

# CC COMPACT SIMPLE FIX DIMMABLE



## EasyLine SIMPLE FIX C-PC

**186415, 186416, 186447, 186448, 186449, 186450,  
186451, 186505, 186710, 186711**

### Typical Applications

Built-in in compact luminaires for

- Retail lighting
- Downlights
- Residential lighting



### EasyLine Simple Fix C-PC

- **DIMMABLE: PHASE-CUT TRAILING-EDGE**
- **DIMMING METHOD: ANALOGUE**
- **SUITABLE FOR EMERGENCY ESCAPE LIGHTING SYSTEMS ACC. TO EN 50172**
- **WITH INTEGRATED CORD GRIP FOR INDEPENDENT OPERATION**
- **SELV**
- **SUITABLE FOR BUILT-IN INTO FURNITURE**
- **LONG SERVICE LIFE:  
UP TO 50,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



## EasyLine Simple Fix C-PC

### Product features

- Compact casing shape

### Electrical features

- Mains voltage: 220–240 V  $\pm 10\%$
- Mains frequency: 50–60 Hz
- Push-in terminals primary: 0.75–1.5 mm<sup>2</sup>, secondary: 0.5–1.5 mm<sup>2</sup> or 0.25–1.5 mm<sup>2</sup> (186505) or 1.5–2.5 mm<sup>2</sup> (186710, 186711)
- Power factor at full load: 0.95 (186415, 186416, 186450, 186451) or 0.9 (186447, 186448, 186449, 186505) or 0.98 (186710, 186711)
- Open circuit voltage (U<sub>max.</sub>): 60 V or 30 V (186448) or 35 V (186450)
- Secondary side switching of LED modules is not allowed.

### Dimming

- Dimmable with phase-cutting trailing-edge dimmer
- The compatibility of the driver and the dimmer has to be confirmed prior to installation to avoid flickering and/or noises.
- Dimming range: 5 to 100% or 10–100% (186447, 186448, 186449, 186710, 186711)
- If no dimming interface is connected, brightness will stay at 100%.

### Safety features

- Protection against transient main peaks up to 1 kV (between L and N) or 0.5 kV (186447, 186448, 186449)
- Electronic short-circuit protection
- Overload protection
- Protection against "no load" operation
- Degree of protection: IP20
- Protection class II
- SELV

### Packaging units

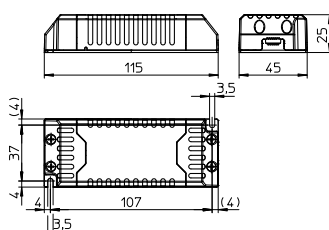
Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186415, 186416	20	112	140
186447, 186448, 186449	20	192	70
186450	20	112	140
186451	20	112	170
186505	20	112	100
186710, 186711	20	165	82



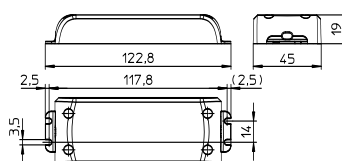
### Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
186710, 186711	K51.1	115	45	25
186447, 186448, 186449	K52	122.8	45	19
186415, 186416, 186450, 186451, 186505	K53	153	41.4	32

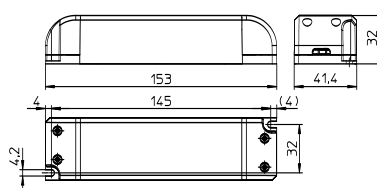
#### K51.1



#### K52



#### K53



### Applied standards

- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 62384
- EN 55015



except 186448



186710, 186711



### Dimming

Analogue



### Product guarantee

- 5 years for operation at recommended operation temperature (see table for expected service life time on the next page)
- 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.

