

CC COMPACT DIP SWITCH DIMMABLE



COMFORTLINE DIP SWITCH C-WIDEUOUT DALI2

187345, 187346, 187347, 187348

Typical Applications

Built-in in compact luminaires for

- Shop lighting
- Office lighting
- Residential lighting
- Downlights



ComfortLine DIP switch C-wideUout DALI2

- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **DIMMABLE: DALI (ED.2)**
- **WIDE OUTPUT VOLTAGE WINDOW**
- **VERY LOW RIPPLE CURRENT: < 3%**
- **SELV**
- **LONG SERVICE LIFE: UP TO 100.000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



ComfortLine DIP switch C-wideUout DALI2

Product features

- Compact casing shape
- Built-in and separate cord-grip available

Functions

- Selectable current output by dip-switch

Electrical features

- Mains voltage: 220–240 V $\pm 10\%$
- Mains frequency: 50–60 Hz
- Push-in terminals:
rigid 0.5–1.5 mm²
strand 0.75–1.5 mm²
- Power factor at full load: > 0.95
- Open circuit voltage ($U_{max.}$): 60 V
- Secondary side switching of LED modules is not allowed.
- SVM: < 0.4
- PstLM: < 1

Dimming

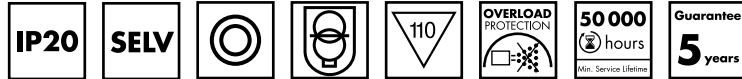
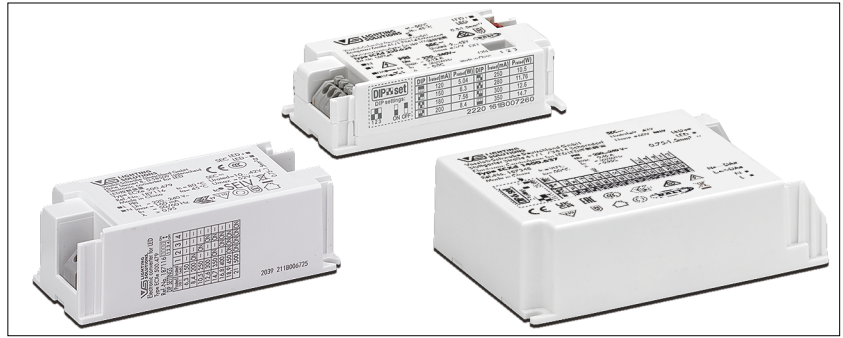
- Analogue
- Dimming range: 1 to 100% (at I_{max})

Safety features

- Protection against transient main peaks up to 1 kV (between L and N)
- Electronic short-circuit protection
- Overload protection
- Degree of protection: IP20
- Protection class II
- SELV

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
187345	100	60	60
187346	90	32	100
187347	90	32	180
187348	40	32	340



Dimensions

Ref. No.	Casing	Length mm	Width mm	Height mm
187346, 187347	K86	97	43	30
187348	K99	110	74	30
187345	K100	85	40	21.5

Applied standards

- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2/EN 61000-3-3
- EN 62384
- EN 55015
- EN 61000-4-2/EN 61000-4-5
- IEC 62386 ed. 2
part 101/102/207

Product guarantee

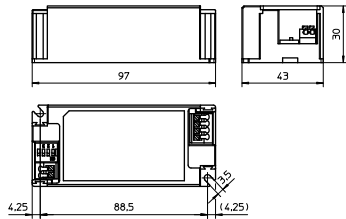
- 5 years
for operation at recommended operation temperature (see table for expected service life time on the next page)
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com).
We will be happy to send you these conditions upon request.



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

Dimensions

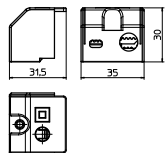
K86



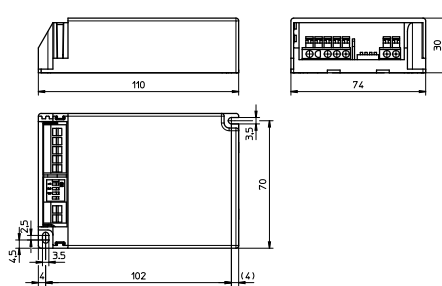
Cord grip for K86

Available for independent operation
Available separately
2 cord grips per LED driver required
Packaging unit: 2 pcs.

