature drop detection is not active
- Comfort temperature: 21 °C; ECO temperature: 18 °C; Frost protection temperature: 7 °C; Cooling temperature: 24 °C
- Internal temperature sensor for the room temperature measurement is active
- Switch-off of the display after 2 minutes without pressing any button is active.

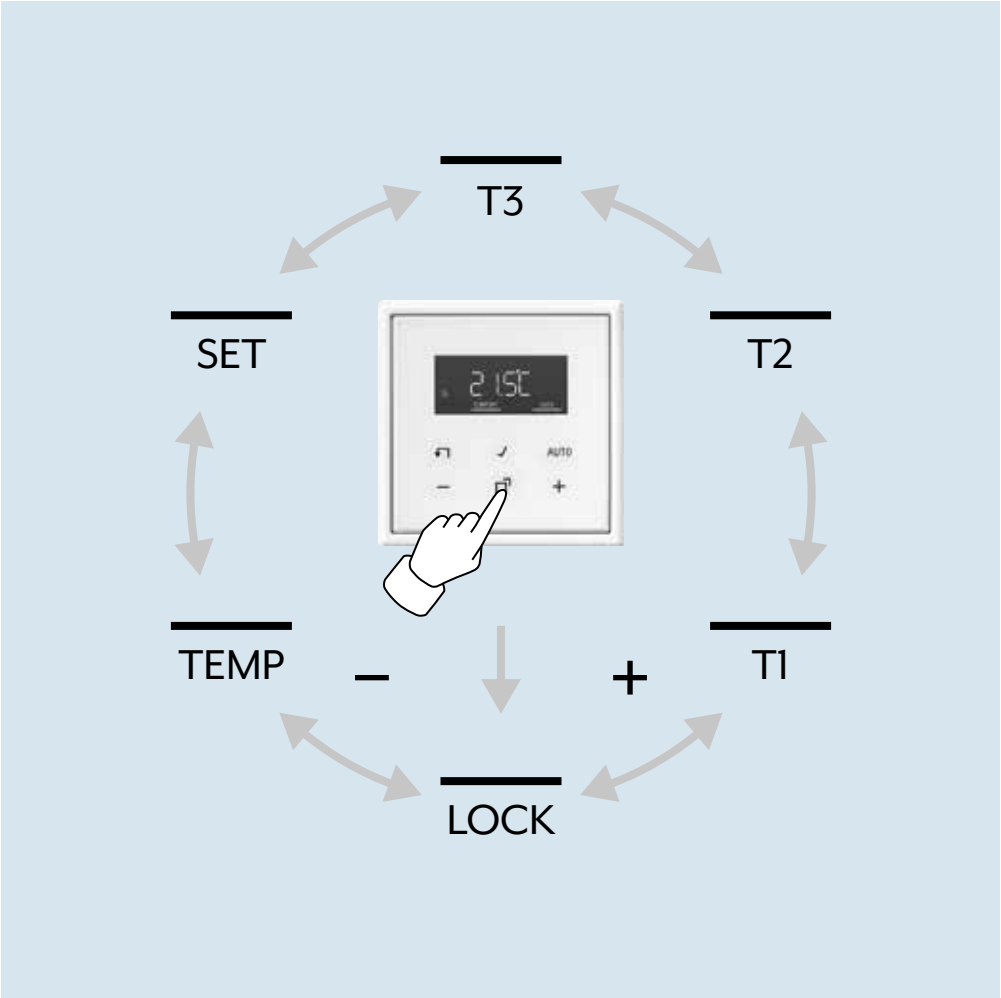
Press and hold the Reset button and the AUTO button simultaneously for 10 seconds to reset the attachment to the factory settings. A countdown is then shown on the display. The reset is performed when the countdown has run down to 0.

6.4 Activate functions

6.4.1 Activate automatic / manual operation

You can switch between automatic and manual operation by pressing the Auto button. If all time switch blocks are deactivated, the attachment automatically switches to manual operation. Automatic operation can no longer be activated. During automatic operation, the display shows AUTO. During manual operation, the display shows MANU.

6.4.2 Programming menu overview



1. Tap the Menu button to open the programming menu or to exit the programming menu.
2. Tap the Plus or Minus button to reach the desired functions.
3. Tap the OK button to confirm your selection.

The following menu items can be selected in the programming menu:

- LOCK: Activate or deactivate operating lock
- T1, T2, T3: Three memory areas for comfort and ECO temperature for the weekday blocks Mon – Fri and Sat – Sun
- SET: Setting of date, time and automatic summer time changeover
- TEMP: Setting of the cooling, comfort and ECO temperature, activation of heating optimisation, temperature drop detection and setting of an offset value

6.4.3 Set operating lock

An active operating lock prevents operation directly at the attachment. The operating lock on the attachment can be activated as follows:

1. Tap the Menu button.
   LOCK flashes on the display.
2. Tap the OK button.
   NO flashes on the display.
3. Change the display to YES by tapping the Plus or Minus button.
4. Tap the OK button to confirm the input.
   The operating lock is active and the LOCK symbol is shown on the display.

6.4.4 Set switching times

Switching times can be stored for the week blocks Mon–Fri and Sat–Sun. If a switching time is set, the room temperature is heated/cooled to a desired temperature on the respective day at the set switching time. The switching times can be set as follows:

1. Tap the Menu button.
2. Select the memory area T1, T2 or T3.
3. Tap the OK button to confirm your selection.
   YES or NO flashes on the display. If NO has been selected, all times in the selected memory area are deactivated.
4. Tap the Plus or Minus button to select the desired indicator.
5. Tap the OK button to confirm the selection.
   The first switching time for the comfort temperature is shown on the display.

The flashing switching time can be changed with the Plus or Minus button and saved with the OK button. The times for comfort temperature and ECO temperature can be set and saved one after the other for each of the week blocks Mon-Fri and Sat-Sun. You exit the menu when you save the last time.

Note: You can also save switching times without calling up the programming menu.

1. Keep the OK button tapped and also tap and hold the Minus button for ECO temperature or the Plus button for comfort temperature for more than one second.
   SAVE is shown on the display. The current time is saved as new switching time for the ECO or comfort temperature.

The quick programming overwrites the existing ECO or comfort temperature in the first memory area. The switching times from memory areas 2 and 3 are deactivated.

6.4.5 Set date and time

The date and time that should be shown on the display can be set as follows:

1. Tap the Menu button.
2. Select SET.
3. Tap the OK button to confirm the selection.
   The year now flashes on the display.
4. Tap the Plus or Minus button to change values for date and time.
5. Tap the OK button to confirm your input.
   After your confirmation, the next value is called up, which you can again adjust using the Plus and Minus buttons. All values are accepted after you have confirmed the last value.

6.4.6 Change temperature parameters

The temperature values for comfort and ECO temperature can be set as follows:

1. Tap the Menu button.
2. Select TEMP.
3. Tap the OK button to confirm the selection.
   The setpoint value for the comfort temperature flashes on the display.
4. Tap the Plus or Minus button to change the setpoint value.
5. Tap the OK button to confirm your input.
   In the same way, you also set the values for the ECO temperature and, if parametrised, the cooling temperature.
6. Activate or deactivate the heating optimisation and temperature drop detection.
7. Finally, set the offset value by tapping the Plus or Minus button.

Note: The device starts with the saved setpoint values after values have been changed.

6.4.7 Change parameters for control

During initial commissioning, various settings are made to adapt the temperature control to local conditions. The settings can be changed as follows:

1. Tap and hold the Menu and Reset buttons for longer than ten seconds.
   The display shows a countdown that counts down from 9 to 0. If the countdown has reached 0, “SET, YES or NO” is shown on the display.
2. Now confirm or change the displayed parameters one after the other by tapping the OK button or the Plus or Minus button.

6.4.8 Display setpoint and actual temperature or current time

After commissioning, the device shows the setpoint temperature and switches off the display after 2 minutes without operation. Alternatively, you can select the display of the actual temperature or the current time. The display can also remain switched on permanently.
Proceed as follows to change the display:

1. Tap and hold the OK and Auto buttons for longer than 10 seconds.
   A countdown runs in the display. If the countdown has reached 0, the actual temperature is shown on the display.
2. Repeat step 1 so that the current time is shown on the display.
3. Repeat step 1 again so that the setpoint temperature is shown on the display.

Tap and hold the OK and Return buttons for longer than 10 seconds to switch on the display permanently. Repeating this step will cause the display to switch off after 2 minutes.

The Clever Config App

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09:59
81 %
Device list
Living room
Ceiling lamp
OFF
ON
Standard lamp
OFF
ON
Wall lamp
OFF
ON
Window
Sliding door
Kitchen
OFF
ON

7. The Clever Config App

With the JUNG Clever Config App, you control the LB Management Bluetooth devices conveniently with your mobile device such as a smart phone. In doing so, the Bluetooth connection is established over a range of up to 10 metres between smart phone and the selected LB Management device. The app enables the convenient

- operation of the device functions,
- displays of values and states,
- creation of time controls and
- configuration of the device.

The app also makes the commissioning of devices significantly easier as device configurations can be created easily, transferred from device to device and imported from other installations. Thereby, the device configuration and the device pairing can be locked with a security password and thus protected against unwanted access.

