

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 ±10%
- Mains frequency: 50–60 Hz
- Push-in terminals: 0.5–1.5 mm²
- Power factor at full load: 0.99
- Open circuit voltage (U_{max.}): 60 V
- Secondary side switching of LED modules is not allowed.

Dimming

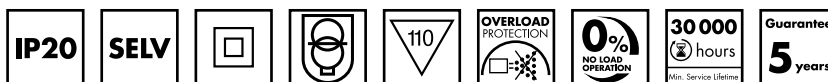
- Dimmable with phase-cutting trailing-edge dimmer
- The compatibility of the driver and the dimmer has to be confirmed prior to installation to avoid flickering and/or noises.
- Dimming range: 5–100%
- If no dimming interface is connected, brightness will stay at 100%.

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

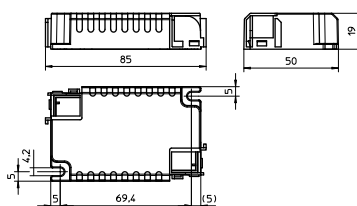
Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186905	60	114	45
186906	60	114	46
186907	60	114	47
186908	60	90	60
186909	60	90	60



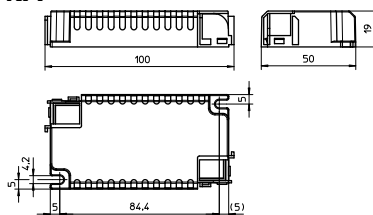
Dimensions

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



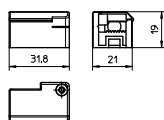
K77



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). 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 / μ 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	186905	220–240	23	0.41 / 50	100	29–40	13	78.5	21
6	ECXd 150.371	186906	220–240	33	0.72 / 49	150	29–40	12	80	24
8	ECXd 200.372	186907	220–240	44	0.77 / 56	200	29–40	12	81	26
10	ECXd 250.373	186908	220–240	52	1.15 / 38	250	29–40	11	84.5	19
14	ECXd 350.374	186909	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
 Hohe Steinert 8 D-58509 Lüdenscheid
 Electronic Converter for LED LED控制装置
Type ECXd 100.370
 Ref.-No. 186905 • $t_c = 80^\circ\text{C}$
 Made in China 中国制造 $t_a = -20 \dots 50^\circ\text{C}$

PRI UN=220...240V~ I-rated=100 mA
 $I_N = 24 \dots 22 \text{ mA}$ $U = 29 \dots 40 \text{ V}$
 $f_N = 50/60 \text{ Hz}$ $U_{\text{max}} = 60 \text{ V}$
 $\lambda = 0.95$ **SELV** $P_{\text{rated}} = 4 \text{ W}$

VS LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Hohe Steinert 8 D-58509 Lüdenscheid
 Electronic Converter for LED LED控制装置
Type ECXd 150.371
 Ref.-No. 186906 • $t_c = 80^\circ\text{C}$
 Made in China 中国制造 $t_a = -20 \dots 50^\circ\text{C}$

PRI UN=220...240V~ I-rated=150 mA
 $I_N = 35 \dots 32 \text{ mA}$ $U = 29 \dots 40 \text{ V}$
 $f_N = 50/60 \text{ Hz}$ $U_{\text{max}} = 60 \text{ V}$
 $\lambda = 0.95$ **SELV** $P_{\text{rated}} = 6 \text{ W}$

VS LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Hohe Steinert 8 D-58509 Lüdenscheid
 Electronic Converter for LED LED控制装置
Type ECXd 200.372
 Ref.-No. 186907 • $t_c = 80^\circ\text{C}$
 Made in China 中国制造 $t_a = -20 \dots 50^\circ\text{C}$

PRI UN=220...240V~ I-rated=200 mA
 $I_N = 46 \dots 42 \text{ mA}$ $U = 29 \dots 40 \text{ V}$
 $f_N = 50/60 \text{ Hz}$ $U_{\text{max}} = 60 \text{ V}$
 $\lambda = 0.95$ **SELV** $P_{\text{rated}} = 8 \text{ W}$