Ref. No.: 187203



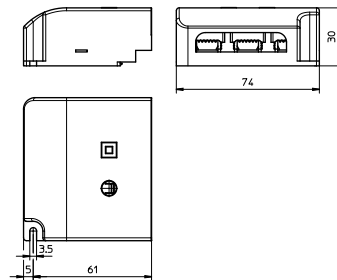
K99



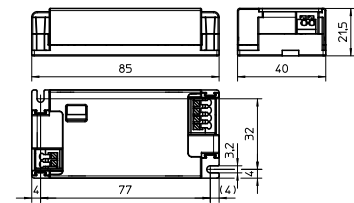
Cord grip for K99

Available for independent operation
Available separately
1 cord grips per LED driver required
Packaging unit: 1 pcs.

Ref. No.: 187365



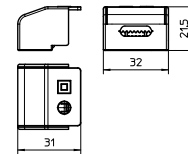
K100



Cord grip for K100

Available for independent operation
Available separately
2 cord grips per LED driver required
Packaging unit: 2 pcs.

Best.-Nr.: 187364



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 5%)	Voltage output DC (V)	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
15	ECXd 350.634	187345	220–240	82–76	4 / 46	120–350	see table "DIP switch settings"	8	83	< 5
26	ECXd 700.635	187346	220–240	136–126	6 / 31	150–700		8	89	< 3
44	ECXd 1050.636	187347	220–240	228–210	7 / 55	700–1050		7	89	< 3
60	ECXd 1400.637	187348	220–240	309–284	8 / 33	700–1400		6	89	< 3

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.		
187345	–20	+50	20	90	–25	+60	20	90	+80	IP20
187346									+85	
187347, 187348									+90	

Expected service life time

at operation temperatures at t_c point

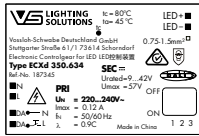
Operation current	Ref. No.					
	187346		187347, 187348		187345	
All	75 °C*	85 °C	80 °C*	90 °C	70 °C	80 °C
hrs.	100,000	50,000	100,000	50,000	100,000	50,000

* recommended operation temperature

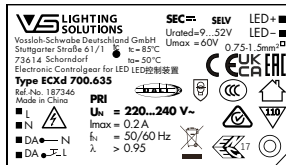
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LED Drivers – ComfortLine DIP switch C-wideUout DALI2

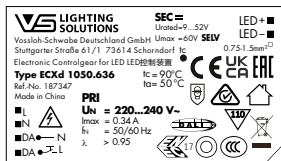
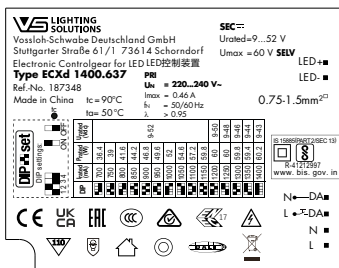
Product labels



DIP switch	Output W	Current mA	Voltage V	Factory settings mA
OFF	5,04	120	9-42	120
ON	6,3	150		
OFF	7,56	180		
ON	8,4	200		
OFF	10,5	250		
ON	11,76	280		
OFF	12,6	300		
ON	14,7	350		



DIP switch	Output W	Current mA	Voltage V	Factory settings mA
OFF	7,8	150	9-52	150
ON	10,4	200		
OFF	13	250		
ON	15,6	300		
OFF	18,2	350		
ON	20,8	400		
OFF	23,4	450		
ON	26	500		
OFF	26,1	550	9-47,5	
ON	26,1	600	9-43,5	
OFF	26	650	9-40	
ON	26,3	700	9-37,5	



DIP switch	Output W	Current mA	Voltage V	Factory settings mA
OFF	36,4	700	9-52	700
ON	39	750		
OFF	41,6	800		
ON	41,7	850	9-49	
OFF	44,1	900		
ON	43,7	950	9-46	
OFF	44	1000	9-44	
ON	44,1	1050	9-42	

