

basicDIM DGC

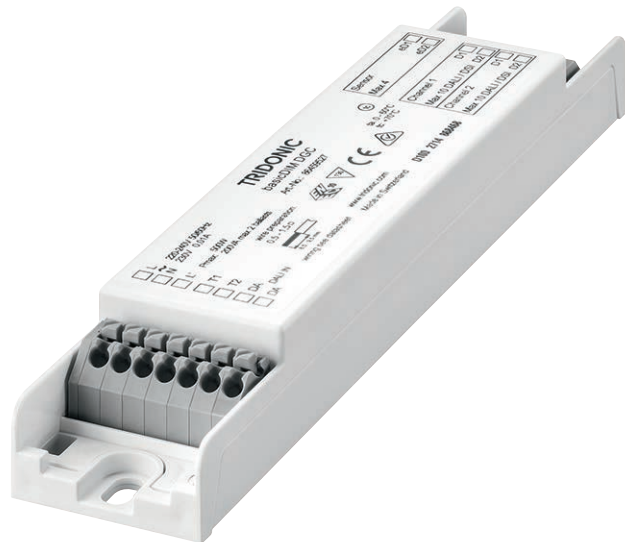
Compact control module

Product description

- Compact dimensions for luminaire installation
- For up to 20 DSI or DALI devices (max. 10 per output channel)
- DALI IN input
- 2 DALI/DSI output channels with adjustable offset from channel 2 to channel 1
- 1 relais output
- Sensor input for up to 4 basicDIM DGC sensors 5DPI 14
- 2 switch inputs for on/off switching and dimming
- Individual adjustment of the parameters with basicDIM DGC Programmer or software masterCONFIGURATOR
- 5-year guarantee



Wiring diagrams and installation examples, page 10



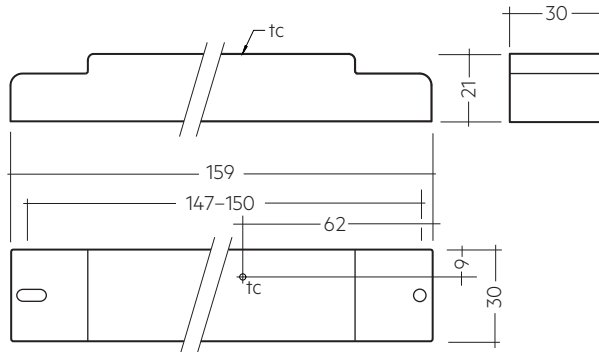


basicDIM DGC

Compact control module

Technical data

Rated supply voltage	220 – 240 V
Mains frequency	50 / 60 Hz
Power	2.5 W
Stand-by power	0.5 W
Current draw, input (DALI bus)	2 mA
Max. number of switched Drivers	2
Max. Inrush current of the load (peak / duration)	55 A / 400µs
Typ. number of switching cycles [®]	50,000
Max. resistive load	500 W
Max. inductive / capacitive load	200 VA
tc	70 °C
Operating temperature	0 ... +60 °C
Storage temperature	-25 ... +70 °C
Type of protection	IP20
Dimensions L x W x H	159 x 30 x 21 mm



Ordering data

Type	Article number	Mounting	Packaging carton	Weight per pc.
basicDIM DGC	28000920	Luminaire installation	10 pc(s).	0.06 kg

Specific technical data

Type	Inputs			Outputs				CH2 as Link Line			
	Dimming switch	Max. cable length at 1.5 mm ²	Max. basicDIM DGC sensors	Max. sensor line length at 0.2 – 1.5 mm ²	Digital control line DALI/DSI	Control output per physical output (devices)	Dimming range	Maximum cable length at 1.5 mm ²	Voltage DC	Maximum cable length at 1.5 mm ²	Number of combinable modules
basicDIM DGC	double	100 m	4	10 m	2	10	1 – 100 %	100 m	13 V	100 m	10

[®] See data sheet 8.2 Switching cycles.

basicDIM DGC Sensor 5DPI 14f

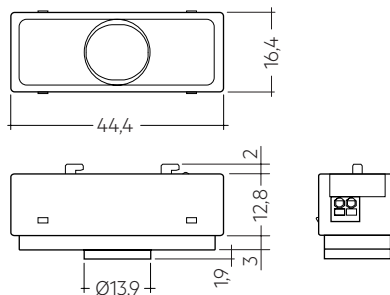
Product description

- Light measurement and motion detection
- Up to 4 basicDIM DGC sensors on one basicDIM DGC
- Can be remote controlled
- Light measurement and motion detection can be deactivated
- Individual adjustment of the parameters with basicDIM DGC Programmer or software masterCONFIGURATOR
- Power supply via basicDIM DGC

Technical data

Ø of detection range, mounted at a height of 2.5 m	4,5 m
Swivel design	no
Detection angle	84°
Light measurement at the sensor head ①	10 – 650 lx
Infra-red control range	5 m
Max. mounting height	5 m
Operating temperature	0 ... +50 °C
Storage temperature	-25 ... +55 °C
Type of protection	IP20

① The measured value at the sensor head corresponds to approx. 15 to 2,000 lux on the surface measured.



