TRIDONIC

enlightening your ideas

basicDIM RCL

Product manual (EN)

Table of contents

Safety instructions

The instructions in this section have been compiled to ensure that operators and users of Tridonic basicDIM RCL lighting control are able to detect potential risks in good time and take the necessary preventative measures.
The operator must ensure that all users fully understand these instructions and adhere to them. This device may only be installed and configured by suitably qualified personnel.

Intended use

Proper use
Control of indoor lighting systems.
The device may only be used for this intended purpose.

Improper use
Outdoor use.
Extensions and modifications to the product.
Use of third-party components and accessories that have not been specifically approved by Tridonic.

⚠ Warning
Improper use could result in injury, malfunction or damage to property. The operator must inform all users of the potential risks associated with the use of the equipment and of protective countermeasures.

Environment
Not to be used in corrosive or explosive environments.

⚠ Dangers associated with the operation of the system

Danger of electrocution
Countermeasures
Disconnect the power to the entire lighting system before working on the lighting system.

Risk of damage caused by condensation
Countermeasures
Prior to commissioning the system, wait until the control device is at room temperature and completely dry.

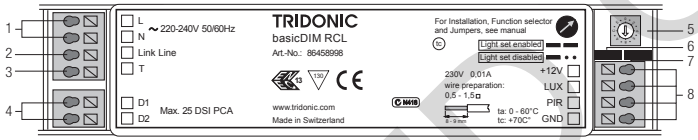
Risk of damage caused by humidity
Countermeasures
Only use the control device in dry rooms and protect it against humidity.

Electromagnetic compatibility (EMC)
Although the Tridonic control device meets the stringent requirements of the appropriate directives and standards on electromagnetic compatibility, it could potentially interfere with other devices under certain circumstances.

Introduction

The basicDIM RCL is a digital control device which can be used to operate up to 25 DSI control gear elements simultaneously in one luminaire group. The luminaires connected to the basicDIM RCL control device can be daylight-linked using up to four basicDIM sensors.
The system enables lighting to be operated in an energy-saving way by switching the lighting off when nobody is present. A further advantage of presence control is that the lighting is immediately switched on again as soon as someone enters the detection range of the basicDIM sensor. Up to 20 basicDIM RCL control devices can be easily wired together with the Link Line control line. Presence control can then be extended to include up to 20 luminaire groups.

basicDIM RCL overview



1. Power supply (adaptor L, N) 220/230/240 V, 50/60 Hz
2. Digital interface (Link Line) for connecting up to 20 basicDIM RCL control devices
3. Input T for direct connection of conventional 230 V, 50/60 Hz momentary-action switches for smoothly adjusting the luminaire group
4. Outputs D1 and D2 for one luminaire group
5. Rotary switch for setting functions (presence control, daylight-linked closed-loop control, test)
6. Jumper reserved for future settings. Must always be fitted in order to operate the basicDIM RCL control device properly
7. Jumper for enabling/disabling configuration
8. Inputs +12V, LUX, PIR and GND for connecting basicDIM sensors

Basic functions

Output for luminaire group
No more than 25 DSI control gear elements can be connected to the output. The DSI control gear elements connected are controlled together.

Input T on the control device
Input T is designed for dimming and brightening the lighting (by holding down the switch). The input can only be used for single momentary-action switch operation. If the lighting is switched off manually, briefly pressing the switch recalls the last value set for the luminaire group. Multiple conventional 230 V, 50/60 Hz momentary-action switches can be connected to the input in parallel.

Inputs PIR and LUX on the control device
Up to four basicDIM sensors can be connected to the PIR and LUX inputs in parallel.

Presence control
The basicDIM RCL control device enables lighting to be controlled by the presence/absence of people. In addition to the basicDIM RCL control device, basicDIM sensors are also required for this function.

Link Line digital interface
Up to 20 basicDIM RCL control devices can be electrically connected using the interface. Up-to-date presence control information is transmitted via the Link Line to all basicDIM RCL control devices connected to the digital interface.

Daylight-linked closed-loop control
The basicDIM RCL control device enables lighting to be regulated by the level of daylight entering the room. In addition to the basicDIM RCL control device, at least one basicDIM sensor is required for this function.

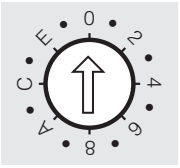
Description of functions

Dimming

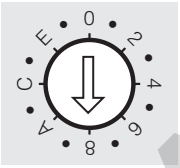
Dimming is the smooth adjustment of the brightness provided by the lighting. The basicDIM RCL control device enables the user to smoothly adjust the lighting manually at any time.

Presence control

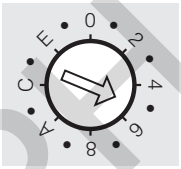
The most expensive light is a light that is left on in unused rooms and work areas. The basicDIM RCL control device enables lighting to be operated in an energy-saving way by switching the lighting off when nobody is present.
A further advantage of presence control is that the lighting is immediately switched on again as soon as someone enters the detection range of a basicDIM sensor.



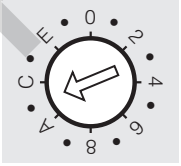
Mode ON/OFF (switch on and off lighting):
If a person enters the detection range of the basicDIM sensor, the lighting is switched on. If no one is located in the detection range, the lighting is switched off once the run-on time has elapsed.
If the momentary-action switch connected to input T is briefly pressed when someone is present in the range, the lighting is switched off for 15 minutes. If the momentary-action switch is briefly pressed again, the lighting is switched on to the last set value.



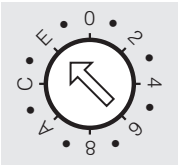
Mode only OFF (switch off lighting):
The lighting is switched on manually. If no one is located in the detection range of the presence detector, the lighting is switched off once the run-on time has elapsed.



