

# CC COMPACT SIMPLE FIX DIMMABLE



## EASYLINE SIMPLE FIX C-PC MINI

**186905, 186906, 186907, 186908, 186909, 186910**

### Typical Applications

Built-in in compact luminaires for

- Retail lighting
- Residential lighting



### EasyLine Simple Fix C-PC mini

- **DIMMABLE: PHASE-CUT TRAILING-EDGE**
- **DIMMING METHOD: ANALOGUE**
- **SELV**
- **LONG SERVICE LIFE:  
UP TO 50,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



## EasyLine Simple Fix C-PC mini

### Product features

- Compact casing shape

### Electrical features

- Mains voltage: 220–240 V  $\pm 10\%$
- Mains frequency: 50–60 Hz
- Push-in terminals: 0.5–1.5 mm<sup>2</sup>
- Power factor at full load: 0.99
- Open circuit voltage ( $U_{max.}$ ): 60 V
- Secondary side switching of LED modules is not allowed.

### Dimming

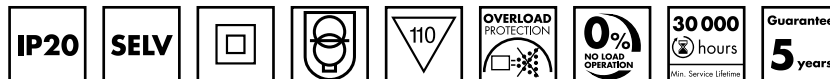
- Dimmable with phase-cutting trailing-edge dimmer
- The compatibility of the driver and the dimmer has to be confirmed prior to installation to avoid flickering and/or noises.
- Dimming range: 5–100%
- If no dimming interface is connected, brightness will stay at 100%.

### Safety features

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

### Packaging units

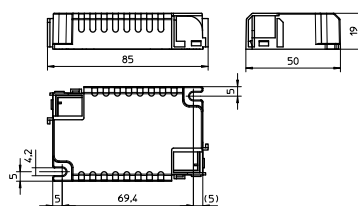
Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186905	60	114	45
186906	60	114	46
186907	60	114	47
186908	60	90	60
186909	60	90	60



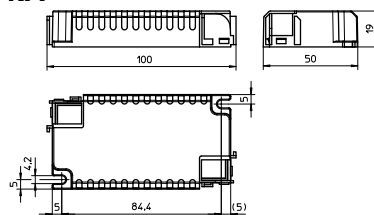
### Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
186905	K76	85	50	19
186906	K76	85	50	19
186907	K76	85	50	19
186908	K77	100	50	19
186909	K77	100	50	19

#### K76



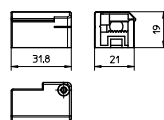
#### K77



### Cord grips K76/K77

Available for independent operation  
Contains two cord grips and screws

**Ref. No.: 186910**



### Applied standards

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



### 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.

# LED Drivers – EasyLine Simple Fix C-PC mini

## 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 %
4	ECXd 100.370	<b>186905</b>	220–240	23	0.41 / 50	100	29–40	13	78.5	21
6	ECXd 150.371	<b>186906</b>	220–240	33	0.72 / 49	150	29–40	12	80	24
8	ECXd 200.372	<b>186907</b>	220–240	44	0.77 / 56	200	29–40	12	81	26
10	ECXd 250.373	<b>186908</b>	220–240	52	1.15 / 38	250	29–40	11	84.5	19
14	ECXd 350.374	<b>186909</b>	220–240	72	1.83 / 23	350	29–40	10	85.5	21

## 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.		
All	-20	+50	5	60	-40	+85	5	95	+80	IP20

## Expected service life time

at operation temperatures at  $t_c$  point

Operation current	Ref. No.	
All	70 °C*	80 °C
hrs.	50,000	30,000

\* recommended operation temperature

## Product labels

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Converter for LED  
**Type ECXd 100.370**  
 Ref.-No. 186905 •  $t_c=80^\circ\text{C}$   
 Made in China  $t_a=-20\dots+50^\circ\text{C}$

**PRI** UN=220...240V~ I<sub>rated</sub>=100 mA  
 I<sub>N</sub>=24...22 mA U = 29...40V  
 f<sub>N</sub>=50/60Hz U<sub>max</sub>=60V  
 $\lambda=0.95$  SELV Protetd = 4 W

CE UK CA EAC

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Converter for LED  
**Type ECXd 150.371**  
 Ref.-No. 186906 •  $t_c=80^\circ\text{C}$   
 Made in China  $t_a=-20\dots+50^\circ\text{C}$