Ordering data

Type	Article number	Packaging, carton	Weight per pc.
basicDIM DGC Sensor 5DPI 14f Luminaire installation	28000933	40 pc(s).	0.06 kg
basicDIM DGC Sensor 5DPI 14f black Luminaire installation	28001696	40 pc(s).	0.06 kg

5DPI 14f Mounting Kit

Product description

- Mounting frame for attaching all 5DP 14f sensor directly to the luminaire housing
- Shutter for preventing movement detection in one direction
- Glow wire test with 750 °C according to EN 61347-1



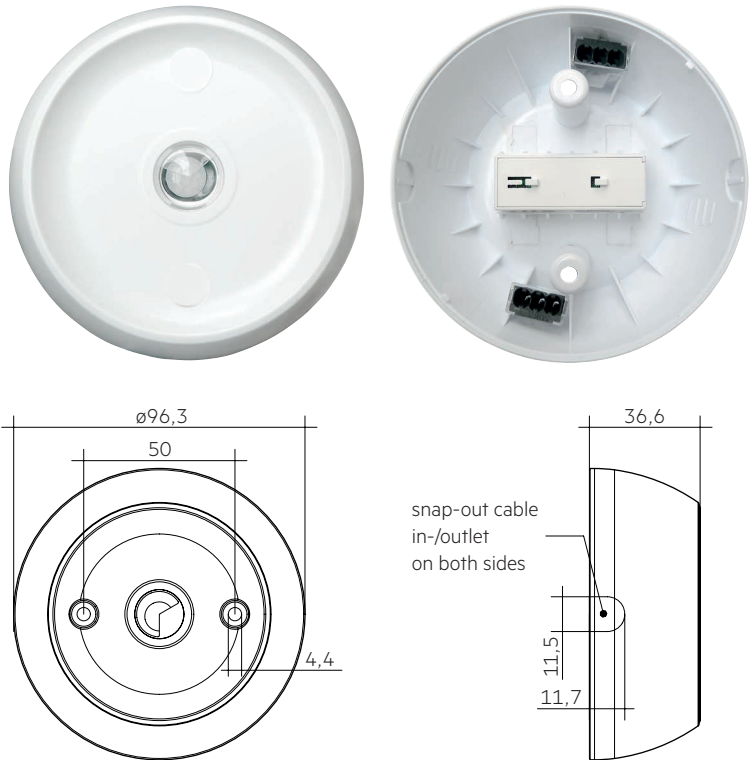
Ordering data

Type	Article number	Packaging carton	Weight per pc.
5DPI 14f mounting kit	28001558	100 pc(s).	0.004 kg
5DPI 14f mounting kit black	28001575	100 pc(s).	0.004 kg

ACU Sensor Housing 14rs IP20

Product description

- Mounting frame for wired 5DP 14f sensors allowing direct mounting to the ceiling
- Easy „click in“ installation of the sensor
- IP20
- Casing: plastic, white
- UV stabilized plastic
- DALI MSensor 5DPI 14 is powered via DALI circuit, basicDIM DGC Sensor 5DPI 14f powered via control unit
- Optional shutter for reduction of movement detection area allowing to decrease the movement detection area from 360° to 240°
- Mounting kit with screws and decorative plugs
- 0.5 mm wiring for the sensor
- Two 3 x 1.5 mm² clamps with cable management (2 entry points on oppsite sides)
- Glow wire test with 750 °C according to EN 61347-1

**Ordering data**

Type	Article number	Packaging carton	Weight per pc.
ACU Sensor Housing 14rs IP20	28001872	57 pc(s).	0.054 kg

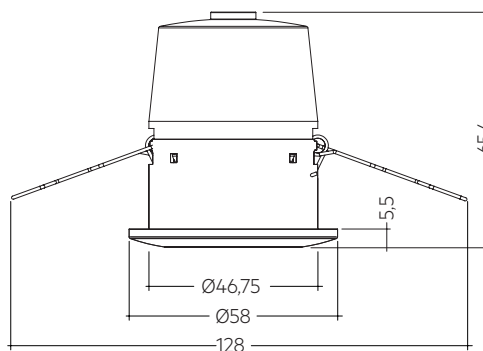
Product description

- Light measurement and motion detection
- Up to 4 basicDIM DGC sensors on one basicDIM DGC
- Can be remote controlled
- Light measurement and motion detection can be deactivated
- Individual adjustment of the parameters with basicDIM DGC Programmer or software masterCONFIGURATOR
- Power supply via basicDIM DGC

Technical data

Ø of detection range, mounted at a height of 2.5 m	4.5 m
Swivel design	no
Detection angle	84°
Light measurement at the sensor head ^①	10 – 650 lx
Infra-red control range	5 m
Max. mounting height	5 m
Operating temperature	0 ... +50 °C
Storage temperature	-25 ... +55 °C
Type of protection	IP20

^① The measured value at the sensor head corresponds to approx. 15 to 2,000 lux on the surface measured.



Ordering data

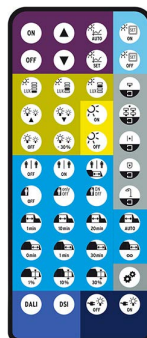
Type	Article number	Packaging, carton	Weight per pc.
basicDIM DGC Sensor 5DPI 14rc Ceiling installation	28000934	63 pc(s).	0.06 kg

ACCES-
SORIES

basicDIM DGC Programmer

Product description

- Optional infra-red programming unit for basicDIM DGC
- Setting of predefined discrete parameter values
- Programmable functions such as light level, time delay, P.I.R., bright-out, power up



Ordering data

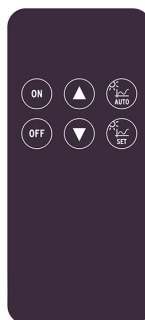
Type	Article number	Dimensions L x W x H	Packaging carton	Weight per pc.
basicDIM DGC Programmer	28000646	130 x 56 x 15 mm	120 pc(s).	0.02 kg

ACCES-
SORIES

REMOTECONTROL IR6

Product description

- Optional infra-red remote control
- Switching on and off (On/Off button)
- Dimming (Up/Down button)
- Activation of automatic lighting control
- Setting the threshold control point (Set button)