## Electrical characteristics

Max. output W	Type	Ref. No.	Voltage 50–60 Hz V	Mains current mA	Inrush current A / $\mu$ s	Current output DC mA ( $\pm$ 8%)	Voltage output DC (V)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
6	ECXd 150.151	<b>186447</b>	220–240	40–35	3 / 238	150	27–41	21.16	> 78	< 20
10	ECXd 250.270	<b>186710</b>	220–240	55–45	1.9 / 40	250	20–40	10	> 85	< 33
	ECXd 500.152	<b>186448</b>	220–240	60–50	5.5 / 120	500	13–20	27.8	> 80	< 20
12	ECXd 250.153	<b>186449</b>	220–240	70–60	6 / 113	250	27–48	26	> 80	< 20
	ECXd 300.271	<b>186711</b>	220–240	66–54	2.2 / 47	300	20–40	9	> 85	< 36
18	ECXd 350.130	<b>186415</b>	220–240	100–90	13.2 / 257	350	32–52	8.6	> 85	< 5
18	ECXd 700.154	<b>186450</b>	220–240	95–85	13.3 / 249	700	16–26	8.2	> 85	< 5
21	ECXd 500.186	<b>186505</b>	220–240	110–100	1.2 / 50	500	28–42	17.1	> 85	< 5
25	ECXd 700.131	<b>186416</b>	220–240	140–120	13.7 / 257	700	22–36	9.2	> 85	< 5
36	ECXd 700.155	<b>186451</b>	220–240	190–170	15.7 / 242	700	32–52	9.2	> 83	< 5

## Maximum ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the drivers.

Ref. No.	Ambient temperature range		Operation humidity range		Storage temperature range		Storage humidity range		Max. operation temperature at $t_c$ point °C	Degree of protection
	°C min.	°C max.	% min.	% max.	°C min.	°C max.	% min.	% max.		
186447, 186448, 186449, 186450	–15	+45	20	60	–40	+85	5	95	+70	IP20
186505									+75	
186415, 186416, 186451									+80	
186710, 186711	–20	+50					10	90	+70	

## Expected service life time

at operation temperatures at  $t_c$  point

Operation current	Ref. No.					
	186415, 186416, 186451	186505	186447, 186448, 186449, 186450, 186710, 186711			
All	70 °C*	80 °C	65 °C*	75 °C	60 °C*	70 °C
hrs.	50,000	30,000	50,000	30,000	50,000	30,000

\* recommended operation temperature

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

# LED Drivers – EasyLine Simple Fix C-PC

## Product labels

**PRI**  
**Un** = 220...240V~  
**In** = 100...90 mA  
**fn** = 50/60Hz  
**λ** = 0,95

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8  
 D-58509 Lüdenscheid  
 Dimmable  
 Electronic Converter for LED  
**Type ECXd 350.130**  
 Ref.-No. 186415

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 350 mA  
**U<sub>c</sub>** = 32...52 V~  
**U<sub>max</sub>** = 60 V  
**Prated** = 18 W  
**SELV**  
**t<sub>a</sub>** = -15...45°C  
**t<sub>c</sub>** = 80°C

■ L  
 ■ N

CE ENEC

**PRI**  
**Un** = 220...240V~  
**In** = 140...120 mA  
**fn** = 50/60Hz  
**λ** = 0,95

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8  
 D-58509 Lüdenscheid  
 Dimmable  
 Electronic Converter for LED  
**Type ECXd 700.131**  
 Ref.-No. 186416  
 Made in PRC

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 700 mA  
**U<sub>c</sub>** = 22...36 V~  
**U<sub>max</sub>** = 45 V  
**Prated** = 25 W  
**SELV**  
**t<sub>a</sub>** = -15...45°C  
**t<sub>c</sub>** = 80°C

■ L  
 ■ N

CE ENEC

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8  
 D-58509 Lüdenscheid  
 Dimmable  
 Electronic Converter for LED  
**Type ECXd 150.151**  
 Ref.-No. 186447

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 150 mA  
**U<sub>c</sub>** = 30...40 V~  
**U<sub>max</sub>** = 60 V  
**Prated** = 6 W  
**SELV**

■ L  
 ■ N

CE ENEC

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8, D-58509 Lüdenscheid  
 Dimmable  
 Electronic Converter for LED  
**Type ECXd 500.152**  
 Ref.-No. 186448  
 Made in China

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 500 mA  
**U<sub>c</sub>** = 13...20 V~  
**U<sub>out</sub>** < 30 V  
**P<sub>max</sub>** = 10 W  
**SELV**

■ L  
 ■ N

CE ENEC

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8  
 D-58509 Lüdenscheid  
 Dimmable  
 Electronic Converter for LED  
**Type ECXd 250.153**  
 Ref.-No. 186449

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 250 mA  
**U<sub>c</sub>** = 30...48 V~  
**U<sub>max</sub>** = 60 V  
**Prated** = 12 W  
**SELV**