DIP switch settings

187345 / ECXd350.634

Pin	1	2	3	Output W	Current mA	Voltage V	Factory settings mA
OFF	OFF	OFF	OFF	5,04	120	9-42	120
ON	OFF	OFF	OFF	6,3	150		
OFF	ON	OFF	OFF	7,56	180		
ON	ON	OFF	OFF	8,4	200		
OFF	OFF	ON	OFF	10,5	250		
ON	OFF	ON	OFF	11,76	280		
OFF	ON	ON	OFF	12,6	300		
ON	ON	ON	OFF	14,7	350		

187346 / ECXd 700.635

Pin	1	2	3	4	Output W	Current mA	Voltage V	Factory settings mA
OFF	OFF	ON	OFF	OFF	7,8	150	9-52	150
ON	OFF	ON	OFF	OFF	10,4	200		
OFF	ON	ON	OFF	OFF	13	250		
ON	ON	ON	OFF	OFF	15,6	300		
OFF	OFF	OFF	ON	OFF	18,2	350		
ON	OFF	OFF	ON	OFF	20,8	400		
OFF	ON	OFF	ON	OFF	23,4	450		
ON	ON	OFF	ON	OFF	26	500		
OFF	OFF	ON	ON	ON	26,1	550	9-47,5	
ON	OFF	ON	ON	ON	26,1	600	9-43,5	
OFF	ON	ON	ON	ON	26	650	9-40	
ON	ON	ON	ON	ON	26,3	700	9-37,5	

187347 / ECXd 1050.636

Pin	1	2	3	Output W	Current mA	Voltage V	Factory settings mA
OFF	OFF	OFF	OFF	36,4	700	9-52	700
ON	OFF	OFF	OFF	39	750		
OFF	ON	OFF	OFF	41,6	800		
ON	ON	OFF	OFF	41,7	850	9-49	
OFF	OFF	ON	OFF	44,1	900		
ON	OFF	ON	OFF	43,7	950	9-46	
OFF	ON	ON	OFF	44	1000	9-44	
ON	ON	ON	OFF	44,1	1050	9-42	

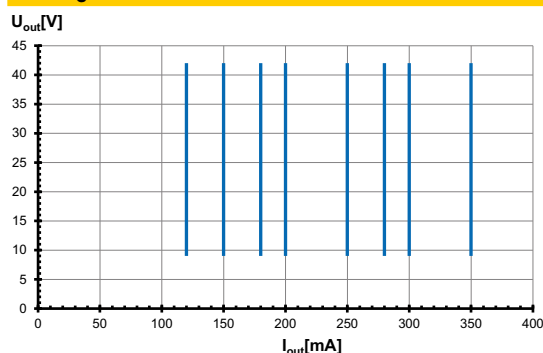
187348 / ECXd 1400.637

Pin	1	2	3	4	Output W	Current mA	Voltage V	Factory settings mA
ON	OFF	OFF	OFF	OFF	36,4	700	9-52	700
OFF	ON	OFF	OFF	OFF	39	750		
ON	ON	OFF	OFF	OFF	41,6	800		
OFF	OFF	ON	OFF	OFF	44,2	850		
ON	OFF	ON	OFF	OFF	46,8	900		
OFF	ON	ON	OFF	OFF	49,6	950		
ON	ON	ON	OFF	OFF	52	1000		
OFF	OFF	OFF	ON	OFF	54,6	1050		
ON	OFF	OFF	ON	OFF	57,2	1100		
OFF	ON	OFF	ON	OFF	59,8	1150		
ON	ON	OFF	ON	OFF	60	1200	9-50	
OFF	OFF	ON	ON	OFF	60	1250	9-48	
ON	OFF	ON	ON	OFF	59,8	1300	9-46	
OFF	ON	ON	ON	OFF	59,4	1350	9-44	
ON	ON	ON	ON	OFF	60,2	1400	9-43	