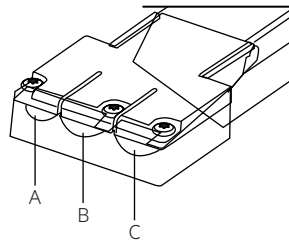
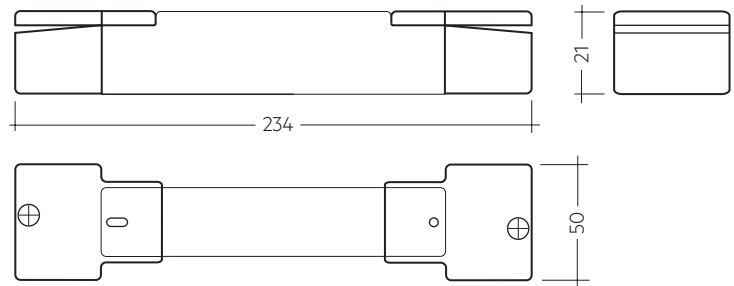
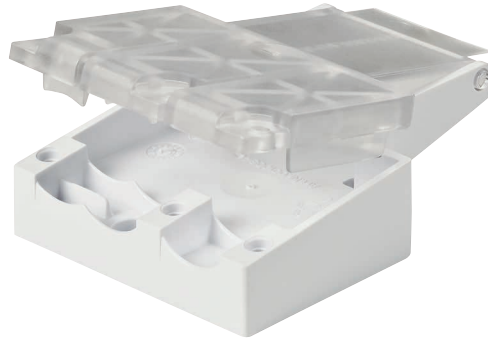
Ordering data

Type	Article number	Dimensions L x W x H	Packaging carton	Weight per pc.
REMOTECONTROL IR6	28000647	86.5 x 40.5 x 7.2 mm	500 pc(s).	0.019 kg

Strain-relief set

Product description

- Strain relief for up to 3 cables suitable for cable with diameter from 2.5 up to 9 mm
- A: 2.5 – 5 mm diameter
- B: 5 – 9 mm diameter
- C: 5 – 9 mm diameter
- 5-year guarantee

**Ordering data**

Type	Article number	Packaging carton	Weight per pc.
Strain-relief set	28000881	10 pc(s).	0.05 kg

1. Standards

EN 55015
EN 61000-3-2
EN 61347-1
EN 61347-2-11
EN 61547
EN 62386-101
EN 60598-1
EN 62493

1.1 DALI standard

The basicDIM DGC is designed to control control gear with DALI standard IEC 60929 (DALI V0) and IEC 62386 (DALI V1).

1.2 Glow-wire test

according to EN 61347-1 passed.

2. Common

The basic DIM DGC provides the basis for an easy-to-use and cost-effective lighting system with motion detection. When the sensor detects movement it triggers a individual adjustable motion detection profile in the control unit. As the amount of natural ambient light changes the illuminance from the artificial lighting system is adjusted. The connected luminaires can be switched on and off via momentary-action switch or remote control possible.

The DALI IN interface allows integration of the basicDIM DGC module also into a comfortDIM system.

The basicDIM DGC module has 5 preprogrammed profiles which can be selected using the basicDIM DGC Programmer. The profiles can be adjusted to your application via the masterCONFIGURATOR (≥ V2.12) software.

If the basicDIM DGC module is used in the basic application, the CH2 can be used as control channel for controlling subordinate basicDIM DGC modules (basic connection), so that the controlling and the subordinate basicDIM DGC modules can be programmed and allocated to groups using the masterCONFIGURATOR software. Every single basicDIM DGC module can be allocated to a group and respond to the presence of up to 5 groups (for more detailed information please refer to the masterCONFIGURATOR documentation).

3. Interfaces / communication

3.1 DALI IN

The DALI IN interface allows integration of the basicDIM DGC module also into a comfortDIM or other BMS systems.

However, not all DALI commands are supported. The DALI commands supported are listed in the operating instructions.



By using the DGC in basic configuration (additional DGC's connected to CH2) DALI IN interface will be deactivated.

3.2 DALI/DSI output channels CH1 - CH2

The output channels can be set to DSI or DALI (default) using the basicDIM DGC Programmer or the masterCONFIGURATOR software.



After mains failure the basicDIM DGC will set new the following parameters to CH1/CH2:

POWER ON LEVEL
SYSTEM FAILURE LEVEL
FADE TIME
MIN LEVEL
MAX LEVEL

For more detailed information please refer to the manual.

3.3 Switch

basicDIM DGC has two inputs (T1 and T2) for two external switches. Any number of switches can be connected in parallel to the inputs (parallel connection of T1 and T2 possible).

Short press (< 500 ms):	ON/OFF
Long press (> 500 ms):	Dim up/down A change in the light value deactivates lighting regulation only temporarily. As soon as the luminaire has been automatically switched on again (motion detection) or manually switched off and on again, regulation is activated again.
2 x short press:	The overwritten setpoint light value is stored (luminaire acknowledges by flashing twice) Function is lockable via the DSI programmer