■ L  
 ■ N

CE ENEC

**PRI**  
**Un** = 220...240V~  
**In** = 95...85 mA  
**fn** = 50/60Hz  
**λ** = 0,95

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8  
 D-58509 Lüdenscheid  
 Dimmable  
 Electronic Converter for LED  
**Type ECXd 700.154**  
 Ref.-No. 186450

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 700 mA  
**U<sub>c</sub>** = 16...26 V~  
**U<sub>max</sub>** = 35 V  
**Prated** = 18,2 W  
**SELV**  
**t<sub>a</sub>** = -15...45°C  
**t<sub>c</sub>** = 80°C

■ L  
 ■ N

CE ENEC

**PRI**  
**Un** = 220...240V~  
**In** = 190...170 mA  
**fn** = 50/60Hz  
**λ** = 0,95

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8  
 D-58509 Lüdenscheid  
 Dimmable  
 Electronic Converter for LED  
**Type ECXd 700.155**  
 Ref.-No. 186451  
 Made in PRC

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 700 mA  
**U<sub>c</sub>** = 32...52 V~  
**U<sub>max</sub>** = 60 V  
**Prated** = 36,4 W  
**SELV**  
**t<sub>a</sub>** = -15...45°C  
**t<sub>c</sub>** = 80°C

■ L  
 ■ N

CE ENEC

**PRI**  
**Un** = 220...240V~  
**In** = 110...100 mA  
**fn** = 50/60Hz  
**λ** = 0,95

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8  
 D-58509 Lüdenscheid  
 Dimmable  
 Electronic Converter for LED  
**Type ECXd 500.186**  
 Ref.-No. 186505

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 500 mA  
**U<sub>c</sub>** = 28...42 V~  
**U<sub>max</sub>** = 60 V  
**Prated** = 21 W  
**SELV**  
**t<sub>a</sub>** = -15...45°C  
**t<sub>c</sub>** = 75°C

■ L  
 ■ N

CE ENEC

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8, D-58509 Lüdenscheid  
 Electronic Converter for LED  
 LED控制装置  
**Type ECXd 250.270**  
 Ref.-No. 186710  
 中国制造

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 250 mA  
**U<sub>c</sub>** = 20...40 V~  
**U<sub>max</sub>** = 60 V  
**Prated** = 10 W  
**SELV**

■ L  
 ■ N

CE ENEC

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Hohe Steinert 8, D-58509 Lüdenscheid  
 Electronic Converter for LED  
 LED控制装置  
**Type ECXd 300.271**  
 Ref.-No. 186711  
 中国制造

EN 61347-1  
 EN 61347-2-13  
 EN 62384  
 EN 61000-3-2  
 EN 55015  
 EN 61547

**SEC**  
**I<sub>rated</sub>** = 300 mA  
**U<sub>c</sub>** = 20...40 V~  
**U<sub>max</sub>** = 60 V  
**Prated** = 12 W  
**SELV**

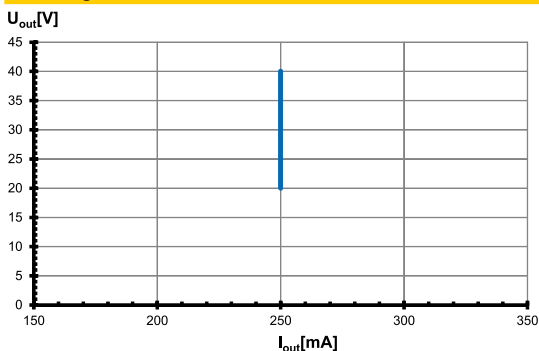
■ L  
 ■ N

CE ENEC

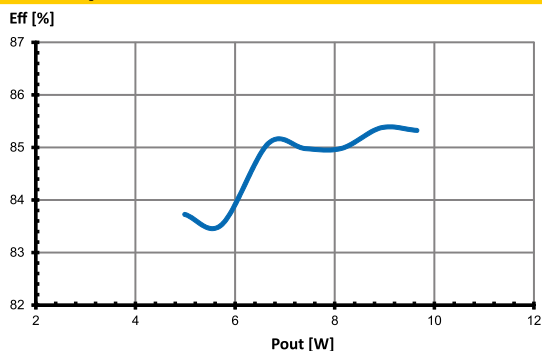
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## Typ. performance graphs for 186710 / Type ECXd 250.270

