

CC COMPACT
DIP SWITCH
DIMMABLE



COMFORTLINE DIP SWITCH C-R4
DALI2

187270, 187293, 187294

Typical Applications

- Office lighting
- Retail lighting
- Residential lighting



ComfortLine DIP switch C-R4 DALI2

- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **DIMMABLE: DALI (ED. 2)**
- **VERY LOW RIPPLE CURRENT: < 4%**
- **WITH INTEGRATED CORD GRIP FOR INDEPENDENT OPERATION**
- **SELV**
- **LONG SERVICE LIFE: UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



ComfortLine DIP switch C-R4 DALI2

Product features

- Compact casing shape
- With integrated cord grip

Functions

- Selectable current output by DIP switch.
- The output current can be freely adjusted between 350 mA and 1050 mA.

Electrical features

- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- Push-in terminals: primary 0.5–1.5 mm² and secondary 0.5–1.5 mm²
- Power factor at full load: 0.95
- Standby losses: < 0.5 W
- Open circuit voltage (U_{max.}): 60 V
- Secondary side switching of LED modules is not allowed.

Dimming

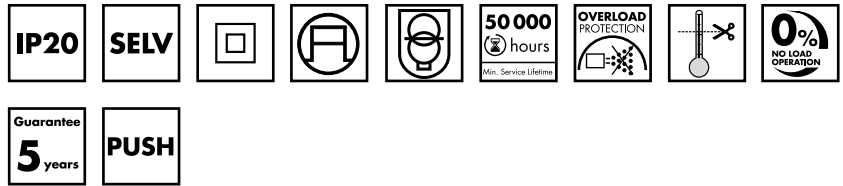
- Dimming range: 1 to 100%
- If no dimming interface is connected, brightness will stay at 100%.

Safety features

- Protection against transient main peaks up to 2 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
- SVM: < 0.4
- PstLM: < 1

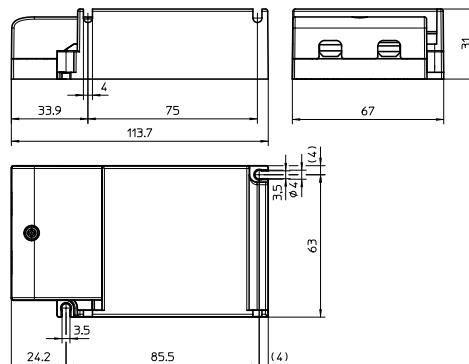
Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187270	20	165	133
187293	20	165	258
187294	20	165	258



Dimensions

- Casing: K96.1
- Length: 113.7 mm
- Width: 67 mm
- Height: 31 mm



Applied standards

- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2:14
- EN 61000-3-3:13
- EN 55015
- IEC 62386 ed. 2 part 101/102/207



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). We will be happy to send you these conditions upon request.

Dimming

Analogue



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

LED Drivers – ComfortLine DIP switch C-R4 DALI2

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 7.5%)	Voltage output DC (V)	THD %	Efficiency at full load % [230 V]	Ripple < 100 Hz %
32	ECXd 700.596	187270	220–240	170–157	11 / 260	350–700	23–46	< 20	87	< 4
40	ECXd 800.601	187293	220–240	208–191	18 / 277	500–800	30–50	< 15	87	< 4
45	ECXd 1050.602	187294	220–240	234–215	18 / 277	700–1050	23–43	< 15	87	< 4

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.		
187270, 187293	-15	+45	20	60	-40	+85	10	95	+75	IP20
187294	-15	+45	20	60	-40	+85	10	95	+80	IP20

Expected service life time

at operation temperatures at t_c point

Operation current	Ref. No. 187270, 187293		Ref. No. 187294	
	t_c	hrs.	t_c	hrs.
	65 °C	75 °C	70 °C	80 °C
	100,000	50,000	100,000	50,000

Product labels

Vossloh-Schwabe Deutschland GmbH
 Stuttgart Straße 61/1, 73614 Schorndorf
 Electronic Converter for LED LED控制装置
Type ECXd 700.596
 Ref.-No. 187270
 Made in China 中国制造