Mode ON/never OFF (switch on the lighting and change to brightness value 10%):
If a person enters the detection range of the presence detector, the lighting is switched on. If no one is located in the detection range, the lighting is dimmed to a brightness level of 10% once the run-on time has elapsed. The brightness level is fixed at 10%.



Mode OFF/never OFF (change to brightness value 10%):
The lighting is switched on manually. If no one is located in the detection range, the lighting is dimmed to a brightness level of 10% once the run-on time has elapsed. The brightness level is fixed at 10%.



Mode no PIR:
Presence control is disabled.

Notes:
! Mode no PIR: daylight-linked closed-loop control is enabled.
! All presence detectors and motion sensors connected to input PIR function in the operating mode are set on the basicDIM RCL control device.
! If no basicDIM sensor is connected to input PIR, set the rotary switch to position D or E (mode no PIR).

Presence control via Link Line digital interface

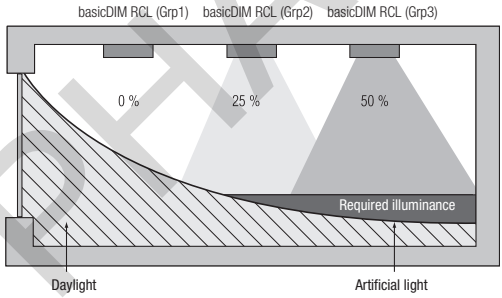
If multiple basicDIM RCL control devices are connected to the Link Line digital interface in parallel, information that the presence of a person has been detected is transmitted to all basicDIM RCL control devices that are connected.

Daylight-linked closed-loop control

Optimal lighting conditions promote a feeling of wellbeing and boost motivation. The best light of all is natural daylight. However, if daylight is not available in sufficient quantity or quality, it is necessary to supplement it with artificial light. Throughout the day, the basicDIM RCL control device automatically balances the level of artificial light in a room against the amount of daylight.

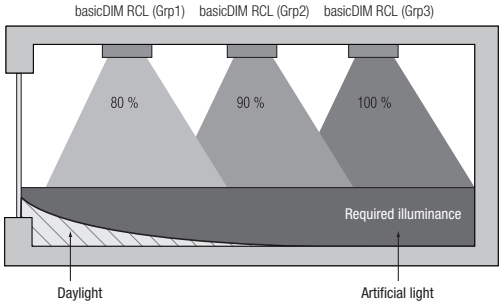
Example of daylight-linked closed-loop control

Day



If a large amount of daylight is entering the room, the first luminaire group (Grp1) next to the window is dimmed. The luminaires in the luminaire groups (Grp2, Grp3) are brightened to provide the required illuminance.

Twilight



If the level of daylight in the room falls, the luminaires in the other groups (Grp1, Grp2, Grp3) are brightened as necessary to provide the required illuminance.

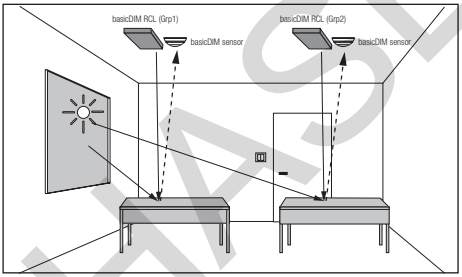
Notes:

! For information on project design see section "Incorporating daylight-linked closed-loop control into the project design", page 13.

! For information on configuration see section "Configuring daylight-linked closed-loop control", page 21.

Example of daylight-linked closed-loop control (look down)

The basicDIM sensor is mounted on the ceiling over the workspace. The light reflected from the workspace (both artificial and natural daylight) is detected by the basicDIM sensor and used to regulate the artificial light to maintain the required illuminance.



One basicDIM sensor is required for each area in the room. The basicDIM sensor can also be used for presence detection at the same time.

Notes:

! For more information relating to project design, positioning and mounting the basicDIM sensor, see the installation instructions for the basicDIM sensor.

! For information on configuration see section "Daylight-linked closed-loop control", page 6.

! If a daylight-linked luminaire group is adjusted, daylight-linked closed-loop control continues at this value.

Project design

Recommended procedure

1. Ascertain the customer's needs and requirements
2. Incorporate luminaire groups into the project design
3. Incorporate operation into the project design
4. Incorporate presence detectors into the project design
5. Incorporate daylight-linked closed-loop control into the project design

Incorporating luminaire groups into the project design

A separate basicDIM RCL control device must be included in the project design for each luminaire group. Luminaires within a luminaire group cannot be controlled individually.

No more than 25 DSI control gear elements can be connected to the output.

Notes:

! Only DSI control gear may be connected to the output of the basicDIM RCL control device.

! A separate basicDIM RCL control device must be included in the project design for each luminaire group. If multiple luminaire groups are required, it must first be determined which luminaires belong to which luminaire groups and the cabling must be planned accordingly.

! If daylight-linked closed-loop control is included in the project design, it must be taken into account that each luminaire group will be controlled individually. When luminaire groups are being incorporated into the project design, it must be noted that daylight affects the different areas of the room in different ways, see section "Configuring daylight-linked closed-loop control", page 21. Plan the cabling accordingly.

! If presence control is included in the project design, it must be taken into account that each luminaire group will be controlled individually. If multiple control devices are connected to each other via the Link Line interface, multiple luminaire groups can be controlled in parallel.

! For details on the type of cabling (DSI control line) and installation material required, see section "Carrying out an installation test", page 16.

