

# CC COMPACT DIMMABLE



## COMFORTLINE SIMPLE FIX C-R5 100 V DALI2

**187221, 187222**

### Typical Applications

Built-in in compact luminaires

- Office lighting
- Residential lighting



### ComfortLine Simple Fix C-R5 100 V DALI2

- **DIMMABLE: DALI (ED. 2)**
- **WIDE INPUT VOLTAGE RANGE: 100–240 V**
- **WITH INTEGRATED CORD GRIP FOR INDEPENDENT OPERATION**
- **SELV**
- **SUITABLE FOR BUILT-IN INTO FURNITURE**
- **PRODUCT GUARANTEE: 5 YEARS**



## ComfortLine Simple Fix C-R5 100 V DALI2

### Product features

- Compact casing shape
- For independent operation with cord grip

### Functions

- Fixed output current

### Electrical features

- Mains voltage: 100–240 V ±10%
- Mains frequency: 50–60 Hz
- Push-in terminals: 0.5–1.5 mm<sup>2</sup>
- Power factor at full load: > 0.9
- Standby losses: < 0.5 W
- Open circuit voltage (U<sub>max.</sub>): 60 V
- Secondary side switching of LED modules is not allowed.

### Dimming

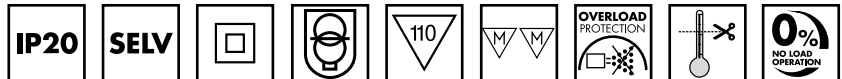
- Dimming range: 1 to 100%
- If no dimming interface is connected, brightness will stay at 100%.

### Safety features

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

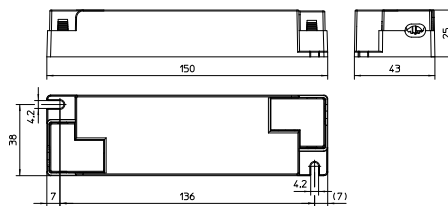
### Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187222	20	140	108
187221	20	140	186



### Dimensions

- Casing: K93
- Length: 150 mm
- Width: 43 mm
- Height: 25 mm



### Cord grip for K93

For independent operation not mounted but enclosed

### 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.

### Applied standards

- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-3
- EN 62384
- EN 55015
- IEC 62386 ed. 2 part 102/103/207
- VDE 0710-T14



### Dimming

Analogue



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# LED Drivers – ComfortLine Simple Fix C-R5 100 V DALI2

## 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 ( $\pm$ 5%)	Voltage output DC (V)	THD %	Efficiency at full load % (230 V)	Ripple 100 Hz %
9	ECXd 700.564	<b>187222</b>	100–240	120–53	11 / 190	700	5–13	20	> 80	< 5
16	ECXd 350.563	<b>187221</b>	100–240	92–86	13 / 184	350	23–46	18	> 84	< 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.		
187221	-15	+45	20	60	-40	+85	5	95	+85	IP20
187222	-15	+45	20	60	-40	+85	5	95	+70	IP20

## Expected service life time

at operation temperatures at  $t_c$  point

Operation current	Ref. No. 187221		Ref. No. 187222	
	Max.	75 °C	85 °C	60 °C
hrs.	50,000	30,000	50,000	30,000

## Product labels

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Controlgear for LED  
**Type ECXd 350.563**  
 Ref.-No. 187221  
 Made in China

**SEC**  
**I<sub>rated</sub> = 350 mA**  
**U<sub>rated</sub> = 23...46 V  $\overline{m}$**   
 U<sub>max</sub> = 60 V  
 Prated = 16 W  
 •  $t_c$

**DA/Ls**  
**DA/N**  
**N**  
**L**

**PRI**  
**U<sub>N</sub> = 100-240V ~**  
 I<sub>N</sub> = 210...80 mA  
 f<sub>N</sub> = 50/60 Hz  
 $\lambda$  = 0,9C

$t_a = -15...45^\circ\text{C}$   
 $t_c = 85^\circ\text{C}$

0,75-1,5□  
 18-9mm

0,5-1,5□  
 18-9mm

LED + ■  
 SEC  
 LED - ■

**DALI**  
**PUSH**

**UK CA EAC SELV EAC**

**VS LIGHTING SOLUTIONS**  
 Vossloh-Schwabe Deutschland GmbH  
 Stuttgarter Straße 61/1, 73614 Schorndorf  
 Electronic Controlgear for LED  
**Type ECXd 700.564**  
 Ref.-No. 187222  
 Made in China

