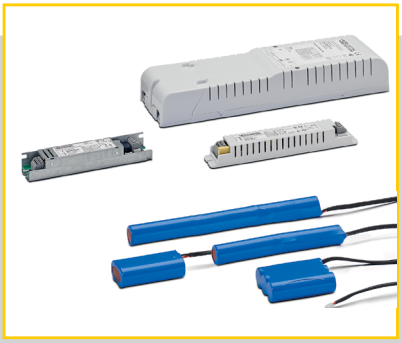
EMERGENCY LIGHTING DEVICES FOR LED APPLICATIONS



ELECTRONIC EMERGENCY LIGHTING DEVICES WITH IRON PHOSPHATE BATTERIES

For nominal operating periods of 1 hour or 3 hours

Emergency lighting systems spring to life any time normal mains lighting systems fail. Emergency lighting is designed to ensure that staff can safely leave any rooms and that there is sufficient lighting to illuminate rescue paths/routes as well as to avoid panic situations.

VS emergency lighting devices are designed for use with LED applications and can be operated as part of a combined system with electronic LED drivers.

LIGHTING SOLUTIONS

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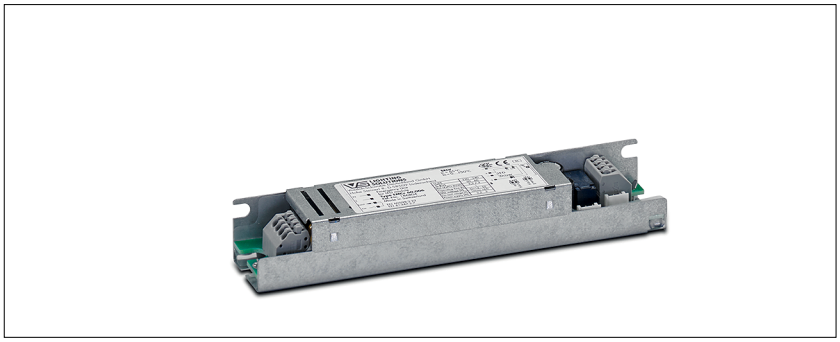
Emergency Basic



Product features
- Designed for installation in LED luminaires for safety lighting for rescue routes and extremely hazardous workplaces
- For emergency lighting for 1 hrs. or 3 hrs. operating time
- Suitable for emergency lighting acc. to VDE 0108 or EN 50172
- Ambient temperature: 5 to 50 °C

Electrical features
- Mains voltage: 220–240 V ± 10%
- Mains frequency: 50–60 Hz
- Output voltage: 55 V, 105 V or 220 V
- Output power in emergency operation: 2.5–3 W

Rechargeable batteries
- Material: Iron phosphate (LiFePO4)
- Choice of the rechargeable battery depends on desired operating time and installation position.
- Charging time of rechargeable batteries: up to 24 hrs. depending on the capacity

Safety features
- For luminaires of protection class I
- Degree of protection: IP20
- SELV* (186804, 186805, 186806, 186807)
- Surge protection (186804, 186805, 186806, 186807): 3.75 kV
- Metal casing must be earthed using two fixing screws

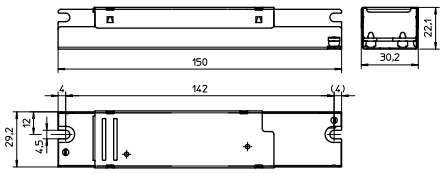
Status LED
- Intermittent green: battery regeneration after commissioning as well as after each battery replacement
- Permanent green: battery correctly connected, battery charged
- Off: defective battery charge, battery not connected, battery totally flat, defective emergency lighting unit or in emergency operation

Packaging units

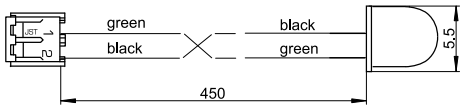
Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186804	50	56	109
186805	50	56	109
186806	50	56	109
186807	50	56	109
186808	50	56	109
186809	50	56	109

IP20 · SELV* · EL · Guarantee 5 years

Dimensions
- Casing: M66
- Length:150 mm
- Width: 30.2 mm
- Height: 22.1 mm



LED



Used standards
- EN 60598-2-22
- EN 61347-2-7
- EN 62384

Product guarantee
- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

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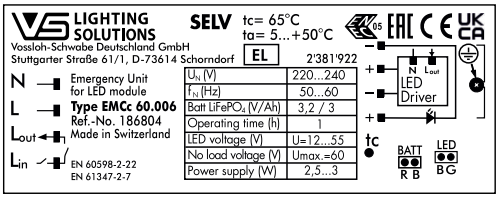
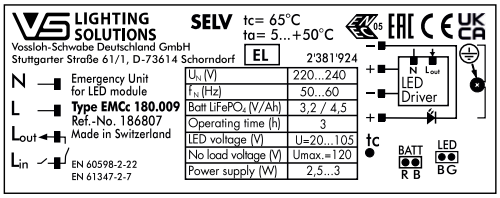
Electrical characteristics

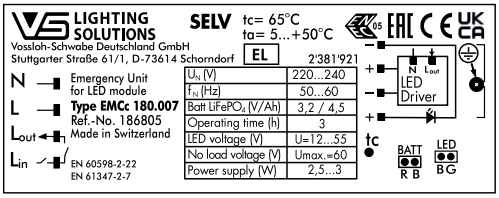
Type	Ref. No. EM gear	Ref. No. Battery	Battery Type	Shape	Nominal emergency operation period hrs.	Output power in emergency operation (W)	Min. lumen in emergency operation* (lm)	Output voltage V	V max.
M66 – Dimensions (LxWxH): 150x30.2x22.1 mm									
EMCc 180.007	**186805**	**183204**	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	12–55	60
		183205	3,2V/4,5 Ah L	Linear	3				
EMCc 180.009	**186807**	**183204**	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	20–105	120
		183205	3,2 V/4,5 Ah L	Linear	3				
EMCc 180.011	**186809**	**183204**	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	100–220	300
		183205	3,2 V/4,5 Ah L	Linear	3				
EMCc 60.006	**186804**	**183202**	3,2V/3 Ah C	Compact	1	2.5–3	250	12–55	60
		183203	3,2V/3 Ah L	Linear	1				
EMCc 60.008	**186806**	**183202**	3,2V/3 Ah C	Compact	1	2.5–3	250	20–105	120
		183203	3,2V/3 Ah L	Linear	1				
EMCc 60.010	**186808**	**183202**	3,2V/3 Ah C	Compact	1	2.5–3	250	100–220	300
		183203	3,2V/3 Ah L	Linear	1				