Incorporating operation into the project design

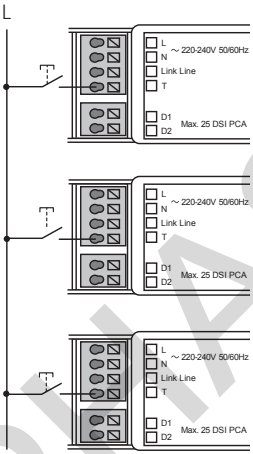
Operating individual luminaire groups manually

Conventional 230 V, 50/60 Hz momentary-action switches can be connected to input T on the basicDIM RCL control device. The momentary-action switch connected to input T functions in the operating mode set by the rotary switch on the basicDIM RCL control device.

Daylight-linked closed-loop control mode "OFF": briefly pressing the momentary-action switch alternates between recalling the value last set for the luminaires (luminaire group) connected to the basicDIM RCL control device and switching off the luminaires (luminaire group). Holding down the momentary-action switch alternates between dimming and brightening the luminaires (luminaire group) between 1% and 100%.

Daylight-linked closed-loop control mode "ON": briefly pressing the momentary-action switch alternates between enabling and disabling daylight-linked closed-loop control. When enabled, the lighting is smoothly adjusted to maintain the required illuminance. Holding down the momentary-action switch alternates between dimming and brightening the luminaires (luminaire group) between 1% and 100%.

Example: operating luminaire groups individually



basicDIM RCL control device: individual operation of luminaire group 1 (Grp 1)

basicDIM RCL control device: individual operation of luminaire group 2 (Grp 2)

basicDIM RCL control device: individual operation of luminaire group 3 (Grp 3)

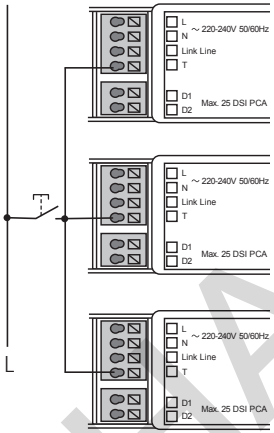
Operating multiple luminaire groups manually

Conventional 230 V, 50/60 Hz momentary-action switches can be connected to input T on the basicDIM RCL control device. One momentary-action switch, connected to the T inputs of the basicDIM RCL control devices in the system, can be used to operate all luminaires (all luminaire groups) simultaneously. The momentary-action switch connected to input T functions in the operating mode selected using the rotary switch on the basicDIM RCL control device.

Daylight-linked closed-loop control mode "OFF": briefly pressing the momentary-action switch alternates between recalling the value last set for all luminaire groups and switching off all lighting. Holding down the momentary-action switch alternates between dimming and brightening all lighting (all luminaire groups) between 1% and 100%.

Daylight-linked closed-loop control mode "ON": briefly pressing the momentary-action switch alternates between enabling and disabling daylight-linked closed-loop control for all basicDIM RCL control devices. When enabled, all lighting is smoothly adjusted to maintain the required illuminance. Holding down the momentary-action switch alternates between dimming and brightening all luminaire groups between 1% and 100%.

Example: operating all luminaire groups simultaneously



basicDIM RCL control device: luminaire group 1 (Grp 1).

basicDIM RCL control device: luminaire group 2 (Grp 2).

basicDIM RCL control device: luminaire group 3 (Grp 3).

Notes:

! Any number of momentary-action switches can be connected to input T on the basicDIM RCL control device in parallel.

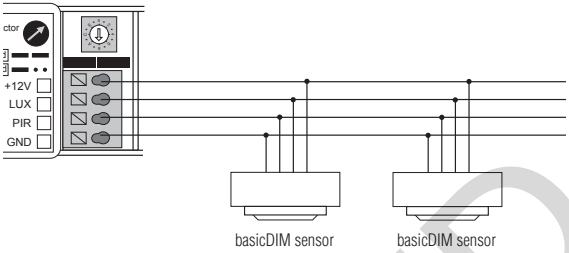
! The phase (L) adjacent to the inputs does not have to be the same as the phase used to supply power to the basicDIM RCL control device. However, only phases assigned to the same sub-circuit may be connected.

Incorporating presence detectors (basicDIM sensor) into the project design

Controlling individual luminaire groups using presence detectors (basicDIM sensor)

The basicDIM sensor controls the luminaire group connected to the basicDIM RCL control device.

Input PIR

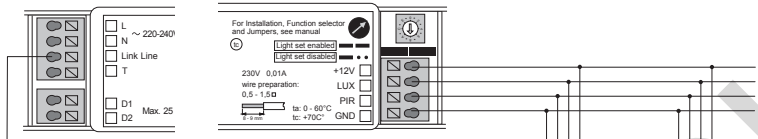


Notes:

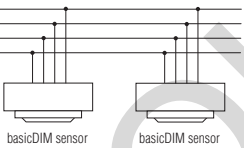
! Up to four basicDIM sensors can be connected to each basicDIM RCL control device in parallel.
! The basicDIM sensors 5DP 19f, 5DP 41rc and 5DP 41rs can be connected in parallel.
! In the project design, position the basicDIM sensor so that it is located above the workspace.
! Reception characteristics are changed by reflections on the walls, furniture or floor.
! The detection ranges of several basicDIM sensors installed close to each other can overlap.
! Avoid sources of heat within the detection range (e.g. printers, copiers, fax machines).
! For information regarding project design, installation materials (cable), and positioning and mounting the basicDIM sensor, consult the data sheet for the basicDIM sensor.