**SEC**  
**I<sub>rated</sub> = 700 mA**  
**U<sub>rated</sub> = 5...13 V  $\overline{m}$**   
 U<sub>max</sub> = 35 V  
 Prated = 9 W  
 •  $t_c$

**DA/Ls**  
**DA/N**  
**N**  
**L**

**PRI**  
**U<sub>N</sub> = 100-240V ~**  
 I<sub>N</sub> = 118...50 mA  
 f<sub>N</sub> = 50/60 Hz  
 $\lambda$  = 0,9C

$t_a = -15...45^\circ\text{C}$   
 $t_c = 70^\circ\text{C}$

0,75-1,5□  
 18-9mm

0,5-1,5□  
 18-9mm

LED + ■  
 SEC  
 LED - ■

**DALI**  
**PUSH**

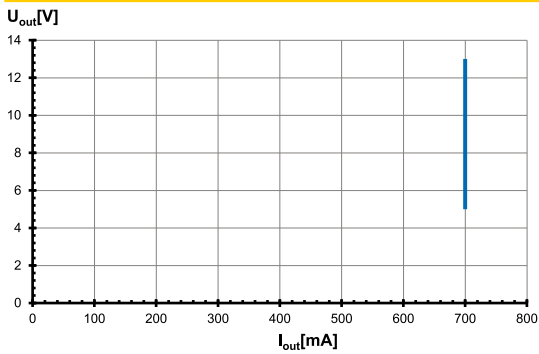
**UK CA SELV EAC**

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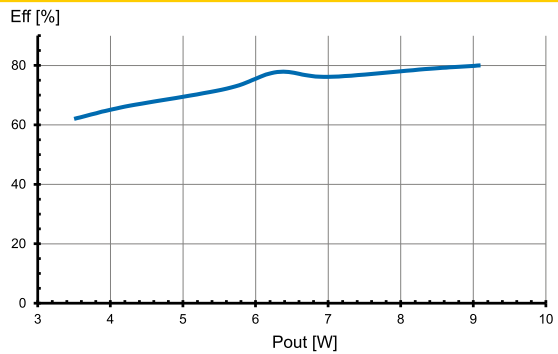
# LED Drivers – ComfortLine Simple Fix C-R5 100 V DALI2