**PRI** UN=220...240V~ I<sub>rated</sub>=150 mA  
 I<sub>N</sub>=35...32 mA U = 29...40V  
 f<sub>N</sub>=50/60Hz U<sub>max</sub>=60V  
 $\lambda=0.95$  SELV Protetd = 6 W

CE UK CA EAC

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Converter for LED  
**Type ECXd 200.372**  
 Ref.-No. 186907 •  $t_c=80^\circ\text{C}$   
 Made in China  $t_a=-20\dots+50^\circ\text{C}$

**PRI** UN=220...240V~ I<sub>rated</sub>=200 mA  
 I<sub>N</sub>=46...42 mA U = 29...40V  
 f<sub>N</sub>=50/60Hz U<sub>max</sub>=60V  
 $\lambda=0.95$  SELV Protetd = 6 W

CE UK CA EAC

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Converter for LED  
**Type ECXd 250.373** •  $t_c=80^\circ\text{C}$   
 Ref.-No. 186908  $t_a=-20\dots+50^\circ\text{C}$   
 Made in China

**PRI** UN=220...240V~ I<sub>rated</sub>=250 mA  
 I<sub>N</sub>=55...50 mA U = 29...40V  
 f<sub>N</sub>=50/60Hz U<sub>max</sub>=60V  
 $\lambda=0.95$  SELV Protetd = 10 W

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**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Converter for LED  
**Type ECXd 350.374** •  $t_c=80^\circ\text{C}$   
 Ref.-No. 186909  $t_a=-20\dots+50^\circ\text{C}$   
 Made in China

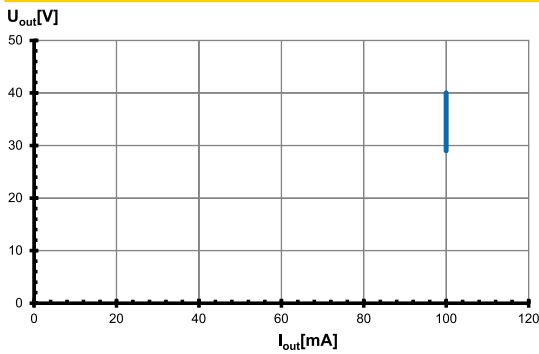
**PRI** UN=220...240V~ I<sub>rated</sub>=350 mA  
 I<sub>N</sub>=76...70 mA U = 29...40V  
 f<sub>N</sub>=50/60Hz U<sub>max</sub>=60V  
 $\lambda=0.95$  SELV Protetd = 14 W

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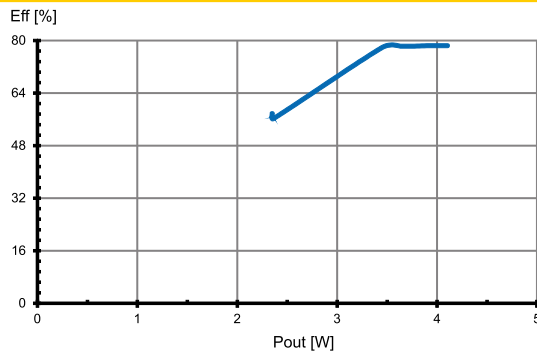
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## Typ. performance graphs for 186905 / Type ECXd 100.370

