

CC TRACK
DIP SWITCH
DIMMABLE



COMFORTLINE DIP SWITCH
UT-212/250 DALI2

**187369, 187370, 187371,
187372, 187373, 187374,
187375, 187376, 187377**

Typical Applications

For common track systems

- Retail lighting



ComfortLine DIP switch UT-212/250 DALI2

- **SELECTABLE OUTPUT CURRENT VIA DIP SWITCH**
- **DIMMABLE: DALI (ED. 2)**
- **VERY LOW RIPPLE CURRENT: 1 %**
- **COMPATIBLE WITH DALI TRACK SYSTEMS**
- **SELV**
- **LONG SERVICE LIFE:
UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**



ComfortLine DIP switch UT-212/250 DALI2

Product features

- Adapter with integrated LED driver electronics for DALI-compatible track systems (compatibility see page 6)
- Available in three different casing colours: white, black and grey

Functions

- Selectable current output by DIP switches
- The output current can be freely adjusted between 120 mA and 1050 mA (dependent of type)

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: > 0.95
- Open circuit voltage (U_{max.}): 57 V
- Secondary side switching of LED modules is not allowed.
- SVM: < 0.4
- PstLM: < 1

Dimming

- 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
- Overtemperature protection
- Protection against overload
- Degree of protection: IP20
- Protection class II
- SELV

Packaging units

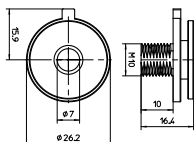
Type	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
ECXd 350.647	48	30	120
ECXd 700.648	30	32	140
ECXd 1050.649	30	32	140

Connector nipple for track adapter

Material: zinc die-cast

Best.-Nr.: 187360

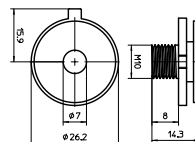
M10x1, length: 10 mm



Material: aluminium

Ref. No.: 187275

M10x1, length: 8 mm



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



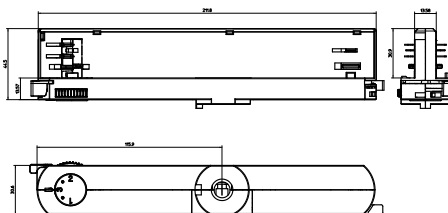
Applied standards

- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 62384
- EN 62386
- EN 55015

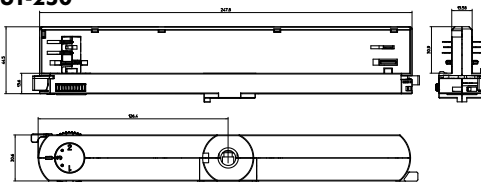
Dimensions

Typ	Gehäuse	Länge mm	Breite mm	Höhe (mm)	
				sichtbar	
ECXd 350.647	UT-212	211.8	30.6	44.5	13.6
ECXd 700.648	UT-250	247.8	30.6	45.5	13.6
ECXd 1050.649	UT-250	247.8	30.6	45.5	13.6

UT-212



UT-250



Dimming

Analogue



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.

Electrical characteristics

Max. output W	Type	Ref. No.	Casing colour	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 350.647	187369	white	220–240	84–790	10 / 80	120–350	9–42	8	83	1
		187370	black								
		187371	grey								
29	ECXd 700.648	187372	white	220–240	161–149	18 / 104	350–700	9–42	9	85	1
		187373	black								
		187374	grey								
40	ECXd 1050.649	187375	white	220–240	208–191	15 / 100	700–1050	9–42 (38.5 V)	9	86	1
		187376	black								
		187377	grey								

Maximum ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the drivers.

Type	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.		
ECXd 350.647	0	+35	20	90	-25	+60	20	90	+70	IP20
ECXd 700.648									+75	
ECXd 1050.649									+85	

Expected service life time

at operation temperatures at t_c point

Operation current	Type					
	ECXd 350.647		ECXd 700.648		ECXd 1050.649	
All	60 °C	70 °C	65 °C	75 °C	75 °C	85 °C
hrs.	100.000	50.000	100.000	50.000	100.000	50.000

Product labels

VS LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1 73614 Schorndorf
 Electronic Controller for LED
Type ECXd350.647 $t_a = 35^\circ\text{C}$ $t_c = 70^\circ\text{C}$
 Ref.-No. 187369 Made in China

$U_N = 220\text{--}240\text{ V}$
 $I_N = 0.12\text{ A max.}$
 $f_N = 50/60\text{ Hz}$
 $U_{max} = 57\text{ V}$
 $\lambda: 0.4\text{C--}0.9\text{C}$

