

# 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.



## 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 (LiFePO<sub>4</sub>)
- 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

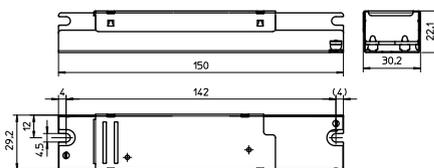
### Packaging units

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



### 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](http://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.

# LED Emergency Lighting Devices – Emergency Basic

## Electrical characteristics

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

\* at 100 lm/W per LED unit

## Product labels

**VS LIGHTING SOLUTIONS**  
Vossloh-Schwabe Deutschland GmbH  
Hohe Steinert 8, D-58509 Lüdenscheid

Emergency Unit for LED module  
**Type EMCc 60.006**  
Ref.-No. 186804  
Made in Switzerland

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

SELV tc= 65°C ta= 5...+50°C	
U <sub>N</sub> (V)	220...240
f <sub>N</sub> (Hz)	50...60
Batt Life PO <sub>2</sub> (V/Ah)	3,2 / 3
Operating time (h)	1
LED voltage (V)	U=12 - 55
No load voltage (V)	U <sub>max</sub> =60
Power supply (W)	2,5...3

**VS LIGHTING SOLUTIONS**  
Vossloh-Schwabe Deutschland GmbH  
Hohe Steinert 8, D-58509 Lüdenscheid

Emergency Unit for LED module  
**Type EMCc 180.009**  
Ref.-No. 186807  
Made in Switzerland

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

SELV tc= 65°C ta= 5...+50°C	
U <sub>N</sub> (V)	220...240
f <sub>N</sub> (Hz)	50...60
Batt Life PO <sub>2</sub> (V/Ah)	3,2 / 4,5
Operating time (h)	3
LED voltage (V)	U=20 - 105
No load voltage (V)	U <sub>max</sub> =120
Power supply (W)	2,5...3

**VS LIGHTING SOLUTIONS**  
Vossloh-Schwabe Deutschland GmbH  
Hohe Steinert 8, D-58509 Lüdenscheid

Emergency Unit for LED module  
**Type EMCc 180.007**  
Ref.-No. 186805  
Made in Switzerland

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

SELV tc= 65°C ta= 5...+50°C	
U <sub>N</sub> (V)	220...240
f <sub>N</sub> (Hz)	50...60
Batt Life PO <sub>2</sub> (V/Ah)	3,2 / 4,5
Operating time (h)	3
LED voltage (V)	U=12 - 55
No load voltage (V)	U <sub>max</sub> =60
Power supply (W)	2,5...3

**VS LIGHTING SOLUTIONS**  
Vossloh-Schwabe Deutschland GmbH  
Hohe Steinert 8, D-58509 Lüdenscheid

Emergency Unit for LED module  
**Type EMCc 60.010**  
Ref.-No. 186808  
Made in Switzerland

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

SELV tc= 65°C ta= 5...+30°C	
U <sub>N</sub> (V)	220...240
f <sub>N</sub> (Hz)	50...60
Batt Life PO <sub>2</sub> (V/Ah)	3,2 / 3
Operating time (h)	1
LED voltage (V)	U=100 - 220
No load voltage (V)	U <sub>max</sub> =300
Power supply (W)	2,5...3

**VS LIGHTING SOLUTIONS**  
Vossloh-Schwabe Deutschland GmbH  
Hohe Steinert 8, D-58509 Lüdenscheid

Emergency Unit for LED module  
**Type EMCc 60.008**  
Ref.-No. 186806  
Made in Switzerland

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

SELV tc= 65°C ta= 5...+50°C	
U <sub>N</sub> (V)	220...240
f <sub>N</sub> (Hz)	50...60
Batt Life PO <sub>2</sub> (V/Ah)	3,2 / 3
Operating time (h)	1
LED voltage (V)	U=20 - 105
No load voltage (V)	U <sub>max</sub> =120
Power supply (W)	2,5...3

**VS LIGHTING SOLUTIONS**  
Vossloh-Schwabe Deutschland GmbH  
Hohe Steinert 8, D-58509 Lüdenscheid

Emergency Unit for LED module  
**Type EMCc 180.011**  
Ref.-No. 186809  
Made in Switzerland

