

Operating instructions

Additional languages r-stahl.com

EN

Compact Luminaire with LED

Series C-Lux 6102/1,
Series C-Lux 6109/1

– Save for future use! –

STAHL

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1 General Information

1.1 Manufacturer

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1.2 About these operating instructions

- Read these operating instructions, especially the safety notes, carefully before use.
- Observe all other applicable documents (see also chapter 1.3).
- Keep the operating instructions throughout the service life of the device.
- Make the operating instructions accessible to operating and maintenance personnel at all times.
- Pass the operating instructions on to each subsequent owner or user of the device.
- Update the operating instructions every time you receive an amendment to them from R. STAHL.

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The original instructions are the German edition.
They are legally binding in all legal affairs.

1.3 Further documents

- Data sheet
- Central battery unit manual
- Software description of the configuration software for the central battery unit

For documents in additional languages, see r-stahl.com.

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1.4 Conformity with standards and regulations

- IECEx, ATEX, EU Declaration of Conformity and further national certificates can be downloaded via the following link: https://r-stahl.com/en/global/support/downloads/.
- IECEx is also available at: https://www.iecex.com/

2 Explanation of the symbols

2.1 Symbols in these operating instructions

Symbol	Meaning
	Tip for making work easier
 DANGER!	Dangerous situation which can result in fatal or severe injuries causing permanent damage if the safety measures are not complied with.
 WARNING!	Dangerous situation which can result in severe injuries if the safety measures are not complied with.
 CAUTION!	Dangerous situation which can result in minor injuries if the safety measures are not complied with.
NOTICE!	Dangerous situation which can result in material damage if the safety measures are not complied with.

2.2 Symbols on the device

Symbol	Meaning
 05594E00	CE marking according to the currently applicable directive.
 02198E00	Device certified for hazardous areas in accordance with the marking.

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3 Safety

The device has been manufactured to the state of the art while observing recognised safety-related rules. When using the device, it is nevertheless possible for hazards to occur to life and limb of the user or third parties or for the device, environment or material assets to be compromised.

- Use the device only
  - if it is not damaged
  - as intended, while remaining aware of safety and dangers
  - in accordance with these operating instructions.

3.1 Intended Use

The 6102/1 and 6109/1 luminaires are intended for lighting areas, work areas and objects, in addition to escape route marking when used with an escape route sign.
The 6109/1 luminaire can also be used as emergency lighting because it has an internal battery. The luminaires are usable indoors and outdoors and are intended for stationary mounting (wall or ceiling installation).
It is explosion-protected equipment certified for use in hazardous areas of Zones 1 and 2, 21 and 22, as well as in safe areas.
"Intended use" includes complying with these operating instructions and the other applicable documents, e.g. the data sheet. All other uses are only intended after they are released by R. STAHL.

3.2 Personnel qualification

Qualified specialist personnel are required to perform the activities described in these operating instructions. This primarily applies to work in the following areas:

- Product selection, project engineering and modification
- Mounting/dismounting the device
- Installation
- Commissioning
- Maintenance, repair, cleaning

Specialists who perform these tasks must have a level of knowledge that meets applicable national standards and regulations.

Additional knowledge is required for tasks in hazardous areas! R. STAHL recommends having a level of knowledge equal to that described in the following standards:

- **IEC/EN 60079-14 (Electrical installations design, selection and erection)**
- **IEC/EN 60079-17 (Inspection and maintenance of electrical installations)**
- **IEC/EN 60079-19 (Equipment repair, overhaul and reclamation)**

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3.3 Residual risks

3.3.1 Explosion hazard

Despite the device's state-of-the-art design, explosion hazards cannot be entirely eliminated in hazardous areas.

- Perform all work steps in hazardous areas with the utmost care at all times!
- Transport, store, plan, mount and operate the device in compliance with the technical data exclusively (see the "Technical data" chapter).

Possible hazards ("residual risks") can be categorised according to the following causes:

Mechanical damage

The device can be damaged during transport, mounting or commissioning. This kind of damage can, for example, render the device's explosion protection partially or completely ineffective. This may result in explosions causing serious or even fatal injuries to persons in the vicinity.

- Transport the device only in its original packaging or in equivalent packaging.
- Check the packaging and the device for damage. Report any damage to R. STAHL immediately. Do not commission a damaged device.
- Store the device in its original packaging in a dry place (with no condensation), and make sure that it is stable and protected against the effects of vibrations and knocks.

Excessive heating or electrostatic charge

Operation outside of the approved conditions or improper cleaning can result in the device heating up severely or becoming electrostatically charged and therefore can cause it to produce sparks. This may result in explosions causing serious or even fatal injuries to persons in the vicinity.

- Operate the device within the prescribed operating conditions only (see the marking on the device and the "Technical data" chapter).
- Install and adjust the device in such a way that it is always operated within the permissible temperature range.
- Do not use the device in strong charge generating environments.
- Avoid friction and flow of particle streams.
- Clean the device with a damp cloth only.

Improper project engineering, mounting, installation, commissioning, maintenance or cleaning

Basic work such as installation, commissioning, maintenance or cleaning of the device must be performed only in accordance with the valid national regulations of the country of use and only by qualified persons. Otherwise the explosion protection can be rendered ineffective. This may result in explosions causing serious or even fatal injuries to persons in the vicinity.

- Have the mounting, installation, commissioning and maintenance work performed by qualified and authorised persons only (see chapter 3.2).
- Prior to commissioning, check the mounting for correctness (see chapter 7).
- Install the device on a level surface only.

- Install mechanical built-in components such as cable glands, stopping plugs and breathers before mounting the luminaire on the ceiling or wall.
- Do not damage the enclosure, built-in components and seals during mounting.
- Observe tightening torques for cable entries and stopping plugs (see chapter 6.2.3).
- Do not change or modify the device.
- Repair work on the device must be performed by R. STAHL only.
- Gently clean the device with a damp cloth only and without scratching, abrasive or aggressive cleaning agents or solutions.

3.3.2 Device damage

The device or individual components can be damaged so significantly as a result of unsuitable operating conditions or careless contact that it does not operate correctly or fails completely.

- Do not subject the device to external heat sources or direct solar radiation. Ensure that the maximum ambient temperature is never exceeded.
- Never touch LED PCBs with body parts. Only touch for electric work when it is in an earthed state and using an insulated special tool.

4 Transport and storage

- Transport and store the device carefully and in accordance with the safety notes (see Chapter "Safety").

4.1 Batteries

As important but also sensitive components, batteries depend on particularly gentle and careful storage.

- Do not transport open; that means do not transport in contact with other materials.
- Do not transport in explosive dust atmosphere.
- Store protected from fire, sources of dust, harmful gases and liquids.
- Store in a dry and cool location.

To avoid material damage and total discharge of the battery, observe the following:

- The battery should be commissioned in the luminaire within 26 weeks from date of production.
- Store the battery at an ambient temperature from +5 to +25 °C and at a relative humidity of 65 ±5 %. Outside of this temperature range, the storage time is shortened to up to a month.

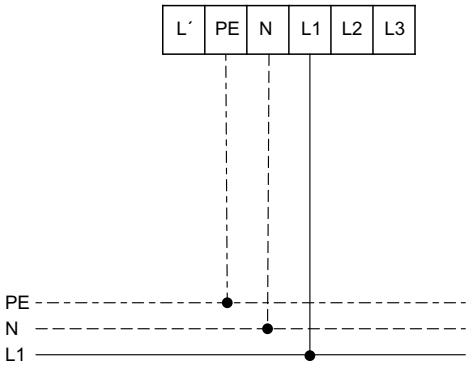
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5 Product selection, project engineering and modification (series 6109/1 only)

5.1 Mains operation

5.1.1 Stand-by operation

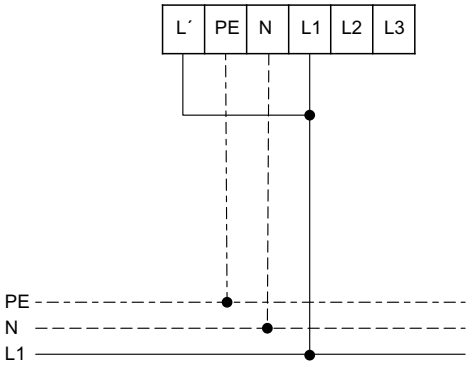
- The light fitting is switched off.



16397E00

5.1.2 Continuous operation

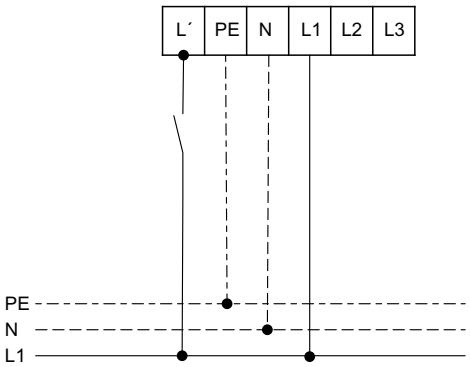
- The light fitting is switched on.



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5.1.3 Normal lighting operation

- The light fitting is operated by normal lighting.