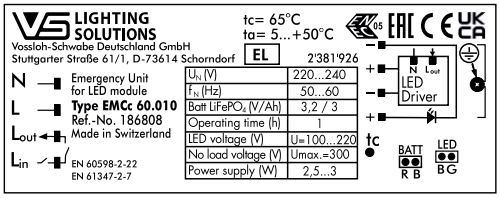
* at 100 lm/W per LED unit

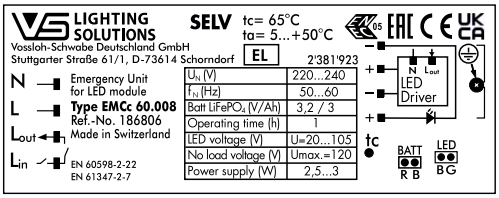
Product lables

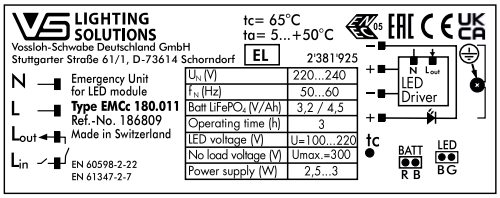












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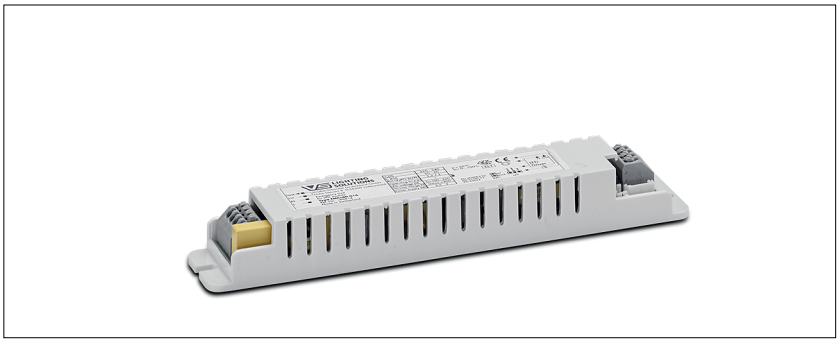
Emergency Smart

With self-diagnosis function



IP20 | SELV* | EL-T | Guarantee 5 years

Product features

- Designed for installation in LED luminaires for safety lighting for rescue routes and extremely hazardous workplaces
- For emergency lighting for 1 hrs. or 3 hrs. operating time
- Suitable for emergency lighting acc. to VDE 0108 or EN 50172
- With self-diagnosis function acc. to EN 62034
- Ambient temperature: 5 to 50 °C

Electrical features

- Mains voltage: 220–240 V ± 10%
- Mains frequency: 50–60 Hz
- Output voltage: 55 V, 105 V or 220 V
- Output power in emergency operation: 2.5–3 W

Rechargeable batteries

- Material: Iron phosphate (LiFePO4)
- Choice of the rechargeable battery depends on desired operating time and installation position.
- Charging time of rechargeable batteries: up to 24 hrs. depending on the capacity

Safety features

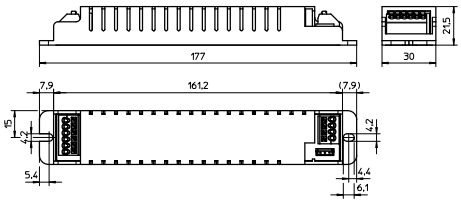
- For luminaires of protection classes I and IIa
- Degree of protection: IP20
- SELV* (186810, 186811, 186812, 186813)
- Surge protection (186810, 186811, 186812, 186813): 3.75 kV

Status LED

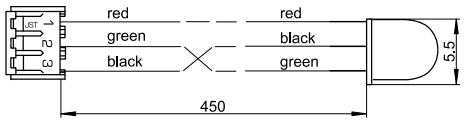
- Intermittent green: battery regeneration after commissioning as well as after each battery replacement
- Permanent green: battery correctly connected, battery charged or self-test operation
- Flashing red: defective battery charge, battery not connected or battery capacity too low
- Flashing intermittent red: defective or unconnected LED luminaire unit
- Off: battery totally flat, defective emergency lighting unit or in emergency operation

Dimensions

- Casing: K67
- Length:177 mm
- Width: 30 mm
- Height: 21.5 mm



LED



Used standards

- EN 60598-2-22
- EN 61347-2-7
- EN 62034
- EN 62384

Product guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186810	50	56	83
186811	50	56	83
186812	50	56	83
186813	50	56	83
186814	50	56	83
186815	50	56	83

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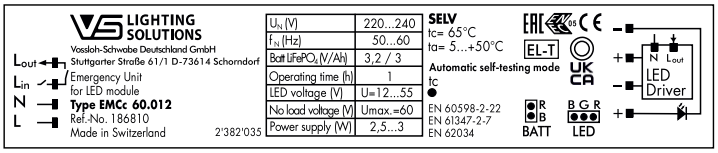
Electrical characteristics

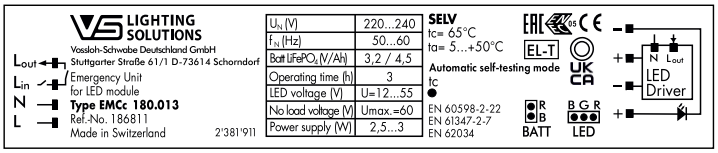
Type	Ref. No. EM gear	Ref. No. Battery	Battery Type	Shape	Nominal emergency operation period hrs.	Output power in emergency operation (W)	Min. lumen in emergency operation* (lm)	Output voltage V	V max.
K67 – Dimensions (LxWxH): 177x30x21.5 mm									
EMCc 180.013	**186811**	**183204**	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	12–55	60
		183205	3,2V/4,5 Ah L	Linear	3				
EMCc 180.015	**186813**	**183204**	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	20–105	120
		183205	3,2 V/4,5 Ah L	Linear	3				
EMCc 180.016	**186815**	**183204**	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	100–300	350
		183205	3,2 V/4,5 Ah L	Linear	3				
EMCc 60.012	**186810**	**183202**	3,2V/3 Ah C	Compact	1	2.5–3	250	12–55	60
		183203	3,2V/3 Ah L	Linear	1				
EMCc 60.014	**186812**	**183202**	3,2V/3 Ah C	Compact	1	2.5–3	250	20–105	120
		183203	3,2V/3 Ah L	Linear	1				
EMCc 60.016	**186814**	**183202**	3,2V/3 Ah C	Compact	1	2.5–3	250	100–300	350
		183203	3,2V/3 Ah L	Linear	1				