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

SELV tc= 65°C ta= 5...+30°C	
U <sub>N</sub> (V)	220...240
f <sub>N</sub> (Hz)	50...60
Batt Life PO <sub>2</sub> (V/Ah)	3,2 / 4,5
Operating time (h)	3
LED voltage (V)	U=100 - 220
No load voltage (V)	U <sub>max</sub> =300
Power supply (W)	2,5...3

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## Emergency Smart

### With self-diagnosis function

#### 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 (LiFePO<sub>4</sub>)
- 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

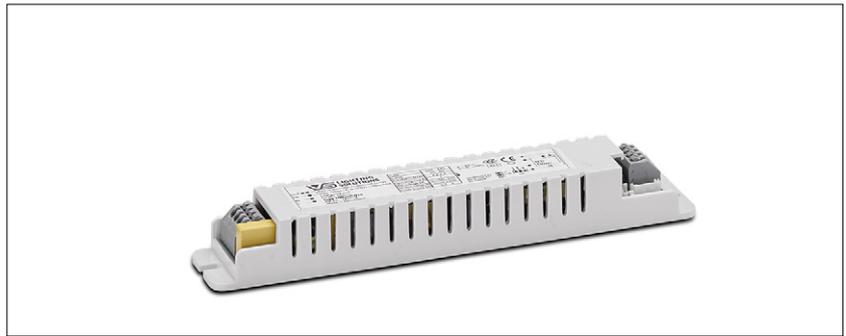
- For luminaires of protection classes I and IIa
- Degree of protection: IP20
- SELV\* (186810, 186811, 186812, 186813)
- Surge protection (186810, 186811, 186812, 186813): 3.75 kV

#### 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

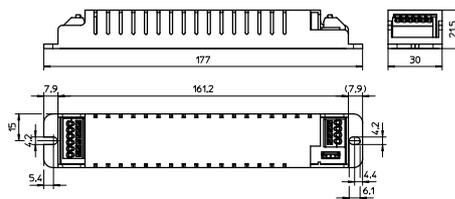
#### Packaging units

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

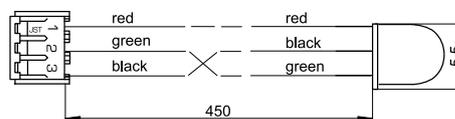


#### Dimensions

- 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](http://www.vossloh-schwabe.com)). We will be happy to send you these conditions upon request.

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# LED Emergency Lighting Devices – Emergency Smart

## Electrical characteristics

Type	Ref. No. EM gear	Ref. No. Battery	Battery		Nominal emergency operation period hrs.	Output power in emergency operation (W)	Min. lumen in emergency operation* (lm)	Output voltage	
			Type	Shape				V	V max.
<b>K67 – Dimensions (LxWxH): 177x30x21.5 mm</b>									
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	100–220	300
		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	100–220	300
		183203	3,2V/3 Ah L	Linear	1				

\* at 100 lm/W per LED unit

## Product labels

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8, D-58509 Lüdenscheid  
Emergency Unit for LED module  
**Type EMCc60.012**  
Ref.-No. 186810  
Made in Switzerland

U <sub>N</sub> [V]	220...240
f <sub>N</sub> [Hz]	50...60
Batt Life PO <sub>4</sub> [V/Ah]	3,2 / 3
Operating time [h]	1
LED voltage [V]	U=12...55
No load voltage [V]	U <sub>max</sub> =60
Power supply [W]	2,5...3

2'382'035 SELV  
t<sub>c</sub> = 65°C  
t<sub>a</sub> = 5...+50°C  
Automatic self-testing mode  
EN 60598-2-22  
EN 61347-2-7  
EN 62034

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8, D-58509 Lüdenscheid  
Emergency Unit for LED module  
**Type EMCc180.013**  
Ref.-No. 186811  
Made in Switzerland

U <sub>N</sub> [V]	220...240
f <sub>N</sub> [Hz]	50...60
Batt Life PO <sub>4</sub> [V/Ah]	3,2 / 4,5
Operating time [h]	3
LED voltage [V]	U=12...55
No load voltage [V]	U <sub>max</sub> =60
Power supply [W]	2,5...3