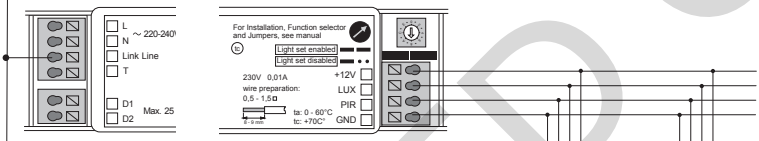
Controlling multiple luminaire groups using presence detectors (basicDIM sensors)

If multiple basicDIM RCL control devices are connected by the Link Line digital interface in parallel, information that the presence of a person has been detected by a basicDIM sensor is transmitted to all basicDIM RCL control devices that are connected.

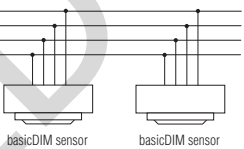


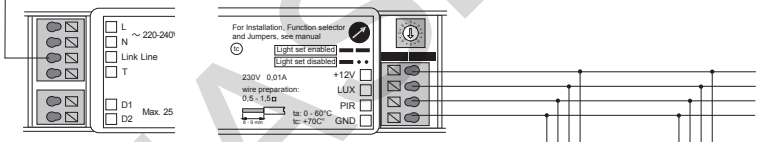
basicDIM RCL control device: luminaire group 1 (Grp 1).
The connected presence detectors (basicDIM sensor) control luminaire groups 1, 2 and 3.



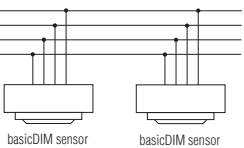


basicDIM RCL control device: luminaire group 2 (Grp 2).
The connected presence detectors (basicDIM sensor) control luminaire groups 1, 2 and 3.





basicDIM RCL control device: luminaire group 3 (Grp 3).
The connected presence detectors (basicDIM sensor) control luminaire groups 1, 2 and 3.



Notes:

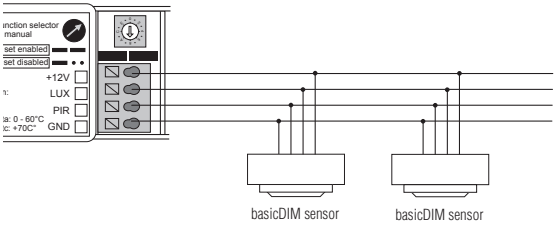
! Up to 20 basicDIM RCL control devices can be connected by wiring them in parallel to the Link Line digital interface.

! The basicDIM sensors connected to the basicDIM RCL control device only control other luminaire groups via the Link Line control line if the lighting was previously switched on using the momentary-action switch connected to input T.

Incorporating daylight-linked closed-loop control into the project design

In addition to the basicDIM RCL control device, a basicDIM sensor is required for daylight-linked closed-loop control. The basicDIM sensor detects both artificial and natural light reflected from the workspace.

Input LUX



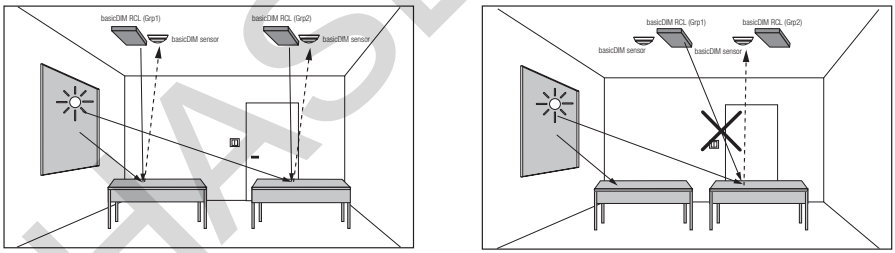
Notes:

! Up to four basicDIM sensors can be connected to each basicDIM RCL control device in parallel.

! For information regarding project design, and positioning and mounting the basicDIM sensor, see the installation instructions for the basicDIM sensor.

! The basicDIM sensors 5DP 19f, 5DP 41rc and 5DP 41rs can be connected in parallel.

Working range for daylight-linked closed-loop control



Notes:

! Only the luminaires illuminating a workspace monitored by a basicDIM sensor should be regulated using daylight-linked closed-loop control. Adjacent luminaires that are regulated via a second sensor should not illuminate the workspace monitored by the first sensor, in order to enable efficient daylight-linked closed-loop control.

! Daylight-linked closed-loop control relies on the measurement of the artificial and natural daylight reflected from a workspace. This measuring procedure does not give exact data for the actual illuminance on the workspace.

! Daylight-linked closed-loop control deliberately reacts to changes in the daylight levels slowly in order for these reactions to be perceived as little as possible.

Installation

DSI control lines, Link Line control line

The DSI control lines can be laid together with a 230 V AC power supply line, provided that it is sufficiently insulated (2 x basic insulation). The control lines can consist of conventional installation material and do not have to be braided or shielded. When selecting the control line, ensure that the maximum resistance is 8 ohm per 300 m length of control line.
The installation material must be approved for low-voltage installation up to 1000 V (DIN VDE 0472, Part 508).

e. g. H05V V-U 2 x 0.75 mm²
H05V V-U 2 x 1.50 mm²

Insulation of DSI interfaces
The insulation of the digital interfaces meets the requirements for basic insulation and was tested in accordance with EN 60928. There is no guarantee of compliance with SELV standards.