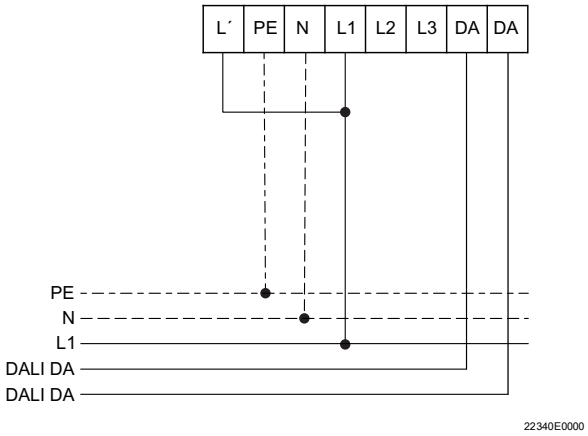


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5.1.4 Control with DALI

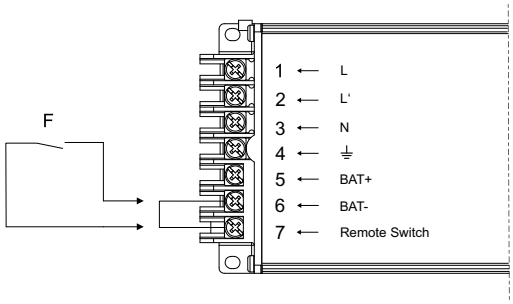
- The light fitting is switched using DALI control.



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5.2 Emergency light blocking

A remote switch for emergency light blocking can be connected via terminals 6 and 7 at the control gear (see Chapter 8.2).



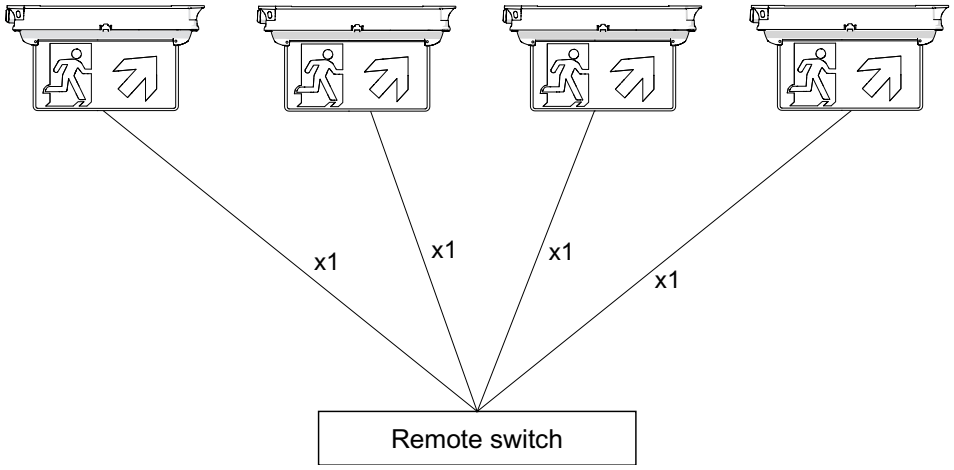
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5.2.1 Connection version remote switch

The remote switch is directly connected to the control gear.

The following connection versions are possible:

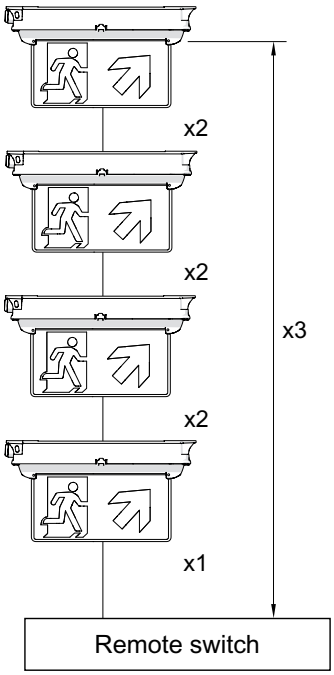
Point-to-point connection



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Linear connection



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The following conductor specifications must be observed during connection:

	Point-to-point connection	Linear connection
maximum conductor length		
x 1	500 m	100 m
x 2		50 m
x 3		500 m
maximum number of light fittings	50	30
Cable cross section	1.5 mm^2	1.5 mm^2

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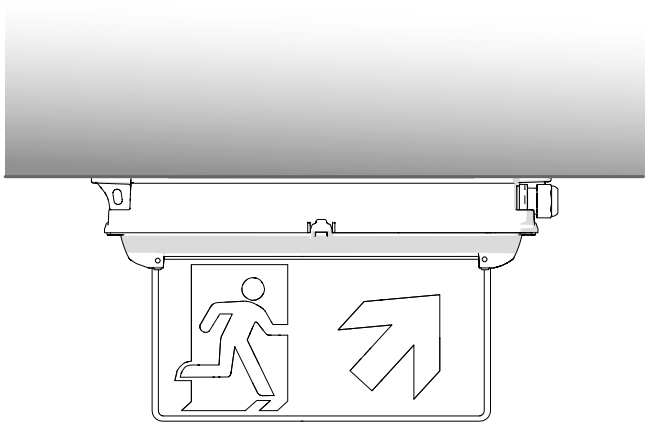
6 Mounting and installation

6.1 Mounting / dismounting

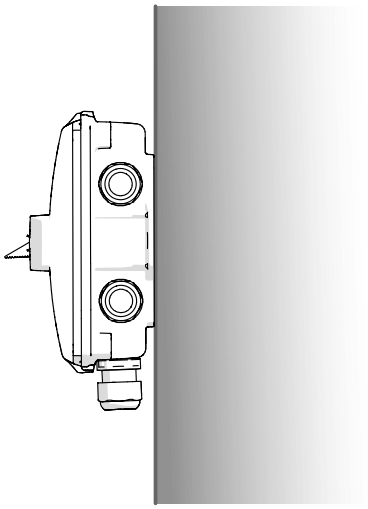
- Mount the device carefully and only in accordance with the safety notes (see Chapter "Safety").
- Read through the following installation conditions and assembly instructions carefully and follow them precisely.

6.1.1 Mounting types

Direct mounting



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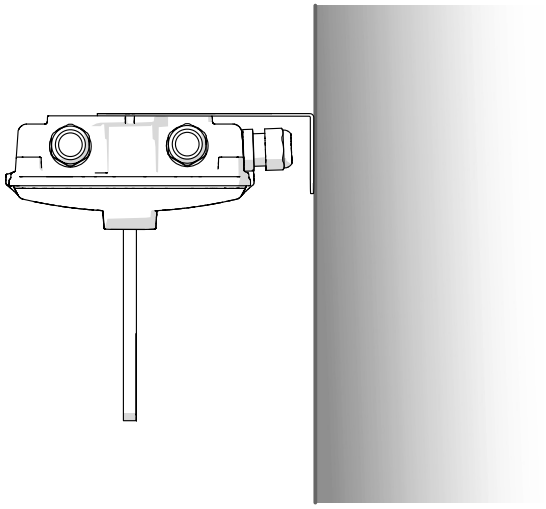


20567E00

The luminaire can be installed directly onto the surface by means of the integrated fastening clips for screws (with a max. diameter of 6 mm).

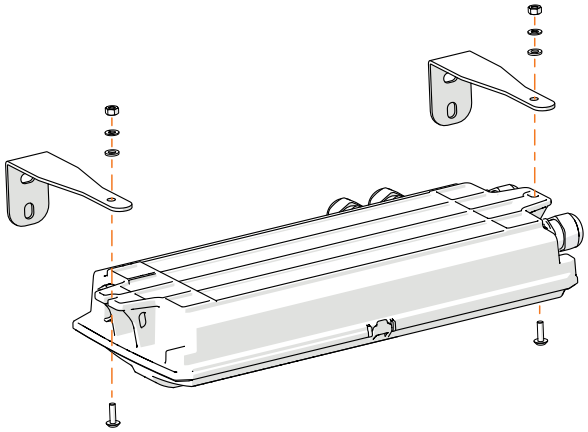
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Mounting with wall bracket



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Wall mounting can be achieved with a wall bracket (available as accessories).

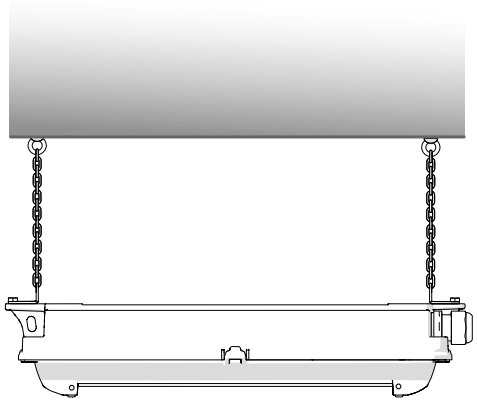


20563E00

- Screw the wall bracket onto the luminaire (see figure, max. 2 Nm).

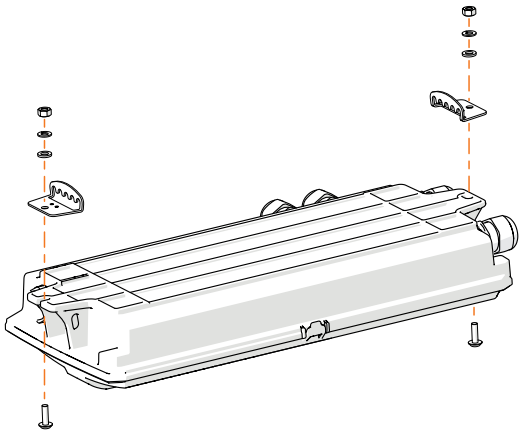
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Hanging mount



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The hanging mount can be achieved using mounting brackets for rope and chain mounting (available as accessories).