2'381'911 SELV  
t<sub>c</sub> = 65°C  
t<sub>a</sub> = 5...+50°C  
Automatic self-testing mode  
EN 60598-2-22  
EN 61347-2-7  
EN 62034

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8, D-58509 Lüdenscheid  
Emergency Unit for LED module  
**Type EMCc60.014**  
Ref.-No. 186812  
Made in Switzerland

U <sub>N</sub> [V]	220...240
f <sub>N</sub> [Hz]	50...60
Batt Life PO <sub>4</sub> [V/Ah]	3,2 / 3
Operating time [h]	1
LED voltage [V]	U=20...105
No load voltage [V]	U <sub>max</sub> =120
Power supply [W]	2,5...3

2'382'090 SELV  
t<sub>c</sub> = 65°C  
t<sub>a</sub> = 5...+50°C  
Automatic self-testing mode  
EN 60598-2-22  
EN 61347-2-7  
EN 62034

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8, D-58509 Lüdenscheid  
Emergency Unit for LED module  
**Type EMCc180.015**  
Ref.-No. 186813  
Made in Switzerland

U <sub>N</sub> [V]	220...240
f <sub>N</sub> [Hz]	50...60
Batt Life PO <sub>4</sub> [V/Ah]	3,2 / 4,5
Operating time [h]	3
LED voltage [V]	U=20...105
No load voltage [V]	U <sub>max</sub> =120
Power supply [W]	2,5...3

2'381'912 SELV  
t<sub>c</sub> = 65°C  
t<sub>a</sub> = 5...+50°C  
Automatic self-testing mode  
EN 60598-2-22  
EN 61347-2-7  
EN 62034

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8, D-58509 Lüdenscheid  
Emergency Unit for LED module  
**Type EMCc60.016**  
Ref.-No. 186814  
Made in Switzerland

U <sub>N</sub> [V]	220...240
f <sub>N</sub> [Hz]	50...60
Batt Life PO <sub>4</sub> [V/Ah]	3,2 / 3
Operating time [h]	1
LED voltage [V]	U=100...220
No load voltage [V]	U <sub>max</sub> =300
Power supply [W]	2,5...3

2'382'036 SELV  
t<sub>c</sub> = 65°C  
t<sub>a</sub> = 5...+50°C  
Automatic self-testing mode  
EN 60598-2-22  
EN 61347-2-7  
EN 62034

**Vossloh-Schwabe Deutschland GmbH**  
Hohe Steinert 8, D-58509 Lüdenscheid  
Emergency Unit for LED module  
**Type EMCc180.016**  
Ref.-No. 186815  
Made in Switzerland

U <sub>N</sub> [V]	220...240
f <sub>N</sub> [Hz]	50...60
Batt Life PO <sub>4</sub> [V/Ah]	3,2 / 4,5
Operating time [h]	3
LED voltage [V]	U=100...220
No load voltage [V]	U <sub>max</sub> =300
Power supply [W]	2,5...3

2'381'913 SELV  
t<sub>c</sub> = 65°C  
t<sub>a</sub> = 5...+50°C  
Automatic self-testing mode  
EN 60598-2-22  
EN 61347-2-7  
EN 62034

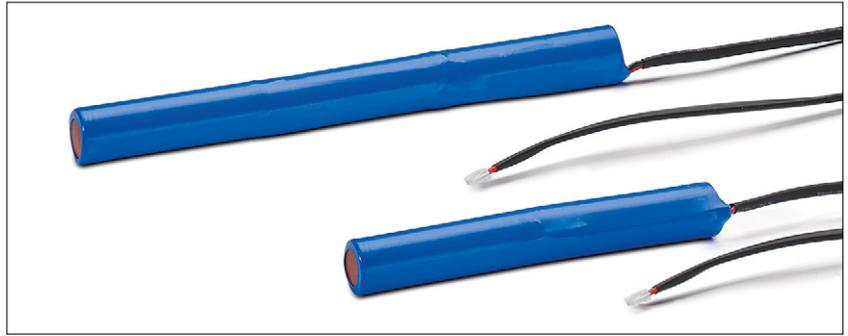
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## Linear Batterys for Emergency Basic and Smart