VS LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Hohe Steinert 8 D-58509 Lüdenscheid
 Electronic Converter for LED LED控制装置 $t_c = 80^\circ\text{C}$
Type ECXd 250.373 • t_c $t_a = -20 \dots 50^\circ\text{C}$
 Ref.-No. 186908
 Made in China 中国制造

PRI UN=220...240V~ I-rated=250 mA
 $I_N = 55 \dots 50 \text{ mA}$ $U = 29 \dots 40 \text{ V}$
 $f_N = 50/60 \text{ Hz}$ $U_{\text{max}} = 60 \text{ V}$
 $\lambda = 0.95$ **SELV** $P_{\text{rated}} = 10 \text{ W}$

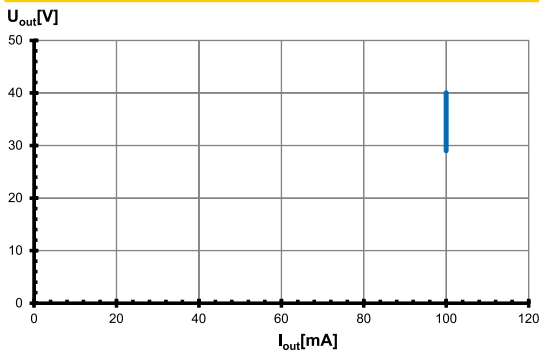
VS LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Hohe Steinert 8 D-58509 Lüdenscheid
 Electronic Converter for LED LED控制装置 $t_c = 80^\circ\text{C}$
Type ECXd 350.374 • t_c $t_a = -20 \dots 50^\circ\text{C}$
 Ref.-No. 186909
 Made in China 中国制造

PRI UN=220...240V~ I-rated=350 mA
 $I_N = 76 \dots 70 \text{ mA}$ $U = 29 \dots 40 \text{ V}$
 $f_N = 50/60 \text{ Hz}$ $U_{\text{max}} = 60 \text{ V}$
 $\lambda = 0.95$ **SELV** $P_{\text{rated}} = 14 \text{ W}$

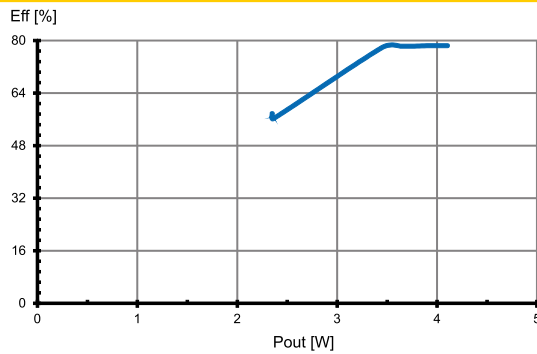
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Typ. performance graphs for 186905 / Type ECXd 100.370