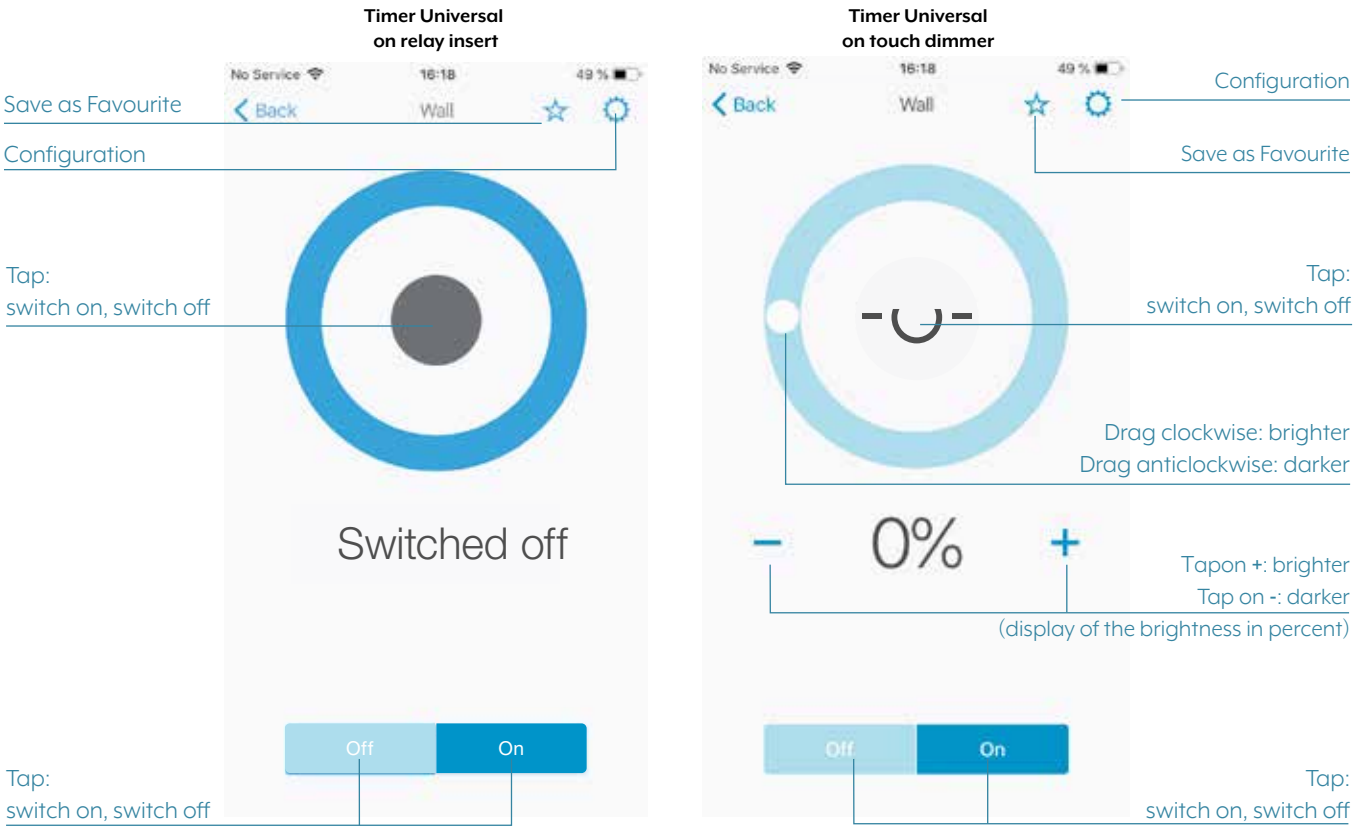
If updates for the app are available, these are automatically provided for download by the iTunes App Store (iOS) or Google Play Store (Android). The software of the Bluetooth devices can also be updated using the app. Thus app and devices always remain up to date on request.

7.1 Operation made easy

With the app, the smart phone becomes remote control for the building technology. The lighting is switched on or set to the desired brightness using your fingertip. Blinds are moved up or down or to any desired position. The slat angle can also be adjusted. In addition, exact values can of course also be specified using the plus and minus buttons and devices switched or blinds moved to the limit positions by tapping with your fingertip

7.1.1 Switching and dimming lights

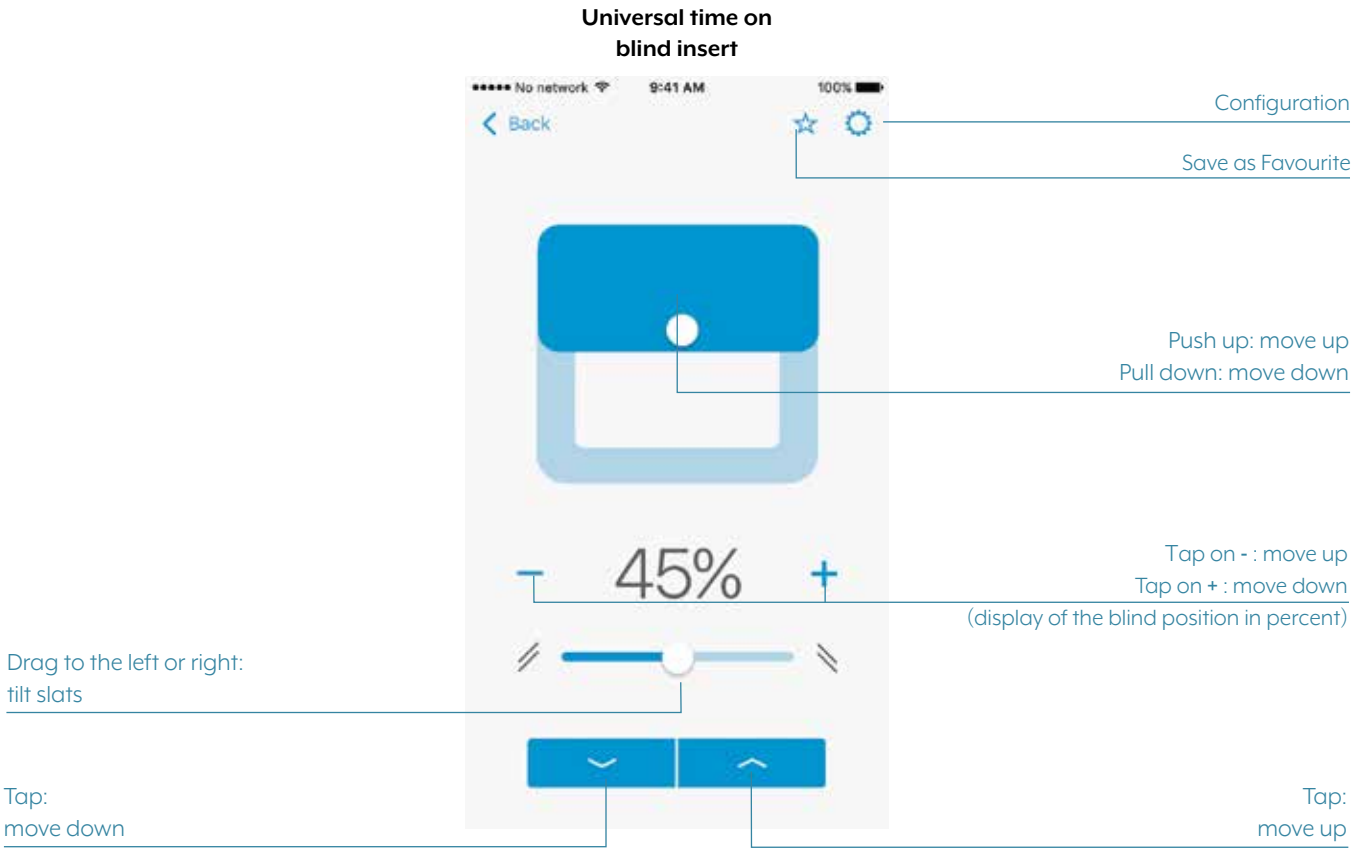
You control the lighting easily using a smart phone or tablet with the Clever Config app.



You can switch the selected light switch on or off with a simple tap on the symbol or the button. In combination with a dimming insert, the dimming functions are also available using the Clever Config app. Set the lighting brightness to the desired value easily using the rotary controller. Alternatively, you can change the numeric value using the + and – buttons. The buttons are of course also available here for the simple switching on and switching off.

7.1.2 Controlling shading

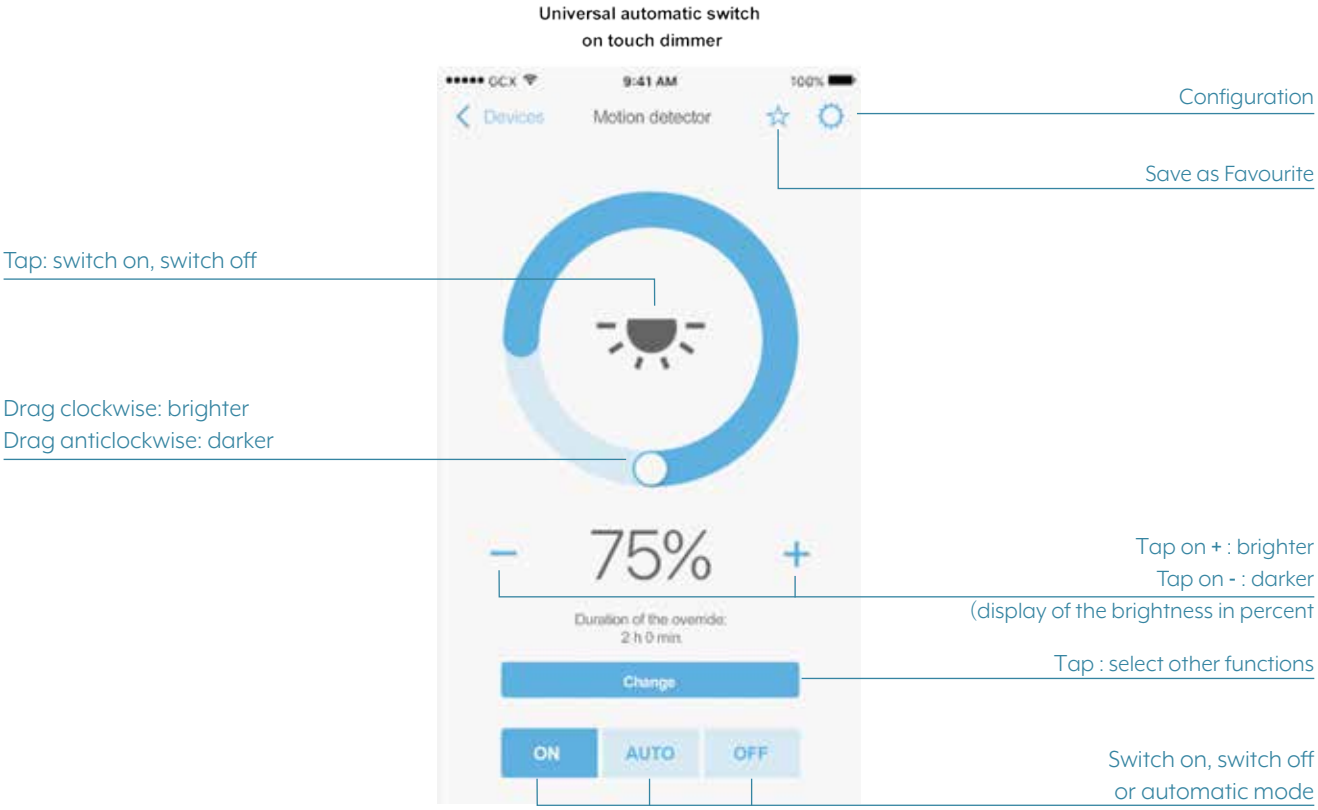
The blinds and shutters can be controlled individually and precisely using the Clever Config app.