Line cross-sections and lengths

DSI control line:

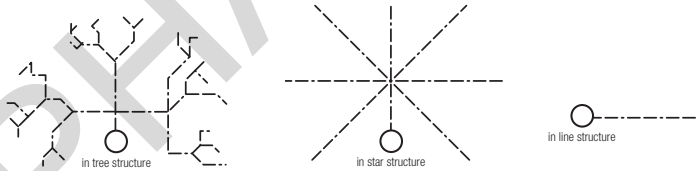
Line cross-section	Maximum line length
2 x 0.50 mm²	125 m
2 x 0.75 mm²	125 m
2 x 1.00 mm²	125 m
2 x 1.50 mm²	250 m

Link Line control line:

Line cross-section	Maximum line length
1 x 0.50 mm²	125 m
1 x 0.75 mm²	125 m
1 x 1.00 mm²	125 m
1 x 1.50 mm²	250 m

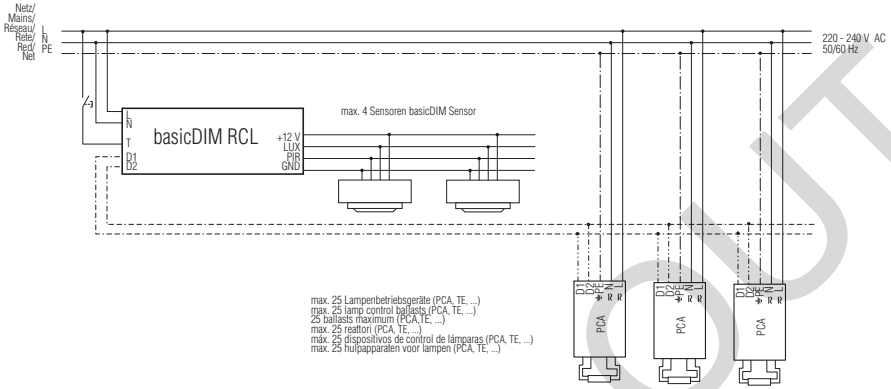
Wiring topology

The following topologies may be used for DSI wiring:



Notes:
! Every output on the basicDIM RCL control device must be wired separately. The outputs cannot be connected to each other electrically.
! Ring topologies are not permitted.

Wiring diagram



Carrying out an installation test

Carry out the installation test once electrical installation has been completed in full and tested.

Set the rotary switch on the basicDIM RCL control device to position F for the installation test.

Overview

What is tested?	How is it tested?	What happens if the installation is OK?
Output	Hold down the momentary-action switch connected to input T.	All connected luminaires brighten or dim.
Input T	Hold down the momentary-action switch connected to input T.	All connected luminaires brighten or dim.
Presence control	Set rotary switch on basicDIM RCL control device to position F (presence control mode: ON/OFF; run-on time: 15 seconds).	If a person enters the detection range of the basicDIM sensor, the lighting is switched on. After the person exits the detection range, the lighting switches off in 15 seconds.
Daylight-linked closed-loop control	Set the rotary switch on the basicDIM RCL control device to position F (daylight-linked closed-loop control mode: ON; status: manual).	When the basicDIM sensor is covered, the lighting slowly brightens. When the basicDIM sensor is illuminated, the lighting slowly dims. Note: Daylight-linked dimming/brightening may take several minutes.

Interrupting the power supply on the basicDIM RCL control device

- **Daylight-linked closed-loop control was disabled before power supply was interrupted (mode OFF):** After power supply is restored, value is first output as 1% brightness (10% if mode OFF/never OFF is enabled). Then the value (brightness) that was enabled before the power supply was interrupted is output.
- **Daylight-linked closed-loop control was enabled before power supply was interrupted (mode ON):** After power supply is restored, value is first output as 1% brightness (10% if mode OFF/never OFF is enabled). Then the value (brightness) that is currently being calculated via daylight-linked closed-loop control is output.

Note:

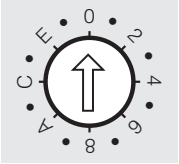
! If the lighting was switched off before the power supply to the basicDIM RCL control device was interrupted, the connected luminaires will go to a value of 0% when the power supply is restored.

Configuration

Before beginning configuration, carry out an installation test (see section "Carrying out an installation test", page 16).

Configuring functions

The basicDIM RCL control device provides a range of functions. Determine which function is desired and use a screwdriver to configure that function on the rotary switch on the basicDIM RCL control device (see section "Description of functions", page 5).



Configurable functions

Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
0	ON/OFF	20 min	ON	manual
1	ON/OFF	20 min	ON	automatic
2	ON/OFF	30 min	ON	manual
3	ON/OFF	40 min	ON	manual
4	ON/OFF	adaptive	ON	manual
5	ON/never OFF	20 min	ON	manual
6	ON/OFF	adaptive	OFF	---
7	ON/OFF	20 min	OFF	---
8	only OFF	10 min	ON	manual
9	only OFF	20 min	ON	manual
A	only OFF	30 min	ON	manual
B	OFF/never OFF	20 min	ON	manual
C	only OFF	20 min	OFF	---
D	no PIR	---	ON	manual
E	no PIR	---	ON	automatic
Test				
F	ON/OFF	15 sec	ON	manual

Note:

! The rotary switch is not only used to set the mode for presence control, but also to set the mode for daylight-linked closed-loop control at the same time.

Setting illuminance

Different tasks call for different required illuminance levels (see section "Extract of required illuminance according to EN 12464", page 29). The basicDIM RCL control device can be used to recall a lighting scene and configure it individually.

Setting illuminance and recalling the set value (without daylight-linked closed-loop control)

The output can be smoothly adjusted to achieve the required illuminance (lx) using the momentary-action switch connected to input T. The basicDIM RCL control device records the set value.
Briefly pressing the momentary-action switch or entering the detection range of the presence detector recalls the last set value. Briefly pressing the momentary-action switch again or leaving the detection range of the presence detector switches off the lighting.

To enable the "Set illuminance and recall set value (without daylight-linked closed-loop control)" function, select one of the following settings and configure it on the rotary switch.

Configurable functions

Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
6	ON/OFF	adaptive	**OFF**	**---**
7	ON/OFF	20 min	**OFF**	**---**
C	only OFF	20 min	**OFF**	**---**

Note:
! The rotary switch is not only used to set the mode for presence control, but also to set the mode for daylight-linked closed-loop control at the same time.