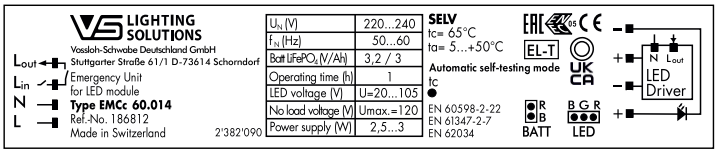
* at 100 lm/W per LED unit

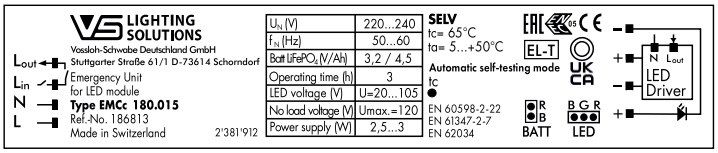
Product lables

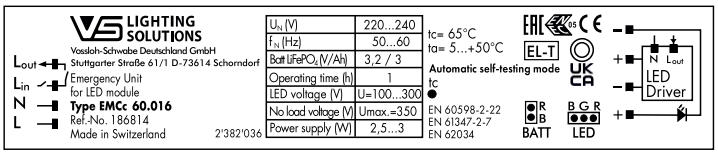
0

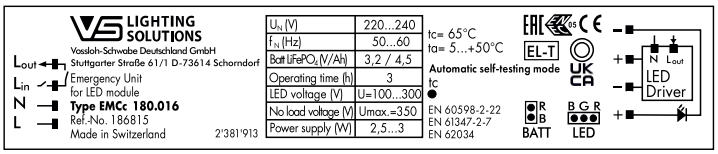












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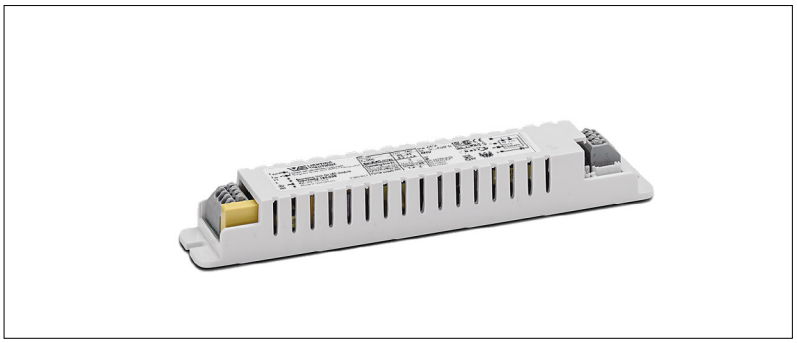
Emergency Smart DALI2

With self-diagnosis function



IP20 · EL-T · Guarantee 5 years · SELV

Product features

- Designed for installation in LED luminaires for safety lighting for rescue routes and extremely hazardous workplaces
- For emergency lighting for 1 hrs. or 3 hrs. operating time
- Suitable for emergency lighting acc. to VDE 0108 or EN 50172
- With self-diagnosis function acc. to EN 62034
- Ambient temperature: 5 to 50 °C

Electrical features

- Mains voltage: 220–240 V ± 10%
- Mains frequency: 50–60 Hz
- Output voltage: 55 V, 105 V or 220 V
- Output power in emergency operation: 2.5–3 W

Rechargeable batteries

- Material: Iron phosphate (LiFePO4)
- Choice of the rechargeable battery depends on desired operating time and installation position.
- Charging time of rechargeable batteries: up to 24 hrs. depending on the capacity

Safety features

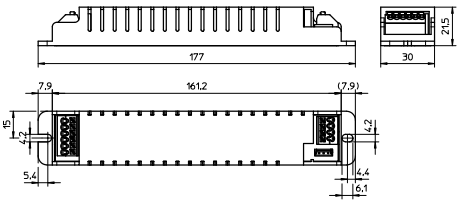
- For luminaires of protection classes I and II
- Degree of protection: IP20
- SELV (187064, 187065, 187067, 187068)
- DALI2
- Surge protection (187064, 187065, 187067, 187068): 3.75 kV

Status LED

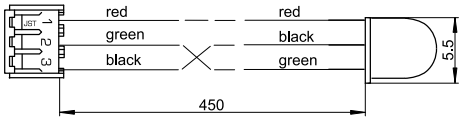
- Intermittent green: battery regeneration after commissioning as well as after each battery replacement
- Permanent green: battery correctly connected, battery charged or self-test operation
- Flashing red: defective battery charge, battery not connected or battery capacity too low
- Flashing intermittent red: defective or unconnected LED luminaire unit
- Off: battery totally flat, defective emergency lighting unit or in emergency operation

Dimensions

- Casing: K67
- Length:177 mm
- Width: 30 mm
- Height: 21.5 mm



LED



Used standards

- EN 60598-2-22
- EN 61347-2-7
- EN 62034
- EN 62384

Product guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187064	40	56	86
187065	40	56	86
187066	40	56	86
187067	40	56	86
187068	40	56	86
187069	40	56	86

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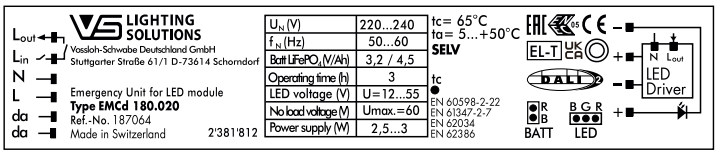
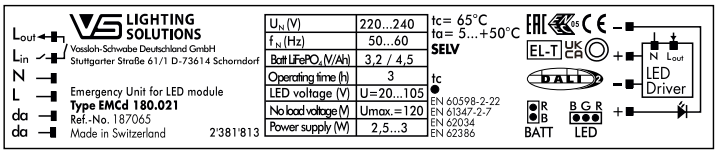
Electrical characteristics