You put the blind in the desired position using the blind symbol. Alternatively, you can change the numeric value using the + and – buttons. If your blinds have adjustable slats, there is also a controller available for adjusting the slats. The app of course also has simple buttons for moving the shading up and down. If the blind is defined in the configuration as roller shutter, the option for slat adjustment is not applicable.

7.1.3 Controlling automatic switches

The automatic switches and presence detectors can be configured and operated using the Clever Config app.

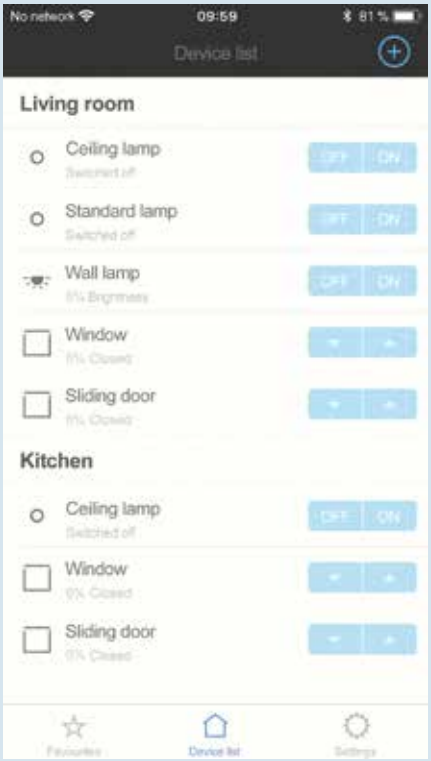


Note: Depending on which insert the automatic switches are combined with, there are different operation and control possibilities.

You dim the lighting to the desired brightness using the rotary controller. Alternatively, you can change the numeric value using the + and – buttons. Using the Change button, you have access to further functions depending on the installed insert.

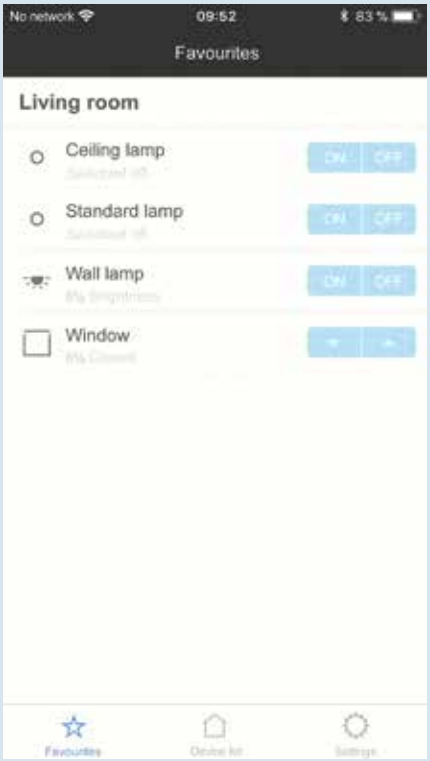
7.1.4 Device list

All connected Bluetooth devices of the LB Management system can be sorted by room, managed and operated in the device list. You add new devices using the + symbol at the top right, see chapter “7.4 Pairing the devices” on page 162.



7.1.5 Manage Favourites

Devices and functions can be set up as Favourites according to personal requirements.
Tap on the star symbol in the header of the desired function for this. This displays the function as Favourite on the start page of the app, and the preferred devices are always only a fingertip away.



7.2 Downloading the app

The Clever Config App can be downloaded from the iTunes App Store (iOS) or Google Play Store (Android).

7.3 Installation requirements

Prerequisite for the installation of the app is the use of a mobile device, e.g. a smart phone with a Bluetooth interface. The installed operating system must be iOS version 9.3 or higher, or version 4.4 or higher of the Android operating system.

7.4 Pairing the devices

In order to be able to control an LB Management device using the app, the device is first paired with the mobile device via Bluetooth.

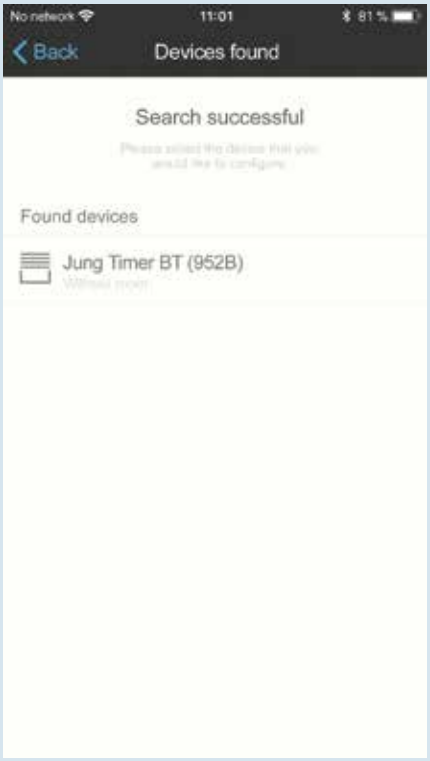
7.4.1 Requirements for the pairing

Ensure that the following requirements are met before you pair the devices with the app:
- The insert is connected and switched off.
- The Bluetooth-capable attachment is attached to the insert and operational.
- The mobile device is in the immediate vicinity of the attachment (in the pairing mode, the range of the devices is restricted for security reasons).
- The app is installed and started.

7.4.2 Performing pairing

Proceed as follows to pair a device with the app:
1. Call up the device list in the app.
2. Tap on the + symbol at the top right in the device list.
3. Activate the pairing mode on the device.
   You activate the pairing mode using the attachment (see “8.2.4 Pairing Universal Timer Bluetooth with mobile devices” on page 184 and “4.4.5 Pairing universal automatic switches with mobile devices” on page 109). Further details for this can be found in the respective operating manual.
   The pairing mode is only active for one minute and the blue device LED flashes slowly.
4. Select Start scan in the app.

The found devices are listed in the app.



5. Select the desired device in the list. Multiple devices can also be put into pairing mode simultaneously.
   Device and mobile device are now paired. The device configuration is transferred to the Clever Config app.

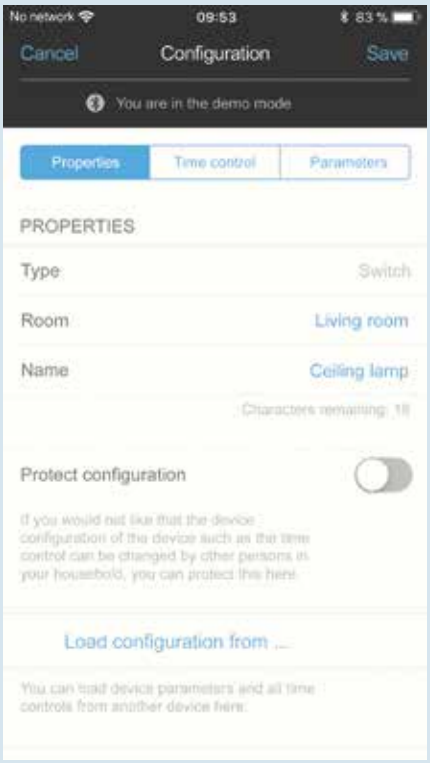
The pairing mode is automatically exited after successful pairing. The blue LED on the device lights for the confirmation of an active connection.

Note: A maximum of eight mobile devices can be paired with one device. When pairing the ninth device, the pairing of the device that has not been used for the longest is deleted. Pairing can be password protected if required. If a password has been allocated by the app, it must be entered before every pairing attempt. This extends the protection of your installation.

7.5 The commissioning of a device

After the successful pairing, the app displays the paired device and reports the identified type of the device, e.g. switch.

7.5.1 Add device information



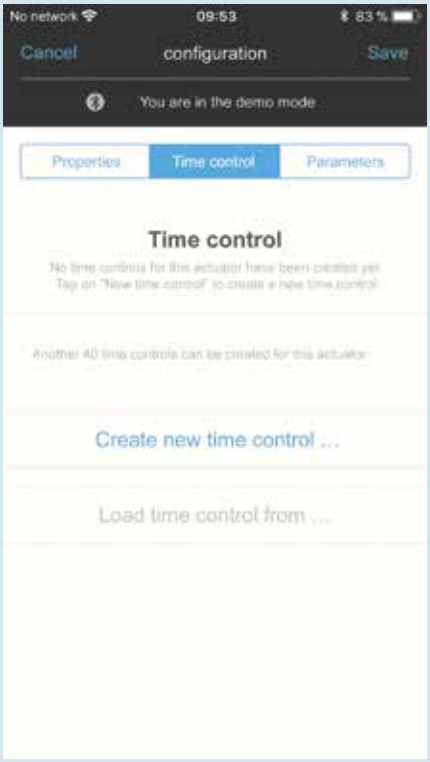
1. Assign a Room, for example living room, to the paired device.
2. Give the device a Name, using which the device can be easily assigned later, for example ceiling lamp.
3. Protect the configuration if required by allocation of a password.
   If Protect Configuration is activated, the password must be entered before the pairing with other mobile devices and before change of the settings.
4. Save the settings by tapping on the Save button (top right).
   The device is created. It is displayed with the assigned room and the device name in the device list (see chapter “7.1.4 Device list” on page 160) and can be operated directly.

7.5.2 Making settings

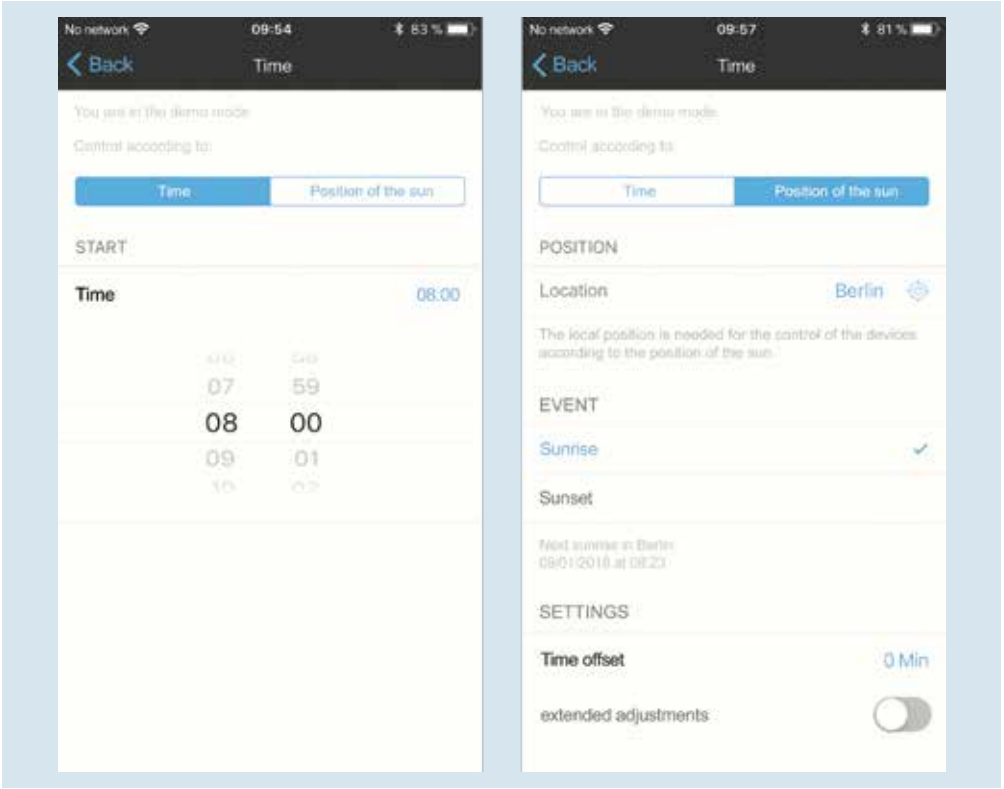
Using the Clever Config app, you conveniently set up the time control of the LB Management devices directly using your smart phone. You make other settings under the Parameters menu item.