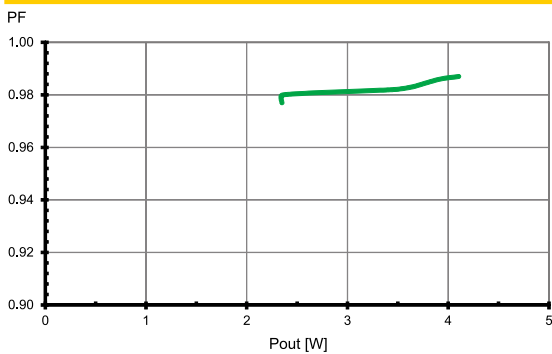
Working area



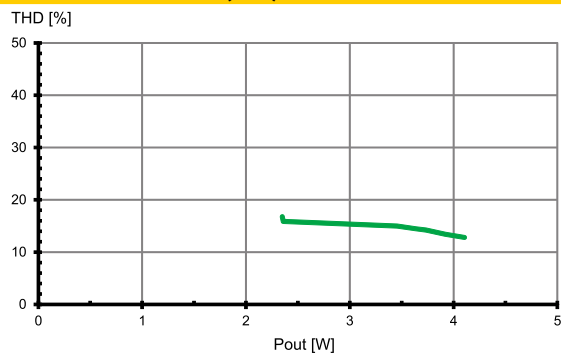
Efficiency



Power factor

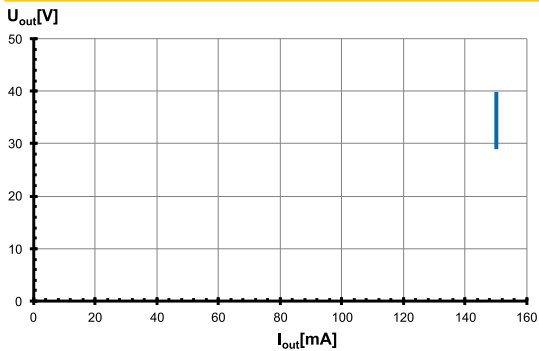


Total harmonic factor (THD)

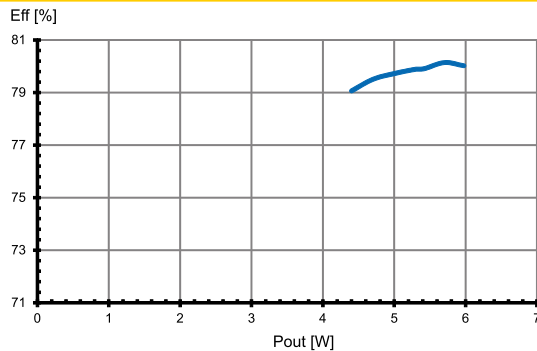


Typ. performance graphs for 186906 / Type ECXd 150.371

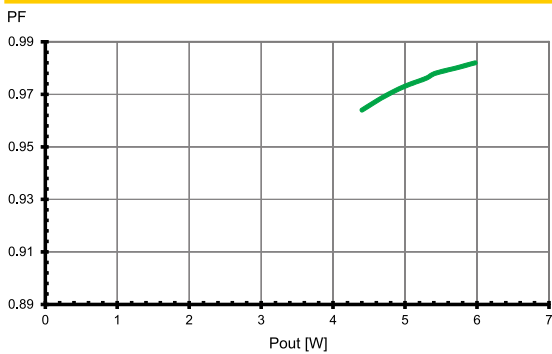
Working area



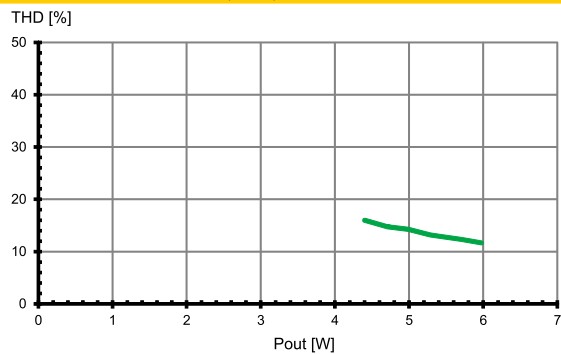
Efficiency



Power factor



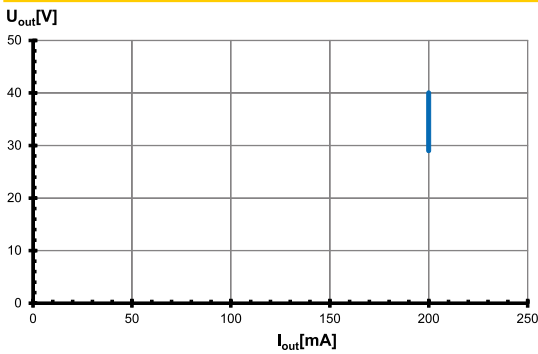
Total harmonic factor (THD)