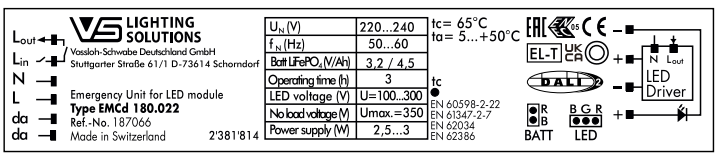
Type	Ref. No. EM gear	Ref. No. Battery	Battery Type	Shape	Nominal emergency operation period hrs.	Output power in emergency operation (W)	Min. lumen in emergency operation* (lm)	Output voltage V	V max.
K67 – Dimensions (LxWxH): 177x30x21.5 mm									
EMCd 180.020	**187064**	**183204**	3,2 V/4,5 Ah C	Compact	3	2,5–3	250	12–55	60
		183205	3,2V/4,5 Ah L	Linear	3				
EMCd 180.021	**187065**	**183204**	3,2 V/4,5 Ah C	Compact	3	2,5–3	250	20–105	120
		183205	3,2 V/4,5 Ah L	Linear	3				
EMCd 180.022	**187066**	**183204**	3,2 V/4,5 Ah C	Compact	3	2,5–3	250	100–300	350
		183205	3,2 V/4,5 Ah L	Linear	3				
EMCd 60.023	**187067**	**183202**	3,2V/3 Ah C	Compact	1	2,5–3	250	12–55	60
		183203	3,2V/3 Ah L	Linear	1				
EMCd 60.024	**187068**	**183202**	3,2V/3 Ah C	Compact	1	2,5–3	250	20–105	120
		183203	3,2V/3 Ah L	Linear	1				
EMCd 60.025	**187069**	**183202**	3,2V/3 Ah C	Compact	1	2,5–3	250	100–300	350
		183203	3,2V/3 Ah L	Linear	1				

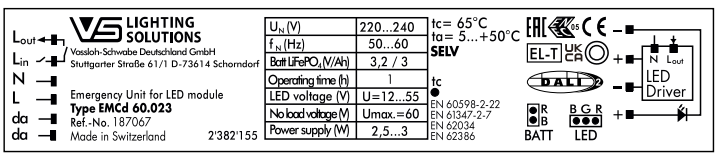
* at 100 lm/W per LED unit

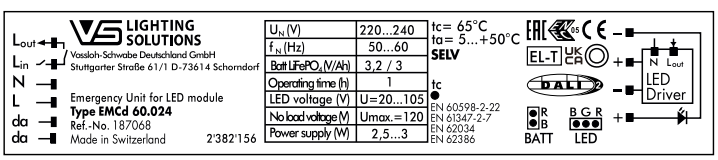
Product lables

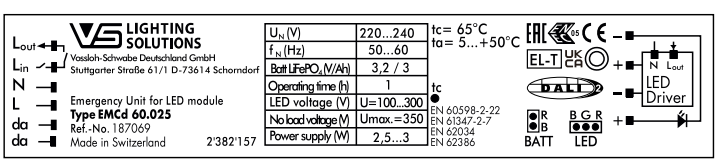












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DALI2 and self tests for single battery application

Operating mode of the Emergency lighting unit	DALI2 driver (main supply) in combination with regular emergency lighting control gear	DALI2 driver (mains supply) in conjunction with DALI2 emergency lighting unit
From commissioning and after battery change (regeneration) repeating three times: 24h charging time with subsequent discharge	The luminaire can be controlled during the charging time via DALI2 as well as a switched phase controlled. The DALI2 driver is disconnected for discharging (by the emergency lighting unit) from the power supply and the lamp. **– DALI2 driver fault message, if applicable.** The illuminant shines inevitably with output power in the emergency operation. The discharge starts three times by the emergency lighting unit, each time after 24h charging time.	The luminaire can be controlled via DALI2 as well as a switched phase controlled. DALI2 emergency lighting units do not perform automatic battery regeneration! **– DALI2 driver fault message, if applicable.** The illuminant shines inevitably with output power in the emergency operation. The discharge starts three times by the emergency lighting unit, each time after 24h charging time.
Capacity test Discharge for at least the time of the rated operating time	The DALI2 driver is disconnected (by the emergency lighting control gear for the test) from the mains supply and the light source. **– DALI2 driver fault message, if applicable.** The lamp necessarily operates with emergency power. The test is started autonomously by the emergency lighting unit every 7th day.	The DALI2 driver is disconnected (by the emergency lighting control gear for the test) from the mains supply and the light source. **– DALI2 driver fault message, if applicable.** The lamp necessarily operates with output power in emergency mode. The test is started autonomously by the emergency lighting unit every 7th day.
Function test Discharge for 1% of the rated operating time	The DALI2 driver is disconnected (by the emergency lighting control gear for the test) from the mains supply and the light source. **– DALI2 driver fault message, if applicable.** The lamp necessarily operates with output power in emergency mode. The test is started autonomously by the emergency lighting unit every 7th day.	The DALI2 driver is disconnected (by the emergency lighting control gear for the test) from the mains supply and the light source. **– DALI2 driver fault message, if applicable.** The lamp necessarily operates with output power in emergency mode. The test is started autonomously by the emergency lighting unit every 7th day.
Regular operation after Test Automatic charging	The luminaire can be controlled via DALI2 as well as a switched phase. However, it is possible that DALI2 control commands were not received by the driver during the test or the driver changes to its start state defined by the manufacturer (mains return). – possibly unknown operating state of the DALI2 driver.	The luminaire can be controlled via DALI2 as well as a switched phase. However, it is possible that DALI2 control commands were not received by the driver during the test or the driver changes to its start state defined by the manufacturer (mains return). – possibly unknown operating state of the DALI2 driver.