TIME CONTROL

In combination with the Universal Timer attachment, you can create automatically running time programs under the Time Control menu item that switch the device on or off at specified times or also switch in specific states (e.g. 40 percent dimmed). The time controls can be assigned to specific weekdays.



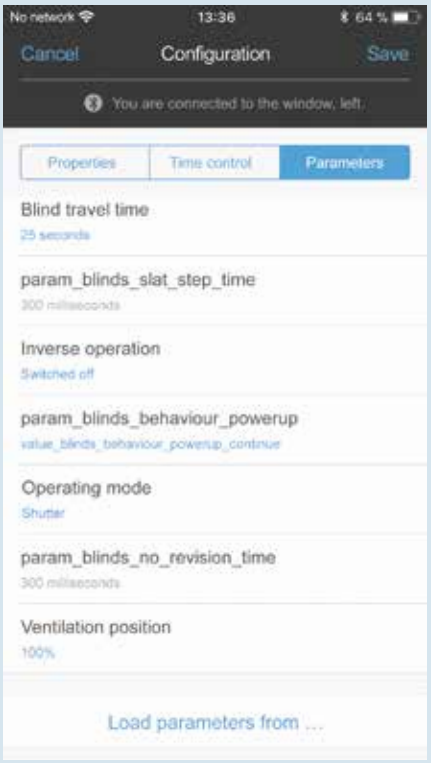
Furthermore, you can define the switching times not only according to time but also according to sun position as the Universal Timer can calculate the sunrise and sunset times depending on the local geographic location (see chapter “8.5 Astro function” on page 190). You also set in the device configuration in the Sun Position menu that the app may access the local position.



You can take this over if you have already created a time control for a different device. For this, select the Take over time control from ... function in the Time Control menu. This significantly reduces the effort for the device configuration.

PARAMETERS

The LB Management inserts can be extensively customised in the Parameters menu. If required, the parameter settings of devices created by you can also be simply adopted here. Details about the adjustable parameters can be found in the chapters
“4. LB Management Light” on page 52 and “5. LB Management Shading” on page 112.



7.5.3 Adjustable functions

UNIVERSAL TIMER
In combination with the Universal Timer Bluetooth attachment, the following functions are available using the Clever Config app:

- Operation of blind and lighting with status feedback (in percent) or switching states (On/Off)
- Displays of the current blind position (in percent), dimming position (in percent) and switching state (On/Off)
- Programming of up to 40 individual switching times
- Blind and slat positions or switching / dimming values can be saved for each switching time
- Copy of switching times to other devices is possible
- Switching commands for sunrise and sunset (astro function)
- Astro time automatically using the geodata of the smart phone
- Astro time shift can be set for each switching time
- Automatic daylight saving time adjustment
- Automatic date and time update during connection with smart phone
- Password protection of time programs and configuration is possible
- Saving of a ventilation position, blind running time, slat changeover time and changeover time for direction change for blind inserts
- Optional changeover to inverse operation
- Adjustment of maximum brightness and minimum brightness for dimming insert
- Switch-on with last brightness or a fixed switch-on brightness for dimming insert
- Connection of an optional brightness sensor for sun protection and twilight function

Details about the functions can be found in the chapters
“8.4 Timer function” on page 188 and “8.5 Astro function” on page 190.

UNIVERSAL AUTOMATIC SWITCH AND CEILING OBSERVER / PRESENCE DETECTOR

In combination with the Universal automatic switch attachment and the ceiling observer / presence detector, the following functions are available using the Clever Config app:

- Programming of up to 16 individual switching times
- Adjustment of the delay time
- Adjustment of the brightness thresholds
- Adjustment of the sensitivity of individual movement detectors in the device to influence the overall sensitivity
- Activation and execution of the walking test function
- Activation of the Continuous Off and Continuous On functions
- Activation and adjustment of the 0.5 – 5 hours ON or OFF function
- Activation of short-time operation
- Activation and adjustment of the hotel function
- Activation and adjustment of the night light function
- Activation of the switch-off advance warning
- Activation of the presence simulation
- Activation and adjustment of the alarm function
- Activation and adjustment of the timer function
- Selection of the movement detector or presence detector mode

In addition for ceiling observer / presence detector:

- Activation of a constant light function in combination with dimming inserts
- Selection of the movement detector or presence detector mode

Details about the functions can be found in chapter “4.4.2 Operating modes and functions” on page 102.

7.5.4 Adjustable parameters

INSERT	PARAMETERS	SETTING OPTIONS
All inserts of LB Management	Astro time shift	+/- 0 – 120 minutes
	Astro time	Automatic location adjustment using location function of the smart phone
All LB Management inserts in combination with a brightness / temperature sensor	Sun protection value	4,000 – 80,000 lux
	Temperature threshold Sun protection	Off. 5 – 50 °C
	Twilight value	5 – 4,000 lux
Dimming inserts	Maximum brightness	75 – 100 percent
	Minimum brightness Basic brightness	1 – 40 percent
	Switch on brightness	0 – 100 percent
Blind inserts	Travel time	1 – 600 seconds
	Slat reversal time / fabric tightening time	0 milliseconds – 10 seconds
	Minimum reversal time	0.3 – 10 seconds
	Ventilation position	1 – 100 percent
	Operating mode	Blinds shutters, awnings
	Drive function	Normal operation, inverse operation

FACTORY SETTINGS	EXPLANATION
0 minutes	Its own astro time shift can be set for each switching time.
	Astro times reflect the sunrise and sunset times in the course of a calendar year.
20,000 lux	The sun protection is executed if any specified sun protection value is exceeded for more than 2 minutes. The sun protection is deactivated if the brightness undercuts the specified sun protection value for longer than 15 minutes. Note: A brightness / temperature sensor is necessary for this function.
Off	If the temperature-dependent sun protection is activated, it is checked whether the specified temperature threshold has been exceeded before executing the sun protection. If this is not the case, the sun protection is not executed until the temperature has been exceeded. Note: A brightness / temperature sensor is necessary for this function.
10 lux	The twilight function is executed if any specified twilight value is undercut for more than 4 minutes. The twilight function is deactivated if the brightness exceeds the specified twilight value for longer than 4 minutes. Note: A brightness / temperature sensor is necessary for this function.
100 percent	Specifies the maximum adjustable brightness.
5 percent	Specifies the minimum adjustable brightness.
100 percent	Specifies the brightness when switching on.
120 seconds	Absolute time that the blind needs for the travel from the upper to the lower limit position. The input is strictly required if position travels should be performed in order to be able to display and adjust the position value (in percent) using the app.
0 milliseconds	Absolute time for the reversal of blind slats. The fabric tightening time for the operation of awnings can be adjusted here.
1 second	Minimum pause time for direction change. The motors can be protected by increasing the minimum reversal time.
100 percent	Specifies how far the blind travels from the upper limit position to the ventilation position.
Roller shutters	Specifies which shading system is used.
Normal operation	Specifies the operating mode.

Operation

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8. Operation

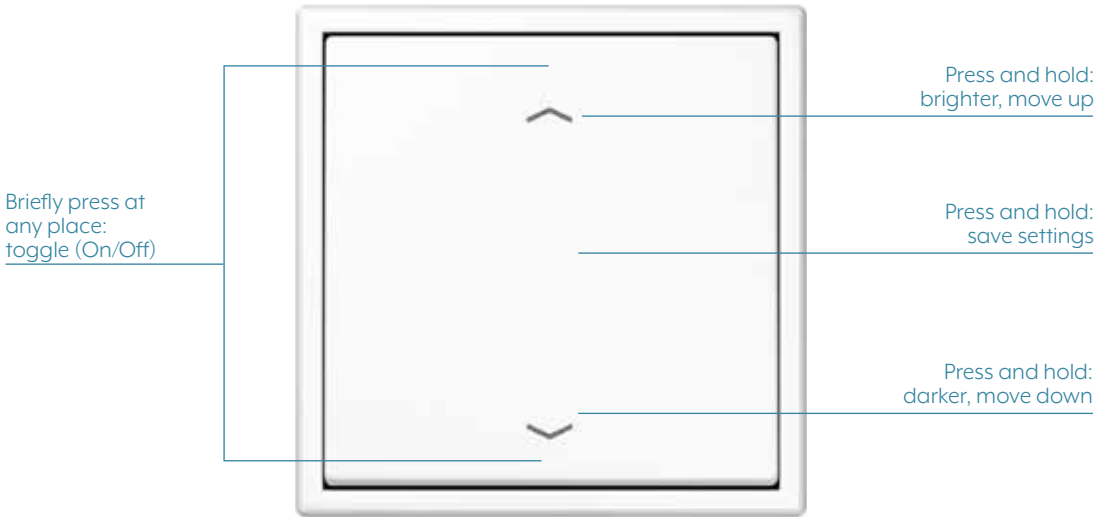
Light and shading can be manually controlled easily and intuitively by pressing a button with the Standard and Universal Centre Plates. The Standard and Universal Timer attachments are available for programmed control.