0.5/1.5
1.5/2mm

SEC

U_{in}	I_{in}	f_{in}	λ	U_{o}
220-240Vac	0.17A	50/60Hz	0.7C-0.9C	23-46Vdc

U_{o} max	I_{o}	Po max	t_a	t_c
60Vdc	700mA	32W	-15...+45°C	75°C

0.75/1.5
1.5/2mm

SELV

DA/N
DA/L

CE UK CA ENE DALI PUSH

Vossloh-Schwabe Deutschland GmbH
 Stuttgart Straße 61/1, 73614 Schorndorf
 Electronic Converter for LED LED控制装置
Type ECXd 800.601
 Ref.-No. 187293
 Made in China 中国制造

0.5/1.5
1.5/2mm

SEC

U_{in}	I_{in}	f_{in}	λ	U_{o}
220-240Vac	0.21A	50/60Hz	0.9C	30-50Vdc

U_{o} max	I_{o}	Po max	t_a	t_c
60Vdc	800mA	40W	-15...+45°C	75°C

0.75/1.5
1.5/2mm

SELV

DA/N
DA/L

CE UK CA ENE DALI PUSH

Vossloh-Schwabe Deutschland GmbH
 Stuttgart Straße 61/1, 73614 Schorndorf
 Electronic Converter for LED LED控制装置
Type ECXd 1050.602
 Ref.-No. 187294
 Made in China 中国制造

0.5/1.5
1.5/2mm

SEC

U_{in}	I_{in}	f_{in}	λ	U_{o}
220-240Vac	0.23A	50/60Hz	0.9C	23-43Vdc

U_{o} max	I_{o}	Po max	t_a	t_c
60Vdc	1050mA	45W	-15...+45°C	80°C

0.75/1.5
1.5/2mm

SELV

DA/N
DA/L

CE UK CA ENE DALI PUSH

187270 / ECXd 700.596				
Pin	Output W	Current mA	Factory settings (mA)	
1	2			
OFF	OFF	16	350	350
ON	OFF	23	500	
OFF	ON	28	600	
ON	ON	32	700	

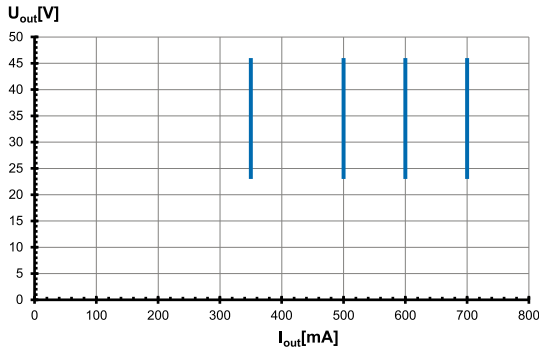
187293 / ECXd 800.601				
Pin	Output W	Current mA	Factory settings (mA)	
1	2			
OFF	OFF	25	500	500
ON	OFF	30	600	
OFF	ON	35	700	
ON	ON	40	800	

187294 / ECXd 1050.602				
Pin	Output W	Current mA	Factory settings (mA)	
1	2			
OFF	OFF	30	700	700
ON	OFF	34	800	
OFF	ON	39	900	
ON	ON	45	1050	

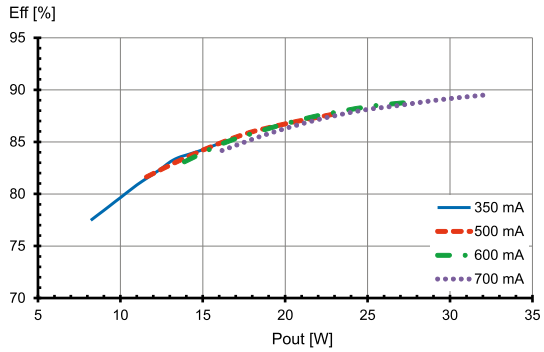
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Typ. performance graphs for 187270 / Type ECXd 700.596