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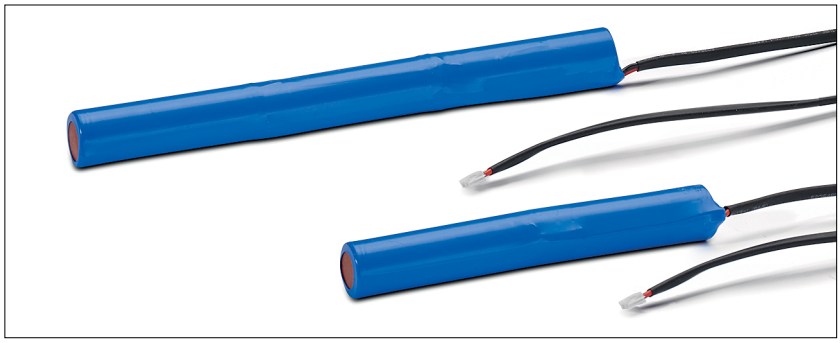
Linear Batterys for Emergency Basic and Smart



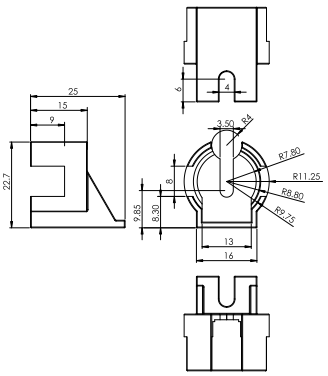
LiFePO4 rechargeable batteries
Charging time of rechargeable batteries:
up to 24 hrs. depending on the capacity
With connection leads (length: 250 mm) and plug;
max. lead length: 750 mm
Choice of the rechargeable battery depends on desired operating time and installation position.

Type	Ref. No.	ELUBAT No.	Dimensions Ø mm	Dimensions Length mm	Nominal operating period hrs.	Weight g	Packaging unit Pieces per box	Packaging unit Boxes per pallet
Linear rechargeable batteries								
3,2 V/4,5 Ah L	**183205**	275809	19	196	3	130	40	32
3,2 V/3 Ah L	**183203**	275802	19	131	1	89	60	32

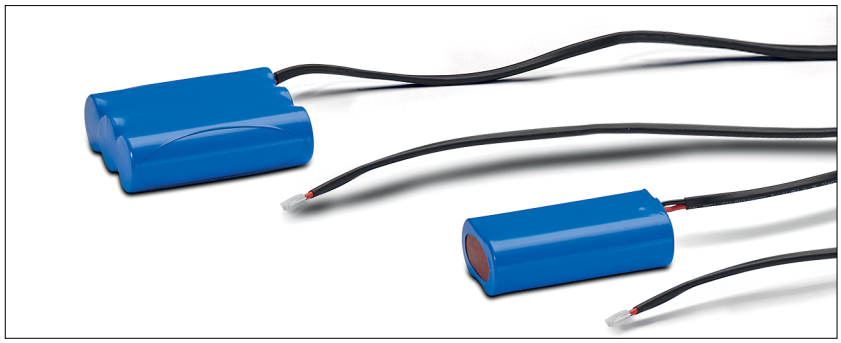
Storage time rechargeable batteries: max. 1 year; storage temperature: 0–50 °C

Product guarantee
- 5 years in combination with Emergency Smart
- 2 years in combination with Emergency Basic
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

Holders for linear rechargeable batteries for emergency LED lighting modules
Sold separately
Two holders per battery required.
Material: PBT
For linear batteries 183203, 183205
Weight: 4 g, packaging unit: 175 pcs.
Type: Batteryholder LiFePO4
Ref. No.: 183206



Compact Batteries for Emergency Basic and Smart



LiFePO4 rechargeable batteries
Charging time of rechargeable batteries:
up to 24 hrs. depending on the capacity
With connection leads (length: 250 mm) and plug;
max. lead length: 750 mm
Choice of the rechargeable battery depends on desired operating time and installation position.

Type	Ref. No.	ELUBAT No.	Dimensions Length mm	Dimensions Width mm	Dimensions Height mm	Nominal operating period (hrs.)	Weight g	Packaging unit Pieces per box	Packaging unit Boxes per pallet
Compact rechargeable batteries									
3,2 V/4,5 Ah C	**183204**	275813	55	19	65	3	130	36	32
3,2 V/3 Ah C	**183202**	275810	36	18	65	1	89	60	32

Storage time rechargeable batteries: max. 1 year; storage temperature: 0–50 °C

Product guarantee
- 5 years in combination with Emergency Smart
- 2 years in combination with Emergency Basic
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

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Emergency Complete

With or without self-diagnosis function and integrated battery

IP20 SELV EL-T Guarantee 3 years

Product features

- Designed for independent operation of LED luminaires for safety lighting for rescue routes and extremely hazardous workplaces
- For emergency lighting for 1 hrs. or 3 hrs. operating time
- Suitable for emergency lighting acc. to VDE 0108 or EN 50172
- With self-diagnosis function acc. to EN 62034 (186817, 186816)
- Ambient temperature: 5 to 50 °C
- Iron phosphate (LiFePO4) rechargeable battery is built-in into the casing
- Charging time of rechargeable battery: up to 24 hrs. depending on the capacity

Electrical features

- Mains voltage: 220–240 V ± 10%
- Mains frequency: 50–60 Hz
- Output voltage: 55 V
- Output power in emergency operation: 2.5–3 W

Safety features

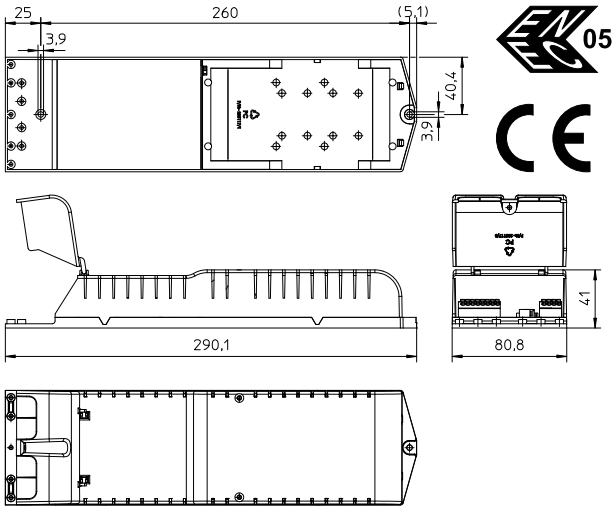
- For luminaires of protection classes I and II
- Degree of protection: IP20
- SELV
- Surge protection: 3.75 kV
- Earthing: complete emergency module does not have to be earthed. The emergency lighting module features three earth terminals for an LED driver and LED unit, if required.