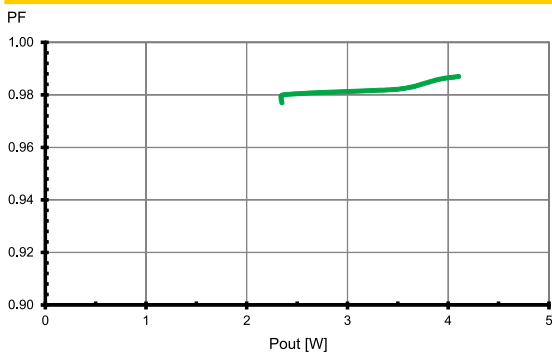
### Working area



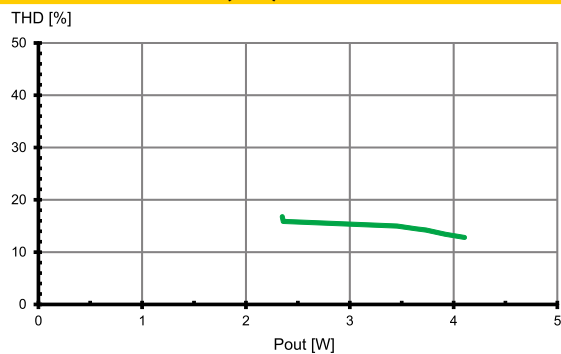
### Efficiency



### Power factor

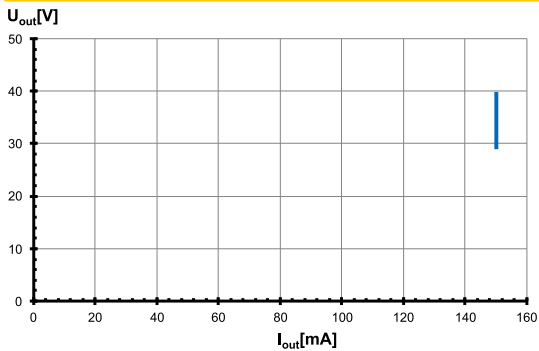


### Total harmonic factor (THD)

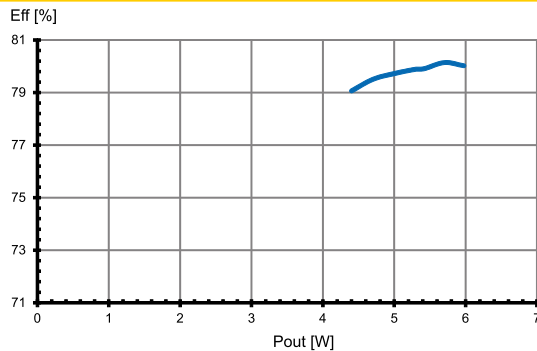


## Typ. performance graphs for 186906 / Type ECXd 150.371

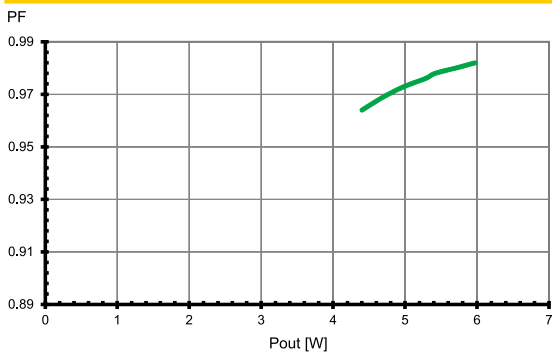
### Working area



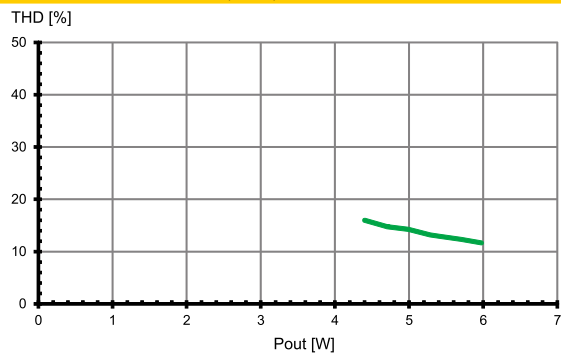
### Efficiency



### Power factor



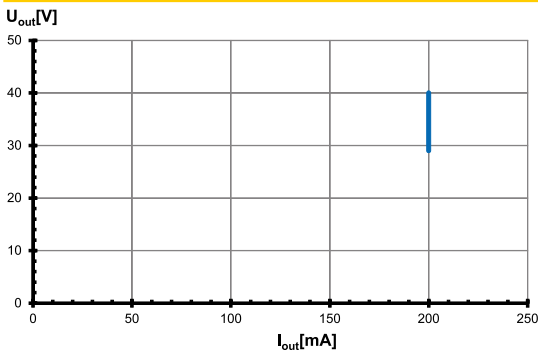
### Total harmonic factor (THD)



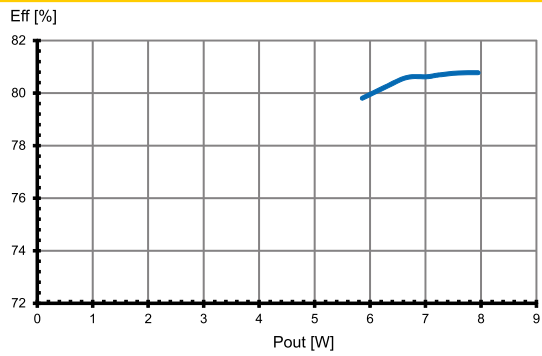
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## Typ. performance graphs for 186907 / Type ECXd 200.372