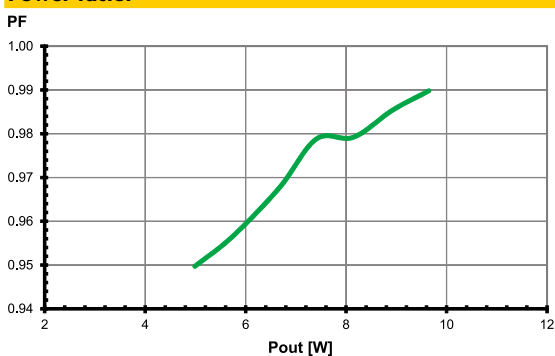
**Working area**



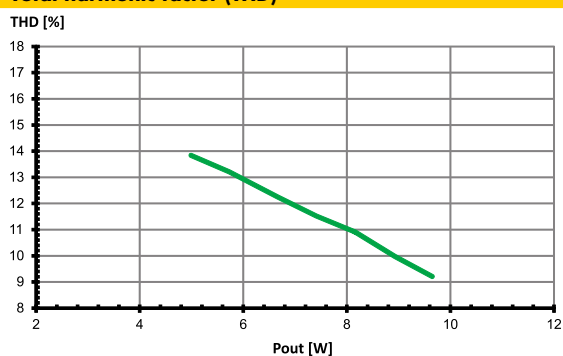
**Efficiency**



**Power factor**

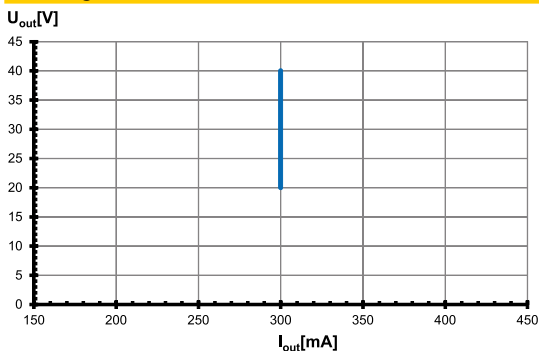


**Total harmonic factor (THD)**

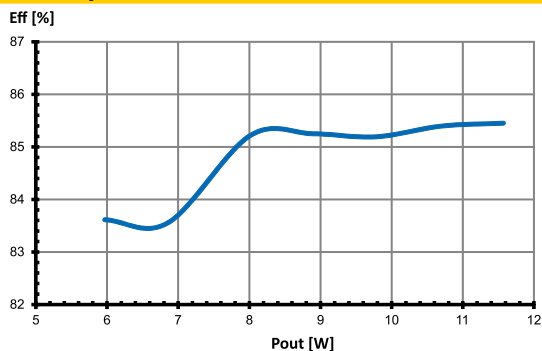


## Typ. performance graphs for 186711 / Type ECXd 300.271

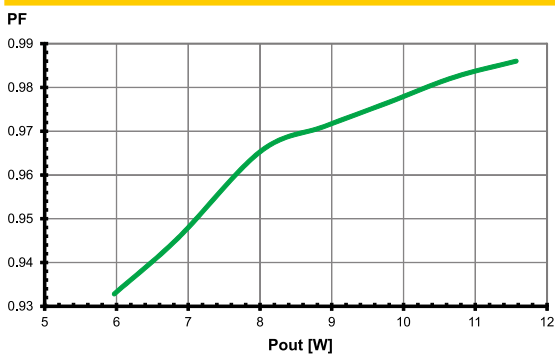
**Working area**



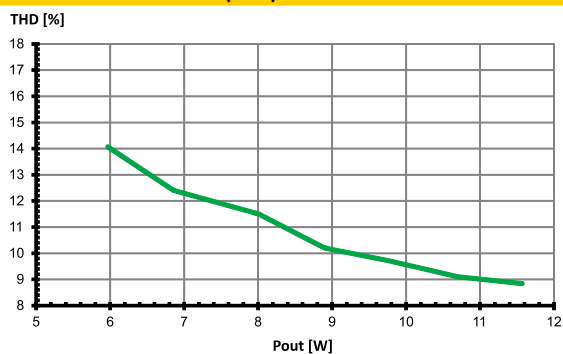
**Efficiency**



**Power factor**



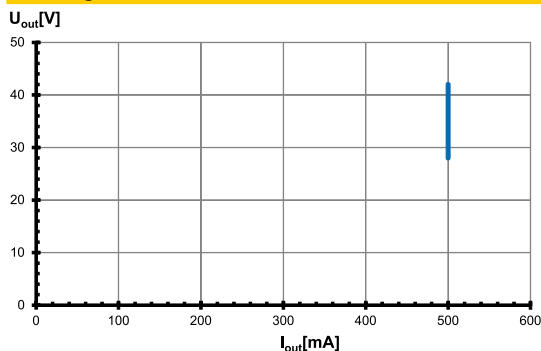
**Total harmonic factor (THD)**



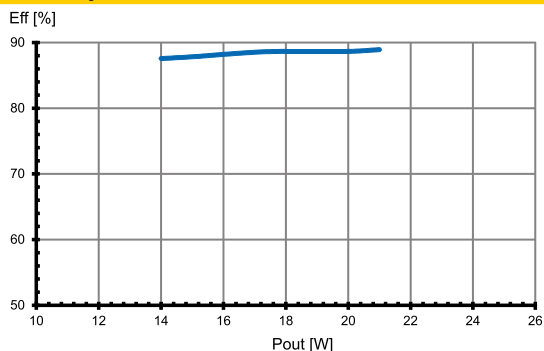
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## Typ. performance graphs for 186505 / Type ECXd 500.186

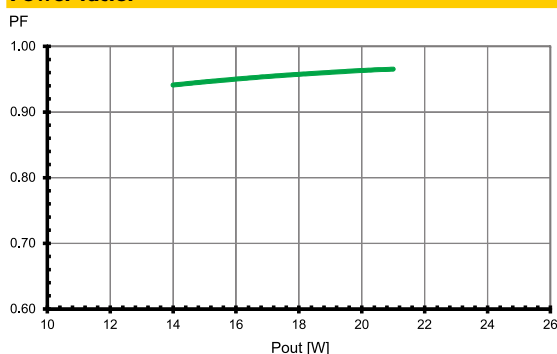
### Working area



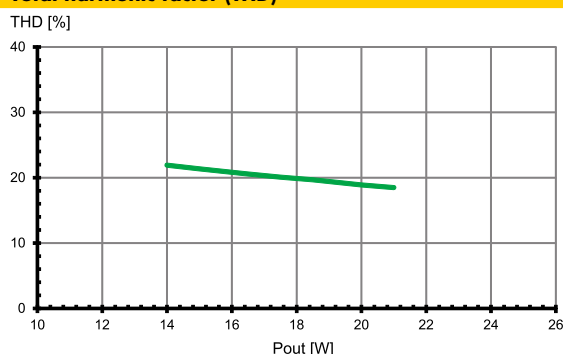
### Efficiency



### Power factor



### Total harmonic factor (THD)



## Safety functions

- Transient mains peaks protection:  
Values are in compliance with EN 61547 (interference immunity).  
Surges between L-N: up to 1 kV
- Short-circuit protection: Control gears are protected against short-term short-circuit
- Overload protection: Control gears only work in range of rated output power and voltage problemfree (< 60 V DC).  
Please check before switch-on mains power supply that the selected LED load is suitable (see Electrical Characteristics on data sheet).
- No load operation: Control gears are protected against no load operation (open load).
- If any of the above mentioned safety functions will be triggered, disconnect the control gear from the power supply then find and eliminate the cause of the problem.

## List of compatible dimmers

Manufacturer	Dimmer type
Elko	316 GLED
Elko	315 GLE
Elko	315 GLE 2-pol
Elko	630 GLE
Legrand	ASW3000H
Micromatic	UNILED+325
Moeller Eaton	x-comfort, type CDAE-01/02
SG	LEDDIM 400

Minimum dimmer load has to be observed.

Minimum dimming load incl. tolerances for LED drivers

- 186415: min. 12 W
- 186416: min. 16 W
- 186447: min. 4 W
- 186448: min. 7 W
- 186449: min. 7 W
- 186450: min. 12 W
- 186451: min. 23 W
- 186505: min. 14 W
- 186710: min. 5 W
- 186711: min. 6 W

The compatibility of the dimmers of other manufacturers has to be tested prior to installation.