Status LED

- Intermittent green: battery regeneration after commissioning as well as after each battery replacement
- Permanent green: battery correctly connected, battery charged or self-test operation
- Flashing red: defective battery charge, battery not connected or battery capacity too low
- Flashing intermittent red: defective or unconnected LED luminaire unit
- Off: battery totally flat, defective emergency lighting unit or in emergency operation

Dimensions

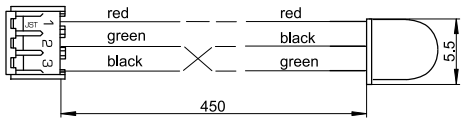
- Casing: K68
- Length: 290.1 mm
- Width: 80.8 mm
- Height: 41 mm



Used standards

- EN 60598-2-22
- EN 61347-2-7
- EN 62034
- EN 62384

LED



Product guarantee

- 3 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

Packaging units

Ref. No.	Packaging unit Pieces per box	Boxes per pallet	Weight g
186817	20	24	389
186816	20	24	348
187077	20	24	389
187076	20	24	348

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Electrical characteristics

Type	**Ref. No.**	Battery		Nominal emergency operation period	Output power in emergency operation (W)	Min. lumen in emergency operation* (lm)	Output voltage	
		Type	Shape	hrs.			V	V max.
K68 – Dimensions (LxWxH): 290.1x80.8x41 mm – with self-diagnosis function								
EMCc 180.019	**186817**	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	12–55	60
EMCc 60.018	**186816**	3,2V/3 Ah C	Compact	1	2.5–3	250	12–55	60
K68 – Dimensions (LxWxH): 290.1x80.8x41 mm – without self-diagnosis function								
EMCc 180.027	**187077**	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	12–55	60
EMCc 60.026	**187076**	3,2V/3 Ah C	Compact	1	2.5–3	250	12–55	60

* at 100 lm/W per LED unit

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Product lables

LIGHTING SOLUTIONS

Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, D-73614 Schorndorf

Emergency Unit
for LED module
Type EMCc 60.018
Ref.-No.186816
Made in Switzerland

Automatic self-testing mode

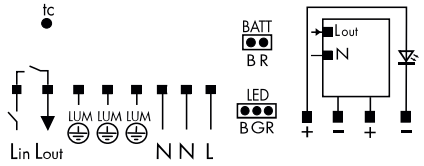
2'382'158

U_N (V)	220...240
f_N (Hz)	50...60
Batt $LiFePO_4$ (V/Ah)	3,2 / 3
Operating time (h)	1
LED voltage (V)	U=12...55
No load voltage (V)	Umax.=60
Power supply (W)	2,5...3

EN 60598-2-22
EN 61347-2-7
EN 62034

EL-T

SELV
tc= 65°C
ta= 5...+50°C



LIGHTING SOLUTIONS

Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, D-73614 Schorndorf

Emergency Unit
for LED module
Type EMCc 180.019
Ref.-No.186817
Made in Switzerland

Automatic self-testing mode

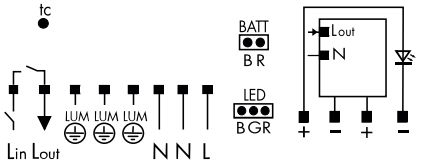
2'381'950

U_N (V)	220...240
f_N (Hz)	50...60
Batt $LiFePO_4$ (V/Ah)	3,2 / 4,5
Operating time (h)	3
LED voltage (V)	U=12...55
No load voltage (V)	Umax.=60
Power supply (W)	2,5...3

EN 60598-2-22
EN 61347-2-7
EN 62034

EL-T

SELV
tc= 65°C
ta= 5...+50°C



LIGHTING SOLUTIONS

Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, D-73614 Schorndorf

Emergency Unit
for LED module
Type EMCc 60.026
Ref.-No. 187076
Made in Switzerland

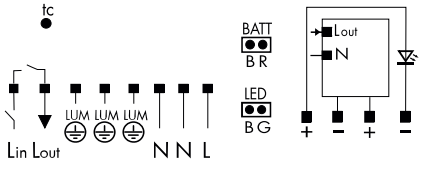
2'386'023

U_N (V)	220...240
f_N (Hz)	50...60
Batt $LiFePO_4$ (V/Ah)	3,2 / 3
Operating time (h)	1
LED voltage (V)	U=12...55
No load voltage (V)	Umax.=60
Power supply (W)	2,5...3

EN 60598-2-22
EN 61347-2-7

EL

SELV
tc= 65°C
ta= 5...+50°C



LIGHTING SOLUTIONS

Vossloh-Schwabe Deutschland GmbH
Stuttgarter Straße 61/1, D-73614 Schorndorf

Emergency Unit
for LED module
Type EMCc 180.027
Ref.-No. 187077
Made in Switzerland

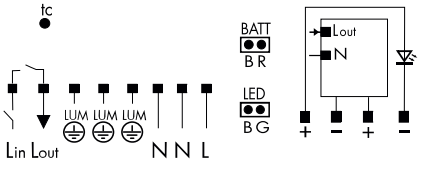
2'381'937

U_N (V)	220...240
f_N (Hz)	50...60
Batt $LiFePO_4$ (V/Ah)	3,2 / 4,5
Operating time (h)	3
LED voltage (V)	U=12...55
No load voltage (V)	Umax.=60
Power supply (W)	2,5...3

EN 60598-2-22
EN 61347-2-7

EL

SELV
tc= 65°C
ta= 5...+50°C



Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advices must be observed; non-observance can result in the destruction of the LED emergency lighting devices, fire and/or other hazards.