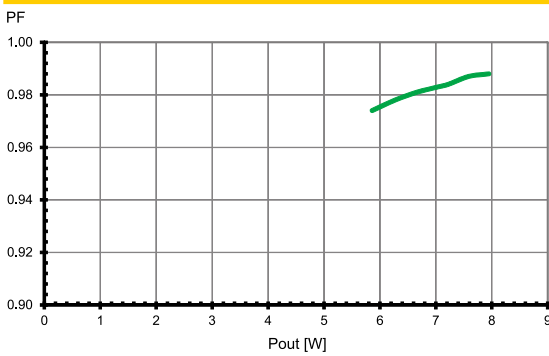
### Working area



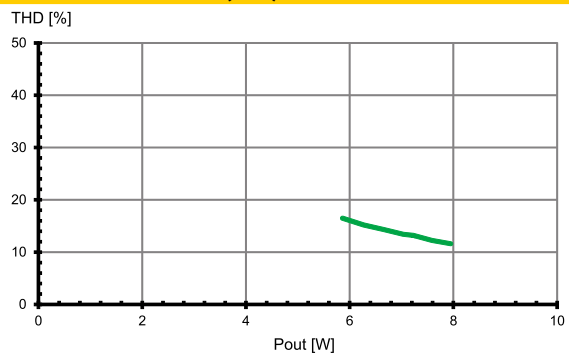
### Efficiency



### Power factor

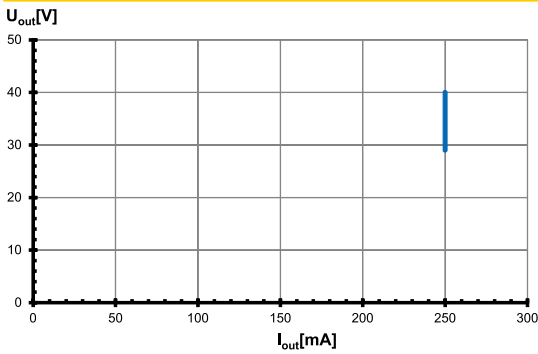


### Total harmonic factor (THD)

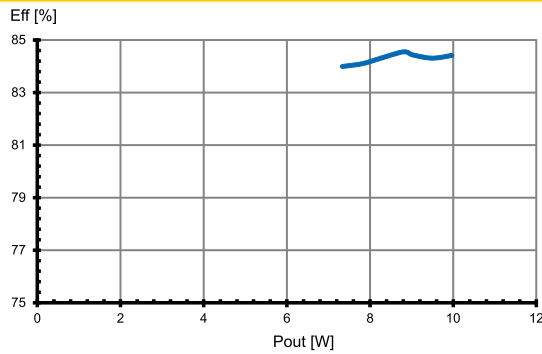


## Typ. performance graphs for 186908 / Type ECXd 250.373

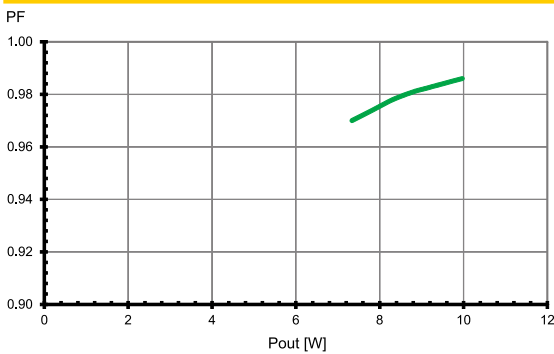
### Working area



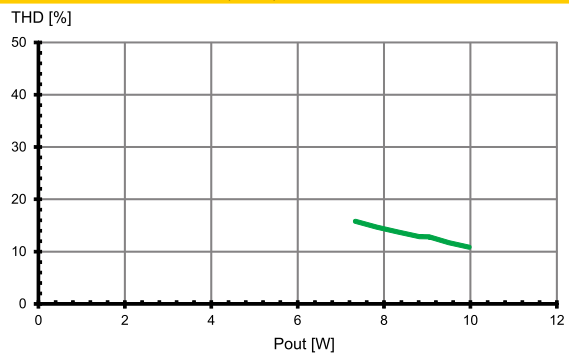
### Efficiency



### Power factor



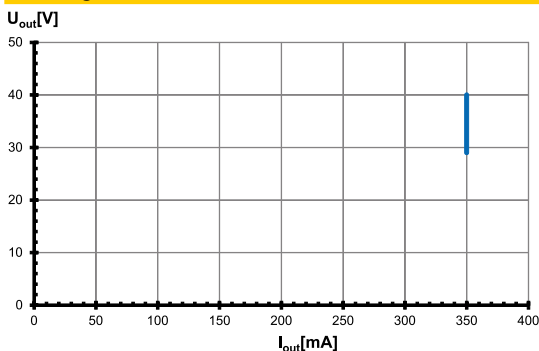
### Total harmonic factor (THD)