### 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.	Dimensions			Nominal operating period hrs.	Weight g	Packaging unit	
		Ø mm	Length mm				Pieces per box	Boxes per pallet
<b>Linear rechargeable batteries</b>								
3,2 V/4,5 Ah L	<b>183205</b>	19	196	3	130	40	32	
3,2 V/3 Ah L	<b>183203</b>	19	131	1	89	60	32	

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

### Holders for linear rechargeable batteries for emergency LED lighting modules

Sold separately

Two holders per battery required.

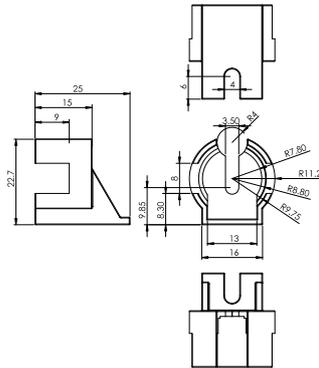
Material: PBT

For linear batteries 183203, 183205

Weight: 4 g, packaging unit: 175 pcs.

Type: Batteryholder LiFePO4

**Ref. No.: 183206**



### Product guarantee

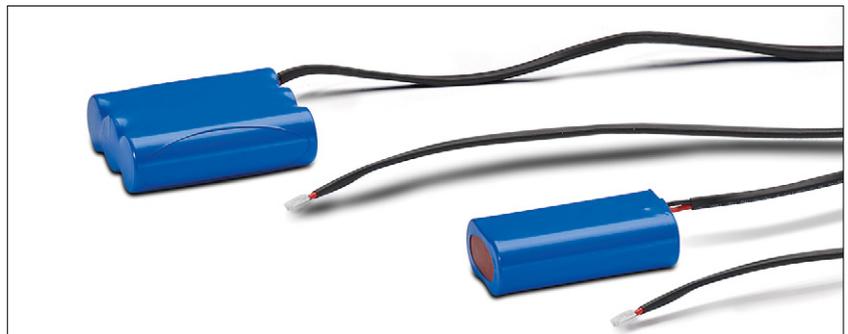
- 3 years in combination with Emergency Smart
- 1 year in combination with Emergency Basic
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage ([www.vossloh-schwabe.com](http://www.vossloh-schwabe.com)). We will be happy to send you these conditions upon request.

## 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.	Dimensions			Nominal operating period hrs.	Weight g	Packaging unit	
		Length mm	Width mm	Height mm			Pieces per box	Boxes per pallet
<b>Compact rechargeable batteries</b>								
3,2 V/4,5 Ah C	<b>183204</b>	55	19	65	3	130	36	32
3,2 V/3 Ah C	<b>183202</b>	36	18	65	1	89	60	32

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

### Product guarantee

- 3 years in combination with Emergency Smart
- 1 year 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](http://www.vossloh-schwabe.com)). We will be happy to send you these conditions upon request.

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## Emergency Complete

**With self-diagnosis function and integrated battery**

### 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
- Ambient temperature: 5 to 50 °C
- Iron phosphate (LiFePO<sub>4</sub>) 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

### Packaging units

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

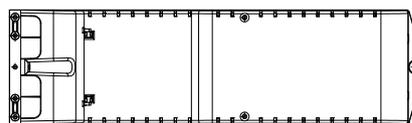
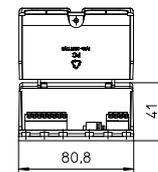
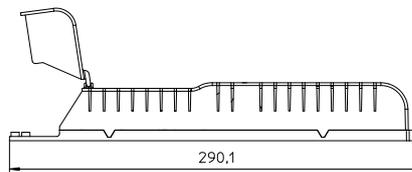
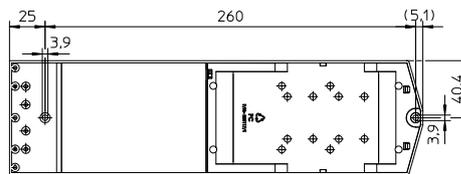


### Dimensions

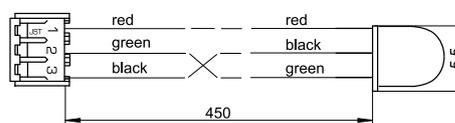
- Casing: K68
- Length: 290.1 mm
- Width: 80.8 mm
- Height: 41 mm

### 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](http://www.vossloh-schwabe.com)). We will be happy to send you these conditions upon request.