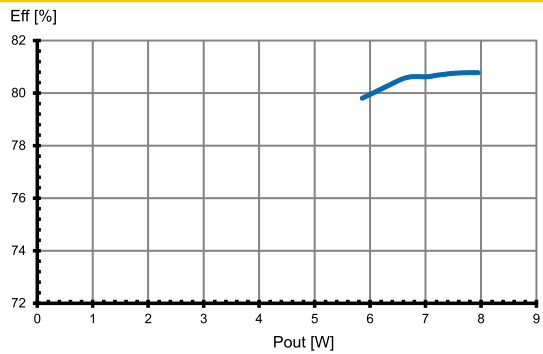
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Typ. performance graphs for 186907 / Type ECXd 200.372

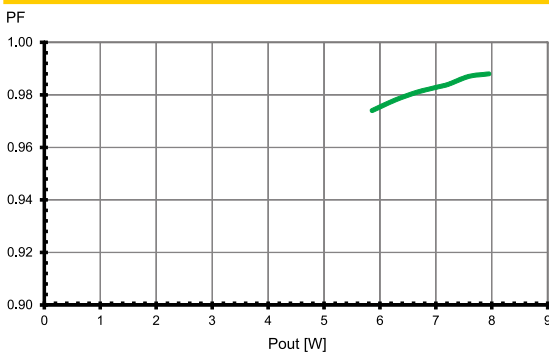
Working area



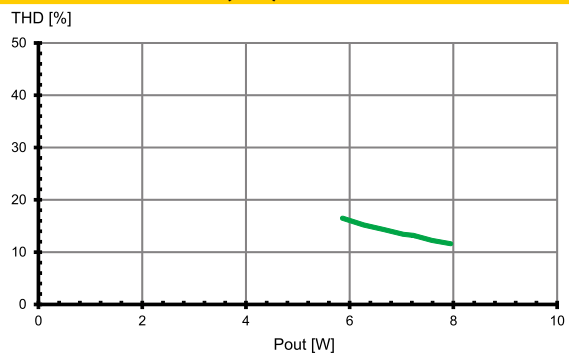
Efficiency



Power factor

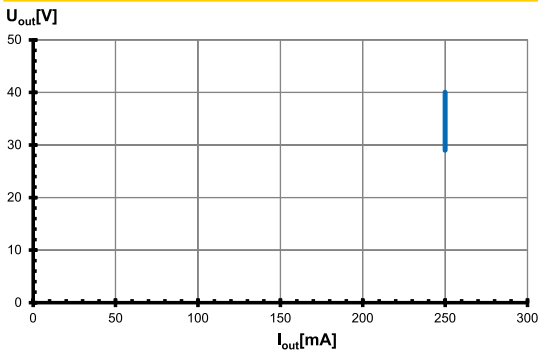


Total harmonic factor (THD)