Mandatory regulations

- DIN VDE 0100
- EN 60598-1

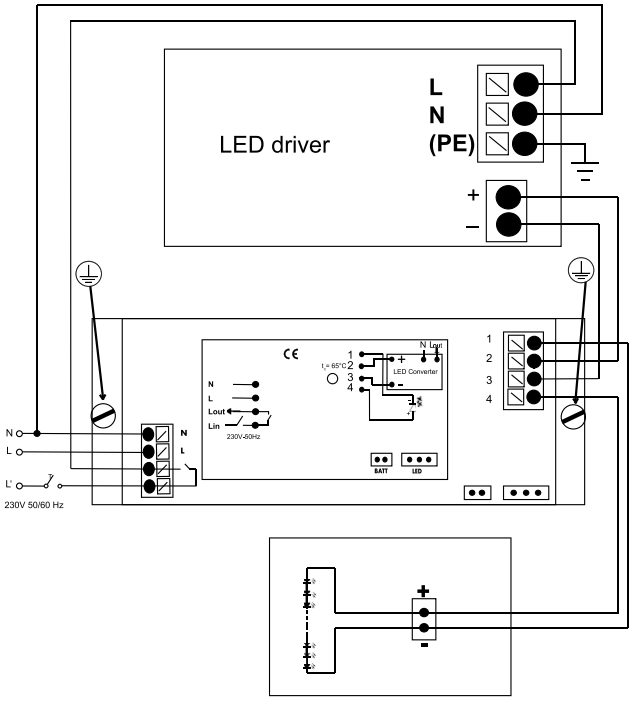
Emergency Basic

Mechanical mounting

- Mounting position: On an earthed metal surface
  Installation in an LED luminaire of protection class I. Installation in a separate casing of protection class I or II.I
- Fastening/Earthing: Fix and/or earth using two suitable metal screws
- Installation of the battery and LED driver for constant switching:
  Installation is possible within the same casing as the emergency lighting unit.
- Ambient temperature of the battery: max. 50 °C
- Length of the status LED lead: 400 mm

Electrical installation

- Connection terminals: Push-in terminals for leads of 0.5-1.5 mm²
- Stripped length: 8.5–10 mm
- Battery connection: Push-in connection with cables (length: 250 mm) (red = + / black = –), max. extension to 750 mm
- Battery discharge current:
  The deep discharge protection of all lithium ion batteries is lower than 10 µA. This makes deliveries with connected battery possible, as long as no logistics restrictions apply.
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Secondary load (LED):
  The sum of forward voltages of LED loads has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet.
- Wiring: During mains-powered operation, the current that flows into the LED luminaire is regulated by the LED driver.
  During emergency lighting operation, the LED unit will be supplied by the battery.
  The current that is supplied by the battery during emergency lighting operation is converted into "LED current" by the Basic emergency lighting unit.



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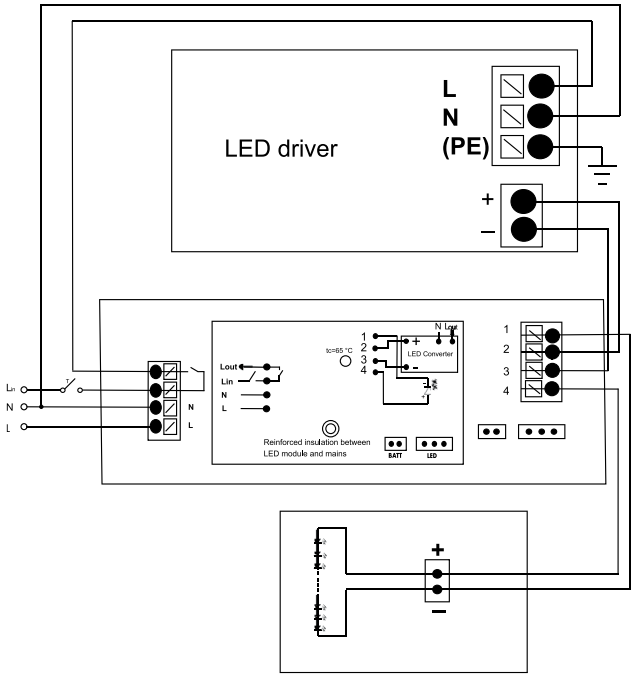
Emergency Smart

Mechanical mounting

- Mounting position: In an LED luminaire or in a separate casing
- Fastening: Using two suitable screws
- Installation of the battery and LED driver for constant switching: Installation is possible within the same casing as the emergency lighting unit.
- Ambient temperature of the battery: max. 50 °C
- Length of the status LED lead: 400 mm

Electrical installation

- Connection terminals: Push-in terminals for leads of 0.5-1.5 mm²
- Stripped length: 8.5–10 mm
- Battery connection: Push-in connection with cables (length: 250 mm) (red = + / black = –), max. extension to 750 mm
- Battery discharge current: The deep discharge protection of all lithium ion batteries is lower than 10 µA. This makes deliveries with connected battery possible, as long as no logistics restrictions apply.
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Secondary load (LED): The sum of forward voltages of LED loads has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet.
- Wiring: During mains-powered operation, the current that flows into the LED luminaire is regulated by the LED driver. During emergency lighting operation, the LED unit will be supplied by the battery. The current that is supplied by the battery during emergency lighting operation is converted into "LED current" by the Smart emergency lighting unit.



Self-testing function

- Self-test: Self-testing function in acc. with EN 62034 included. Every 8 days (random period between 8 and 8.25 days) an automatic self-test will be carried out. During this time, the LED unit will be supplied by the battery for 2 minutes via the emergency smart emergency lighting module. This ensures the LED unit and the correct functioning of the emergency lighting can be checked.
- Fatigue test: In addition, a quarterly fatigue test is carried out to check battery capacity. The first fatigue test is carried out 8 days after commissioning.
- Battery recovery: Within the space of about four days following commissioning and/or after a change of battery, three short charging and discharging cycles will be automatically carried out to regenerate the battery.

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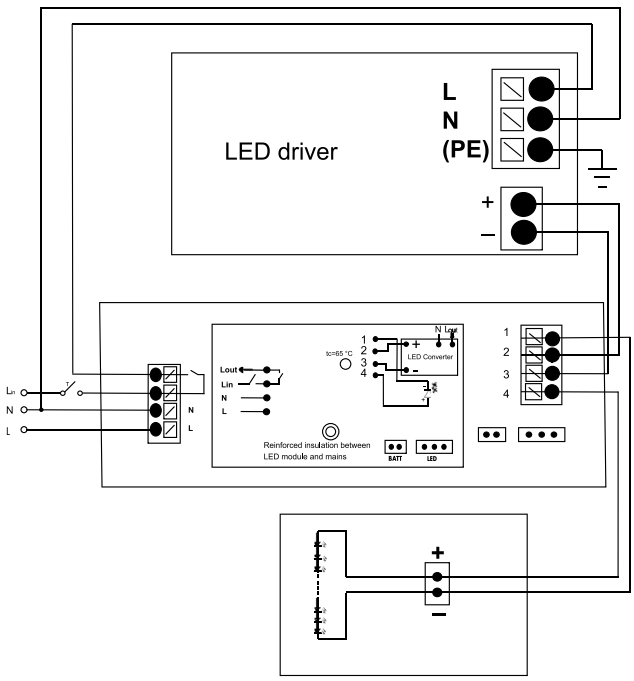
Emergency Smart DALI