DIP settings:
 1: ON, 2: OFF, 3: OFF

Technical Data:

U _{out} /Vdc	Pract.W	5.04	6.3	7.56	8.4	10.5	11.76	12.6	14.7
I _{out} /mA	120	150	180	200	250	280	300	350	

ECXd350.647 $t_a = 35^\circ\text{C}$ $t_c = 70^\circ\text{C}$
 Ref.-No. 187370 Made in China

VS LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1 73614 Schorndorf
 Electronic Controller for LED
Type ECXd350.647 $t_a = 35^\circ\text{C}$ $t_c = 70^\circ\text{C}$
 Ref.-No. 187370 Made in China

$U_N = 220\text{--}240\text{ V}$
 $I_N = 0.12\text{ A max.}$
 $f_N = 50/60\text{ Hz}$
 $U_{max} = 57\text{ V}$
 $\lambda: 0.4\text{C--}0.9\text{C}$

DIP settings:
 1: ON, 2: OFF, 3: OFF

Technical Data:

U _{out} /Vdc	Pract.W	5.04	6.3	7.56	8.4	10.5	11.76	12.6	14.7
I _{out} /mA	120	150	180	200	250	280	300	350	

ECXd350.647 $t_a = 35^\circ\text{C}$ $t_c = 70^\circ\text{C}$
 Ref.-No. 187371 Made in China

ECXd 350.647							
Pin	1	2	3	Power W	Current mA	Voltage V	Factory settings (mA)
OFF	OFF	OFF	OFF	5.0	120	9–42	350
OFF	OFF	ON	ON	6.3	150		
OFF	ON	OFF	OFF	7.6	180		
OFF	ON	ON	ON	8.4	200		
ON	OFF	OFF	OFF	10.5	250		
ON	OFF	ON	ON	11.8	280		
ON	ON	OFF	OFF	12.6	300		
ON	ON	ON	ON	14.7	350		

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LED Drivers – ComfortLine DIP switch UT-212/250 DALI2

VSL LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1 73614 Schorndorf
 Electronic Controller for LED
Type ECXd700.648
 Ref.-No. 187372
 Made in China

U_N = 220-240 V~
 I_N = 0.19 A max.
 f_N = 50/60 Hz
 U_{max} = 55 V ~
 λ: 0.5C-0.98
 t_a = 35°C t_c = 75°C

DIP settings	Power(W)	Current(mA)	9-42						
OFF OFF	14.7	18.8	18.9	21	23.1	25.2	27.3	29.4	
ON OFF	16.8	400	450	500	550	600	650	700	

LED = ■
 LED = ■
 0.51 5°

SELV ○ CE UK ENEC ENEC ENEC ENEC ENEC

VSL LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1 73614 Schorndorf
 Electronic Controller for LED
Type ECXd700.648
 Ref.-No. 187373
 Made in China

U_N = 220-240 V~
 I_N = 0.19 A max.
 f_N = 50/60 Hz
 U_{max} = 55 V ~
 λ: 0.5C-0.98
 t_a = 35°C t_c = 75°C

DIP settings	Power(W)	Current(mA)	9-42						
OFF OFF	14.7	18.8	18.9	21	23.1	25.2	27.3	29.4	
ON OFF	16.8	400	450	500	550	600	650	700	

LED = ■
 LED = ■
 0.51 5°

SELV ○ CE UK ENEC ENEC ENEC ENEC ENEC

VSL LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1 73614 Schorndorf
 Electronic Controller for LED
Type ECXd700.648
 Ref.-No. 187374
 Made in China

U_N = 220-240 V~
 I_N = 0.19 A max.
 f_N = 50/60 Hz
 U_{max} = 55 V ~
 λ: 0.5C-0.98
 t_a = 35°C t_c = 75°C

DIP settings	Power(W)	Current(mA)	9-42						
OFF OFF	14.7	18.8	18.9	21	23.1	25.2	27.3	29.4	
ON OFF	16.8	400	450	500	550	600	650	700	

LED = ■
 LED = ■
 0.51 5°

SELV ○ CE UK ENEC ENEC ENEC ENEC ENEC

ECXd 700.648							
Pin	1	2	3	Power W	Current mA	Voltage V	Factory settings (mA)
OFF	OFF	OFF	OFF	14.7	350	9-42	700
ON	OFF	OFF	OFF	16.8	400		
OFF	ON	OFF	OFF	18.9	450		
ON	ON	OFF	OFF	21.0	500		
OFF	OFF	ON	OFF	23.1	550		
ON	OFF	ON	OFF	25.2	600		
OFF	ON	ON	OFF	27.3	650		
ON	ON	ON	OFF	29.4	700		