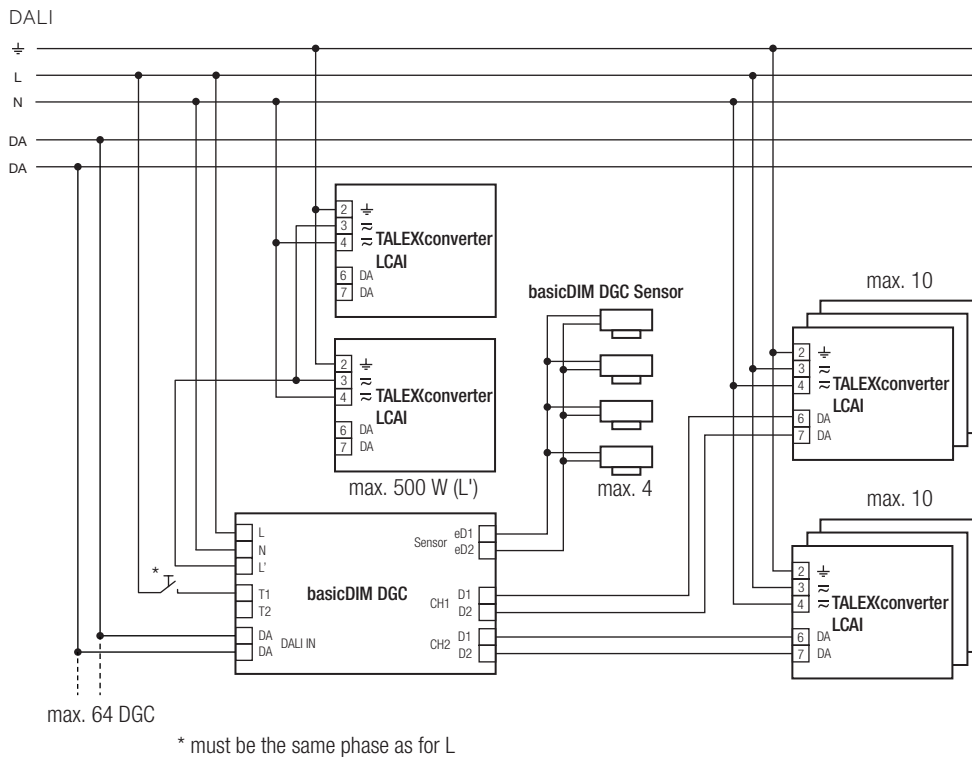
Different output channels are controlled, depending on the profile selected.

4. Installation

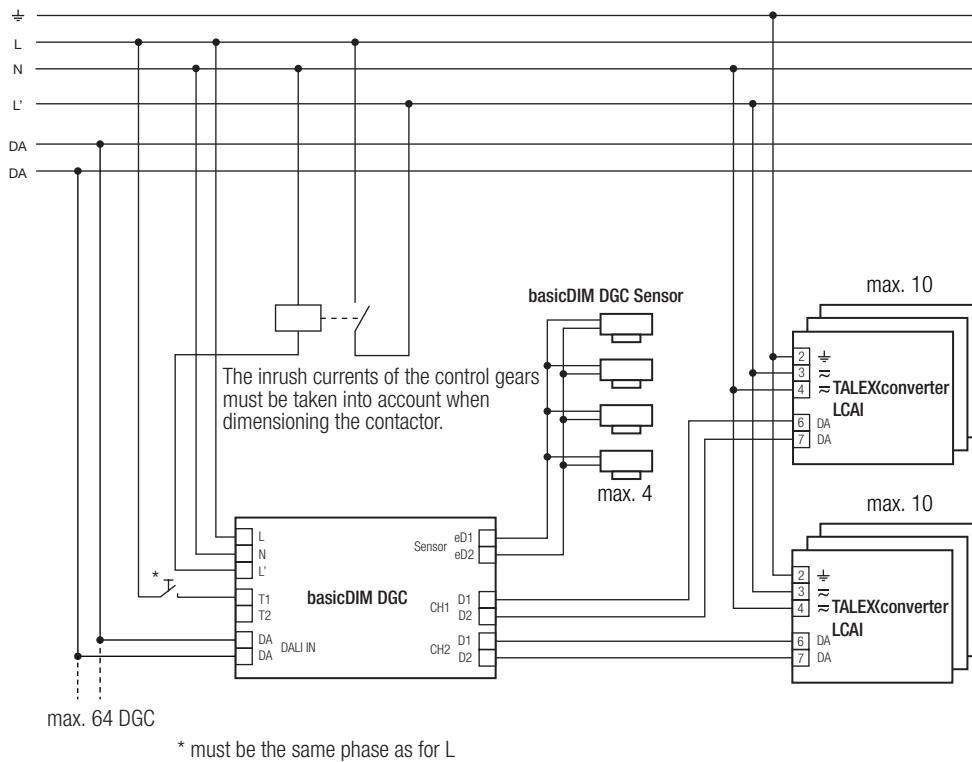


- basicDIM DGC can be operated without sensor. The motion detection must be disabled via masterCONFIGURATOR or with unique connecting a sensor and basicDIM DGC Programmer.
- DSI/DALI is not SELV. The installation instructions for mains voltage therefore apply.
- The maximum cable length between the external switch and basicDIM DGC is 100 m.
- The maximum cable length between the sensor and basicDIM DGC is 10 m.
- A synchronous operation of DALI and DSI ballasts at the same control gear is not possible.
- The output channels (for a cable cross-section of 1.5 mm²) must not be exceeded 100 m.
- If CH2 is used as link line, the maximum cable length must not exceed 100 m (at 1.5 mm²).
- If a basicDIM DGC is connected to CH2, DALI IN is disabled and CH2 is used as Link-Line (neighbourhood function). No control commands are transmitted via CH2, to reactivate DALI IN see basicDIM DGC manual.
- Any number of push to make switches may be connected in parallel to the inputs.
- Do not connect standard switches to the input.
- Please ensure that the detection range of the sensor lies in the lighting area of the controlled luminaires.
- Heaters, fans, printers and copiers located in the detection zone may cause incorrect presence detection.
- To avoid false readings, the sensor should be installed so there is no direct light from the lamp in the detection zone.
- Sensor wires must be routed separately from the lamp wires and mains cables otherwise the lighting control system may malfunction. If separate routing is not possible (for reasons of space) shielded lamp wires and mains cables must be used.
- Avoid direct illumination of the light source on the sensor including housing.