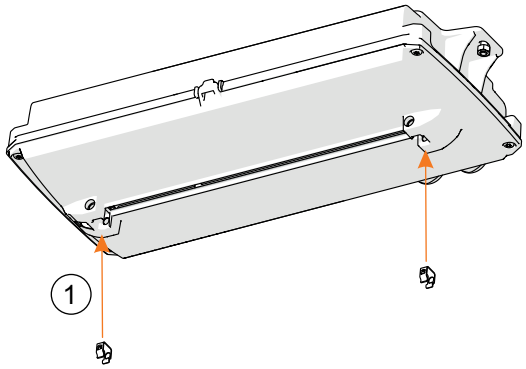


20579E00

- Screw the bracket for rope/cable mounting onto the luminaire (see figure, max. 2 Nm).

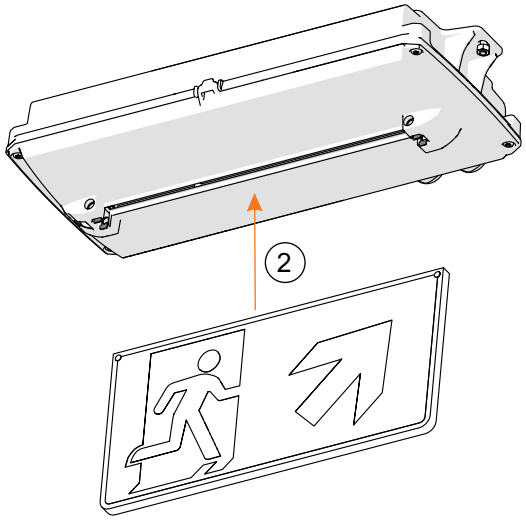
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6.1.2 Mounting the light panel



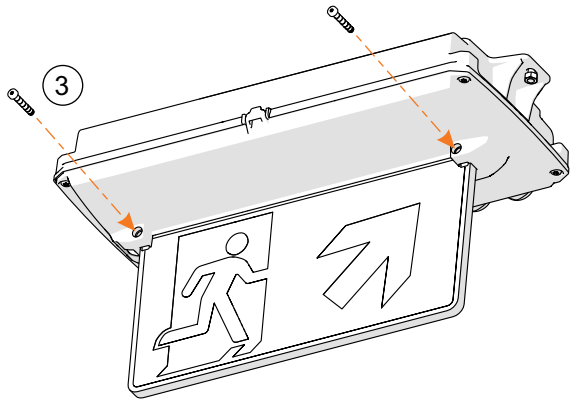
20558E00

- Insert compensation springs into the intended cut-out (1).



20561E00

- Insert the light panel into the compensation springs and mount in the cut-out at the same time (2).

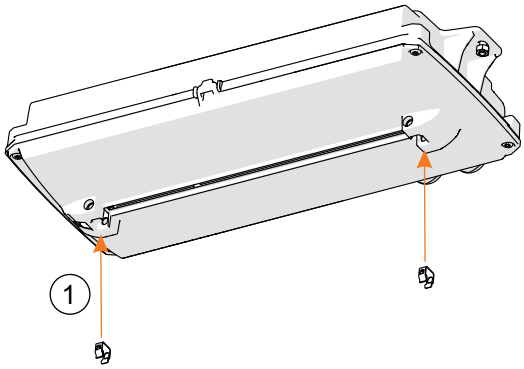


20562E00

- Fit the light panel with the screws included in delivery (3) (tightening torque 0.8 Nm).

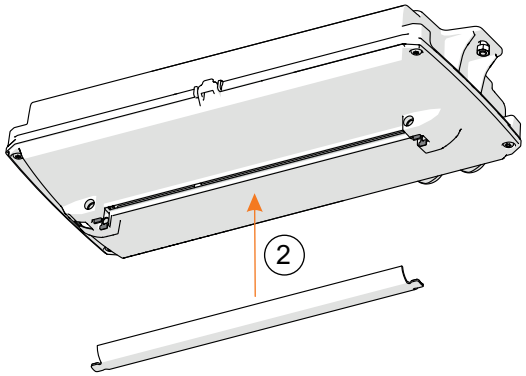
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6.1.3 Mounting the diffuser



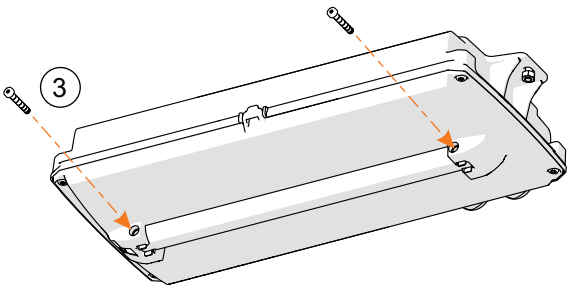
20558E00

- Insert compensation springs into the intended cut-out (1).



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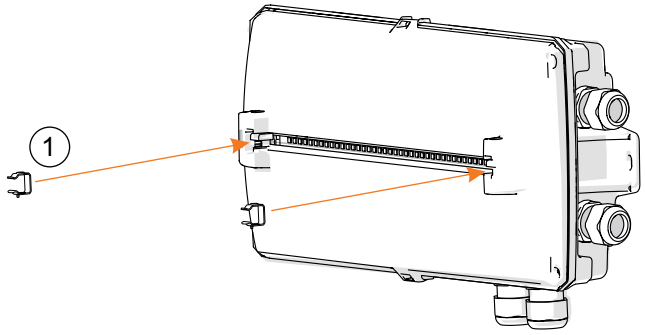
- Insert the diffuser into the compensation springs and mount in the cut-out at the same time (2).



20560E00

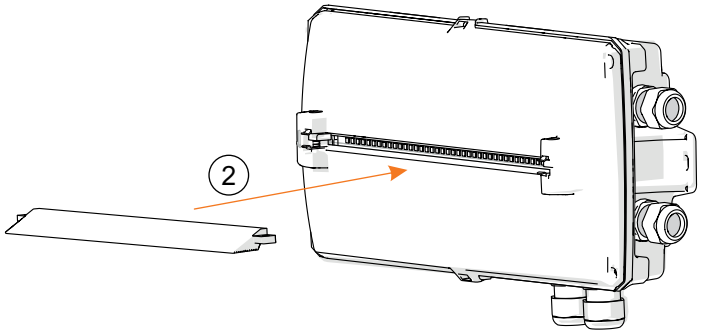
- Fit the diffuser with the screws included in delivery (3) (tightening torque 0.8 Nm).

6.1.4 Mounting the deflection optics



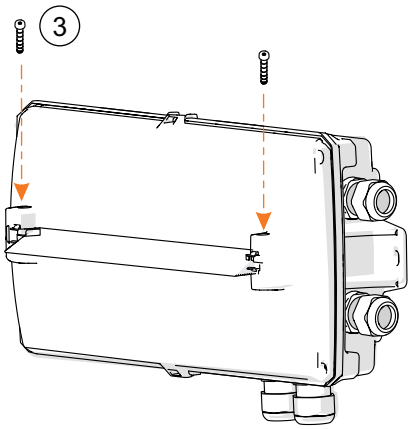
20568E00

- Insert compensation springs into the intended cut-out (1).



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- Insert the deflection optics into the compensation springs and mount in the cut-out at the same time (2).



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- Fit the deflection optics with the screws included in delivery (3) (tightening torque 0.8 Nm).

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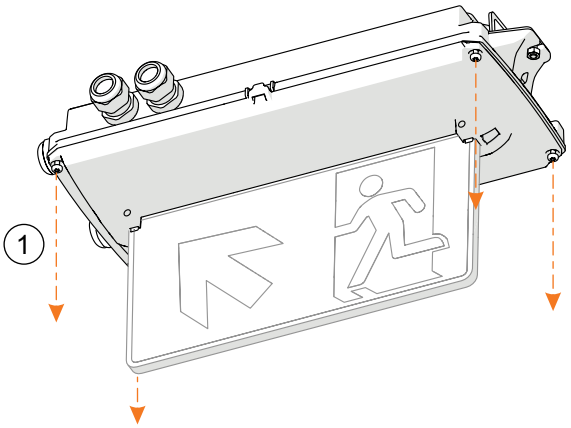
6.1.5 Opening and Closing of the Enclosure

Observe the following during mounting and dismounting:

- Version without switch: Disconnect the luminaire from the power supply and secure it against being switched on again.
- Do not use force when opening or closing the enclosure!

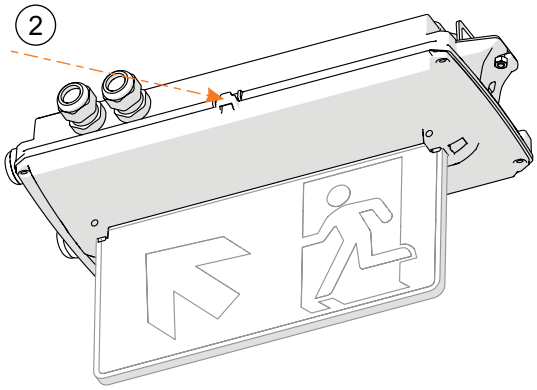
Opening the luminaire

The screws are secured against getting lost in the cover by a securing mechanism. The cover is secured against falling down by a securing mechanism in the inside.



20553E00

- Loosen 4 x screws M5 x 12 (1) with TX25 box spanner.