VSL LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1 73614 Schorndorf
 Electronic Controller for LED
Type ECXd1050.649
 Ref.-No. 187375
 Made in China

U_N = 220-240 V~
 I_N = 0.26 A max.
 f_N = 50/60 Hz
 U_{max} = 56 V ~
 λ: 0.75C-0.98
 t_a = 35°C t_c = 85°C

DIP settings	Power(W)	Current(mA)	9-42						
OFF OFF	29.4	31.5	33.6	35.7	37.8	39.9	40	40.4	
ON OFF	700	750	800	850	900	950	1000	1050	

LED = ■
 LED = ■
 0.51 5°

SELV ○ CE UK ENEC ENEC ENEC ENEC ENEC

VSL LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1 73614 Schorndorf
 Electronic Controller for LED
Type ECXd1050.649
 Ref.-No. 187376
 Made in China

U_N = 220-240 V~
 I_N = 0.26 A max.
 f_N = 50/60 Hz
 U_{max} = 56 V ~
 λ: 0.75C-0.98
 t_a = 35°C t_c = 85°C

DIP settings	Power(W)	Current(mA)	9-42						
OFF OFF	29.4	31.5	33.6	35.7	37.8	39.9	40	40.4	
ON OFF	700	750	800	850	900	950	1000	1050	

LED = ■
 LED = ■
 0.51 5°

SELV ○ CE UK ENEC ENEC ENEC ENEC ENEC

VSL LIGHTING SOLUTIONS
 Vossloh-Schwabe Deutschland GmbH
 Stuttgarter Straße 61/1 73614 Schorndorf
 Electronic Controller for LED
Type ECXd1050.649
 Ref.-No. 187377
 Made in China

U_N = 220-240 V~
 I_N = 0.26 A max.
 f_N = 50/60 Hz
 U_{max} = 56 V ~
 λ: 0.75C-0.98
 t_a = 35°C t_c = 85°C

DIP settings	Power(W)	Current(mA)	9-42						
OFF OFF	29.4	31.5	33.6	35.7	37.8	39.9	40	40.4	
ON OFF	700	750	800	850	900	950	1000	1050	

LED = ■
 LED = ■
 0.51 5°

SELV ○ CE UK ENEC ENEC ENEC ENEC ENEC

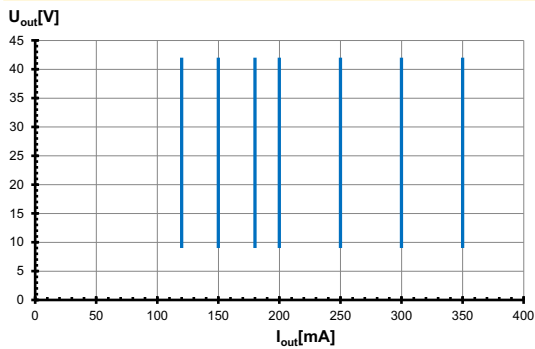
ECXd 1050.649							
Pin	1	2	3	Power W	Current mA	Voltage V	Factory settings (mA)
OFF	OFF	OFF	OFF	29.4	700	9-42	1050
ON	OFF	OFF	OFF	31.5	750		
OFF	ON	OFF	OFF	33.6	800		
ON	ON	OFF	OFF	35.7	850		
OFF	OFF	ON	OFF	37.8	900		
ON	OFF	ON	OFF	39.9	950		
OFF	ON	ON	OFF	40.0	1000		
ON	ON	ON	OFF	40.4	1050		
OFF	ON	ON	ON	40.4	1050		

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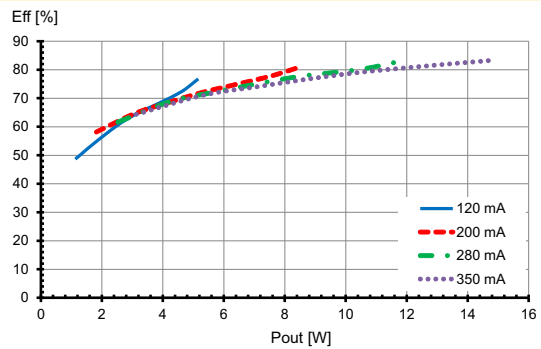