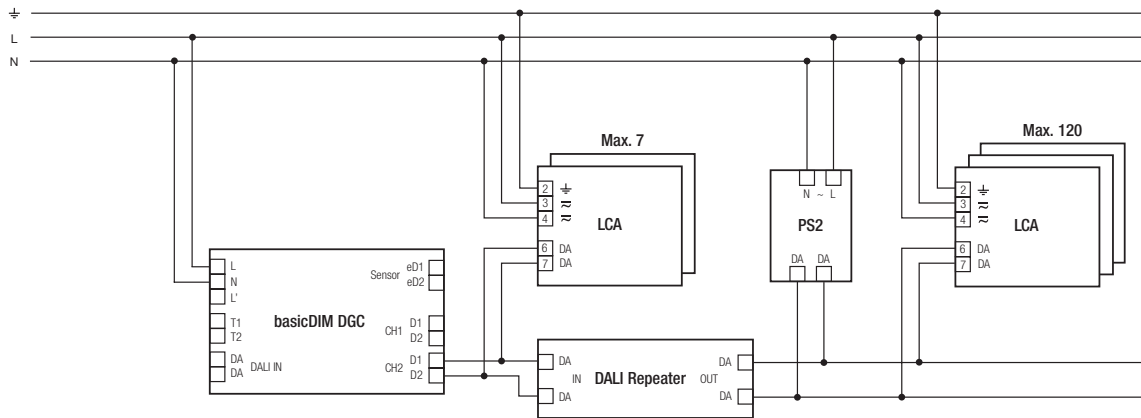
4.1 Wiring diagram basicDIM DGC



Relais in standby



4.2 Wiring diagram basicDIM DGC with DALI PS1(2)

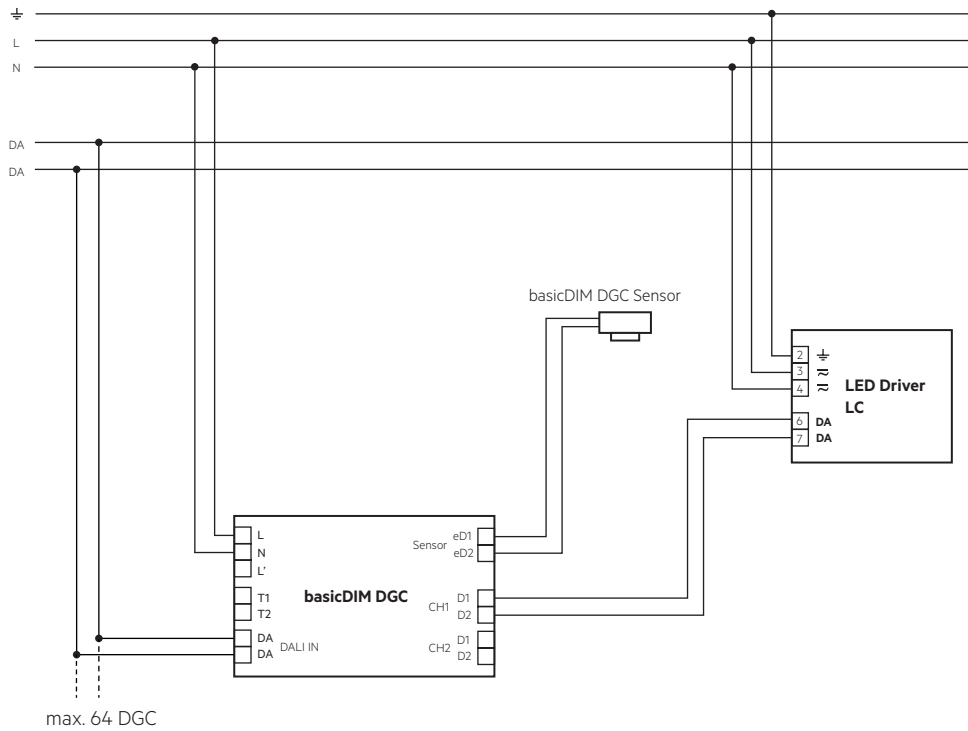


Use only in combination with DALI Repeater (86458401) and one of the following DALI supplies:

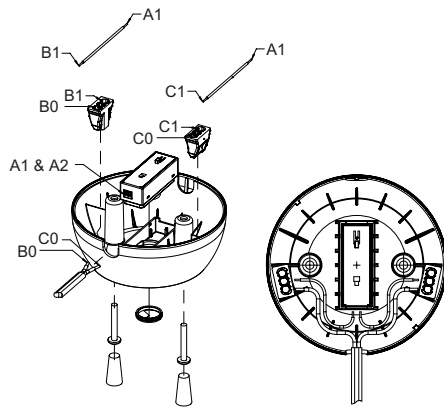
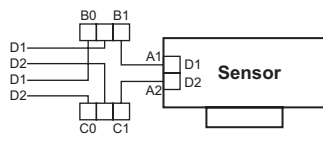
- DALI PS1 (24034323), 200 mA, max. 100 additional devices
- DALI PS2 (28000876), 240 mA, max. 120 additional devices

This combination can be used on CH1 and CH2.

Wiring diagram basicDIM DGC for Intelligent Luminaire

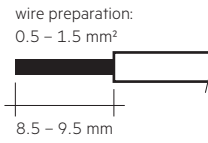


4.3 Wiring and mounting ACU Sensor Housing 14rs IP20



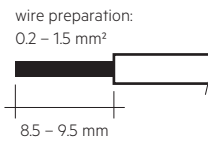
4.4 Wiring type and cross-sections for basicDIM DGC

Solid wire with a cable cross-section of 0.5 mm² to 1.5 mm².



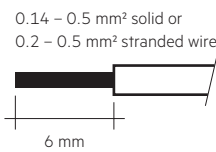
4.5 Wiring type and cross section for sensor rc version

The wiring can be solid wire or stranded wire with a cross-section of 0.2 mm² to 1.5 mm².