## Typ. performance graphs for 187222 / Type ECXd 700.564 at 230 V

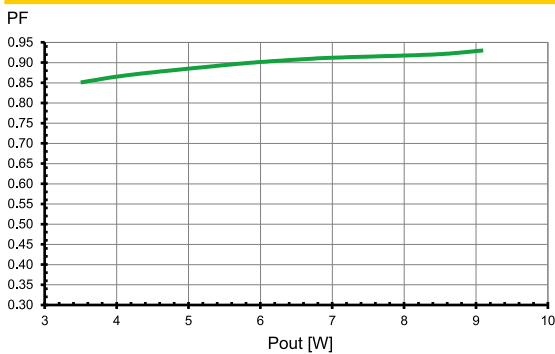
### Working area



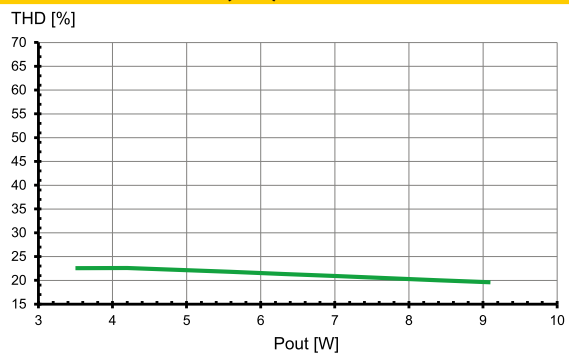
### Efficiency



### Power factor

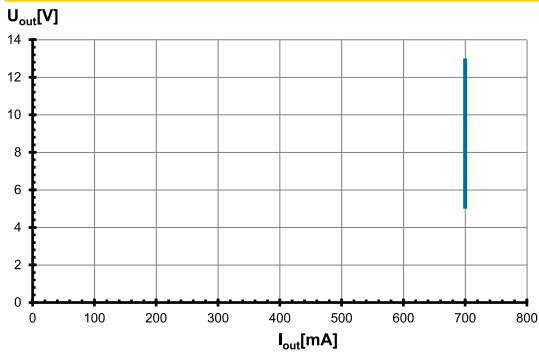


### Total harmonic factor (THD)

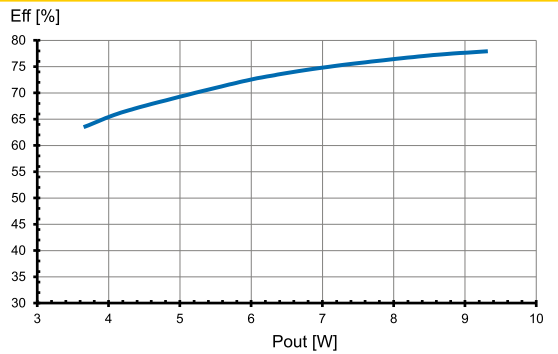


## Typ. performance graphs for 187222 / Type ECXd 700.564 at 100 V

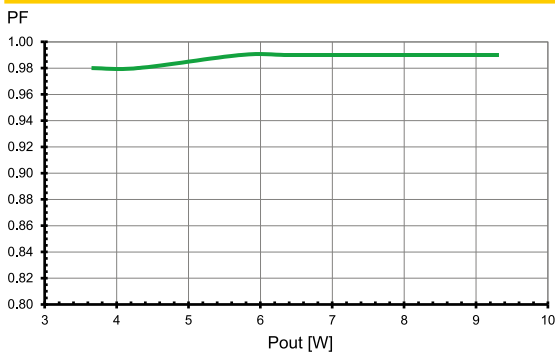
### Working area



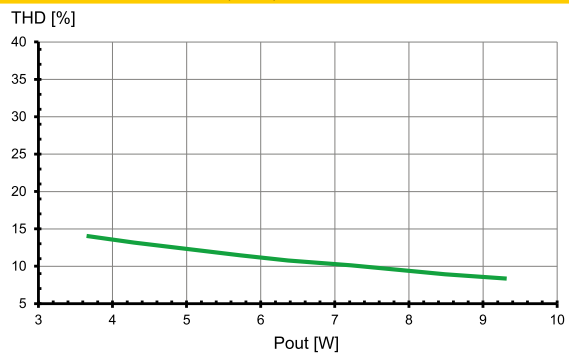
### Efficiency



### Power factor



### Total harmonic factor (THD)

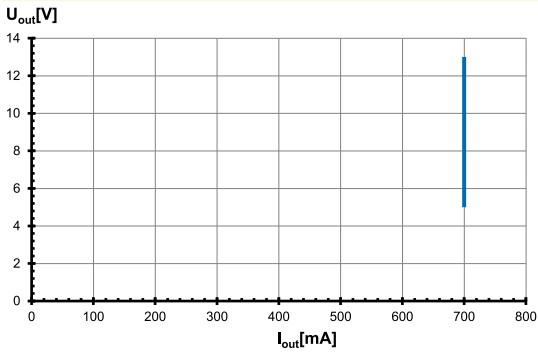


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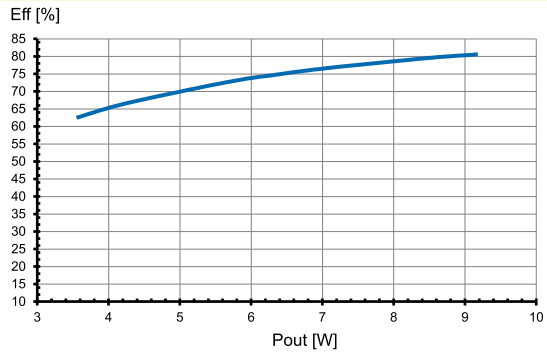
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## Typ. performance graphs for 187222 / Type ECXd 700.564 at 240 V