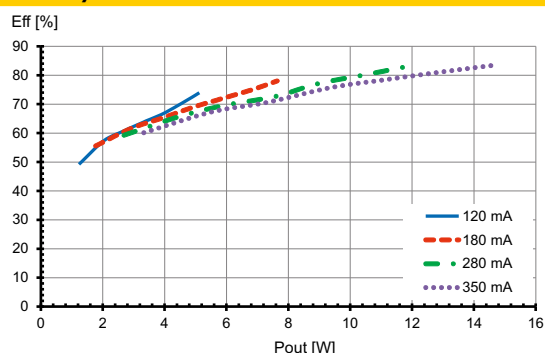
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Typ. performance graphs for 187345 / Type ECXd 350.634

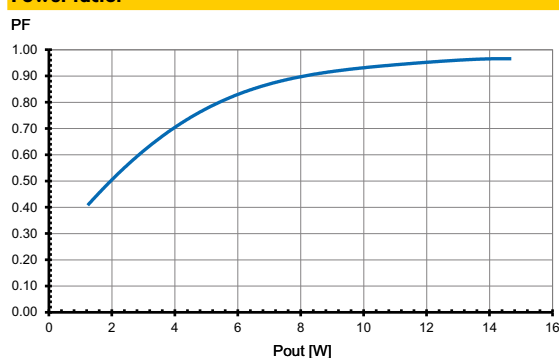
Working area



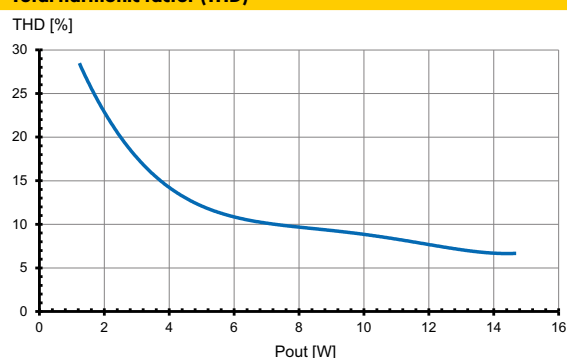
Efficiency



Power factor

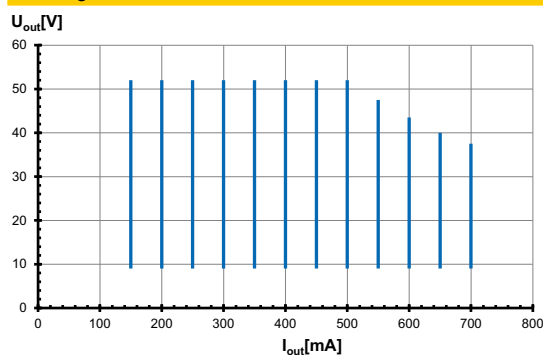


Total harmonic factor (THD)