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

## 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 drivers, fire and/or other hazards.

### Mandatory regulations

- DIN VDE 0100
- EN 60598-1

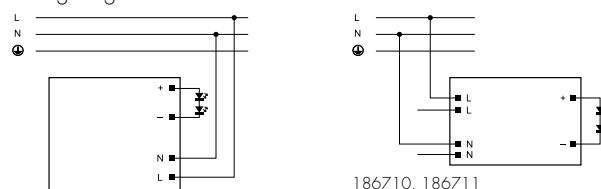
### Mechanical mounting

- Mounting position: Independent application: Drivers are allowed to use for independent applications
- Mounting location: Independent LED drivers do not need to be integrated into a casing.  
Installation in outdoor luminaires: degree of protection for luminaire with water protection rate  $\geq 4$  (e.g. IP54 required).
- Degree of protection: IP20
- Clearance: Min. 0.10 m from walls, ceilings and insulation
- Surface: Solid and plane surface for optimum heat dissipation required.
- Heat transfer: If the driver is destined for installation in a luminaire, sufficient heat transfer must be ensured between the driver and the luminaire casing.  
LED drivers should be mounted with the greatest possible clearance to heat sources. During operation, the temperature measure at the driver's  $t_c$  point must not exceed the specified maximum value.
- Fastening: Using M4 screws in the designated holes
- Tightening torque: 0.2 Nm

### Electrical installation

- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of primary: 0.75–1.5 mm<sup>2</sup>, secondary: 0.5–1.5 mm<sup>2</sup> or 0.25–1.5 mm<sup>2</sup> (186505) or 1.5–2.5 mm<sup>2</sup> (186710, 186711)
- Stripped length: 8.5–10 mm
- Wiring: The mains conductor within the luminaire must be kept short (to reduce the induction of interference).  
Mains and lamp conductors must be kept separate and if possible should not be laid in parallel to one another.  
Max. secondary side lead length: 3 m
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Through-wiring: Is not allowed.

- Secondary load: The sum of forward voltages of LED loads is within the tolerances which are mentioned in the Electrical Characteristics on the data sheet.
- Parallel wiring: Parallel connection of LED loads is not allowed.
- Wiring diagram:



### Selection of automatic cut-outs for VS LED drivers

- Dimensioning automatic cut-outs  
High transient currents occur when an LED driver is switched on because the capacitors have to load. Ignition of LED modules occurs almost simultaneously. This also causes a simultaneous high demand for power. These high currents when the system is switched on put a strain on the automatic conductor cut-outs, which must be selected and dimensioned to suit.
- Release reaction  
The release reaction of the automatic conductor cut-outs comply with VDE 0641, part 11, for B, C characteristics. The values shown in the following tables are for guidance purposes only and are subject to system-dependent change.
- No. of LED drivers  
The maximum number of VS LED drivers applies to cases where the devices are switched on simultaneously. Specifications apply to single-pole fuses. The number of permissible drivers must be reduced by 20% for multi-pole fuses. The considered circuit impedance equals 400 mΩ (approx. 20 m [2.5 mm<sup>2</sup>] of conductor from the power supply to the distributor and a further 15 m to the luminaire).

Type	Ref. No.	Automatic cut-out type and possible no. of VS drivers pcs.					
Automatic cut-out type		B 10 A	B 13 A	B 16 A	C 10 A	C 13 A	C 16 A
ECXd 350.130	<b>186415</b>	23	30	37	39	50	62
ECXd 700.131	<b>186416</b>	22	29	36	37	49	60
ECXd 150.151	<b>186447</b>	113	147	181	189	245	302
ECXd 500.152	<b>186448</b>	127	166	204	166	216	266
ECXd 250.153	<b>186449</b>	124	162	199	142	185	228
ECXd 700.154	<b>186450</b>	24	31	39	40	52	65
ECXd 700.155	<b>186451</b>	21	27	34	35	46	56
ECXd 500.186	<b>186505</b>	79	103	126	79	103	126
ECXd 250.270	<b>186710</b>	169	220	271	169	220	271
ECXd 300.271	<b>186711</b>	144	188	231	144	188	231

- To limit capacitive inrush currents the current carrying capacity of each circuit breaker (fuse) can be increased by a factor of 2.5 with the help of our ESB (Ref. No.: 149820, 149821, 149822) inrush current limiters.

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