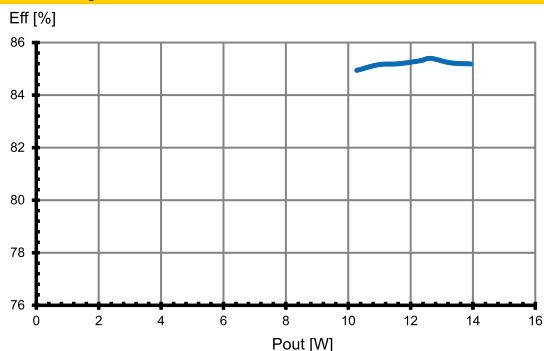
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## Typ. performance graphs for 186909 / Type ECXd 350.374

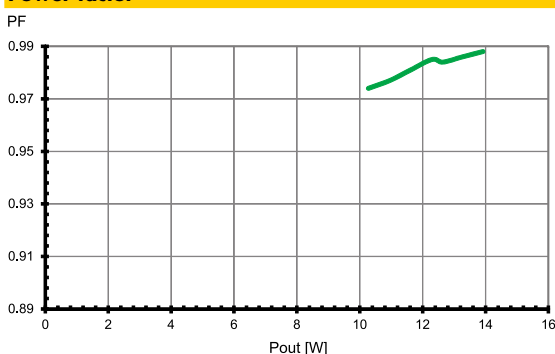
### Working area



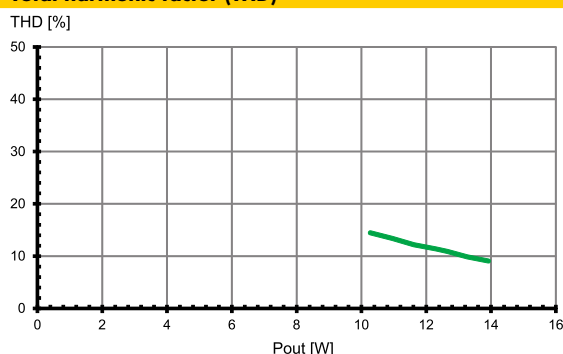
### Efficiency



### 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.  
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	315 GLE
Elko	315 GLE 2-pol
Elko	316 GLED
Elko	630 GLE
Legrand	ASW 3000H
Micromatic	UNI LED + 325
Moeller Eaton	CDAE - 01/04
SG	LEDDIM 400

Minimum dimmer load has to be observed.  
Minimum dimming load incl. tolerances for LED drivers

- 186905: min. 3.2 W
- 186906: min. 4.4 W
- 186907: min. 5.8 W
- 186908: min. 6.9 W
- 186909: min. 10.8 W

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

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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 drivers, fire and/or other hazards.

### Mandatory regulations

- DIN VDE 0100
- EN 60598-1

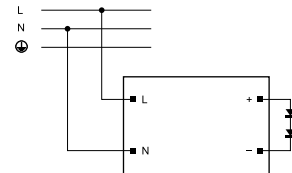
### Mechanical mounting

- Mounting position: Built-in: Any position inside a luminaire is allowed  
Independent application: Drivers are allowed to use for independent applications with separate cord grip (Ref. No.: 186910).
- Mounting location: LED drivers are designed for integration into luminaires or comparable devices. 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: 0.5–1.5 mm<sup>2</sup>
- 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.					
		B 10 A	B 13 A	B 16 A	C 10 A	C 13 A	C 16 A
ECXd 100.370	<b>186905</b>	384	500	615	384	500	615
ECXd 150.371	<b>186906</b>	263	342	421	263	342	421
ECXd 200.372	<b>186907</b>	263	342	421	263	342	421
ECXd 250.373	<b>186908</b>	166	216	266	166	216	266
ECXd 350.374	<b>186909</b>	120	156	192	120	156	192

- 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.

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