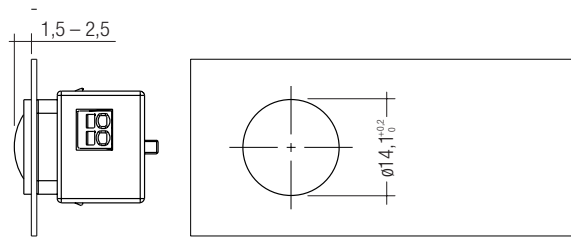
4.6 Wiring type and cross section for sensor f version

The wiring can be solid wire or stranded wire with a cross-section for solid wire of 0.14 mm² to 0.5 mm² and a cross-section for stranded wire of 0.2 mm² to 0.5 mm².

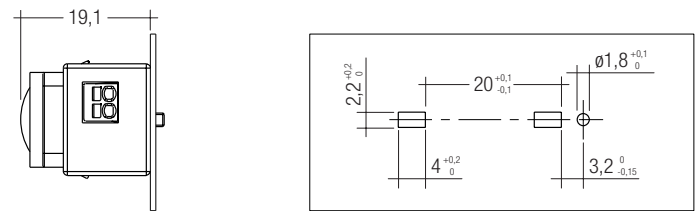


4.7 Mounting variants luminaire installation sensor

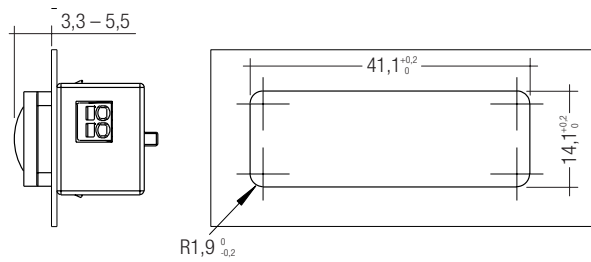
Size of the sheet: 0.8 – 1.8 mm



Size of the sheet: 0.6 – 0.8 mm



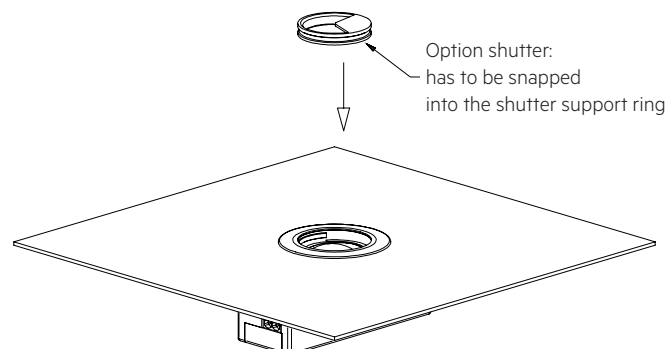
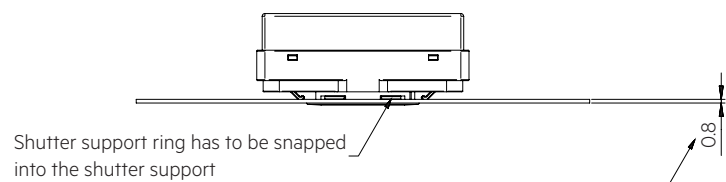
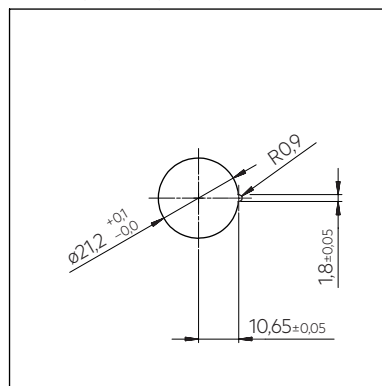
Size of the sheet: 0.8 – 3.0 mm



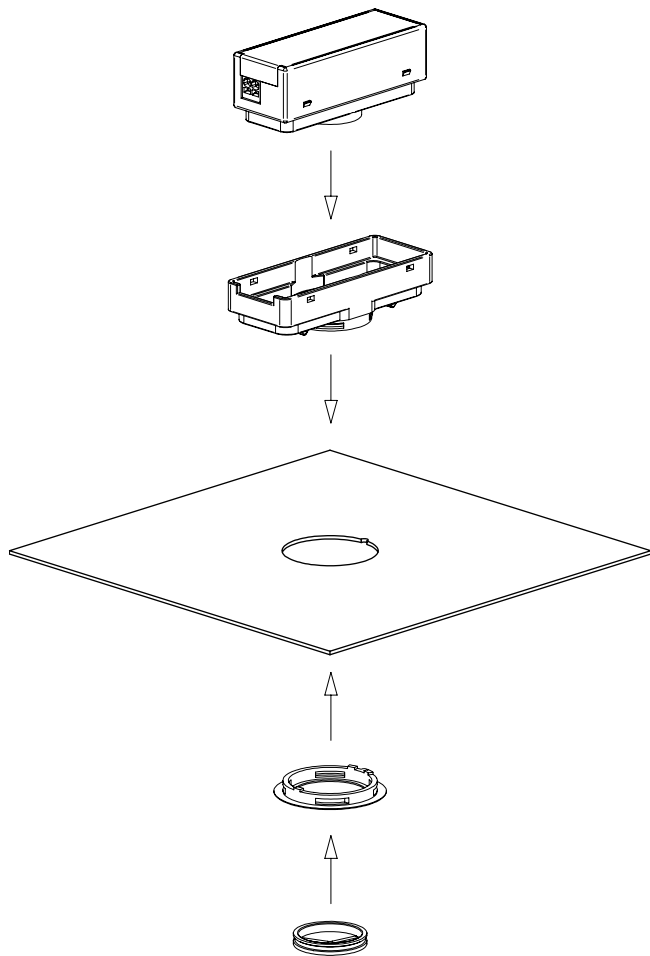
4.8 Mounting in luminaire housing with Mounting Kit:

Size of the sheet: 0.8 – 2.0 mm

Dimension drawing for needed mounting opening

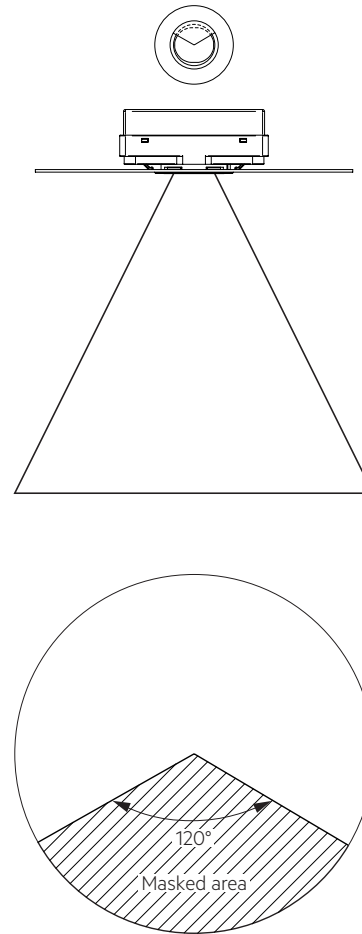


4.9 Mounting Kit mounting



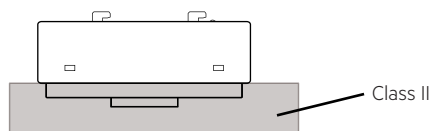
4.10 Mounting Kit Shutter

Area which is masked by the shutter.



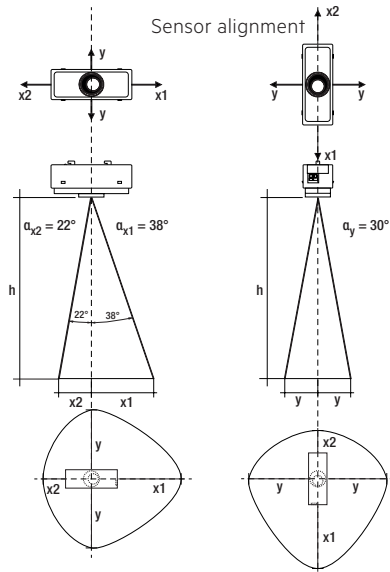
4.11 Mounting in class II luminaire

The Sensor provides basic insulation as required by IEC 62386-101 and defined in IEC 61347-1.
If the sensor is built into a class II luminaire which has to provide double or reinforced insulation it has to be considered that the Sensor is not a class II device. Still the Sensor can be used for such projects as the front of the sensor is tested to fulfill the class II requirements for double or reinforced insulation.



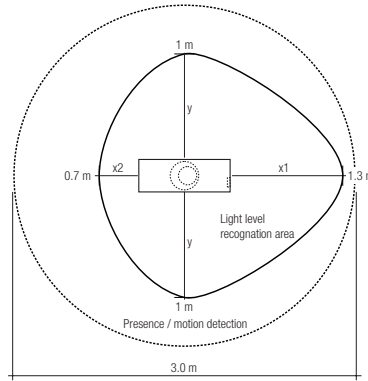
5. basicDIM DGC sensor functions

5.1 Light level recognition area

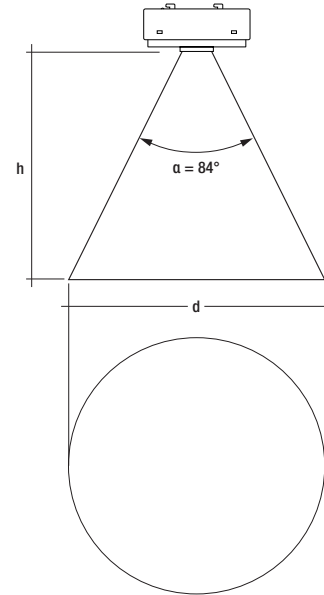


h *	x1	x2	y	d
1.7 m	1.3 m	0.7 m	1.0 m	3.0 m
2.0 m	1.6 m	0.8 m	1.2 m	3.6 m
2.3 m	1.8 m	0.9 m	1.3 m	4.1 m
2.5 m	2.0 m	1.0 m	1.4 m	4.5 m
2.7 m	2.1 m	1.1 m	1.6 m	4.9 m
3.0 m	2.3 m	1.2 m	1.7 m	5.4 m
3.5 m	2.7 m	1.4 m	2.0 m	6.3 m
4.0 m	3.1 m	1.6 m	2.3 m	7.2 m

Example for light and motion detection area at height of 1.7 m:



5.2 Presence / motion detection



* The recommended maximum room height for office applications is 3 m and for corridor applications for example 4 m. Up to 2 m mounting height presence is detected and over 2 m motion is detected.

Calculation of the diameter (light area):

$$x1 = \tan(\alpha_{x1}) \times h$$

$$x2 = \tan(\alpha_{x2}) \times h$$

$$y = \tan(\alpha_y) \times h$$

Calculation of the diameter (motion area):

$$d = 2 \times \tan(0,5 \times \alpha) \times h$$

6. Functions



6.1 Relais







The relay can be used in four different operating modes:

- Reduction of standby losses (standby wiring example)
- Independent output channel for switching non-dimmable luminaires (DALI wiring example)

Depending on the profile used, the relay will respond differently. For the 5 main profiles, the two relay profiles used are Standby and OnlyOFF. The masterCONFIGURATOR software allows to enable or disable the relay profiles as well.

Standby		Energy saving mode If the basicDIM DGC module is switched off, the relay will switch off (after 10 minutes). If the basicDIM DGC is switched on, the relay will switch on. Switching: relay in standby mode
OnlyOFF		The relay must be switched on using the momentary-action switch, but is switched off by the presence detector.
Active		The relay is switched on or off via the presence detector.
Inactive		The relay must be switched on and off using the momentary-action switch.