8.1 Manual control

8.1.1 Standard centre plate

You control light and shade manually by pressing a button with the Standard centre plate. The button reacts on the full surface and in particular makes the switching of light using the toggle function particularly simple: The light goes on by pressing a button at any place and off again by pressing on the switch again. The Standard centre plate can also be operated with your elbow if you have your hands full. In combination with a dimming insert, the lighting can also be dimmed. Pressing and holding the top half of the button dims the lighting brighter; pressing and holding the bottom half of the button dims the lighting darker.
You also control the shading by pressing and holding the button. Pressing and holding the top half moves the blind up; pressing and holding the bottom half moves the blind down. If you have set up a ventilation position, the blind first stops in this position and then continues down to the specified lower limit position after pressing and holding the button again.

If a Standard 2-gang centre plate is used, the operation of the left and right rocker is identical.



The Standard centre plate is also available without arrow symbols.

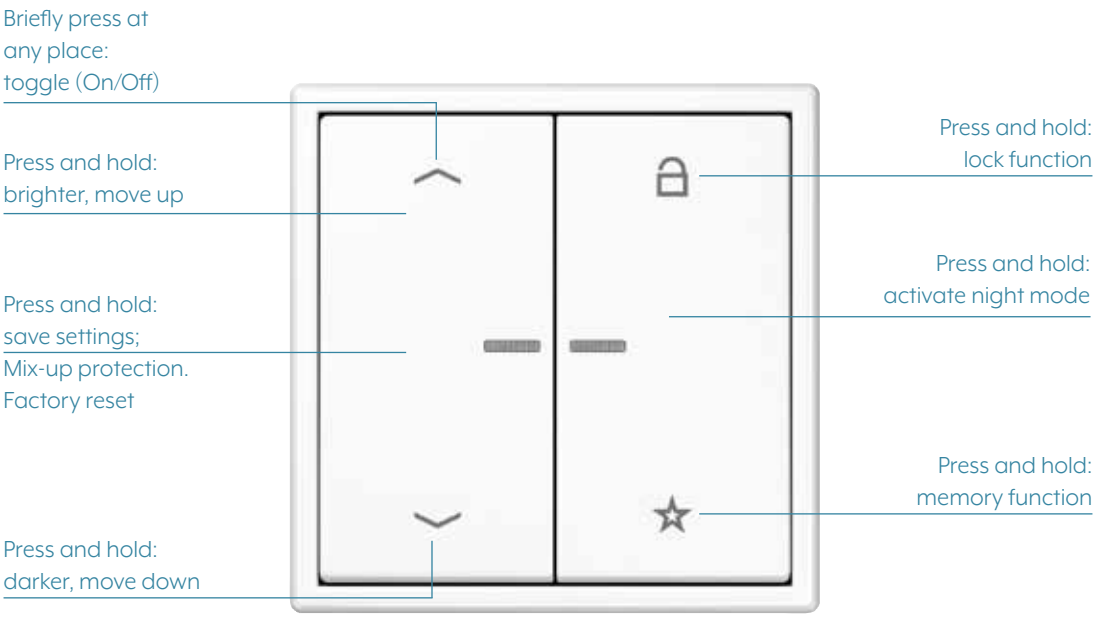
YOU WOULD LIKE TO...	IMPLEMENTATION	FURTHER INFORMATION
... switch the light.	– Briefly press the centre plate.	If the dimming insert is used, the light is switched to the saved switch-on brightness when switching on.
... switch on the light with minimum brightness.	– Press and hold the centre plate at the bottom.	
... dim the light brighter.	– Press and hold the centre plate at the top.	The light can be dimmed up to the maximum brightness.
... dim the light darker.	– Press and hold the centre plate at the bottom.	The light can be dimmed down to the minimum brightness.
... adjust the brightness / travel position.	– Press and hold the centre plate in the middle.	
... save the current brightness as switch-on brightness.	– Adjust the light to the desired brightness. – Press and hold the centre plate at the top and bottom simultaneously for longer than four seconds.	The light switches off briefly and immediately on again. The switch-on brightness is saved. If a saved brightness is saved again, the dimmer switches on after every switch-on with the value it had before the switching off.
... save a ventilation position from the upper limit position.	– Press and hold the centre plate at the bottom. – Press and hold the centre plate at the top and bottom simultaneously for longer than four seconds. – Release the buttons when the desired position is reached and press the button at the top within four seconds.	Any previous position is overwritten by saving a new position (see page 115).
... adjust the colour temperature for DALI control devices.	– Press and release the centre plate at the top and bottom simultaneously twice. – the colour temperature can be adjusted directly on the right rocker	The value is saved permanently after it has been adjusted. The brightness is adjusted with the left rocker

8.1.2 Universal centre plate

The Universal centre plate has the same functions as the Standard centre plate, however expands these with further functions. Both the Standard centre plate as well as the Universal centre plate provide the following functions:

- Toggle function (On/Off) by short press at any place
- Dim brighter / move up by pressing and holding the left upper button half
- Dim darker / move down by pressing and holding the left lower button half
- Save settings by pressing and holding the left button in the middle

The right button of the Universal centre plate extends the Standard centre plate by the lock function (top) and the memory function (bottom). Pressing and holding the lock function deactivates all automatic functions, memory mode and disables satellite unit operation. However, you can continue to operate the left button half when the lock function is activated. Activate the memory function by pressing and holding this. Previously saved switching operations are repeated in a 24 hours cycle in the memory function.
Press the right top and bottom button simultaneously, activate the night mode, in which both LEDs do not light continuously but only for five seconds.
Press and hold the memory button and the desired function button (On/Off, Brighter/Darker, Up/Down) simultaneously to save the memory function. A successful save is signalled by the LED.



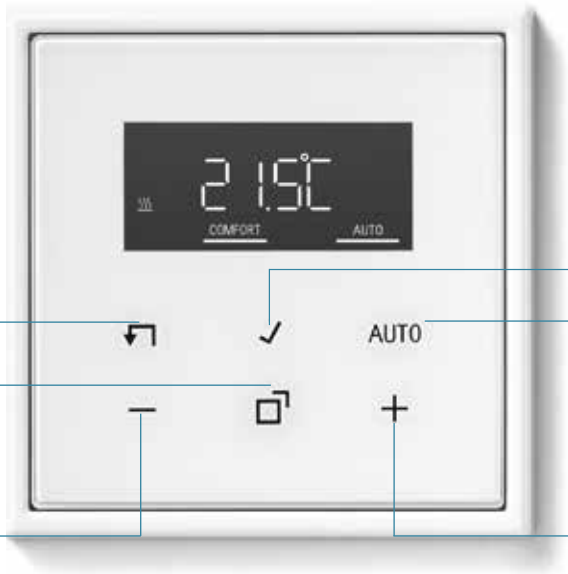
The Universal centre plate is also available without arrow symbols.

YOU WOULD LIKE TO...	IMPLEMENTATION	FURTHER INFORMATION
... switch the light.	– Briefly press the centre plate.	If the dimming insert is used, the light is switched to the saved switch-on brightness when switching on.
... switch on the light with minimum brightness.	– Press and hold the left centre plate at the bottom.	
... dim the light brighter.	– Press and hold the left centre plate at the top.	The light can be dimmed up to the maximum brightness.
... dim the light darker.	– Press and hold the left centre plate at the bottom.	The light can be dimmed down to the minimum brightness.
... adjust the brightness / travel position.	– Press and hold the left centre plate in the middle.	
... save the current brightness as switch-on brightness.	– Adjust the light to the desired brightness. – Press and hold the left centre plate at the top and bottom simultaneously for longer than four seconds.	The light switches off briefly and immediately on again. The switch-on brightness is saved. If a saved brightness is saved again, the dimmer switches on after every switch-on with the value it had before the switching off.
... save a ventilation position from the upper limit position.	– Press and hold the centre plate at the bottom. – Press and hold the centre plate at the top and bottom simultaneously for longer than four seconds. – Release the buttons when the desired position is reached and press the button at the top within four seconds.	Any previous position is overwritten by saving a new position (see page 115).
... save the current switching time for the memory operation.	– Tap and hold the Memory button and the desired function button (On/Off; Brighter/Darker; Up/Down) simultaneously.	The current switching time is saved if the LED lights green. Saving again overwrites the old switching time.
... delete the saved switching times.	– Press and hold the right button at the bottom for longer than 20 seconds and until the LED lights green for the second time.	
... activate / deactivate the memory operation.	– Press and hold the right button at the bottom for longer than four seconds.	
... activate / deactivate the lock function.	– Press and hold the right button at the top for longer than four seconds to activate.	Manual operation using the left button at the top and bottom continues to be possible.
... activate / deactivate the night mode.	– Press and hold the right button at the top and bottom for longer than four seconds to activate.	In the night mode, the status and function LEDs do not light continuously but only for four seconds after the buttons have been pressed.
... adjust the colour temperature for DALI control devices.	– Press and release the centre plate at the top and bottom simultaneously twice.	The value is saved permanently after it has been adjusted.
... operate the centre plate on a different insert with the same function.	– Attach the centre plate to a different insert.	Saved settings and switching times are retained.
... operate the centre plate on a different insert with a different function.	– Press and hold the left control button at the top and bottom simultaneously for longer than 20 seconds. – Then briefly press the left button at the top and bottom.	A factory reset must be performed first to delete all saved times and settings. Then the centre plate can be operated on a different insert with a different function.

8.2 Automatic Control

8.2.1 Standard room thermostat

The Standard RTR is an LB Management attachment with six operating buttons.
Use the **Plus and Minus buttons** to set the displayed temperatures or times in the menu.
Using the middle bottom button **Programming** / **Settings Menu,** you reach the menu in which you can select and program various functions such as the astro function or the lock function. You confirm the settings with the **OK button**. Using the **Reset button,** you can undo the adjustments and reset the changed functions to the factory settings.
You can change to the automatic mode using the **Automatic button**.