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# LED Emergency Lighting Devices – Emergency Complete

## Electrical characteristics

Type	Ref. No.	Battery		Nominal emergency operation period hrs.	Output power in emergency operation (W)	Min. lumen in emergency operation* (lm)	Output voltage	
		Type	Shape				V	V max.
<b>K68 – Dimensions (LxWxH): 290.1x80.8x41 mm</b>								
EMCc 180.019	<b>186817</b>	3,2 V/4,5 Ah C	Compact	3	2.5–3	250	12–55	60
EMCc 60.018	<b>186816</b>	3,2V/3 Ah C	Compact	1	2.5–3	250	12–55	60

\* at 100 lm/W per LED unit

## Product labels

**VS LIGHTING SOLUTIONS**      

Vossloh-Schwabe Deutschland GmbH  
Hohe Steinert 8, D-58509 Lüdenscheid  
Emergency Unit  
for LED module  
**Type EMCc 60.018**  
Ref.-No. 186816  
Made in Switzerland

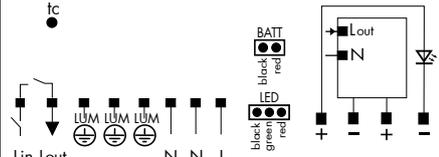
**Automatic self-testing mode**

2'382'158

$U_N$ (V)	220...240
$f_N$ (Hz)	50...60
Batt LiFePO <sub>4</sub> (V/Ah)	3,2 / 3
Operating time (h)	1
LED voltage (V)	U=12 - 55
No load voltage (V)	U <sub>max.</sub> =60
Power supply (W)	2,5...3

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

**SELV**  
 $t_c = 65^\circ\text{C}$   
 $t_a = 5...+50^\circ\text{C}$



**VS LIGHTING SOLUTIONS**      

Vossloh-Schwabe Deutschland GmbH  
Hohe Steinert 8, D-58509 Lüdenscheid  
Emergency Unit  
for LED module  
**Type EMCc 180.019**  
Ref.-No. 186817  
Made in Switzerland

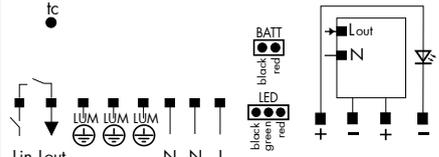
**Automatic self-testing mode**

2'382'950

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

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

**SELV**  
 $t_c = 65^\circ\text{C}$   
 $t_a = 5...+50^\circ\text{C}$



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## 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