20554E00

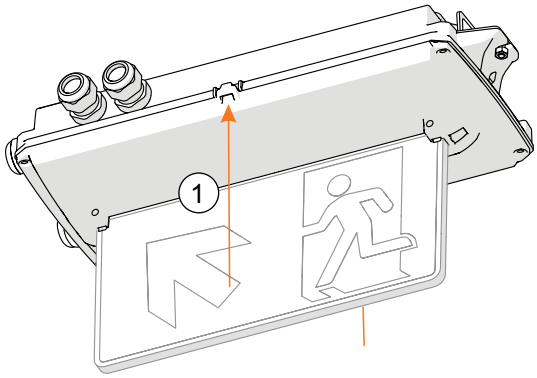
- Open the lateral catches (2).
- Swing the cover out.

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Closing the luminaire

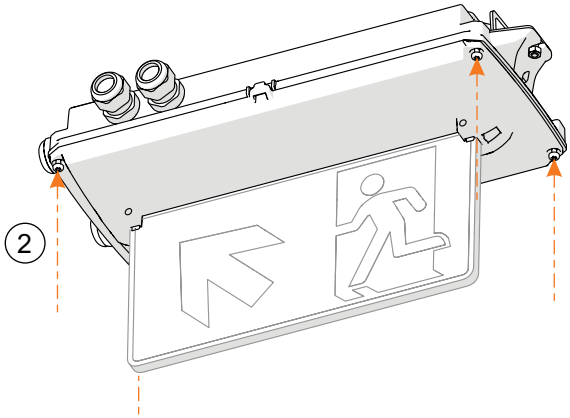
DANGER! Explosion due to insufficient sealing of the device!
Non-compliance may result in serious or even fatal injuries.
- Ensure that the catches fully snap into place on both sides of the luminaire when closing.
- Tighten all screws to the specified tightening torque.

When closing the luminaire, ensure that no electrical lines are caught and damaged between the enclosure and the cover. Ensure that the electrical lines are securely fixed in place with cable holders for this.



20556E00

- Place the cover onto the enclosure. Firmly press the lateral catches closed and check that they have fully snapped in place (1).



20557E00

- Tighten 4 x screws M5 x 12 with TX25 box spanner (2) (tightening torque 3 Nm).

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6.2 Installation

6.2.1 Electrical connections

Mains connection

Observe the maximum clamping possibility of the connection terminals (see chapter "Technical data").

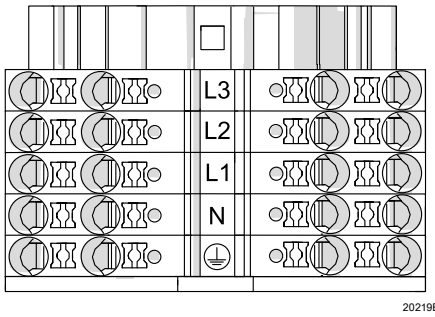
Observe the following when connecting to the mains connection:
- Clamping must be carried out precisely!
- Do not clamp any part of the conductor insulation!
- Do not mix up the conductors.
- Observe the technical regulations when connecting the conductor.
- Clamp the conductor firmly.

Connection terminals

Clamping range:
1 x 1.5 to 4 mm^2 (finely stranded)
1 x 1.5 to 6 mm^2 (solid or finely stranded with core end sleeve)
(2 free clamping units per pole available)

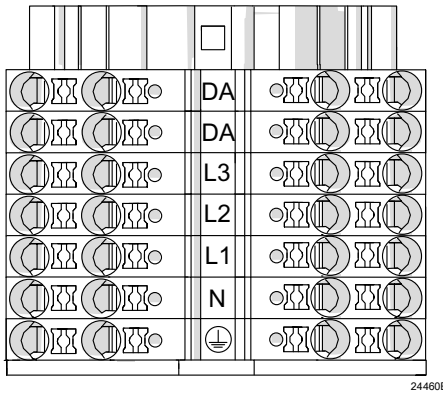
Stripping length:
10 to 12 mm

Standard (series 6102/1):



L1, L2, L3	= phase
N	= neutral conductor
⏚	= protective conductor

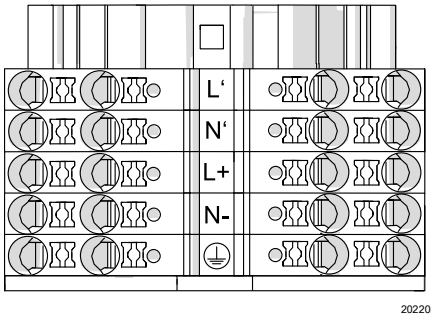
with DALI connection (series 6102/1):



DA, DA	= DALI connection
L1, L2, L3	= phase
N	= neutral conductor
⏚	= protective conductor

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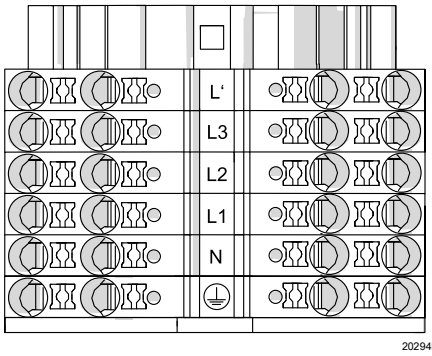
with address module (series 6102/1):



L‘, N‘ = control input
L+, N- = final electrical circuit
⏚ = protective conductor

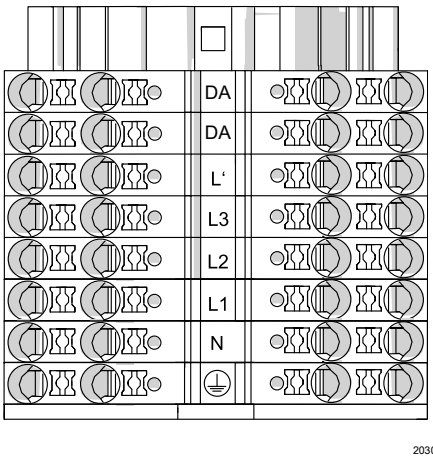
The luminaire is addressed via the central battery system's software.
Please pay attention to the system manufacturer's description.

Standard (series 6109/1):



L‘ = switched phase
L1 = charging phase
L2, L3 = phase
N = neutral conductor
⏚ = protective conductor

with DALI connection (series 6109/1):

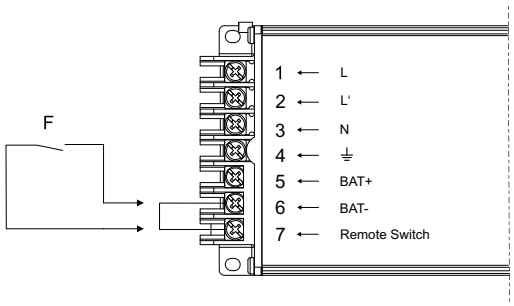


DA, DA = DALI connection
L‘ = switched phase
L1 = charging phase
L2, L3 = phase
N = neutral conductor
⏚ = protective conductor

EN

Connection of remote switch to control gear

Connecting the remote switch to the potential-free contact "Remote switch" of the control gear.



Clamping range:
1.5 mm^2 solid, finely and extra finely stranded
Stripping length:
8.5 to 9.5 mm

Through wiring of the mains supply connection

Through wiring with 2.5 mm^2 cross section for max. 16 A.

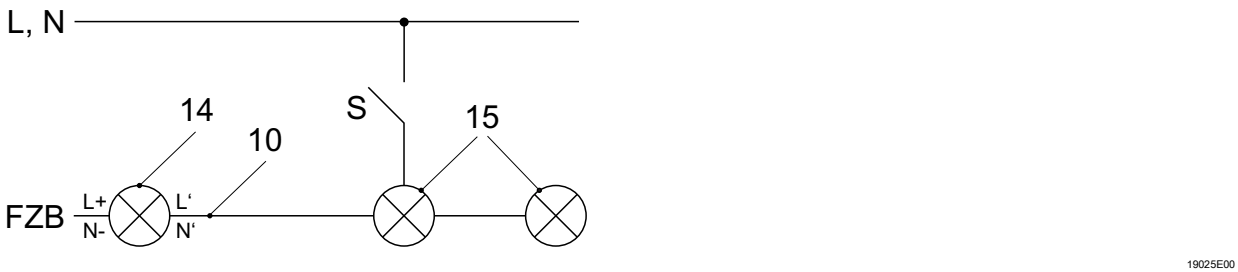
6.2.2 Luminaires with address module

The address module is integrated into the control gear. Each control gear with an integrated address module has a unique serial number. This serial number is right on the control gear and can also be recorded with a QR code scanner. The luminaire address is assigned using the configuration software for the central battery unit or with a programming device available as an accessory.

There are four removable labels with the serial number on the control gear (1x label for the control gear, 1x label for the exterior luminaire, 2x for customer documents).
During the installation, write down the location and position of the luminaire and the serial number. This simplifies configuration of the central battery unit.
Further information on configuration can be found in the software description and the central battery unit manual.

Control input (L‘, N‘):

The address module provides the opportunity to connect a control line for switching the luminaire together with the general lighting.



L, N	Power supply network	10	Control line
FZB	Battery system	14	Emergency lighting
S	General lighting switch	15	General lighting

6.2.3 Cable entries

The standard luminaire is delivered with 3 entries, 2 cable entries and 2 stopping plugs.

Cable entry on the front side

Cable entries are fastened using the associated nuts.

Metal cable entries and stopping plugs

DANGER! Explosion warning due to metal cable entries or stopping plugs that are not earthed!

Non-compliance may result in serious or even fatal injuries.

- Properly earth the metal cable entry.
- Use earthing nuts or other suitable fastening optionsUse earthing nuts or other suitable fastening options.

DANGER! Explosion warning due to improper mounting/selection of metal cable entries or stopping plugs!