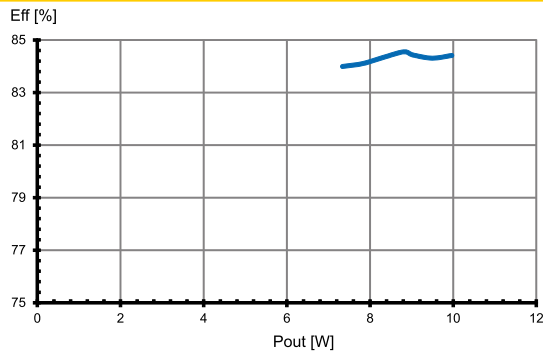


Typ. performance graphs for 186908 / Type ECXd 250.373

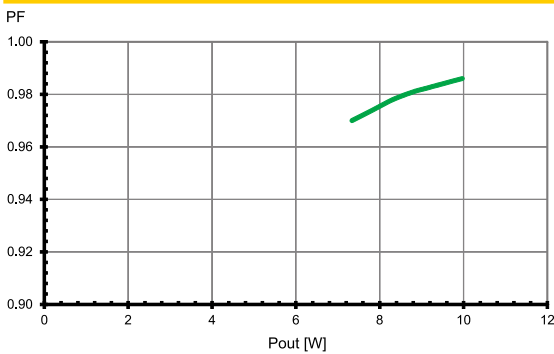
Working area



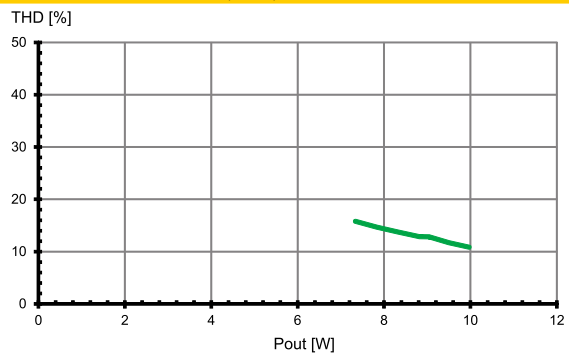
Efficiency



Power factor



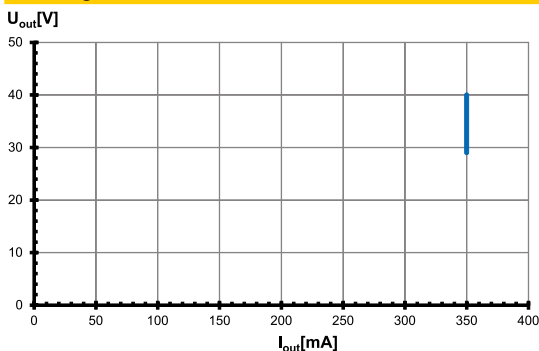
Total harmonic factor (THD)



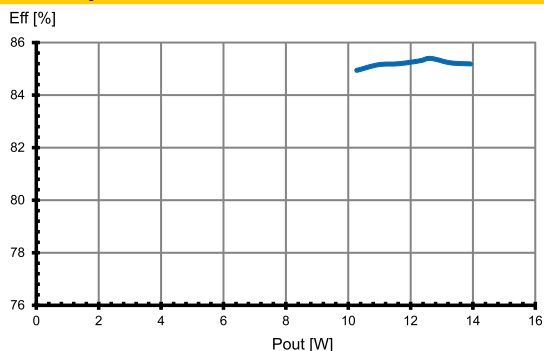
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Typ. performance graphs for 186909 / Type ECXd 350.374

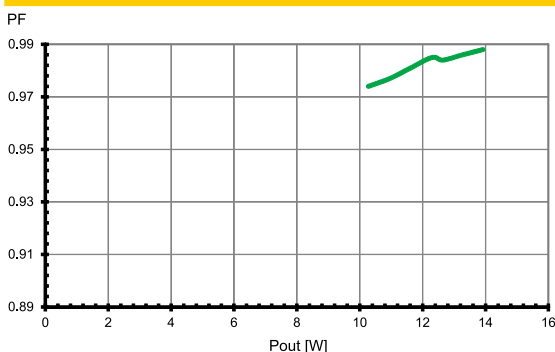
Working area



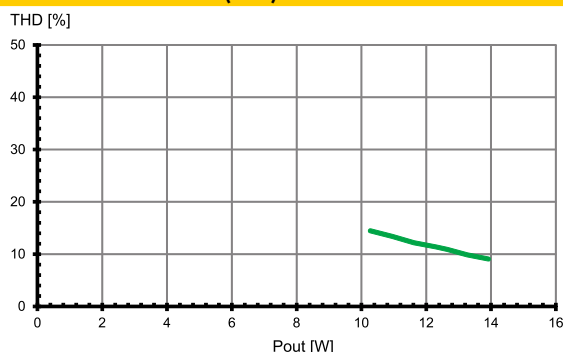
Efficiency



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

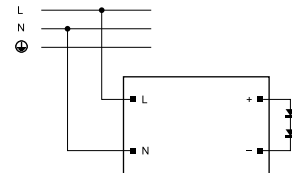
Mechanical mounting

- 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 ≥ 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 mm²
- 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 m Ω (approx. 20 m [2.5 mm²] 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 100.370	186905	384	500	615	384	500	615
ECXd 150.371	186906	263	342	421	263	342	421
ECXd 200.372	186907	263	342	421	263	342	421
ECXd 250.373	186908	166	216	266	166	216	266
ECXd 350.374	186909	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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