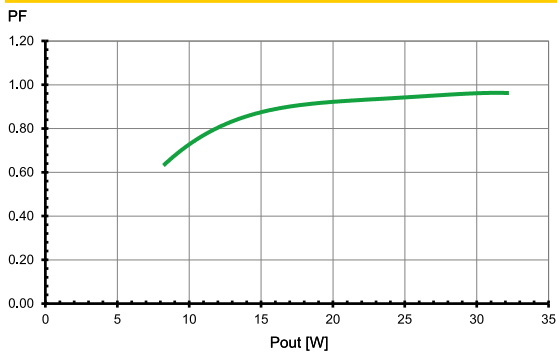
Working area



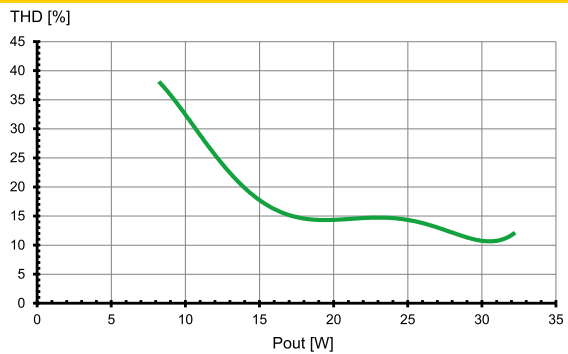
Efficiency



Power factor

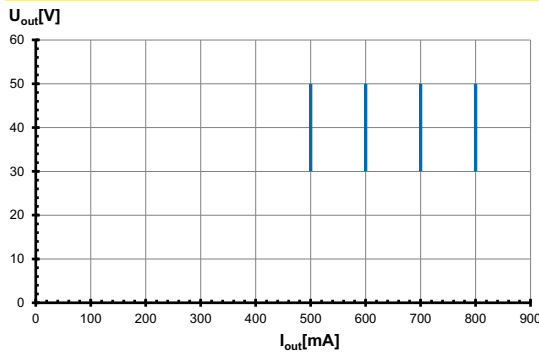


Total harmonic factor (THD)

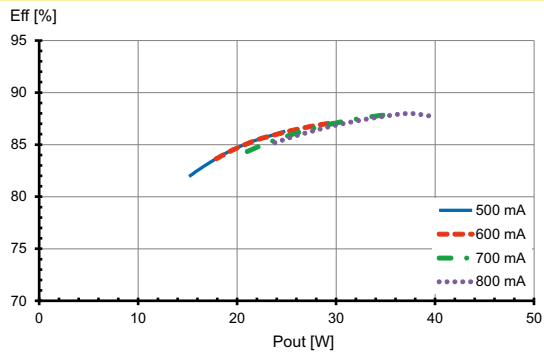


Typ. performance graphs for 187293 / Type ECXd 800.601

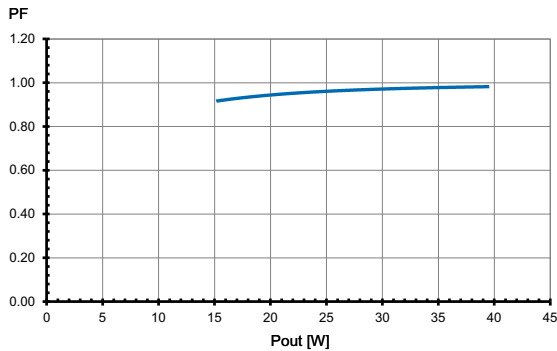
Working area



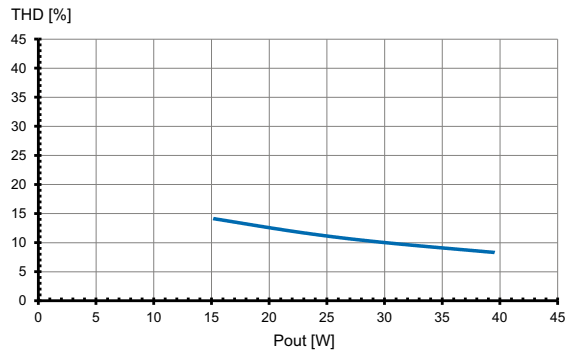
Efficiency



Power factor



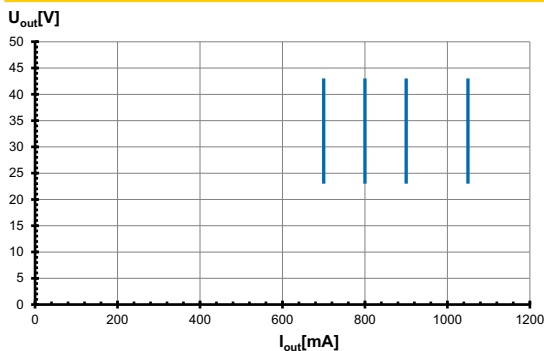
Total harmonic factor (THD)