Non-compliance may result in serious or even fatal injuries.

- Use metal cable entries and stopping plugs on the longitudinal side only in the M20 version.
  To this end, equip the available M25 opening with a reducer to M20.

Tightening torques for components from R. STAHL Schaltgeräte GmbH

Luminaires with installed cable entries and stopping plugs from R. STAHL Schaltgeräte GmbH must be tightened using the following values:

		Tightening torque	
		Connection thread	Pressure screw
Cable entry 8161	M20 x 1.5	2.3 Nm	1.5 Nm
	M25 x 1.5	3.0 Nm	2.0 Nm
Stopping plug 8290	M20 x 1.5	1.0 Nm	–
	M25 x 1.5	1.5 Nm	–

EN

Luminaires with cable entries and stopping plugs which are not supplied by R. STAHL Schaltgeräte GmbH

DANGER! Explosion hazard due to defective sealing of the device!
Non-compliance may result in serious or even fatal injuries.
- Equip the enclosure only with suitable equipment (e.g. cable entries, stopping plugs or breathers) that is verifiably approved for use in hazardous areas and meets the requirements of the IP protection rating.
- Observe the operating instructions from the manufacturers of the components and seals that are to be installed.
- Seal any unused cable entries with the stopping plugs approved for the type of protection.
- Seal all open drilled holes using suitable equipment.

Please observe the following:
- the required dust resistance!
- the required type of protection!
- the required temperature resistance!
- the IP degree of protection according to the rating plate!
- the operating instructions of the cable entries and stopping plugs!
- the required tightening torques!
- the range of the permissible cable diameter!
- insert the metal cable entries and/or stopping plugs into the PE!

7 Commissioning

Before commissioning, carry out the following inspection steps:
- Monitor the mounting and installation.
- Check the device for damage.
- Remove any foreign objects.
- If necessary, clean the connection chamber.
- Monitor whether the electrical lines have been inserted correctly.
- Monitor whether the electrical lines are securely fitted using the cable holders provided.
- Monitor whether all screws and nuts have been tightened firmly.
- Monitor whether all drilled holes are closed.
- Monitor whether all cable entries and stopping plugs have been tightened firmly.
- Monitor whether all conductors have been connected firmly.
- Monitor whether the line voltage and the rated operational voltage are consistent.
- Monitor whether the permissible conductor diameter for the corresponding cable entries have been used.
- Monitor whether the device is closed according to regulations.
- Monitor whether the LED assembly and the diffuser are clean.

In order to avoid condensation in the device, observe the following:
- Operate the luminaire continuously or periodically over extended periods of time.
- Avoid thermal bridges, use suitable installation accessories.
- Use breathers.

EN

8 Operation

8.1 Mode of operation

When opening the enclosure, the luminaire automatically switches itself off (optional).
The operating hours can be determined and the luminaire can be dimmed and switched (optional) via a DALI interface.

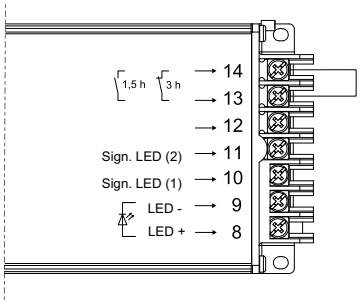
8.2 Operating modes (series 6109/1 only)

Power supply operation:

Stand-by switching	The luminaire is switched off regardless of normal lighting.
Continuous mode	The luminaire is switched on regardless of normal lighting.
Normal lighting operation	The light fitting is operated by normal lighting.

Emergency light operation:
In the event of a power failure, the luminaire switches to emergency light operation.
The luminaire is switched on regardless of the operation mode of the selected rated operating time.

Rated operating time



20717E00

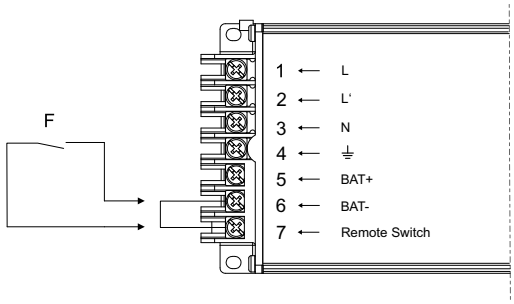
Rated operating time	Jumper between terminals 13 and 14 of the control gear
1.5 hours	open
3.0 hours	closed

It is not possible to set the rated operation duration on devices with DALI.

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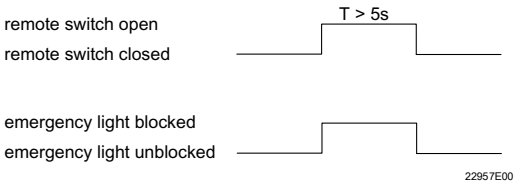
8.3 Emergency light blocking (remote switch function)

A remote switch for emergency light blocking can be connected via terminals 6 and 7 at the control gear.



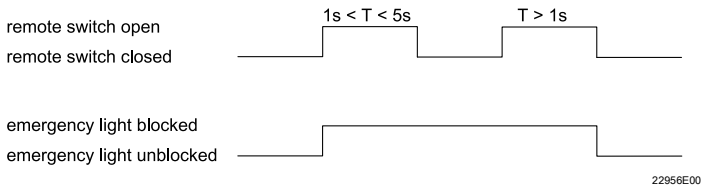
20716E00

	Remote switch is closed	Remote switch is opened	
		Logic 1 (see figure below)	Logic 2 (see figure below)
Duration		≥ 5 s	1 to 5 s (pulse)
Power supply operation	Switching on the luminaire depending on operating mode	Switching on the luminaire depending on operating mode	
Power failure	Emergency light function	No emergency light function	No emergency light function Notice: The existing emergency light blocking is automatically reset after a power failure.



22957E00

Logic 1



22956E00

Logic 2

8.4 Function and rated operating time test (series 6109/1 only)

To carry out the test, the following prerequisites must be fulfilled:

- the time interval has expired.
- the power supply operation was active for at least 1 hour.
- the remote switch is closed.

The test result is shown on the LED indicator.
During a test the luminaire is switched on.

Function test

- starts within 24 hours after commissioning.
- is carried out every 7 days.
- takes 1 minute.
- checks the function of the LEDs and the battery.

Rated operating time test

- starts within 44 days after commissioning.
- is carried out once a year.
- checks the function and the operating time of the luminaire during emergency light mode.
- is repeated after 14 days if rated operating time test is faulty.

EN

8.5 Displays (series 6109/1 only)

When connecting to the power supply
Initialisation for 10 seconds

Seconds	Description	LED indicator
0 to 2	Function test green LED	–
2 to 4	Function test red LED	–
4 to 10	Status of rated operating time test	Green LED flashes - rated operating time test active
		Green LED off - rated operating time test not active

Then, the LED indicator switches to operating mode.

During power supply operation
Blinking: 1 second on, 1 second off
Flashing: 0.25 seconds on, 0.75 seconds off

LED indicator	Description	Significance
Green	Luminaire is operational	–
Flashing green	Luminaire is operational	Function or rated operating time test activated
Red	Error	Battery is defective or electric circuit is interrupted
Blinking red	Error	Last function and/or rated operating time test defective
Flashing red	Error	LEDs defective
Blinking green/red	Luminaire is ready for operation, no emergency light operation	Emergency light operation is deactivated by remote switch
Flashing green/red	Luminaire is ready for operation	Reset signal detected

During emergency light operation
The LED indicator is switched off.

8.6 Troubleshooting (series 6109/1 only)

Error	Cause of error	Troubleshooting
Luminaire is not lighting up	The LEDs are defective.	Replace the mounting plate including LEDs and the control gear.
	The control gear is defective.	Replace the mounting plate including LEDs and the control gear.
	The switch is defective.	Replace the switch.
Red LED indicator	The battery is defective.	Replace the battery.
	The switch in the battery box is defective.	Replace the switch.
	The switch in the luminaire is defective.	Replace the switch.
LED indicator blinking red	The battery capacity is too low.	Replace the battery.
	The LEDs are defective.	Replace the mounting plate including LEDs and the control gear.

The LED indicator lights up in green after troubleshooting.

If the error cannot be eliminated using the specified procedures:

▶ Contact R. STAHL Schaltgeräte GmbH.

For rapid processing, have the following information ready:

- Type and serial number of the device
- Purchase information
- Error description
- Intended use (in particular, input and output wiring)

EN

9 Maintenance, Overhaul, Repair

- Comply with the applicable national standards and regulations in the country of use, e.g. IEC/EN 60079-14, IEC/EN 60079-17, IEC/EN 60079-19.

9.1 Maintenance

Check the following points in addition to the national regulations:

- Whether the clamping screws holding the electrical lines are fitted securely
- Whether the device has cracks or other visible signs of damage
- Whether the seal shows signs of ageing or damage (completely replace enclosure components with damaged foamed seal)
- Whether the device is clean inside and out
- Compliance with the permissible temperatures (according to EN 60079)
- Whether the cable entry is intact and securely tightened
- Whether the cables and electrical lines show signs of ageing and damage
- Whether the device is used as intended and functions properly

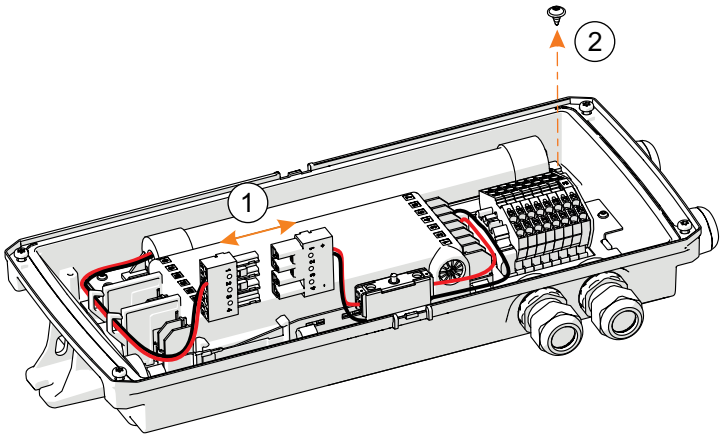
9.2 Overhaul

- Perform maintenance on the device according to the applicable national regulations and the safety notes in these operating instructions ("Safety" chapter).

