Assembly instructions for mounting and installing of electronic control-gear for LEDs

Regulations

DIN VDE 0100	Regulations for erection of low voltage installations with nominal voltages up to 1000 V
EN 60598-1	Luminaries – part 1: General requirements and tests
EN 61347-1	Lamp control gear – part 1: General and safety requirements
EN 61347-2-13	Lamp control gear - Part 2-13: Particular requirements for DC or AC supplied electronic control gears for LED modules
EN 62384	DC or AC supplied electronic control gear for LED modules – Performance requirements
EN 61000-3-2	Electromagnetic Compatibility (EMC) – part 3: maximum values – main section part 2: maximum values for mains harmonics (device input current up to and including 16 A per conductor)
EN 55015	Maximum values and methods of measurement for RFI suppression in electrical lighting installations and similar electrical appliances
EN 61547	Installations for general lighting purposes – EMC immunity requirements

Mechanical mounting of LED-control gears

Mounting	Built in application: - Any position inside a luminaire is allowed Independent application: - Drivers are not allowed to use for independent applications
Clearance	Min. of 0.1 m from walls, celling's, insulation materials
Surface	Solid and smooth surface area for good heat dissipation required
Mounting In indoor Luminaires	Install according to EN 60598; keep away from heating sources and water.
Mounting In outdoor Luminaires	Degree of protection for the luminaries against water = 4 necessary (e. g. IP54)
Fastening	Using M4 screws for fastening in the designated holes
Heat transfer	Installation in a luminaire must ensure sufficient heat transfer between the control gear and the lamp housing. The control gear should have the maximum possible clearance to heat sources. During operation, the temperature measured at the tc point of the driver must not exceed the specified value (see temperature stated on the label or Electrical information at page 4)

Additional mounting instructions for LED control gear

Safety functions

Overheating	The control gear has overheating protection. In case of overheating the control gear will dimm down, and is able to switch off the LEDs. After cooling down it will dimm up and restart automatically.
No Load operation	The control gear is protected against no load operation (open load)
Short circuit protection	The control gear is protected against permanent short circuit with automatic restart function. Normal operation if the short circuit is fixed.
	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.
Overload protection	The control gear only works in range of rated output power and voltage. Short overload does not damage the LED driver. Please check before switch on main power supply that the selected LED load is suitable (see Electrical information's at page 3)
Protection against transient mains peaks	Values are in compliance with EN61547 (interference immunity) Surges between L/N up to 1kV Surges between L/N/PE up to 2kV

Delivery conditions

Output current	Drivers will be delivered with different output currents (350mA, 500mA and 700mA).

Additional features

Output current Selection	The output current can be adapted within the rated output current range between 350mA … 700mA. To change the output current it is necessary to use the correct VS Tool (iProgrammer, VS Reference-no. 186428) including the VS Software. The Software is free of charge and can be downloaded under following link: https://www.vossloh-schwabe.com/en/home/products/led-control-gears/constant-current.html For further constructions please follow the link and check the Operating Manual for the iProgrammer. Please refer to the electrical values and the operating window to see which combinations are possible.

Electrical installations

Selection of automatic Cut-outs

Release reaction

Release reaction of automatic cut-outs comply with VDE 0641, part 11 for B-, C-characteristics. The number of control gear in below table is recommended values as guidelines and can be varied depending on the respective circuit breaker system.

No. of control gears

Maximum number of VS control gears apply in such cases where the devices are switched on simultaneously. Specifications apply to single-poled fuses. The number of permissible ballasts must be reduced by 20 % for multi-pole fuses. The considered circuit impedance equals 400 mΩ (approx. 20 m [1.5 mm²] of conductor from the power supply to the distributor and a further 15 m to the luminaire).

Inrush current		
LED Driver	Inrush current [A]	Time 50% Ipeak [µs]
ECXe700.149	32	240
ECXe700.150	26	200

Possible number of control gear						
LED Driver	Type of automatic cut-off					
	B 10 A	B 13 A	B 16 A	C10	C 13 A	C 16 A
ECXd 700.149	9	12	15	15	20	24
ECXd 700.150	12	16	20	21	28	34

Through wiring

Through wiring is not allowed / not possible

Conductor

Primary and secondary conductor cross section: min. 0.2 mm² and max. 1.5 mm²

Type	Cross section	Max. lead length of secondary conductor
ECXe700.149 ECXe700.150	0,2 mm²	0.8 m
	0,5 mm²	0.8 m
	0,75 mm²	0.8 m
	1,0 mm²	0.8 m
	1,5 mm²	0.8 m

Connections

Push in terminals with release button

Wiring

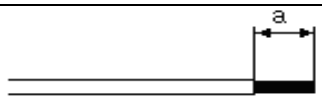
Primary wires must be as short as possible, and need to be separated between primary and secondary wiring. Keep capacity of output wires to PE as low as possible to avoid glowing of LEDs in standby mode.

Secondary load

The sum of forward voltages of LED-loads are within the tolerance which is highlighted in Electrical information under USEC.