Depending on the profile used, different operating modes are preprogrammed for the presence detector. These can be changed using the basicDIM DGC Programmer or the masterCONFIGURATOR software.

	ON / OFF	The light is switched on and off automatically based on the presence/absence of people.
	Only OFF	The presence detector just switches the connected luminaires off. The luminaires are switched on manually via the connected external momentary-action switch or the remote control.
	Never OFF	If no presence is detected, the sensor dims down to the "second light level" parameter and maintains this setting.
	OFF	Presence detector disabled. The light must be switched on and off manually.

6.2 Run-on time

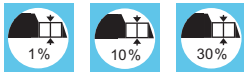


Run-on time of the presence detector, run-on time starts when no presence is detected.

The run-on time may vary depending on the profile used. You can choose whether you want the basicDIM DGC module to switch off the light completely or to dim it down to the absence value after the run-on time.

It can also be changed using the basicDIM DGC Programmer or the masterCONFIGURATOR software.

Absence value



Switch-off delay

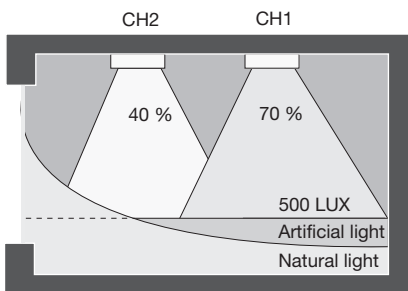


The absence value (light level) and the switch-off delay (the period for which the level is maintained) differ depending on the profile used; these parameters may be changed using the basicDIM DGC Programmer or the masterCONFIGURATOR software.

6.3 Offset



Depending on the profile used, a negative offset may be enabled between CH2 and CH1. Using the basicDIM DGC Programmer and the masterCONFIGURATOR software, this parameter may be changed (also positive offset possible).



6.4 Manual-off delay



If the light is switched off manually via momentary-action switch or remote control, the presence detector is disabled. After a period of delay without any presence detected, the presence detector is enabled again. If the sensor detects presence during the "Manual Off" delay, the delay time will start all over again. It can only be changed by using the masterCONFIGURATOR software.

6.5 Lighting control



Lighting control is started via the Auto key of the basicDIM Programmer or REMOTECONTROL IR6.



If the basicDIM DGC module has been switched on via the ON key, lighting control is disabled. If you want to use lighting control, you need to start the DGC module via the Auto key.

Lighting control can also be disabled using the masterCONFIGURATOR software.

6.6 Set target value



The light level can be set via following options:

- REMOTECONTROL IR6 (press the key for > 3 s)
- basicDIM DGC Programmer (press the key for > 3 s)
- masterCONFIGURATOR software
- external momentary-action switch:



By briefly pressing the momentary-action switch twice the currently measured light level is saved as new target value. (Depending on the profile used, this function is enabled or disabled, but it can be changed using the basicDIM DGC Programmer or the masterCONFIGURATOR software)

6.7 Bright-out



If the nominal illuminance level (e.g. 500 lx) is exceeded for 10 minutes at over 150 % (e.g. 750 lx), the light is switched off, even if presence is detected. The light is switched on again as soon as the measured light level falls below the target value.

Depending on the profile used, this function is either enabled or disabled and can be changed using the basicDIM DGC Programmer or the masterCONFIGURATOR software.

The bright-OUT status can be indicated on the sensor by a slowly flashing green status LED.

By default this function is disabled, but it can be enabled using the masterCONFIGURATOR software.






Light control incl. brightout activated for CH1. CH2 is not illuminated controlled.




6.8 Neighbourhood function

Depending on the profile used, the basicDIM DGC can respond to presence detected in other groups.





These functions can be changed using the basicDIM DGC Programmer or the masterCONFIGURATOR software.

	Switched off	No response to presence detected in other groups. Default setting for all profiles!
	Switched on	If presence is reported by other groups, the light level will switch to presence value
	Switched on	If presence is reported by other groups, the light level will switch to absence value

6.9 Momentary-action switch inputs

	Momentary-action switch 1
	Momentary-action switch 2
	Display of outputs controlled by momentary-action switch (CH1 and CH2, or just CH1 or CH2)

6.10 Basic functions

	Switching on If the DGC module has been switched on via ON, lighting control is disabled.
	Switching off
	Dimming up
	Dimming down

6.11 Profiles

Profile 1: Individual room

Profile 2: Classroom

Profile 3: Corridor

Profile 4: WC

Profile 5: Free-standing luminaire (default profile)

Profile Test:



You may use the Profile Test to check the profile you selected.

All times relevant to the profile are reduced to 15 s.



The Profile Test will automatically be terminated after 1 h, or by pressing the Auto key of the basicDIM DGC Programmer.

The profiles can be adjusted to your needs via the masterCONFIGURATOR software or the DGC Programmer.

For more detailed information please refer to the masterCONFIGURATOR documentation at www.tridonic.com.

6.12 Behaviour after return of power

The basicDIM DGC module features two different types of starting behaviour after mains failure.

	Power ON behaviour OFF (luminaires remain switched off)
	Power ON behaviour ON (the luminaires are switched on after return of power). Default setting for all profiles!

7. Brief description of profiles

7.1 Individual room profile



7.2 Classroom profile



7.3 Corridor profile



7.4 WC profile



7.5 Free-standing luminaire profile (default)



8. Miscellaneous

8.1 Additional information

Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

Life-time declarations are informative and represent no warranty claim.
No warranty if device was opened.

8.2 Switching cycles

The number of switching cycles is directly related to the level and duration of the inrush current. To increase the number of cycles either LED drivers with lower inrush current (e.g. Tridonic Industry LED Drivers) or an additional external relay can be used.