Typ. performance graphs for 187369, 187370, 187371 / Type ECXd 350.647

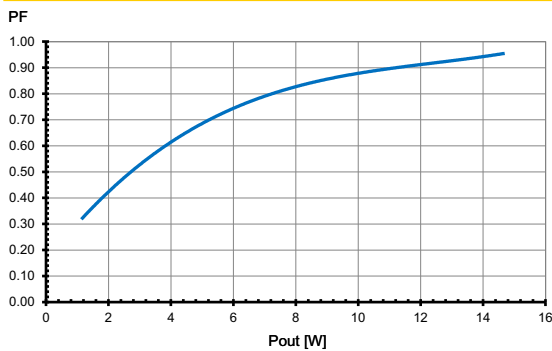
Working area



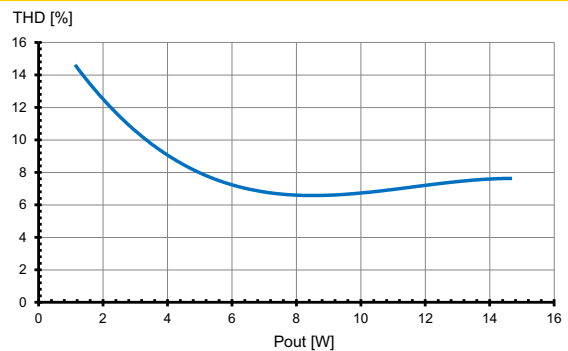
Efficiency



Power factor

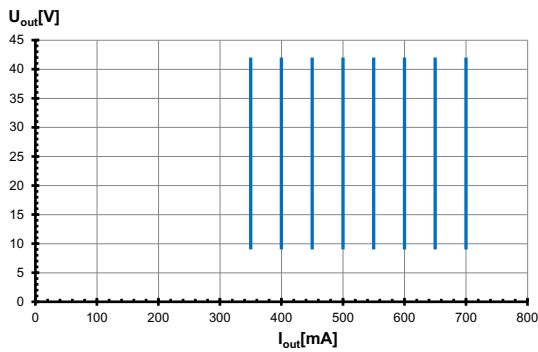


Total harmonic factor (THD)

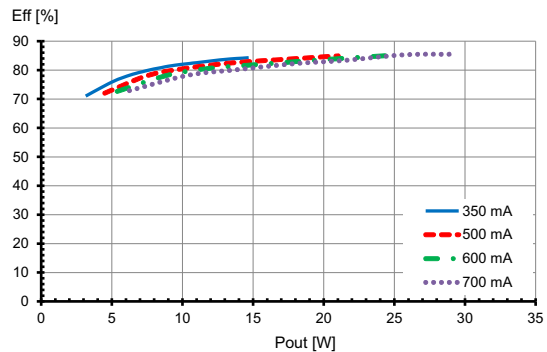


Typ. performance graphs for 187372, 187373, 187374 / Type ECXd 700.648

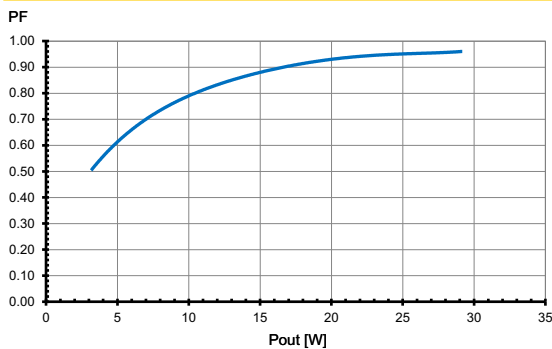
Working area



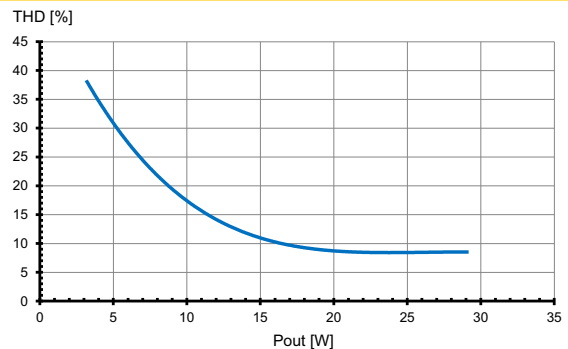
Efficiency



Power factor



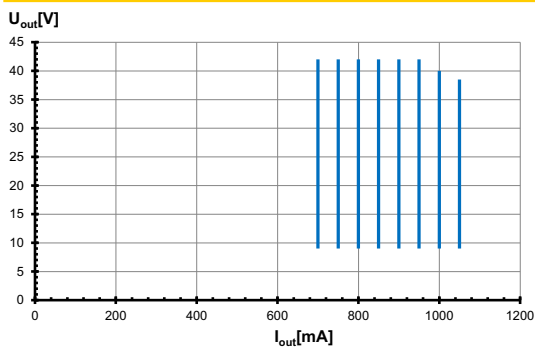
Total harmonic factor (THD)