Configuring presence control

Configure the desired presence control function using the rotary switch on the basicDIM RCL control device.

Mode ON/OFF (recall lighting scene and switch off lighting)

Mode ON/OFF
(see section "Description of functions", page 5)

Run-on times for mode ON/OFF
The run-on time can be fixed or adaptive as required. If the run-on time is set to "adaptive", the system differentiates between times when people rarely enter the detection range of the presence detector, and times when the range is quite active. The duration of the run-on time (between 4 min and 20 min) is then adapted via presence control to suit the situation.

Available settings: 20 min, 30 min, 40 min, adaptive (between 4 min and 20 min).

Configurable functions

Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
0	**ON/OFF**	**20 min**	ON	manual
1	**ON/OFF**	**20 min**	ON	automatic
2	**ON/OFF**	**30 min**	ON	manual
3	**ON/OFF**	**40 min**	ON	manual
4	**ON/OFF**	**adaptive**	ON	manual
6	**ON/OFF**	**adaptive**	OFF	---
7	**ON/OFF**	**20 min**	OFF	---

Note:
! The rotary switch is not only used to set the mode for presence control, but also to set the mode for daylight-linked closed-loop control at the same time.

Mode only OFF (switch off lighting)

Mode only OFF
(see section "Description of functions", page 5)

Run-on times for mode only OFF
The run-on times are fixed.

Available settings: 10 min, 20 min, 30 min.

Configurable functions

Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
8	**only OFF**	**10 min**	ON	manual
9	**only OFF**	**20 min**	ON	manual
A	**only OFF**	**30 min**	ON	manual
C	**only OFF**	**20 min**	OFF	---

Note:
! The rotary switch is not only used to set the mode for presence control, but also to set the mode for daylight-linked closed-loop control at the same time.

Mode ON/never OFF (switch on the lighting and change to brightness value 10%)

Mode ON/never OFF
(see section "Description of functions", page 5)

Run-on times for mode ON/never OFF
The run-on time is fixed at 20 min.

Configurable functions

Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
5	**ON/never OFF**	**20 min**	ON	manual

Note:
! The rotary switch is not only used to set the mode for presence control, but also to set the mode for daylight-linked closed-loop control at the same time.

Mode OFF/never OFF (change to brightness value 10%)

Mode OFF/never OFF
(see section "Description of functions", page 5)

Run-on times for mode OFF/never OFF
The run-on time is fixed at 20 min.

Configurable functions

Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
B	**OFF/never OFF**	**20 min**	ON	manual

Note:
! The rotary switch is not only used to set the mode for presence control, but also to set the mode for daylight-linked closed-loop control at the same time.

Mode no PIR

Mode no PIR
(see section "Description of functions", page 5)

Configurable functions

Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
D	**no PIR**	**---**	ON	manual
E	**no PIR**	**---**	ON	automatic

Note:
! The rotary switch is not only used to set the mode for presence control, but also to set the mode for daylight-linked closed-loop control at the same time.

Configuring daylight-linked closed-loop control

Daylight-linked closed-loop control has two operating modes (status): "automatic" and "manual".

"Automatic" daylight-linked closed-loop control

Every time the illuminance is changed manually by holding down the momentary-action switch connected to input T, the ideal illuminance is changed.
Holding down the momentary-action switch smoothly adjusts the lighting to achieve the required illuminance (lx). The basicDIM RCL control device records this set value automatically and then considers it to be the ideal illuminance for daylight-linked closed-loop control.
Briefly pressing the momentary-action switch or entering the detection range of the presence detector causes the value currently being calculated via daylight-linked closed-loop control to be output at the luminaires. Briefly pressing the momentary-action switch again or leaving the detection range of the presence detector switches off the lighting.

Configurable functions

Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
1	ON/OFF	20 min	**ON**	**automatic**
E	no PIR	---	**ON**	**automatic**

Note:
! The rotary switch is not only used to set the mode for daylight-linked closed-loop control, but also to set the mode for presence control at the same time.

Setting and saving the ideal illuminance
The ideal illuminance is set by holding down the momentary-action switch connected to input T.

1. Switch on the lighting by briefly pressing the momentary-action switch.
2. Smoothly adjust the lighting to achieve the desired illuminance (lx) by holding down the momentary-action switch.
3. Save the current illuminance (lx) as the ideal illuminance by releasing the momentary-action switch.

"Manual" daylight-linked closed-loop control

Every time the illuminance (lx) is changed manually by holding down the momentary-action switch connected to input T, daylight-linked closed-loop control is disabled.

Holding down the momentary-action switch smoothly adjusts the lighting to achieve the desired illuminance (lx). When the illuminance is changed, daylight-linked closed-loop control is disabled until the momentary-action switch is briefly pressed or the lighting is switched on/off via presence control.

Configurable functions

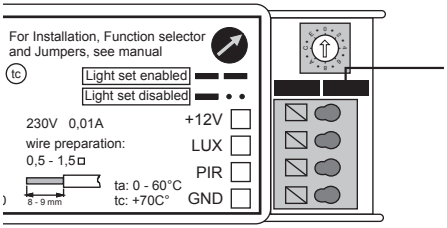
Position	Presence control		Daylight-linked closed-loop control	
	Mode	Run-on time	Mode	Status
0	ON/OFF	20 min	**ON**	**manual**
2	ON/OFF	30 min	**ON**	**manual**
3	ON/OFF	40 min	**ON**	**manual**
4	ON/OFF	adaptive	**ON**	**manual**
5	ON/never OFF	20 min	**ON**	**manual**
8	only OFF	10 min	**ON**	**manual**
9	only OFF	20 min	**ON**	**manual**
A	only OFF	30 min	**ON**	**manual**
B	ON/never OFF	20 min	**ON**	**manual**
D	no PIR	---	**ON**	**manual**

Note:
! The rotary switch is not only used to set the mode for daylight-linked closed-loop control, but also to set the mode for presence control at the same time.