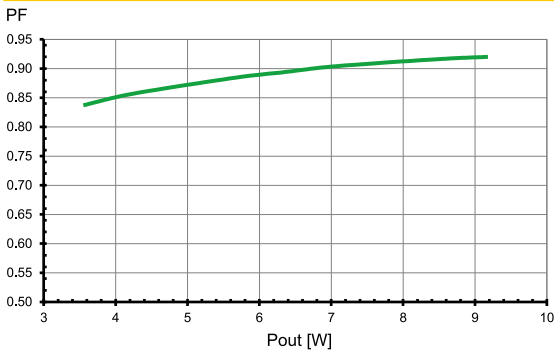
### Working area



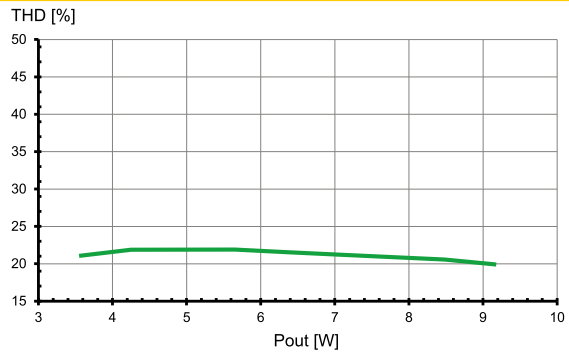
### Efficiency



### Power factor

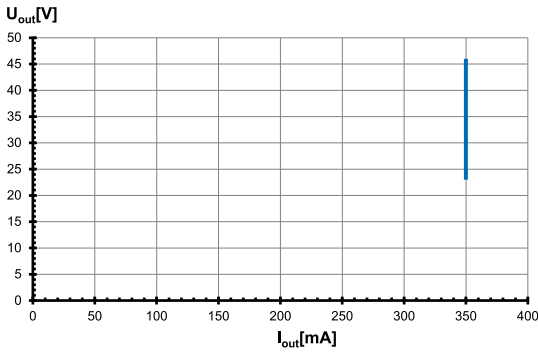


### Total harmonic factor (THD)

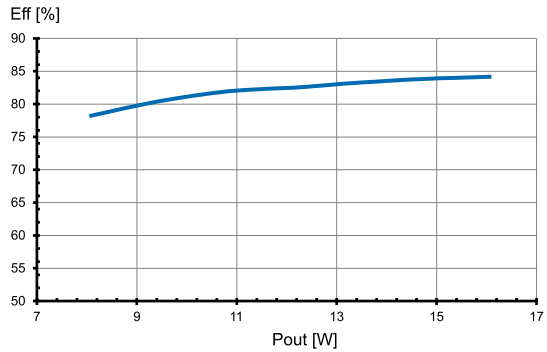


## Typ. performance graphs for 187221 / Type ECXd 350.563 at 230 V

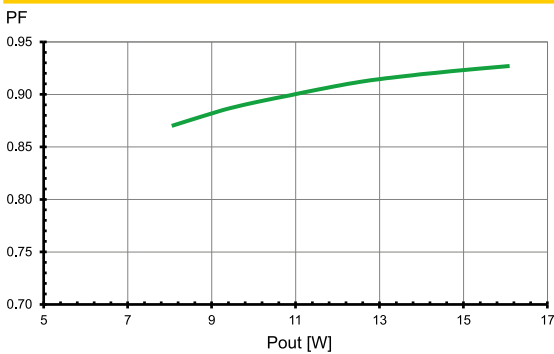
### Working area



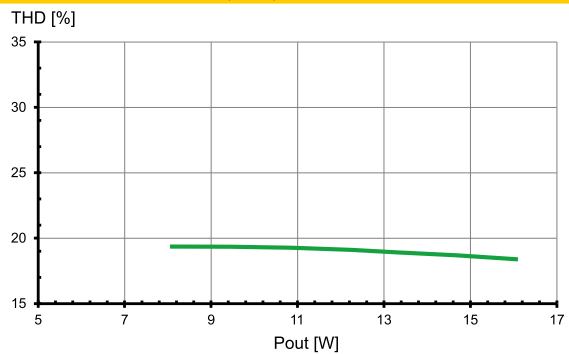
### Efficiency



### Power factor



### Total harmonic factor (THD)

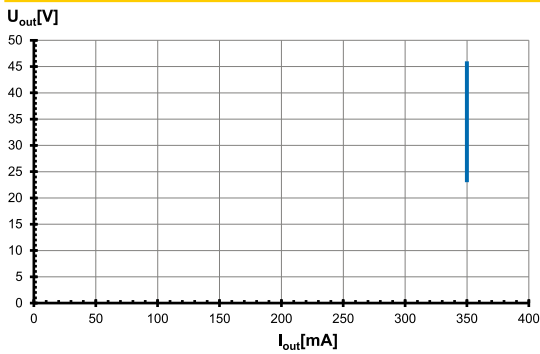


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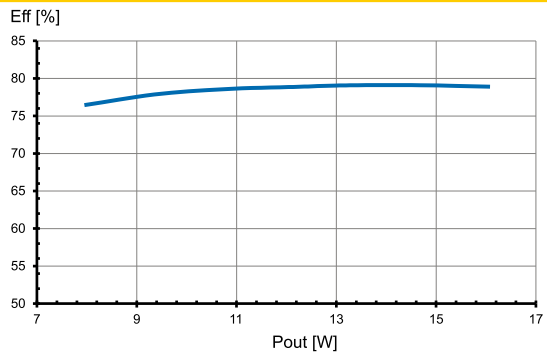
# LED Drivers – ComfortLine Simple Fix C-R5 100 V DALI2