Switching on and off

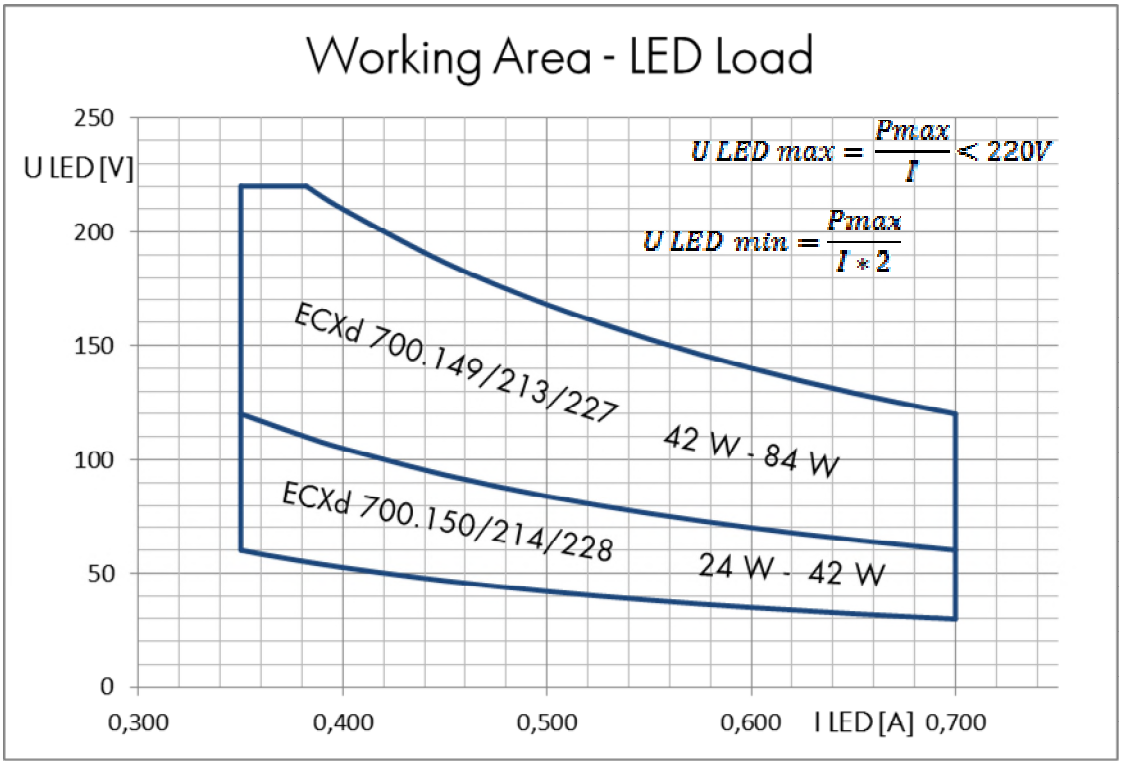
Switching on/off at secondary side is not allowed

Lead Preparation	
a	8,5-10 mm
	

Electrical information

Electronic control gear for LED's												
Type	Ref. no.	U_N Mains Voltage (V)	Nominal Input current (mA)	U_{LED} (with load, depends on selected current) (V)	U-OUT [V]	P_{rated} max. (W)	I_{rated} Nominal output current (mA)	tc max. (°C)	ta Min/Max-Ambient temperature (°C)	Protec-tion class	Degree of protec-tion	Weight (g)
ECXd 700.149	**186445 186577 186578**	220 – 240	410 – 380	60 – 220	<250	84	350 – 700 -5% +10%	70	-25…+50°C	I	IP20	265
ECXd 700.150	**186446 186575 186576**	220 – 240	215 – 200	30 – 120	<250	42	350 – 700 -5% +10%	60	-25…+50°C	I	IP20	235

Operating Window LED Driver



ECXd700.149				
Irated [mA]	ULED min. [V]	ULED max. [V]	Prated min. [W]	Prated max. [W]
350	120	220	42,00	77,00
375	112	220	42,00	82,50
400	105	210	42,00	84,00
425	98	197	41,65	83,73
450	93	186	41,85	83,70
475	88	176	41,80	83,60
500	84	168	42,00	84,00
525	80	160	42,00	84,00
550	76	152	41,80	83,60
575	73	146	41,98	83,95
600	70	140	42,00	84,00
625	67	134	41,88	83,75
650	64	129	41,60	83,85
675	62	124	41,85	83,70
700	60	120	42,00	84,00

ECXd700.150				
Irated [mA]	ULED min. [V]	ULED max. [V]	Prated min. [W]	Prated max. [W]
350	68	120	23,80	42,00
375	64	112	24,00	42,00
400	60	105	24,00	42,00
425	56	98	23,80	41,65
450	53	93	23,85	41,85
475	50	88	23,75	41,80
500	48	84	24,00	42,00
525	45	80	23,63	42,00
550	43	76	23,65	41,80
575	41	73	23,58	41,98
600	40	70	24,00	42,00
625	38	67	23,75	41,88
650	36	64	23,40	41,60
675	35	62	23,63	41,85
700	34	60	23,80	42,00