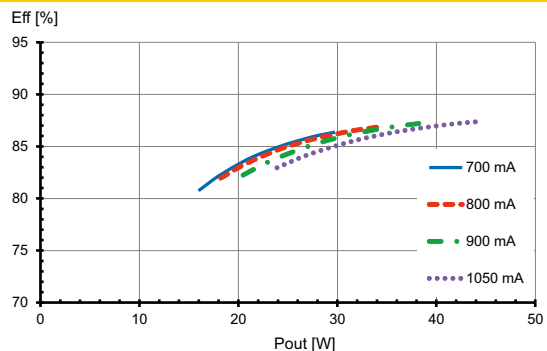
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Typ. performance graphs for 187294 / Typ ECXd 1050.602

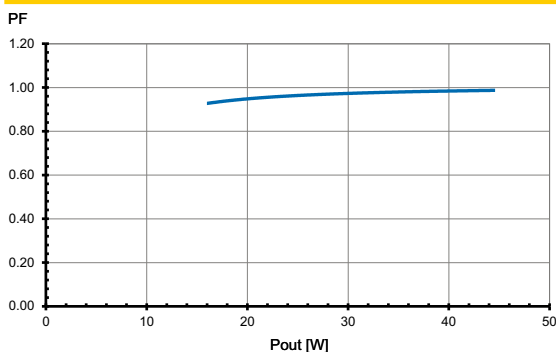
Working area



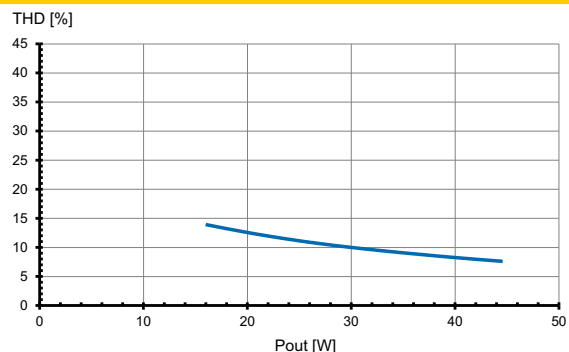
Efficiency



Power factor



Total harmonic factor (THD)



Safety functions

- Transient mains peaks protection:
 - Values are in compliance with EN 61547 (interference immunity).
 - Surges protection between L-N: 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.
- 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

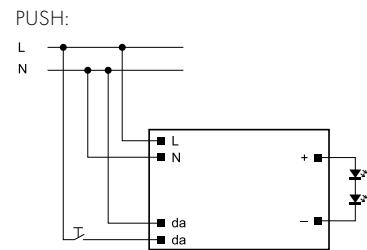
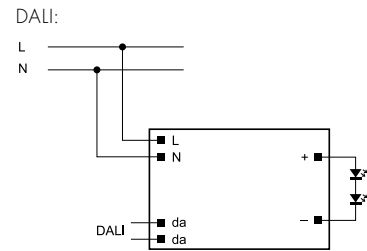
Mechanical mounting

- Mounting position: Any position
- 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 ≥ 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 mm² for primary side and 0.5–1.5 mm² for secondary side
- 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.
- 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:



Note: Max. quantity of drivers at one push button: 5

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.		
		B 10 A	B 16 A	B 20 A
Automatic cut-out type B				
ECXd 700.569	187270	28	45	56
ECXd 800.601	187293	16	25	32
ECXd 1050.602	187294	16	25	32
Automatic cut-out type C				
ECXd 700.569	187270	46	75	93
ECXd 800.601	187293	26	42	53
ECXd 1050.602	187294	26	42	53

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

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