Mechanical mounting

- Mounting position: In an LED luminaire or in a separate casing
- Fastening: Using two suitable screws
- Installation of the battery and LED driver for constant switching: Installation is possible within the same casing as the emergency lighting unit.
- Ambient temperature of the battery: max. 50 °C
- Length of the status LED lead: 400 mm

Electrical installation

- Connection terminals: Push-in terminals for leads of 0.5-1.5 mm²
- Stripped length: 8.5–10 mm
- Battery connection: Push-in connection with cables (length: 250 mm) (red = + / black = –), max. extension to 750 mm
- Battery discharge current: The deep discharge protection of all lithium ion batteries is lower than 10 µA. This makes deliveries with connected battery possible, as long as no logistics restrictions apply.
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Secondary load (LED): The sum of forward voltages of LED loads has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet.
- Wiring: During mains-powered operation, the current that flows into the LED luminaire is regulated by the LED driver.
  During emergency lighting operation, the LED unit will be supplied by the battery.
  The current that is supplied by the battery during emergency lighting operation is converted into "LED current" by the Smart emergency lighting unit.



Self-testing function

- Self-test: Self-testing function in acc. with EN 62034 included.
  Every 8 days (random period between 8 and 8.25 days) an automatic self-test will be carried out. During this time, the LED unit will be supplied by the battery for 2 minutes via the emergency smart emergency lighting module.
  This ensures the LED unit and the correct functioning of the emergency lighting can be checked.
- Fatigue test: In addition, a quarterly fatigue test is carried out to check battery capacity. The first fatigue test is carried out 8 days after commissioning.
- Battery recovery: Within the space of about four days following commissioning and/or after a change of battery, three short charging and discharging cycles will be automatically carried out to regenerate the battery.

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Emergency Complete

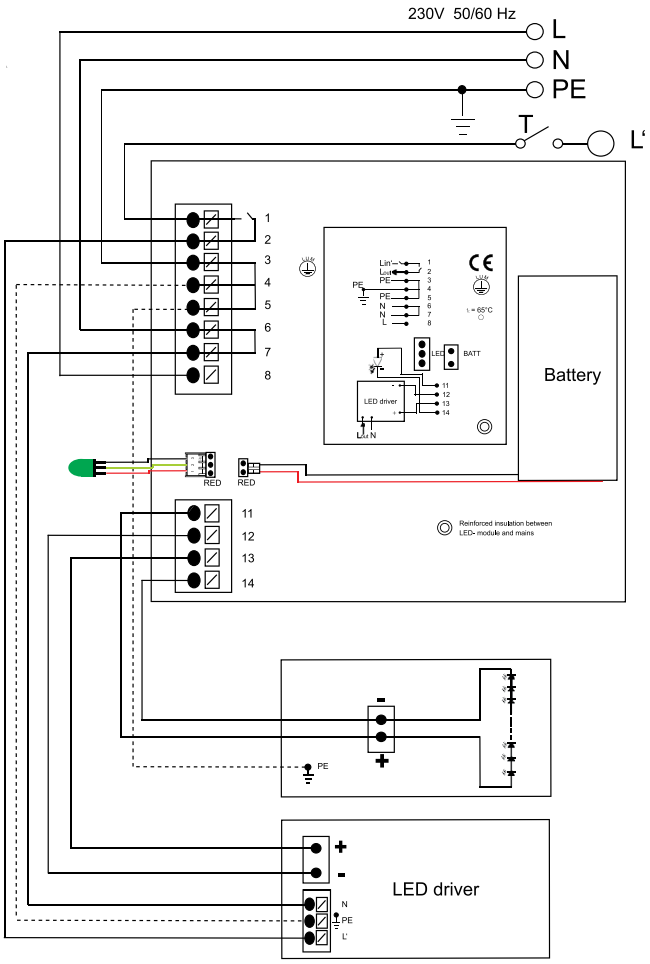
Mechanical mounting – Emergency Complete

- Mounting position: Outside of an LED luminaire; suitable for independent operation
- Fastening: Using two suitable screws
- Ambient temperature of the battery: max. 50 °C
- Length of the status LED lead: 400 mm

Electrical installation

- Connection terminals: Push-in terminals for leads of 0.5-1.5 mm²
- Stripped length: 8.5–10 mm
- Battery connection: Push-in connection with cables (length: 250 mm) (red = + / black = –), max. extension to 750 mm
- Battery discharge current: The deep discharge protection of all lithium ion batteries is lower than 10 µA. This makes deliveries with connected battery possible, as long as no logistics restrictions apply.
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Secondary load (LED): The sum of forward voltages of LED loads has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this data sheet.
- Wiring: The Emergency Complete casing is fitted with a lid for a cord grip. As shown in the circuit diagram, the following three leads must be connected to the mains terminal of the Emergency Complete unit:
  – mains cable (switched phase, direct phase, neutral and earth, if required for the driver and/or the LED unit)
  – LED driver cable (switched phase, neutral and earth, if required)
  – bus line (DALI)

  During mains-powered operation, the current that flows into the LED luminaire is regulated by the LED driver.
  During emergency lighting operation, the LED unit will be supplied by the battery.
  The current that is supplied by the battery during emergency lighting operation is converted into "LED current" by the Complete emergency lighting unit.



Self-testing function

- Self-test: Self-testing function in acc. with EN 62034 included.
  Every 8 days (random period between 8 and 8.25 days) an automatic self-test will be carried out. During this time, the LED unit will be supplied by the battery for 2 minutes via the emergency smart emergency lighting module.
  This ensures the LED unit and the correct functioning of the emergency lighting can be checked.
- Fatigue test: In addition, a quarterly fatigue test is carried out to check battery capacity. The first fatigue test is carried out 8 days after commissioning.
- Battery recovery: Within the space of about four days following commissioning and/or after a change of battery, three short charging and discharging cycles will be automatically carried out to regenerate the battery.

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