OK:
Confirm setting

Reset: undo setting

Automatic mode

Programming / Settings menu
undo setting

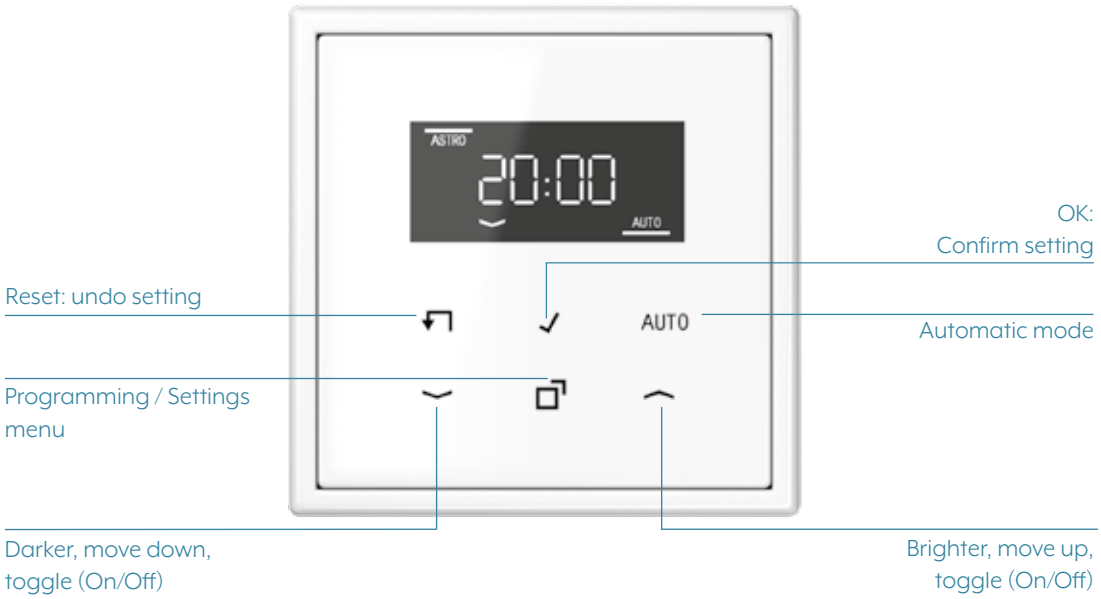
Reduce the temperature/time

Increase the temperature/time

YOU WOULD LIKE TO...	IMPLEMENTATION	FURTHER INFORMATION
... increase the setpoint temperature.	– Tap the Plus button for less than one second.	The setpoint temperature is increased by 0.5 °C for each tap of the button. In cooling operation, you cannot increase the setpoint temperature using the Plus button.
... reduce the setpoint temperature.	– Tap the Minus button for less than one second.	The setpoint temperature is reduced by 0.5 °C for each tap of the button. In cooling operation, you cannot increase the setpoint temperature using the Minus button.
... call up the comfort temperature.	– Tap and hold the Plus button for longer than one second.	
... call up the ECO temperature.	– Tap and hold the Minus button for longer than one second.	
... activate / deactivate the automatic mode.	– Press the Automatic button.	Automatic operation cannot be activated if no temperatures are saved.
... reset the temperature to factory settings.	– Press and hold the Reset button and the AUTO button simultaneously for longer than ten seconds.	A countdown starts in the display.
... display the time continuously.	– Tap and hold OK and Reset buttons simultaneously for ten seconds.	Pressing again switches off the display two minutes after the buttons were pressed.
... activate / deactivate the lock function.	– Tap the Menu button and then OK. – Tap the Plus or Minus button until “YES” is shown on the display. – Tap the OK button to confirm the activation.	The display shows LOCK. Alternatively, activate the lock function in the menu with the Lock selection.
... deactivate the lock function.	– Press the right arrow button briefly.	
... change the time.	– Tap the Menu button and select “Set”. – Confirm the selection by tapping the OK button and then make the settings. – Confirm the new time by pressing the OK button.	In the event of power failure, the time is maintained for at least four hours.
... change the temperature parameters.	– Tap the Menu button and select TEMP. – Confirm the selection by tapping the OK button. – Change the setpoint value by tapping the Plus or Minus button. – Confirm the new temperature by tapping the OK button.	
... activate or deactivate the button lock.	– Tap and hold the Minus and Auto buttons for longer than one second.	LOCK is displayed or hidden.
... Change parameters for control.	– Tap and hold the Menu and Reset buttons for longer than ten seconds.	A countdown from 9 to 0 is counted down on the display.
... switch between setpoint and actual temperature and the time.	– Tap and hold the OK button and the AUTO button for longer than ten seconds.	A countdown from 9 to 0 is counted down on the display.
... switch on the display permanently and switch it off after 2 minutes.	– Tap and hold the OK button and the Reset button for longer than ten seconds.	A countdown from 9 to 0 is counted down on the display.
... restore the factory settings of the device.	– Tap and hold the Auto button and the Reset button for longer than ten seconds.	A countdown from 9 to 0 is counted down on the display.

8.2.2 Standard Timer

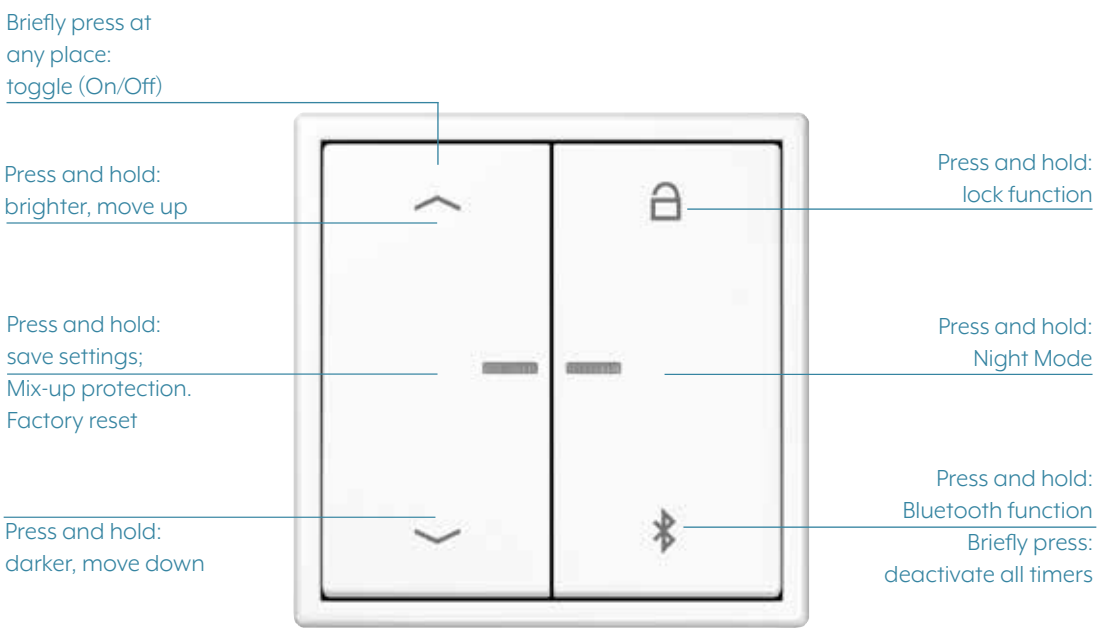
The Standard Timer is an LB Management attachment with six buttons.
Depending on the insert, you control the LB Management functions using the **arrow buttons**.
Using the middle bottom button **Programming** / **Settings Menu,** you reach the menu in which you can select and program various functions such as the astro function or the lock function. You confirm the settings with the **OK button**. Using the **Reset button,** you can undo the adjustments and reset the changed functions to the factory settings.
You can change to the automatic mode using the **Automatic button**. In the automatic mode, the load is switched automatically in accordance with the saved switching times.



YOU WOULD LIKE TO...	IMPLEMENTATION	FURTHER INFORMATION
... switch on the light / move the blinds up.	– Press the right arrow button.	If the dimming insert is used, the light is switched to the saved switch-on brightness.
... switch off the light / move the blinds down.	– Press the right arrow button.	
... activate / deactivate the automatic mode.	– Press the Automatic button.	The automatic mode cannot be activated if no times are saved.
... reset the timer to factory settings.	– Press and hold the Reset button and the AUTO button simultaneously for longer than ten seconds.	A countdown starts in the display.
... display the time continuously.	– Tap and hold OK and Reset buttons simultaneously for ten seconds.	Pressing again switches off the display two minutes after the buttons were pressed.
... save the current time as travel time.	– Press and hold the desired arrow button and OK for more than one second.	The time is saved for Mon – Sun, and the display shows SAVE.
... activate / deactivate the lock function.	– Press and hold the right button for longer than four seconds.	The display shows LOCK. Alternatively, activate the lock function in the menu with the Lock selection.
... deactivate the lock function.	– Press the right arrow button briefly.	
... change the programming.	– Press the Programming / Settings Menu button. – Confirm the programming by pressing the OK button.	Using blind inserts, 2 movement times can be programmed for each week block (Mon – Fri; Sat – Sun). Using switching and dimming inserts, 4 switching times can be programmed for each week block (Mon – Fri; Sat – Sun).
... change the time.	– Tap the Programming button and then any of the arrow buttons until the display shows “Set”. – Confirm by pressing the OK button and then make the settings. – Confirm the new time by pressing the OK button.	In the event of power failure, the time is maintained for at least four hours.
... operate the timer on a different insert with the same function.	– Attach the timer to a different insert.	Saved settings and switching times are retained.
... operate the timer on an insert with a different function.	– Tap and hold the left and right arrow buttons simultaneously for longer than 20 seconds. – Then tap and hold the left and right arrow buttons simultaneously for longer than 4 seconds.	A factory reset must be performed first to delete all saved settings. Then the timer can be operated on a different insert with a different function.

8.2.3 Universal timer Bluetooth

The Universal Timer Bluetooth has four buttons (On/Off / Lock function / Bluetooth) for performing local operation.
The LB Management inserts are directly controlled with the left rocker half.
The toggle function (On/Off) – as is also the case for the Universal centre plate – is executed by briefly pressing the left button at the top or bottom. You activate the lock function by pressing and holding the padlock symbol. The lock function disables all automatic functions and time programs as well as operation via possibly connected satellite units.
You switch the Bluetooth function on or off by pressing and holding the bottom right button.
You can pair your smart phone or tablet with the Universal Timer Bluetooth via the Bluetooth connection. The full operation is performed using the Clever Config app. You can conveniently access the time programs and the configuration of the timer. Both can be protected with a password. The values set in the device are automatically retrieved with the Bluetooth function and transferred to the Clever Config app as soon as a connection is established.
A short press on the bottom right button deactivates all stored timers without having to put a smart phone in your hand. This is indicated by an orange LED on the right rocker side. Another button press activates all timers again.



The Universal Timer Bluetooth is also available without arrow symbols.