9.2.1 Battery replacement (series 6109/1 only)

DANGER! Explosion hazard due to explosive dust atmosphere!
Non-compliance may result in serious or even fatal injuries.

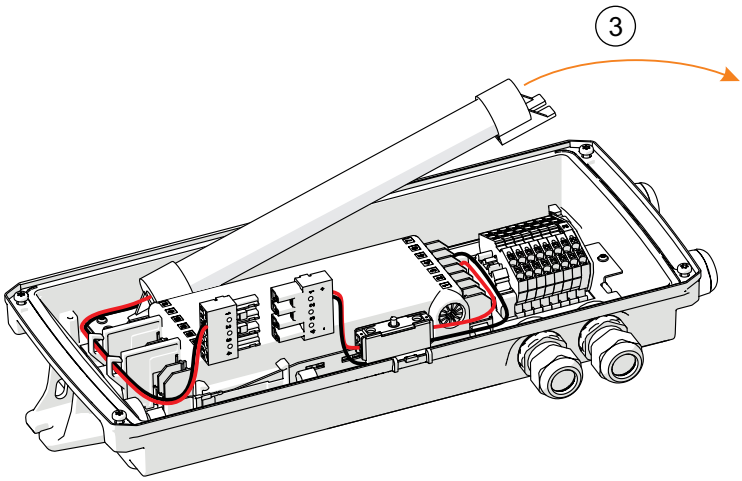
- Do not replace or transport the battery in explosive dust atmosphere.



20564E00

- Disconnect battery plug (1).
- Loosen screw (2).

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20565E00

- Swivel the battery up and remove laterally (3).

Installation of the battery in reverse order
(tightening torque for screw on the battery: 0.7 Nm).

9.3 Repair

- Repair work on the device must be performed only by R. STAHL.

Repairs carried out on the mounting plate are not permitted.

- Replace the mounting plate completely in case of error.

10 Returning the device

- Only return or package the devices after consulting R. STAHL!
  Contact the responsible representative from R. STAHL.

R. STAHL's customer service is available to handle returns if repair or service is required.

- Contact customer service personally.

or

- Go to the r-stahl.com website.
- Under "Support" > "RMA" > select "RMA-REQUEST".
- Fill out the form and send it.
  You will automatically receive an RMA form via email. Please print this file off.
- Send the device along with the RMA form in the packaging to
  R. STAHL Schaltgeräte GmbH (refer to chapter 1.1 for the address).

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11 Cleaning

- Check the device for damage before and after cleaning.
  Take damaged devices out of operation immediately.
- To avoid electrostatic charge, the devices located in hazardous areas may only be cleaned with a damp cloth.
- When cleaning with a damp cloth, use water or mild, non-abrasive, non-scratching cleaning agents.
- Do not use aggressive cleaning agents or solvents.

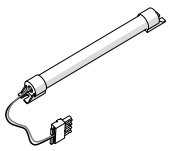
12 Disposal

CAUTION! Burns or poisoning from chemical reaction of incorrectly discarded batteries!
Non-compliance may result in serious injuries or environmental damage.
- Collect batteries separately
- Do not dispose of batteries in the household waste. Instead, send for disposal, i.e. to official collection points or give back to the supplier.

- Observe national and local regulations and statutory regulations regarding disposal.
- Separate materials when sending them for recycling.
- Ensure environmentally friendly disposal of all components according to the statutory regulations.

13 Accessories and Spare parts

NOTICE! Malfunction or damage to the device due to the use of non-original components.
Non-compliance can result in material damage.
- Use only original accessories and spare parts from R. STAHL Schaltgeräte GmbH (see data sheet).

Designation	Figure	Description			Art. no.	Weight kg
Battery set	 20715E00	NiCd battery	2.2 Ah / 6 V	1 piece	**273190**	0.480

EN

14 Annex A

14.1 Technical data

Explosion Protection

Global (IECEx)

Gas and dust	IECEx IBE 19.0016
	Ex db eb ib op is IIC T4 Gb
	Ex tb op is IIIC T100 °C Db

Europe (ATEX)

Gas and dust	IBExU 19 ATEX 1072
	Ⓔx II 2 G Ex db eb ib op is IIC T4 Gb
	Ⓔx II 2 D Ex tb op is IIIC T100 °C Db

Certifications and certificates

Certificates	IECEx, ATEX

Technical Data

Electrical data

Rated operational voltage

Variant	6102/1 Standard + DALI	6102/1 ADR	6109/1 Standard + DALI
	100 to 240 V AC ±10 %, 50 to 60 Hz	220 to 240 V AC ±10 %, 50 Hz	100 to 240 V AC ±10 %, 50 to 60 Hz
	100 to 250 V DC ±10 %	194 to 250 V DC ±10 %	–

Rated operational current

Variant	6102/1 Standard + DALI	6102/1 ADR	6109/1 Standard + DALI
230 V AC	47 mA	47 mA	58 mA
100 V AC	109 mA	–	122 mA

Power input

Variant	6102/1 Standard + DALI	6102/1 ADR	6109/1 Standard + DALI
Nominal power	10 W	10 W	10 W
Rated power	9.7 W	9.7 W	10 W

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Technical Data

Inrush current

Variant	6102/1 Standard + DALI	6102/1 ADR	6109/1 Standard + DALI
I_{peak}	4.2 A	2.7 A	4.8 A
Δt	37 µs	132 µs	37 µs

maximum number of luminaires per miniature circuit breaker:

Type	10 A	16 A	20 A	25 A
B	50	50	50	50
C	50	50	50	50
K	50	50	50	50

Values apply to line voltage 230 V AC.

Power factor

230 V: ≥ 0.90
100 V: ≥ 0.99

Protection class

I (with internal PE connection)

Luminous characteristics

Colour rendering

R_a ≥ 80

Colour temperature

5,000 K (neutral white)

Luminous flux

Optics	with diffuser	without diffuser	with deflection optics
Luminous flux [lm]	600	775	490
Luminaire efficacy [lm/W]	62	80	51

Values apply to T_a = +25 °C.

Luminance

Light panel green: L_m = 145 cd/m^2
Light panel white: L_m = 1,400 cd/m^2

Recognition range

30 m light panel

Luminous flux decline

No luminous flux decline
- Within the permissible ambient temperature range
- During DC operation (only Series 6102/1)

Luminous flux decline during battery operation (only Series 6109/1)
- By 50% for a rated operating time of 1.5 h (Standard with DALI version)
- By 75% for a rated operating time of 3.0 h (Optional for DALI version)

EN

Technical Data

Ambient conditions

Operating temperature range

Variant	6102/1 Standard + DALI	6102/1 ADR	6109/1 Standard + DALI
no through wiring	-40 to +60 °C	-30 to +60 °C	-30 to +60 °C 1) 2)
I_N through wiring max. 3 x 10 A	-40 to +60 °C	-30 to +60 °C	-30 to +60 °C 1) 2)
I_N through wiring max. 3 x 16 A	-40 to +50 °C	-30 to +50 °C	-30 to +50 °C 1) 2)

1) Rated operating time during emergency light operation
is guaranteed in an ambient temperature range from -5 to +60 °C.
Outside of this temperature range, the rated operating time can be shortened.
2) Battery service life
is guaranteed in an ambient temperature range of -30 to +60 °C corresponding to IEC/EN 60598-2-22.

Storage

6102/1:
Storage temperature -40 to +70 °C

6109/1:
depending on the storage duration:
up to 1 week: -20 to +55 °C
up to 1 month: -20 to +45 °C
over 1 month: -20 to +30 °C

Service life

LED

$L_{90}B_{50}$: 100,000 h

L_xB_y
At the end of the service life:
- Luminous flux declines to "x" percent
- Up to "y" percent of all luminaires fall below "x"

LED control gear

Variant	6102/1 Standard + DALI	6102/1 ADR	6109/1 Standard + DALI
C10	≥ 100,000 h	≥ 50,000 h	≥ 100,000 h

EN

Technical Data

Mechanical data

Degree of protection	IP66 / IP67 (IEC 60598)
Impact strength (IK code)	IK08 (IEC 62262)
Material	
Enclosure	polyester resin, glass fibre reinforced
Enclosure colours	Colour grey, similar to RAL 7035
Seal	Silicone (without influence on paint wetting)
Cover	Polycarbonate
Light panel	Polymethylmethacrylate (PMMA), stainless steel fixing accessories SS304 (1.4301 or V2A)
Diffuser	Polycarbonate (PC), stainless steel fixing accessories SS304 (1.4301 or V2A)
Deflection optics	Polymethylmethacrylate (PMMA), stainless steel fixing accessories SS304 (1.4301 or V2A)
Luminaire locking	4 x M5 screw caps for Torx 25 (max. 3 Nm) + mounting mechanism; cover over hinge rope can be swivelled out