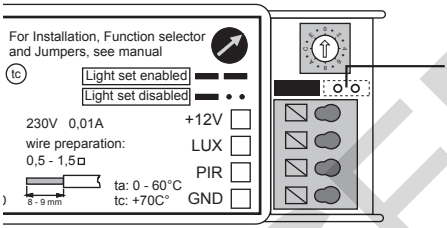
Enabling and disabling configuration of the ideal illuminance

Configuration must be enabled in order to set the ideal illuminance. Insert the "Light set" jumper into the basicDIM RCL control device to enable configuration.

Enable:



Disable:



Note:
! Enabling and disabling configuration is only possible in "manual" operating mode (status).

Setting the ideal illuminance
The ideal illuminance is set when the lowest illuminance in operation occurs in the workspace. Darken the room by closing the blinds, curtains, etc. If it is impossible to darken the room artificially, set the ideal illuminance in the evening or at night.
1. Place a luxmeter on the work surface (e.g. desk) situated under the luminaire group.
2. Use the momentary-action switch to smoothly adjust the lighting until the ideal illuminance is reached. This can be seen on the luxmeter.
3. Wait approx. 40 seconds.
4. Compare the illuminance on the luxmeter with the desired ideal illuminance. Repeat steps 2 and 3 if there is any deviation.

Saving the ideal illuminance
1. Briefly press the momentary-action switch connected to input T twice.
2. The connected luminaires blink twice to confirm that the ideal illuminance has been successfully saved.

Setting the ideal illuminance using the light/dark procedure of a basicDIM sensor

If the "Light set" jumper is not or cannot be fitted on the basicDIM RCL control device for setting the ideal illuminance (e.g. because the basicDIM RCL control device is installed somewhere difficult to access, such as in a luminaire or in a suspended ceiling), the ideal illuminance can alternatively be set using the light/dark procedure of a basicDIM sensor.

Enabling configuration of the ideal illuminance
Configuration must first be enabled in order to set the ideal illuminance. Carry out a light/dark procedure using a basicDIM sensor connected to the basicDIM RCL control device to enable configuration.

Enable:
1. Brighten the luminaires to 100%.
2. Shine a bright torch on the basicDIM sensor three times at intervals of approximately one second (light/dark procedure).
3. The connected luminaires blink once to confirm that the light/dark procedure was successful.
4. Briefly press the momentary-action switch twice ("double-click") within 60 seconds.
5. The connected luminaires blink once to confirm that configuration has been successfully enabled.

Setting the ideal illuminance
The ideal illuminance is set when the lowest illuminance in operation occurs in the workspace. Darken the room by closing the blinds, curtains, etc. If it is impossible to darken the room artificially, set the ideal illuminance in the evening or at night.

1. Place a luxmeter on the work surface (e.g. desk) situated under the luminaire group.
2. Use the momentary-action switch to smoothly adjust the lighting until the ideal illuminance is reached. This can be seen on the luxmeter.
3. Wait approx. 40 seconds.
4. Compare the illuminance on the luxmeter with the desired ideal illuminance. Repeat steps 2 and 3 if there is any deviation.

Saving the ideal illuminance
1. Briefly press the momentary-action switch connected to input T twice.
2. The connected luminaires blink twice to confirm that the ideal illuminance has been successfully saved.

Disabling configuration of the ideal illuminance
1. Briefly press the momentary-action switch connected to input T.
2. The lighting switches off.

Notes:
- **!** The brightness values detected by the basicDIM sensors are processed by the basicDIM RCL control device and used for daylight-linked closed-loop control.
- **!** The basicDIM sensors should not be covered to set the ideal illuminance.
- **!** Changes to workspaces or in the surrounding area (e.g. turning pages of a newspaper) can cause deviations from the set ideal illuminance.
- **!** Make sure that the same lighting conditions in the room (darkening) exist for all basicDIM sensors during configuration (daylight-linked closed-loop control).
- **!** Make sure that no artificial or natural daylight reaches the lens of the basicDIM sensor directly.

Daylight-linked dimming off and on (Bright-Out/Bright-In)

The basicDIM RCL control device is configured so that if the lighting is switched on and a large amount of daylight is entering the room, the artificial light is dimmed off, and then later, if there is less daylight entering the room, the artificial light is dimmed on again.
If the lighting is dimmed off via daylight linking, it will remain off even if a presence is detected via presence control. If the lighting is dimmed off via daylight linking, it will switch on if the momentary-action switch connected to input T is briefly pressed. The lighting is dimmed off again via daylight linking after 10 minutes have passed and if the daylight conditions have not changed.

Synchronising luminaire groups

If a momentary-action switch is connected to the T inputs of multiple basicDIM RCL control devices, the luminaires may exhibit different levels of brightness after a number of smooth adjustments have been made.

Synchronising luminaire groups
1. Hold down the momentary-action switch connected to the T inputs for 20 seconds.
2. After 20 seconds, all luminaire groups switch to 50% brightness.
3. The luminaire groups are synchronised.

Note:
! After synchronisation, holding down the momentary-action switch will dim the lighting.

Replacing devices

Replacing control gear or luminaires

1. Ensure that the new device (control gear/luminaire) can be used (see section "Incorporating luminaire groups into the project design", page 8).
2. Disconnect the basicDIM system from the power supply.
3. Replace the device (control gear/luminaire). Several devices (control gear/luminaires) can be replaced at the same time.
4. Switch the power supply back on.