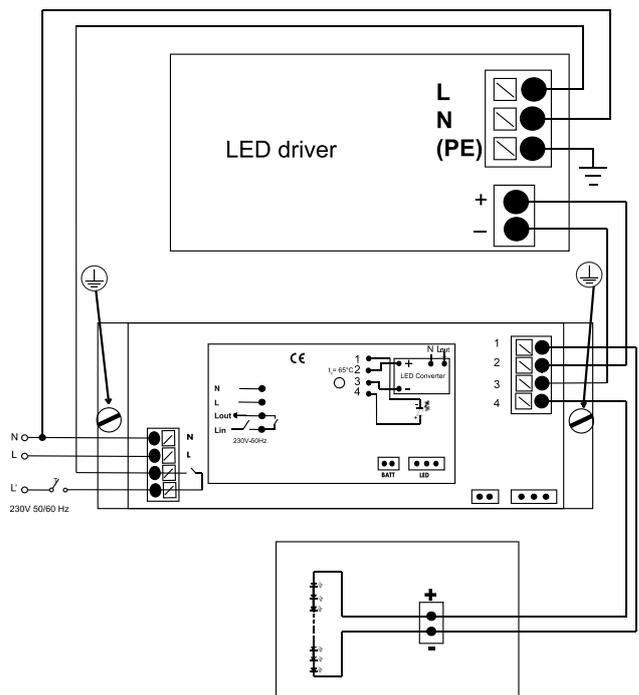
### Electrical installation

- Connection terminals: Push-in terminals for leads of 0.5-1.5 mm<sup>2</sup>
- 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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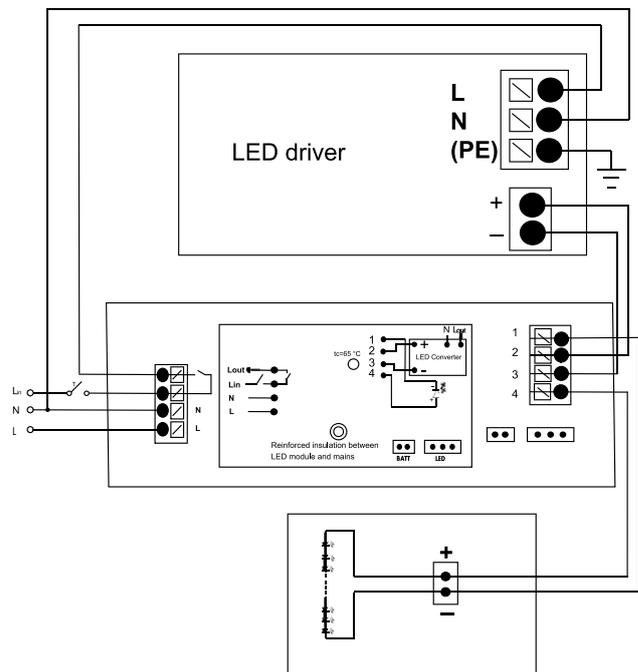
## Emergency Smart

### 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 mm<sup>2</sup>
- 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

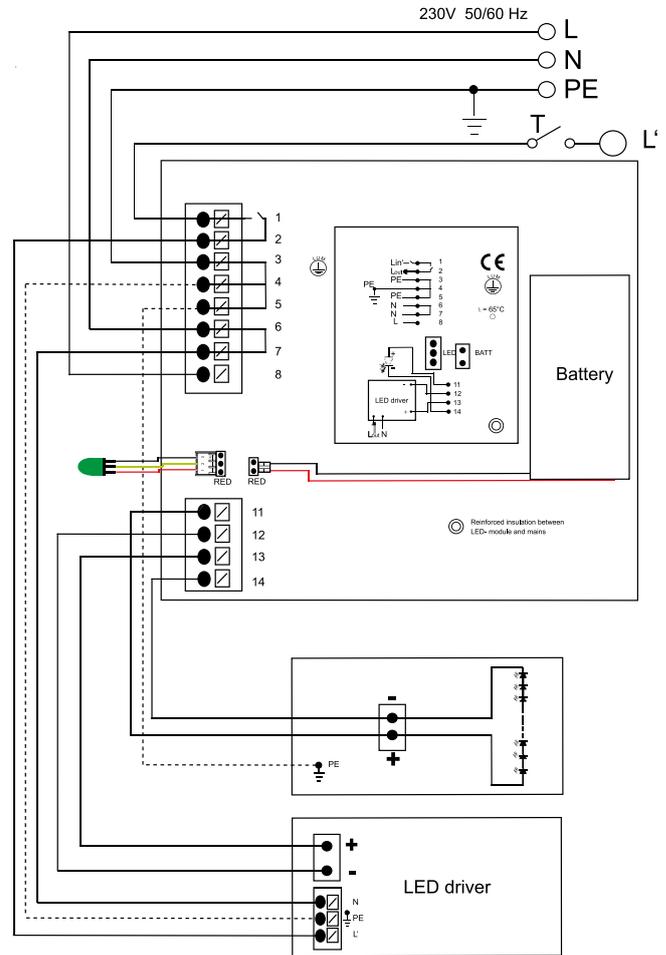
### Electrical installation

- Connection terminals: Push-in terminals for leads of 0.5-1.5 mm<sup>2</sup>
- 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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