Mounting / Installation

Cable glands	**Standard luminaire** 3 drilled holes with M25 for cable entries made from: Plastic: 2 x M25 x 1.5 cable entry 8161 and 2 x M25 x 1.5 stopping plugs 8290 (enclosed) Metal: 1 x metal plate M25 x 1.5 connected by means of PE for cable entries made of metal on longitudinal side. Without metal plate on the front side. The cable entry must be fastened using an earthing nut. Attention: cable entries and earthing nuts must be ordered separately. Only M20 cable entries with an M25 to M20 reducer can be on the longitudinal side. Notice: cable entries M20 possible with suitable reducer.
Connection	6102/1: Standard: 5-pole: L1, L2, L3, N, PE With address module: 5-polig: L+, N-, L', N', PE With DALI: 7-pole: L1, L2, L3, N, PE, DA, DA 6109/1: Standard: 6-pole: L1, L2, L3, L', N, PE With DALI: 8-pole: L1, L2, L3, L', N, PE, DA, DA

Technical Data

Mounting		
Luminaire	Direct:	By means of 2 integrated fastening clips on the enclosure for screws with a max. diameter of 6 mm
	With wall bracket (optional):	For mounting with the light panel or direct radiation downwards on the wall
	With bracket for rope/chain mounting (optional):	For mounting on the chain or rope
Accessories	The light panel, diffuser and deflection optics are each installed with 2 compensation springs and mounting screws	

Optional

Address module (series 6102/1 only)	**Control input:** Rated voltage: 220 to 230 V 50 Hz AC / DC **Function:** Address and switching module for R. STAHL emergency lighting systems according to VDE 0108: The module is used for monitoring individual luminaires and for the control of mains and emergency luminaires. The module offers the following functions: • Control of the luminaire (ON / OFF) and calling up the function • Up to 20 addresses can be configured for each electrical circuit by means of a coding switch • The type of connection (continuous light, stand-by light or switched light) of the luminaire is freely programmable • Mixed operation within a circuit is possible
DALI-connection	DALI interface according to: 6102/1: IEC 62386-207:2018 (DALI 2) 6109/1: IEC 62386-207:2009 (DALI 1) 6109/1: IEC 62386-202:2009 (DALI 1) Conductor cross-section ≥ 1.5 mm^2 Maximum conductor length = 300 m

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Technical Data

Control gear (series 6109/1 only)

Emergency light mode	In the case of a power failure, the luminaire is supplied by the battery
Rated operating time	At optimal ambient temperature of the battery:

Battery capacity	Operating time of emergency light	Emergency light output
2.2 Ah	1.5 h	50 %
	3.0 h	25 %

Switchover voltage	From mains to battery operation at $U < 0.74 \times U_N$ From battery to mains operation at $U > 0.8 \times U_N$

Battery set (series 6109/1 only)

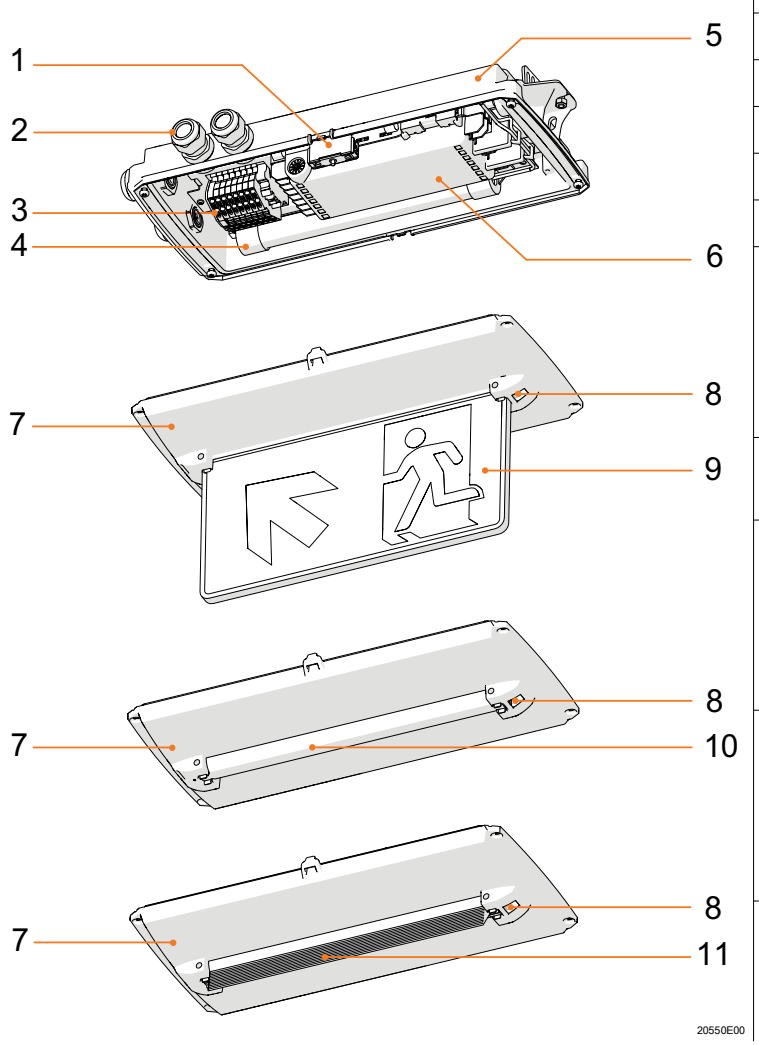
Version	NiCd battery, gas-tight, installed in the luminaire
Operating voltage	6 V
Capacity	2.2 Ah
Replacing the battery set	When opening the enclosure, the battery set is disconnected from the power supply; after loosening the battery mounting screw (TX20) and the battery plug, the battery set can be taken out of the enclosure.

For further technical data, see r-stahl.com.

15 Annex B

EN

15.1 Device design

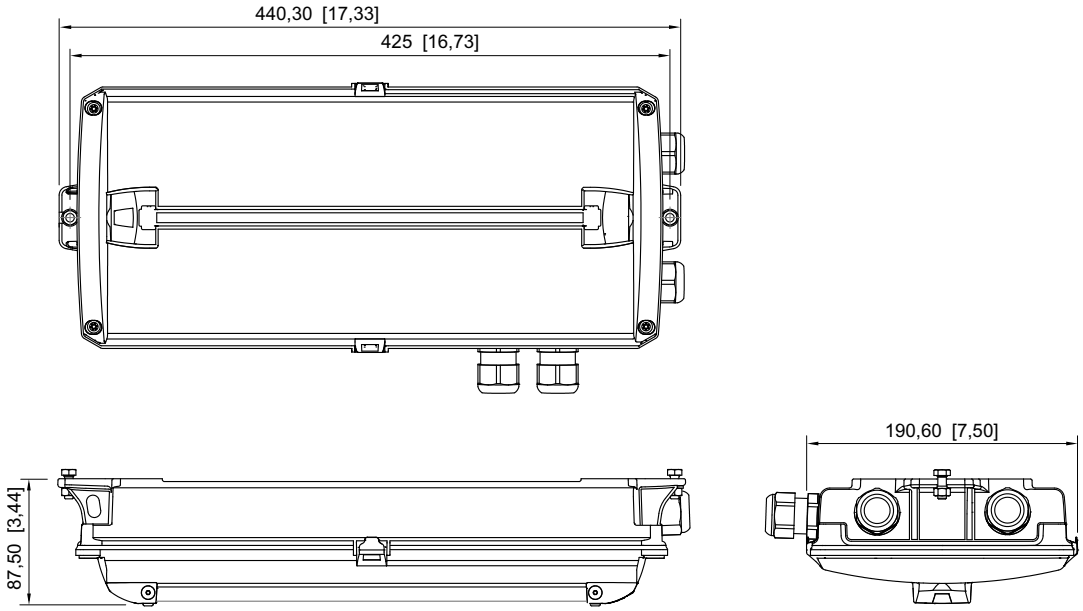


#	Device component
1	Switch (series 6109/1 only)
2	Cable entry
3	Connection terminal
4	Battery (series 6109/1 only)
5	Luminaire enclosure
6	Control gear
7	Luminaire cover with mounting option for light panel (9), diffuser (10), deflection optics (11)
8	LED indicator (series 6109/1 only)
9	Light panel
10	Diffuser
11	Deflection optics