## Typ. performance graphs for 187221 / Type ECXd 350.563 at 100 V

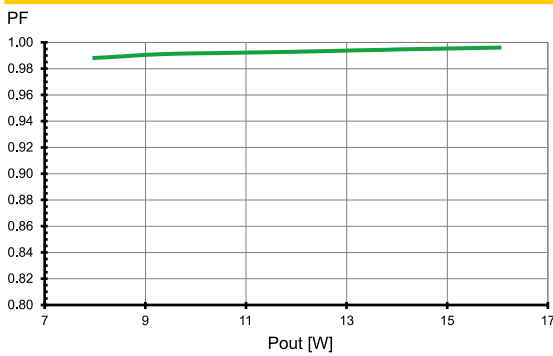
### Working area



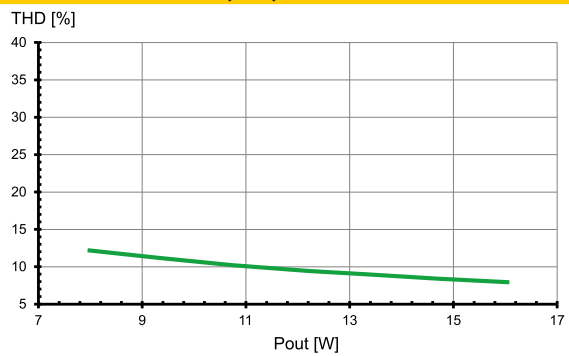
### Efficiency



### Power factor

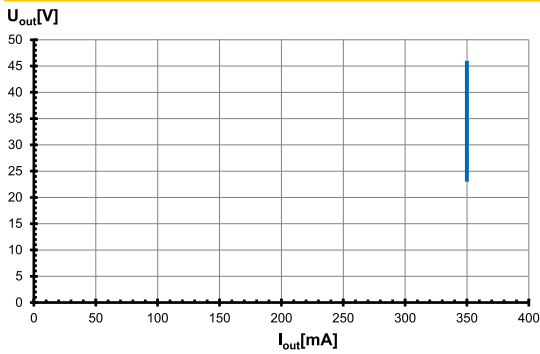


### Total harmonic factor (THD)

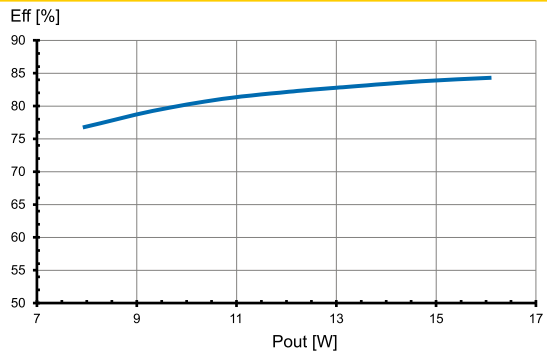


## Typ. performance graphs for 187221 / Type ECXd 350.563 at 240 V

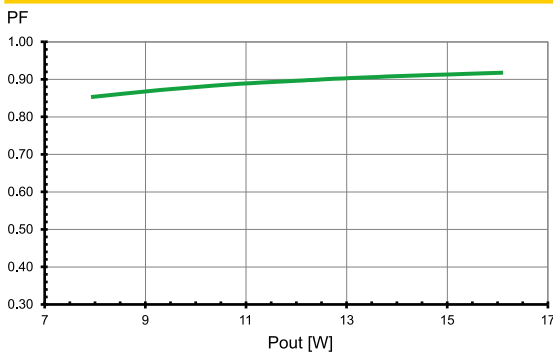
### Working area



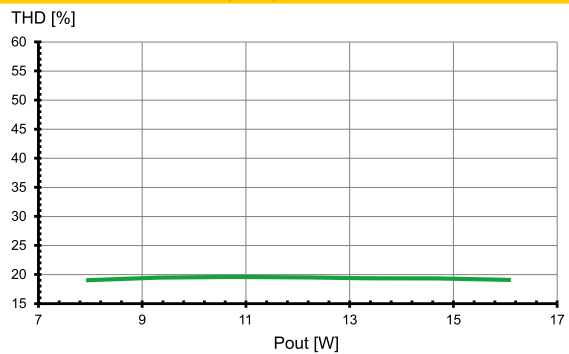
### Efficiency



### Power factor



### Total harmonic factor (THD)



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## Safety functions

- Transient mains peaks protection:  
Values are in compliance with EN 61547 (interference immunity).  
Surges between L-N: up to 1 kV  
Surges between L/N-PE: up to 2 kV
- Short-circuit protection:  
The control gear is protected against permanent short-circuit with automatic restart function.
- Overload protection: The control gears have overload protection due to limitation of DC output voltage < 60 V. Please check before switch-on mains power supply that the selected LED load is suitable (see Electrical Characteristics on data sheet).
- Overheating: The control gears have overheating protection. In case of overheating the control gear will shut down. For restart switch of the mains for 1 min. and start again. The temperature reduces the output current of the control gear in the event of overheating.
- No load operation: The control gear is 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.

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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

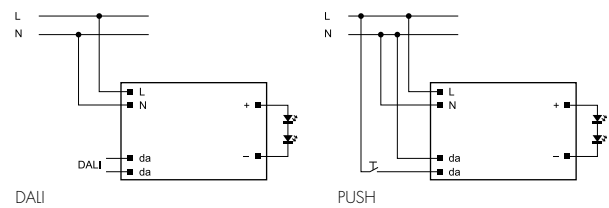
- Mounting position: Independent application: Drivers with integrated cord grip are allowed to use for independent applications.
- Mounting location: Independent LED drivers do not need to be integrated into a casing.  
Installation in outdoor luminaires: degree of protection for luminaire with water 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 0.5–1.5 mm<sup>2</sup>
- Stripped length: 8–9 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 for independent drivers: 1 m

- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Parallel connection: At secondary side is not allowed.
- 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.

### 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 700.564	<b>187222</b>	39	51	62	65	85	104
ECXd 350.563	<b>187221</b>	34	44	55	57	74	91

- 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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