The basicDIM system automatically initialises the new device (control gear/luminaire) and is immediately ready for operation.

Replacing basicDIM sensors

1. Disconnect the basicDIM system from the power supply.
2. Replace the basicDIM sensor. Several basicDIM sensors can be replaced at the same time.
3. Switch the power supply back on.
4. Configure the daylight-linked closed-loop control (see section "Enabling and disabling configuration of the ideal illuminance", page 23)

The basicDIM system automatically initialises the new basicDIM sensor and is immediately ready for operation.

Replacing the basicDIM RCL control device

1. Disconnect the basicDIM system from the power supply.
2. Replace the basicDIM RCL control device.
3. Set the rotary switch on the basicDIM RCL control device to the desired function (mode) (see section "Configuring functions", page 17).
4. Switch the power supply back on.
5. Set the illuminance if necessary (see section "Setting illuminance", page 18).
6. Configure the daylight-linked closed-loop control if necessary (see section "Enabling and disabling configuration of the ideal illuminance", page 23)

Technical data

Nominal voltage . . . . . 220/230/240 V AC, 50/60 Hz
Permitted input voltage . . . . . 198–264 V AC, 50–60 Hz
Power loss . . . . . < 1.5 W
Outputs . . . . . D1, D2, DSI control line
Capacity . . . . . Max. 25 DSI-compatible control gear elements
DSI signal . . . . . 12 V (Manchester Code)
DSI control line . . . . . NYM 2 x 1.5 mm^2 (H05VV-U 2 x 1.5 mm^2)
Mains line . . . . . NYM 2 x 1.5 mm^2 (H05VV-U 2 x 1.5 mm^2)
Terminals . . . . . 0.75–2.5 mm^2
Housing material . . . . . Flame-retardant polycarbonate; halogen-free
Weight . . . . . approx. 350 g
Permitted ambient temp. . . . . 0 to 60°C
Storage temperature . . . . . -25 to 55°C
Protection type IP20

Line length . . . . . DSI control line:

Line cross-section	Maximum line length
2 x 0.50 mm^2	125 m
2 x 0.75 mm^2	125 m
2 x 1.00 mm^2	125 m
2 x 1.50 mm^2	250 m

Conformity:

EN 61547 Equipment for general lighting purposes. EMC immunity requirements

EN 61347-1 Lamp controlgear (General and safety requirements)

EN 61347-2-11 Lamp controlgear (Particular requirements for miscellaneous electronic circuits used with luminaires)

EN 55015 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

ICE 60695-2-11 Fire hazard testing. Test methods. Glowing/hot-wire based test methods. Glow-wire flammability test method for end-products

13

Frequently asked questions

How many luminaires (control gear elements) can I connect to one output?
- A maximum of 25 DSI control gear elements can be connected.

How can I connect more than 25 DSI loads to one output?
- Use the DSI-V/T amplifier (art. no. 86458690) to connect up to 50 additional control gear elements.

I have luminaires with both DALI and DSI control gear. Can I run both control gear types from one basicDIM RCL control device?
- No. Only DSI control gear may be connected.

How many sensors can be connected to a basicDIM RCL control device?
- A maximum of four basicDIM sensors may be connected.

Can I assign one presence detector (basicDIM sensor) to multiple luminaire groups (basicDIM RCL control devices)?
- Yes. If multiple basicDIM RCL control devices are connected to the Link Line digital interface in parallel, information that the presence of a person has been detected is transmitted to all basicDIM RCL control devices that are connected.

What components do I have to reconfigure when replacing a basicDIM RCL control device?
- see section "Replacing the basicDIM RCL control device", page 26

Are the current user settings saved if the power is interrupted?
- Yes. When power is restored, the settings that were active before the power supply was interrupted are recalled.

Extract of required illuminance according to EN 12464

Type of room	Task or activity	Maintained illuminance [$\bar{E}_m$] in the task area [lx]
Office work	Filing, copying	300
	Circulation areas in work rooms	300
	Writing	500
	Reading, data processing	500
	CAD workstations	500
	Conference and meeting rooms	500
	Reception desks	300
	Archives	200
Public areas, service counter areas	Entrance halls	100
	Cloakrooms	200
	Waiting rooms	200
	Cash desks and counters	300
Design and drawing rooms	Drawing rooms	500
	Drawing rooms in art colleges	750
	Technical drawing rooms	750
Side rooms	Stairwells, escalators, moving walkways	150
	Canteens	200
	Buffet areas	300
	Staffrooms	100
	Gymnasiums	300
	Kitchenettes	200
	Catering kitchens	500
	Changing rooms, wash rooms and restrooms	200
	First-aid rooms	500

Disposal

For disposal in accordance with the WEEE Directive:

- Return the device to Tridonic or dispose of the device in accordance with national regulations.
- Do not dispose of the device in non-recyclable waste.
- Do not burn the device.

CE conformity

Tridonic hereby declares that the basicDIM RCL complies with the relevant EU Directives.

Glossary

Control gear
An electrical device used to operate a lamp. Includes electronic ballasts, smoothly adjustable electronic ballasts, DSI-compatible electronic ballasts, transformers, phase dimmers, switching actuators, etc.

Illuminance in lux (lx)
Illuminance describes the amount of luminous flux falling on a surface.

DSI
Digital Serial Interface. A standardised interface for digitally operating control gear.

DSI load
A DSI load is a DSI-compatible lamp control gear such as an electronic ballast or electronic transformer. Usually, lamp control gear counts as one DSI load. See the technical data for further information.

Wiring topology
Types and options for laying the DSI control line (star, linear and/or tree topologies).

Luminaire group
A group of luminaires that can be jointly controlled.

Go to www.tridonic.com to find your personal contact at Tridonic.

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