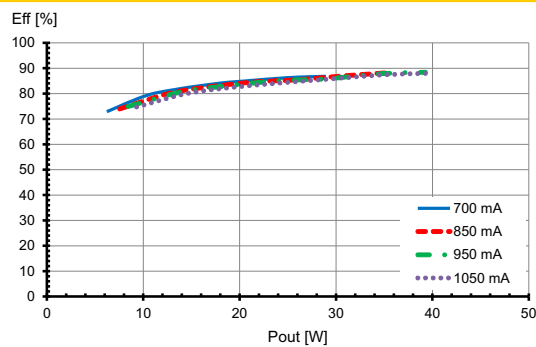
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Typ. performance graphs for 187375, 187376, 187377 / Type ECXd 1050.649

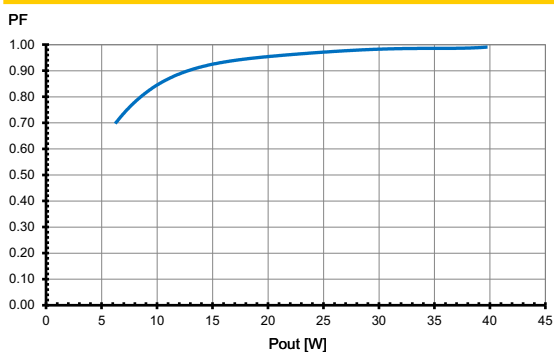
Working area



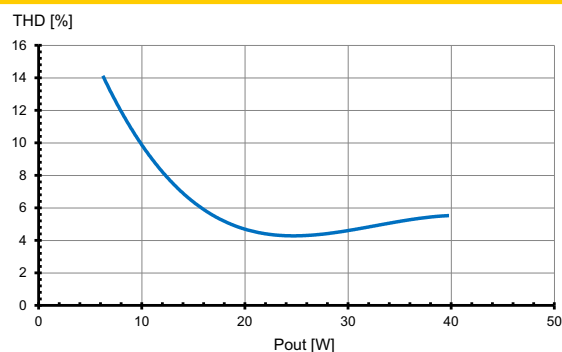
Efficiency



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: 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. Please check before switch-on mains power supply that the selected LED load is suitable (see electrical characteristics on data sheet).
- Overheating:
 - In case of overheating the control gear will shut down.
 - Automatic restart when the fault is removed.
- 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.

Compatibility of track rails

Suitable for following tracks

- Global TRAC PULSE
- Powergear Pro
- STUCCHI

Vossloh-Schwabe does not guarantee the compatibility of the tracks and the track-adapter, because manufacturing tolerances of the tracks or changes made at the tracks by the manufacturer could affect the compatibility between the tracks and the adapter.

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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

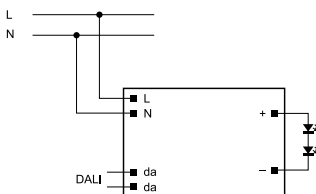
- DIN VDE 0100
- EN 60598-1

Mechanical mounting

- Mounting position and location:
 - Common track system
- 3-phase option: 3 phases are selectable with a rotary switch. The neutral is in a fixed position in the track.
- Degree of protection: IP20
- Fastening: Double mechanical locking for perfect track fixing
- Load: max. up to 50 N

Electrical installation

- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of 0.5–1.5 mm²
- Stripped length: 8.5–10 mm
- 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 has to be within the tolerances which are mentioned in the table "Electrical Characteristics" in this 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 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 350.647	187369, 187370, 187371	108	172	216
ECXd 700.648	187372, 187373, 187374	45	72	90
ECXd 1050.649	187375, 187376, 187377	43	69	86
Automatic cut-out type C				
ECXd 350.647	187369, 187370, 187371	113	181	227
ECXd 700.648	187372, 187373, 187374	58	93	116
ECXd 1050.649	187375, 187376, 187377	43	69	86

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