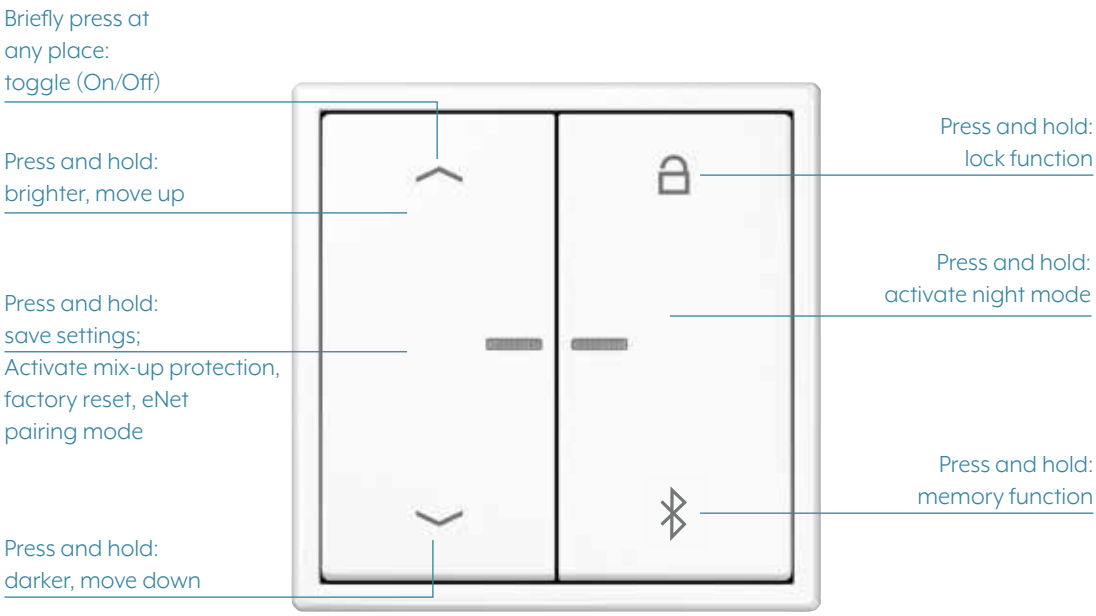
YOU WOULD LIKE TO...	IMPLEMENTATION	FURTHER INFORMATION
... switch the light.	– Tap the left button briefly.	If the dimming insert is used, the light is switched to the saved switch-on brightness when switching on.
... switch on the light with minimum brightness.	– Tap the left button at the bottom.	
... dim the light brighter.	– Tap the left button at the top.	The light can be dimmed up to the maximum brightness.
... dim the light darker.	– Tap the left button at the bottom.	The light can be dimmed down to the minimum brightness.
... adjust the brightness / travel position.	– Tap and hold the left button in the middle.	
... save the current brightness as switch-on brightness.	– Adjust the light to the desired brightness. – Tap and hold the left button at the top and bottom simultaneously for longer than four seconds.	The light switches off briefly and immediately on again. The switch-on brightness is saved. If a saved brightness is saved again, the dimmer switches on after every switch-on with the value it had before the switching off.
... pair the smart phone with the timer / Bluetooth function.	– Press and hold the right button at the bottom for longer than four seconds.	If you have paired your smart phone with the Universal Timer Bluetooth, you can program the settings for light brightness or the position of the blinds using the Clever Config app.
... activate / deactivate the lock function.	– Press and hold the right button at the top for longer than four seconds.	The lock function disables the satellite unit operation and deactivates the Bluetooth function. Manual operation using the left button at the top and bottom continues to be possible. The LED lights red when the lock function is active.
... activate / deactivate the night mode.	– Press and hold the right control button at the top and bottom simultaneously for more than four seconds.	In night mode, the LED lights after the button is pressed for maximum three seconds.
... operate the timer on a different insert with the same function.	– Press and hold the left control button at the top and bottom simultaneously for more than four seconds to enable the timer.	The timer is first blocked and the left LED flashes red. It is enabled by pressing the buttons. The saved settings are retained.
... operate the timer on an insert with a different function.	– Press and hold the left control button at the top and bottom simultaneously for more than 20 seconds. – Then briefly press the left button at the top and bottom.	The timer is first blocked and the left LED flashes red. The timer is reset by pressing the buttons and the saved times and settings are lost.

8.2.4 Pairing Universal Timer Bluetooth with mobile devices

Proceed as follows to pair the Universal Timer Bluetooth with a mobile device:

1. Install the Clever Config app on the mobile device and open the app.
2. Press and hold the Bluetooth button of the Universal Timer Bluetooth for more than four seconds.
   The pairing mode is activated.
3. Follow the instructions in the app.
4. You can set up a password if desired. This will then always be requested when you perform other pairings. Pairing a total of eight Bluetooth devices is possible with the app so that an automatic connection between Bluetooth device and attachment is always established when a device is in the range of the attachment.

You end the pairing mode manually when you keep the Bluetooth button pressed for more than four seconds. Alternatively, the pairing mode is ended automatically when a pairing has been successfully completed or there have been no pairings for more than one minute.



8.2.5 eNet Standard Radio centre plate

The eNet Standard Radio centre plate has two buttons and the eNet Radio centre plate has four buttons, which are used for local operation.

With the **eNet Standard Radio centre plate**, you control light and shade by pressing a button. The button reacts on the full surface and in particular makes the switching of light using the toggle function particularly simple: The light goes on by pressing a button at any place and off again by pressing on the switch again.

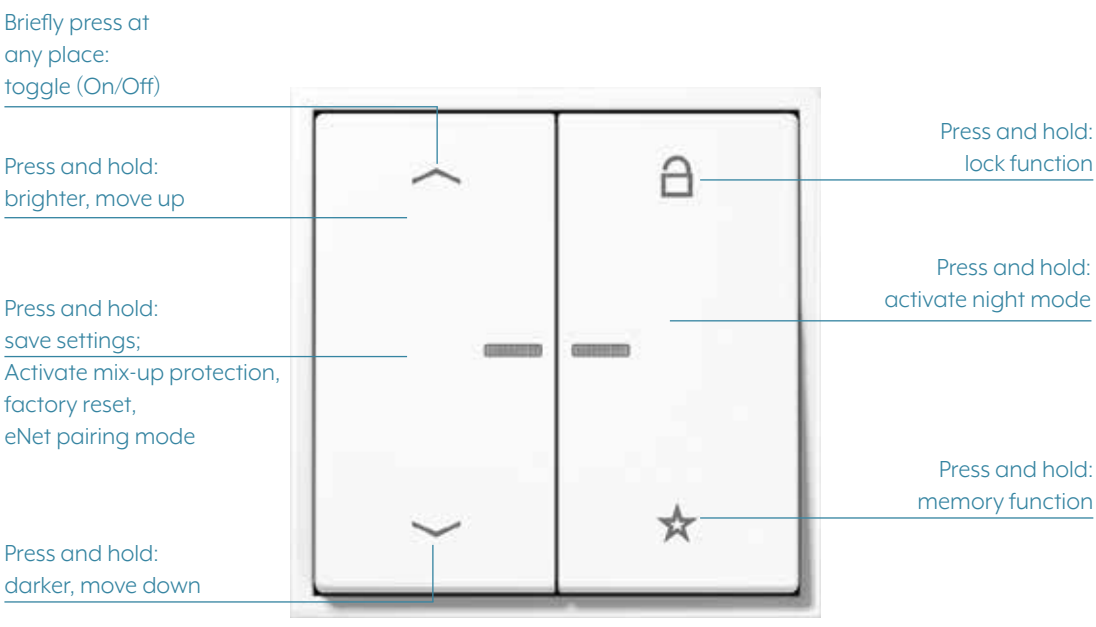
With the **eNet Radio centre plate**, the left rocker takes on the toggle function (on/off) which, as with the Universal centre plate as well, is carried out by a short press at the top or bottom.
The right button of the centre plate extends the centre plate by the lock function (top) and the memory function (bottom). Pressing and holding the lock function deactivates all automatic functions, memory mode and disables satellite unit operation. However, you can continue to operate the left button half when the lock function is activated.
Activate the memory function by pressing and holding this. Previously saved switching operations are repeated in a 24 hours cycle in the memory function.
Press the right top and bottom button simultaneously, activate the night mode, in which both LEDs do not light continuously but only for five seconds.
Press and hold the memory button and the desired function button (On/Off, Brighter/Darker, Up/Down) simultaneously to save the memory function. A successful save is signalled by the LED.
The eNet pairing mode is activated by pressing and holding the left rocker.

ENET STANDARD RADIO CENTRE PLATE

The following functions are possible:
- Manual, wireless and time-controlled operation of e.g. lighting, blinds, shutters, awnings
- Transmitter for wireless transmission of switching, dimming and blind commands
- Operation on switching, dimming or blind insert or 3-wire satellite unit from LB Management
- 2 switching times can be saved that can be repeated every 24 hours (only applies to the eNet Radio centre plate)
- locking function (only applies to the eNet Radio centre plate)
- Status feedback to radio transmitter
- Status indicator using LED
- Night mode
- Evaluation of the satellite unit inputs
- Functions in combination with light insert
– Scene operation possible
– Switch-on brightness can be permanently stored when combined with flush-mounted inserts for dimming
- Functions in combination with blind insert
– Positioning of blinds via scene recall
– Position for sun protection and twilight
– Running time and ventilation position of the blind can be stored
- Functions in combination with Relay switch insert 2-channel
– Output a2 switches depending on output a1 e.g. to switch on ventilation depending on the lighting and to switch it off with delay; switch-on delay for output a2 can be set; shut-off delay for output a2 can be set

Detailed information about eNet Smart Home can be found in the eNet System Manual. You can download this on the following web page:
www.enet-smarthome.de > Support / Downloads / eNet System Manual

ENET RADIO CENTRE PLATE



8.3 Operation using the satellite units

The following rules apply when you operate the lighting via satellite units:

8.3.1 Installation button as satellite unit

The master is switched by briefly pressing the button that functions as satellite unit. This happens in toggle mode. If the master was switched off, it switches on again by pressing the button and vice versa. When pressed and held, the lighting is dimmed brighter and darker alternately. The dimmer stops if the minimum or maximum brightness is reached. The dimming direction is also changed after each actuation.

8.3.2 Satellite unit with centre plate

2-WIRE SATELLITE UNIT WITH CENTRE PLATE

The master is switched if you briefly press the centre plate at the top, bottom or full surface.
This happens in toggle mode. If the master was switched off, it switches on again by pressing the centre plate and vice versa.
If you keep the button pressed, you can dim the lighting brighter or darker and save the setting depending on where you press the button.
If you keep the button pressed at the bottom, a dimming insert is switched on to the minimum brightness. If the master is already switched on, the lighting is continuously dimmed down to the minimum brightness when the button is kept pressed at the bottom. The achieved brightness value is maintained when you release the button.
If you press the button on the full surface while the load is switched on, the current brightness value is saved in the master as new switch-on brightness.

3-WIRE SATELLITE UNIT WITH CENTRE PLATE

The master is specifically switched on if you press the centre plate at the top. You also dim the lighting brighter when you press the button at the top and darker when you press the button at the bottom.
You also specifically switch off the master if you press the centre plate at the bottom.
The 3-wire satellite unit with centre plate does not have the toggle function.
Using specific switching (at the top – On; at the bottom – Off), you can specifically control multiple masters simultaneously with the 3-wire satellite unit.