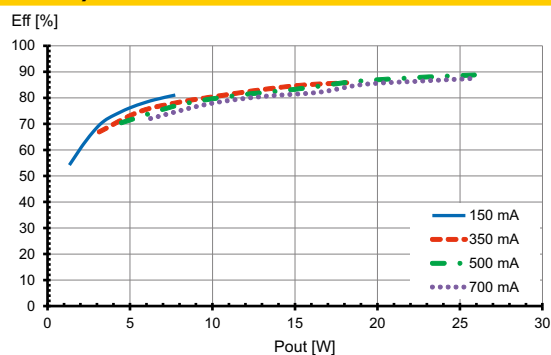


Typ. performance graphs for 187346 / Type ECXd 700.635

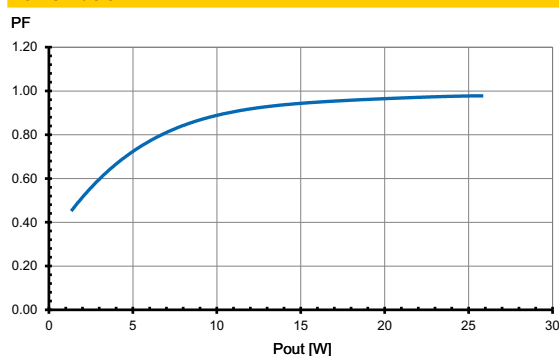
Working area



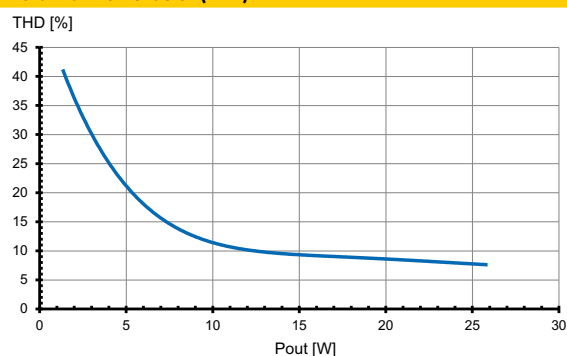
Efficiency



Power factor



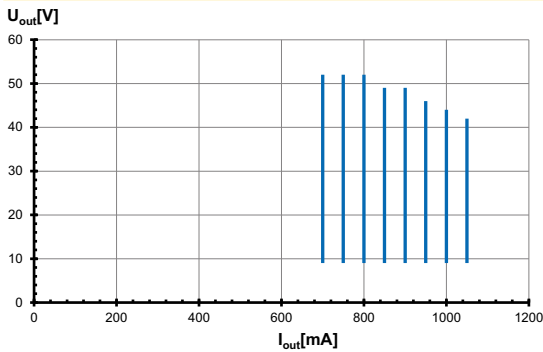
Total harmonic factor (THD)



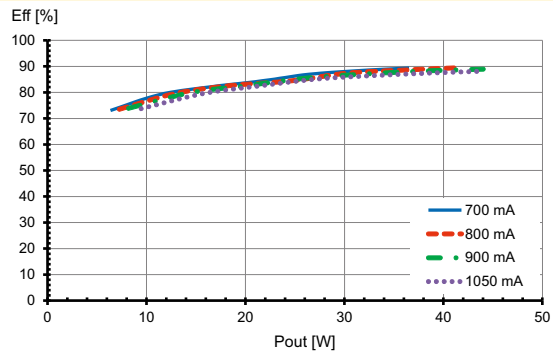
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Typ. performance graphs for 187347 / Type ECXd 1050.636

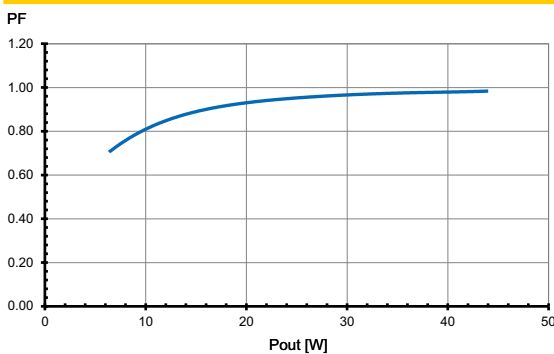
Working area



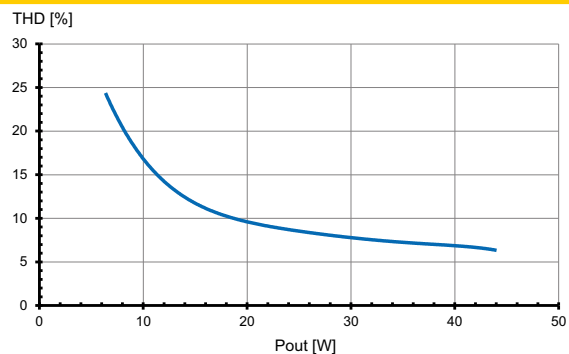
Efficiency



Power factor

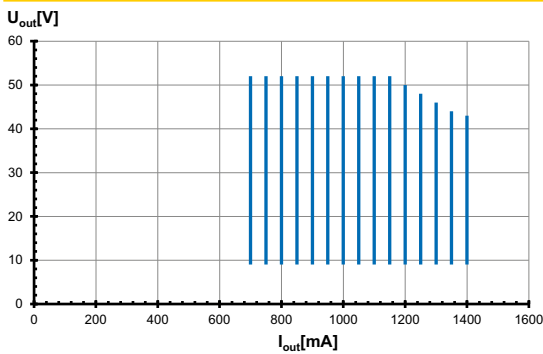


Total harmonic factor (THD)