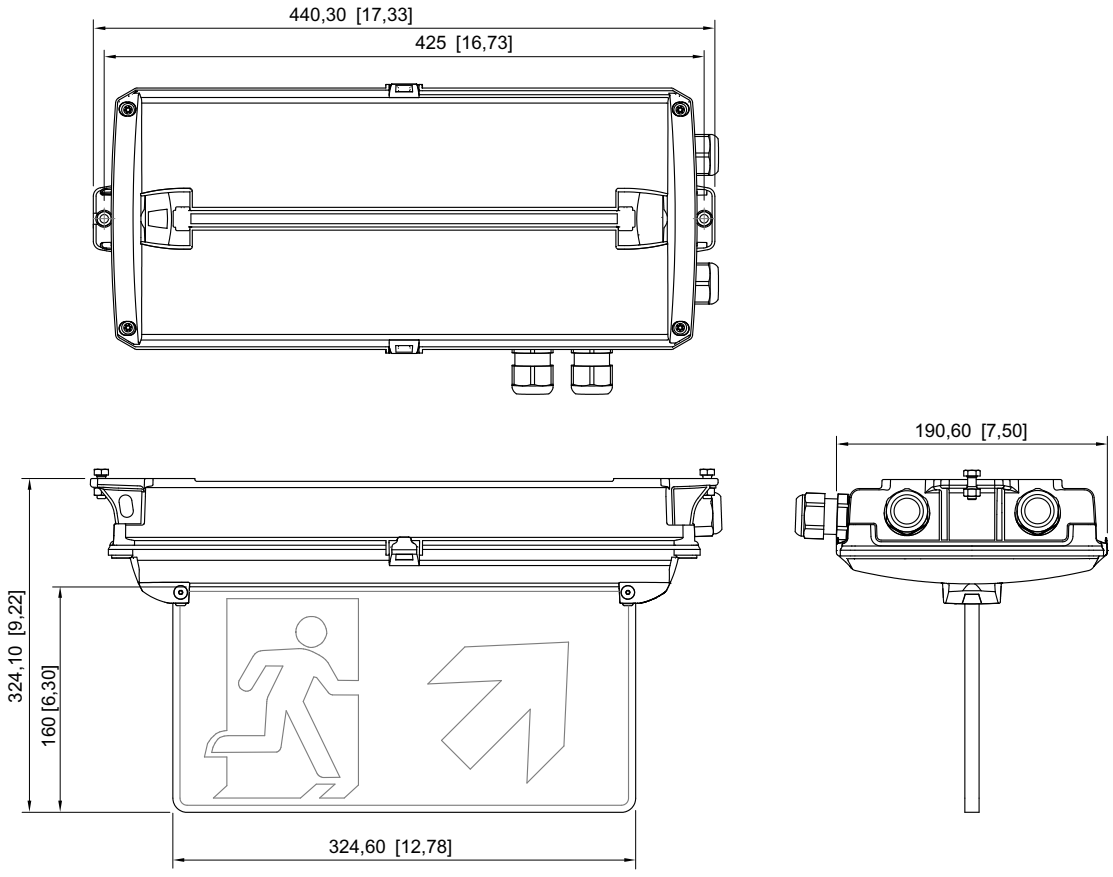
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15.2 Dimensions / fastening dimensions

Dimensional drawings (all dimensions in mm [inches]) – Subject to modification



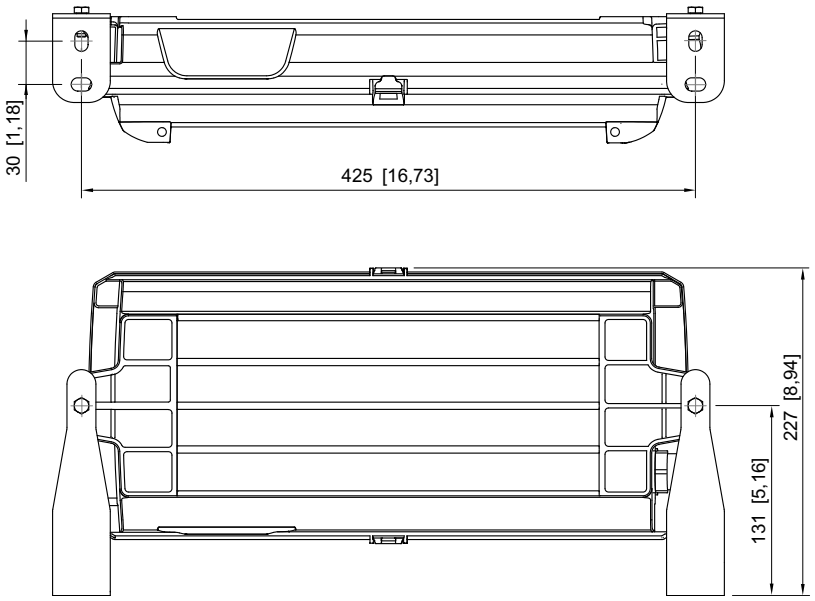
Without light panel



With light panel

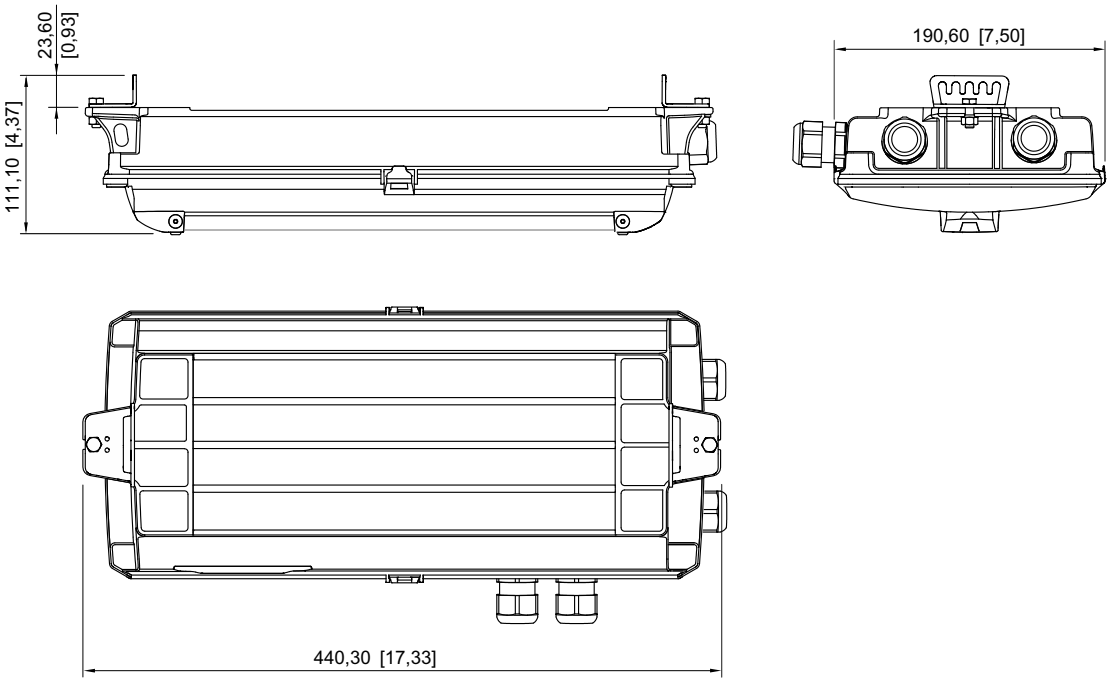
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Dimensional drawings (all dimensions in mm [inches]) – Subject to modification



20542E00

With mounting bracket



20551E00

For rope/chain mounting

EU-Konformitätserklärung
EU Declaration of Conformity
Déclaration de Conformité UE

R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany
erklärt in alleiniger Verantwortung / *declares in its sole responsibility / déclare sous sa seule responsabilité,*

dass das Produkt: *that the product:* *que le produit:*	**Kompaktleuchte mit LED** *Compact Luminaire with LED* *Luminaire compact avec LED*
Typ(en), *type(s), type(s):*	**6102/.** **6109/.**

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.
is in conformity with the requirements of the following directives and standards.
est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) / *Directive(s) / Directive(s)*	**Norm(en)** / *Standard(s) / Norme(s)*
2014/34/EU **ATEX-Richtlinie** *2014/34/EU* *ATEX Directive* *2014/34/UE* *Directive ATEX* (OJ L 96, 29/03/2014, p. 309–356)	EN IEC 60079-0:2018 EN 60079-1:2014 EN IEC 60079-7:2015+A1:2018 EN 60079-11:2012 EN 60079-28:2015 EN 60079-31:2014
Kennzeichnung, *marking, marquage:*	**II 2 G Ex db eb ib op is IIC T4 Gb** **II 2 D Ex tb op is IIIC T 100°C Db** **CE 0158**
EU-Baumusterprüfbescheinigung: *EU Type Examination Certificate:* *Attestation d'examen UE de type:*	**IBExU 19 ATEX 1072** (IBExU Institut für Sicherheitstechnik GmbH Fuchsmühlenweg 7, 09599 Freiberg, Germany)
Produktnormen nach Anhang II ATEX (aus Niederspannungsrichtlinie): *Product standards according to Annex II ATEX (from Low Voltage Directive):* *Normes de produits selon l'annexe II ATEX (de la Directive Basse Tension)*	EN IEC 60598-1:2021+A11:2022 EN IEC 60598-2-22:2022 EN 62471:2008
2014/30/EU **EMV-Richtlinie** *2014/30/EU* *EMC Directive* *2014/30/UE* *Directive CEM* (OJ L 96, 29/03/2014, p. 79–106)	EN IEC 55015:2019+A11:2020 EN 61547:2009 EN 61000-3-2:2014 EN 61000-3-3:2013
2011/65/EU & (EU) 2015/863 RoHS-Richtlinien *2011/65/EU & (EU) 2015/863 RoHS Directives* *2011/65/UE & (UE) 2015/863 Directives RoHS* (OJ L 174, 1/07/2011, p. 88–110 & OJ L 137, 04/06/2015, p. 10-12)	EN IEC 63000:2018

Unterzeichnet für und im Namen von: / *signed for and on behalf of: / signé pour et au nom de:*
R. STAHL Schaltgeräte GmbH

Waldenburg, 2024-10-22

Ort und Datum
Place and date
Lieu et date

Steffen Holtz
Leiter Entwicklung Leuchten und Signalgeräte
Director R&D Lighting and Signalling
Directeur R&D Eclairage & Appareils de signalisation

Daniel Groth
Leiter Qualitätsmanagement Systeme
Director Quality Management Systems
Directeur Systèmes de Management de la Qualité