8.4 Timer function

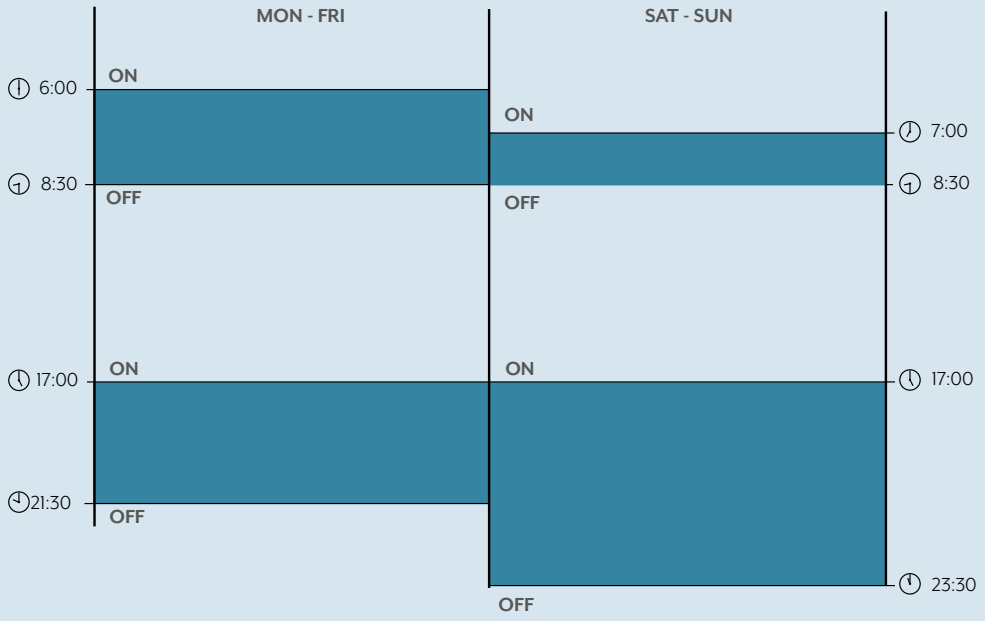
Light and shade can be automatically controlled according to a schedule using the timer function. This light can be switched on or off or dimmed to a desired brightness at defined times. Move blinds up or down at specific times or to a specified position. The timer function can be used with the Standard Timer or the Universal Timer Bluetooth.
Both timer attachments detect immediately whether they are on a light or blind control insert and adjust themselves accordingly to timer switch or blind timer operation. This happens completely automatically. The changeover to summer or winter time also happens automatically.
Using the timer, you can also adjust and save the switch-on brightness of dimming. Specify the switching times; the dimmer switches on with the desired switch-on brightness at the specified switching times.
The timer settings are saved in non-volatile memory so that no settings are lost even in the event of power failure.

8.4.1 Switching times

The Standard Timer has two week blocks. The first block is Mon – Fri and the second is Sat – Sun. For both week blocks, you can program the Up/Down switching time pairs for blind inserts and the On/Off switching time pairs for switching and dimming inserts.

You can set and manage up to 40 switching times using the Clever Config app with the Universal Timer Bluetooth. The switching times do not have to be set chronologically by you but can be made in any order. You can program different times for each weekday if required.

OUTDOOR LIGHTING TIMER PROGRAM



8.5 Astro function

Using the astro function, you switch light and shading depending on sunrise and sunset. The times for moving the blinds up and down and for switching the light on and off adjust themselves during the year to the changing sunrise and sunset times.

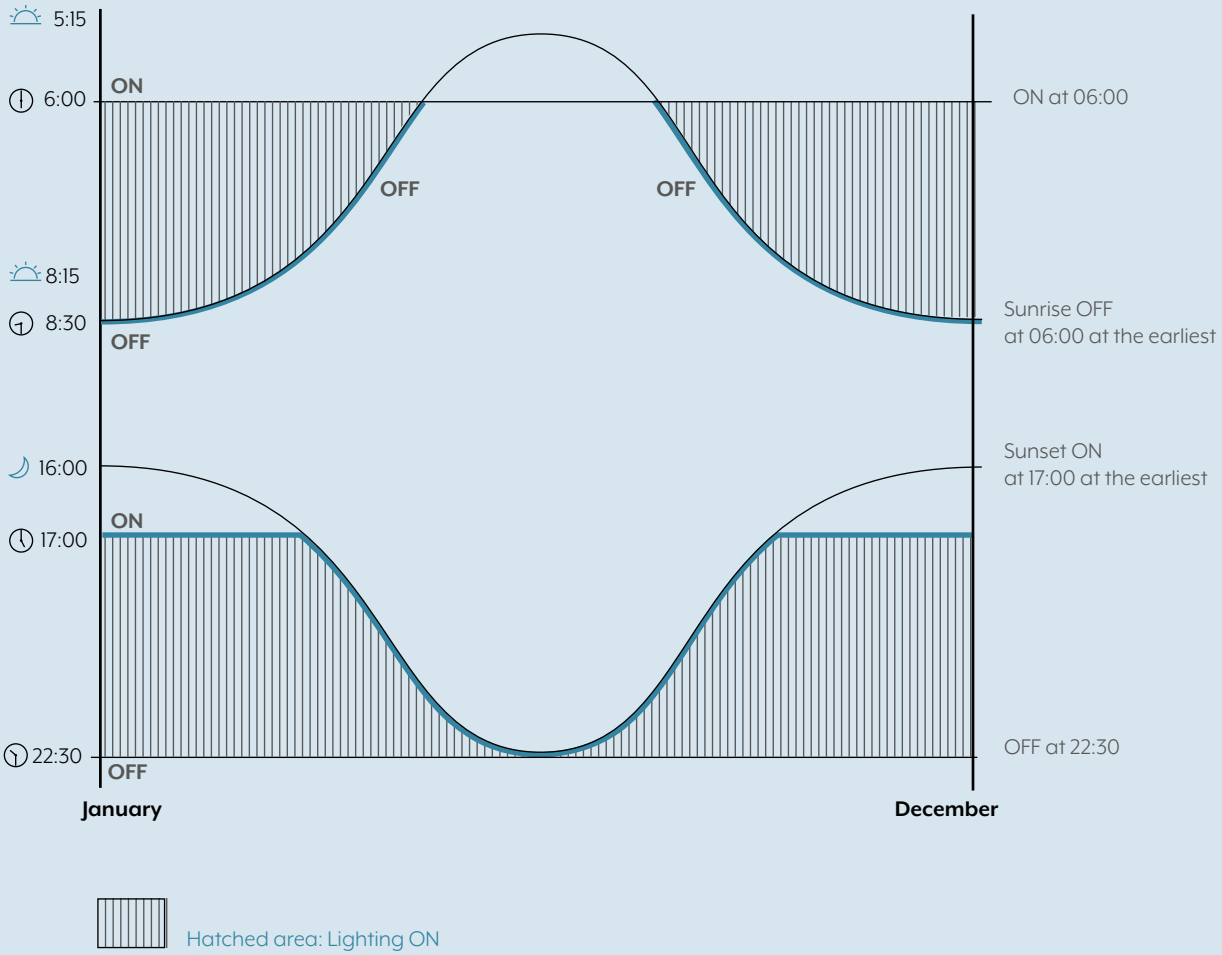
Note: You must specify the current date and the country for which the times should be calculated so that the Standard Timer attachment can calculate the astro times.
The Universal Timer adopts the geodata and times from your smart phone.

8.5.1 Combination of astro function and timer function

The combination of astro time and a fixed blind travel time ensures that a blind is raised in the mornings at sunrise, however not before a fixed time. It is lowered in the evenings at sunset, however not later than a fixed time.
Analogously, the combination of astro time and a fixed lighting switching time ensures that the lighting is switched off in the mornings at sunrise at the latest using the switch-off time of the time program. The load is switched on in the evenings at sunset, but at the earliest using the switch-on time of the time program.

Time program and astro function example for outdoor lighting
The outdoor lighting should light in the morning and evening in the time that the occupants leave the house or come home.
The outdoor lighting is switched on Monday to Friday in the morning from 06:00 until 08:30 and in the evening from 17:00 until 22:30 by the timer function. The astro function ensures that the switching times are adjusted depending on sunrise and sunset.
In the winter, the time program switches on the lighting in the morning at 06:00 and the astro function switches it off after sunrise (for example, at 08:30). In the winter, the sunset is before the specified 17:00 switching time of the time program; therefore the sunset is not weighted here and the lighting is not switched on until 17:00. The lighting is switched off at 22:30. The sunrise and sunset times and thus the switching times change during the course of the year.
In March, sunrise is still after the specified switching time. The lighting is switched on in the morning at 06:00. The sun does not set in the evening until after the switching time of the time program. Therefore the lighting stays off and is not switched on until 19:00.
The sunrise time in midsummer is before the programmed switching time. There is already sufficient light at 05:30 so that the outdoor lighting is not switched on. Therefore the outdoor lighting also stays switched off in the evening.

OUTDOOR LIGHTING TIMER PROGRAM IN COMBINATION WITH ASTRO FUNCTION



8.6 Presence simulation

If you are absent for a prolonged time (e.g. on account of a holiday), you can simulate that persons are present in the building using presence simulation and thus deter potential burglars. The presence simulation records switching processes for this and reproduces them automatically as required. This the lighting is also automatically switched during a prolonged absence.
The switching processes are first recorded in recording mode in a defined period. The recorded switching processes are reproduced in the playback mode of the presence simulation. Random switching operations are performed in the case that insufficient switching processes have been stored during the recording.
If any movement is detected in playback mode, this is evaluated and the lighting is switched accordingly. The alarm function can also be activated during the presence simulation.

8.7 Alarm function

When the alarm function is activated, the load is always only switched on for a short time for approx. 1 second as soon as any movement is detected. If the movement is detected over a prolonged time, this results in the switch-on pulse being repeated. The movement evaluation when the alarm function is activated is always performed independent of brightness.
The alarm function is activated when leaving the house or the apartment. If any burglar wants to gain access in this time, he is unsettled and deterred by the pulse-based activation of the load. The neighbours are also made aware by the activation of the load that there is somebody in the house or apartment and can obtain assistance.
The movement detector switches the load into the flashing operation (approx. 1 second ON, 1 second OFF) for the specified delay time. The status LED 2 (red LED) also signals the alarm tripping until the deactivation of the alarm function by fast flashing (0.5 second ON, 0.5 second OFF).

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