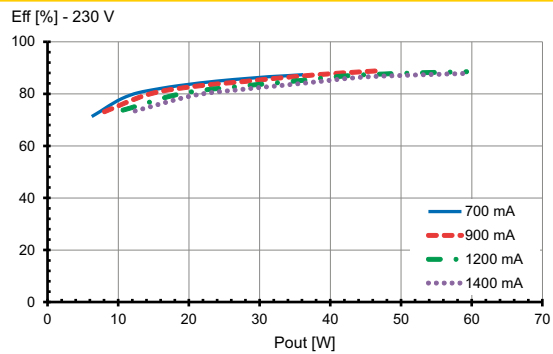


Typ. Leistungsdiagramme für 187348 / Typ ECXd 1400.637

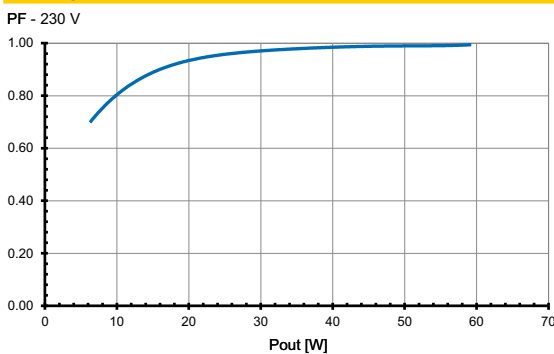
Arbeitsbereich



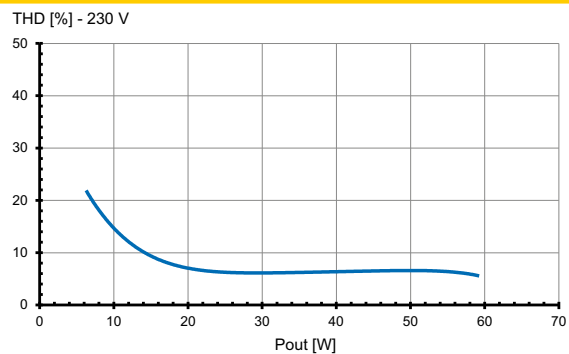
Effizienz



Leistungsfaktor



Klirrfaktor (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
- Short-circuit protection: The control gear is protected against
permanent short-circuit with automatic restart
function.
- Overload protection: The control gear only works in range of rated
output power and voltage problemfree
($< 60 \text{ V DC}$).
Please check before switch-on mains power
supply that the selected LED load is suitable
(see Electrical Characteristics on data sheet).
- Overheating: The control gear has overheating protection.
In case of overheating the output current of the
control gear will be reduced. After the tempe-
rature will drop below the critical temperature
value, the output current rises again to the
previously set value.
- 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

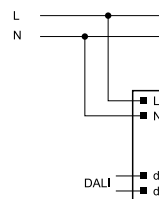
- Mounting position: Built-in: Any position inside a luminaire is allowed
Independent application: Drivers are allowed to use for independent applications with separate cord grip (Ref. No.: 187203 for K86).
- Mounting location: LED drivers are designed for integration into luminaires or comparable devices.
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

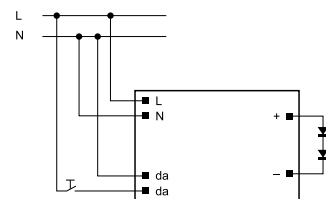
- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of
rigid 0.5–1.5 mm²
strand 0.75–1.5 mm²
- Stripped length: 7–8 mm
- Wiring: The mains conductor within the luminaire must be kept short (to reduce the induction of interference).
Mains and lamp conductors must be kept separate and if possible should not be laid in parallel to one another.
Max. secondary side lead length: 2 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:

DALI:



PUSH:



Note: Max. quantity of drivers at one push button: 32

- Corridor Function: Enter corridor mode: Long push (>120s)
Exit corridor mode: Short push 5 times in 3 seconds
(For detailed description of corridor functionality please contact your responsible sales person)

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 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 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 350.634	187345	111	144	177	111	144	177
ECXd 700.635	187346	58	76	94	58	76	94
ECXd 1050.636	187347	32	42	52	32	42	52
ECXd 1400.637	187348	29	37	46	29	37	46

- 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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