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 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: Independent application:	- Any position inside a luminaire is allowed - 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. To start normal operation after in case of over temperature protection, the power supply needs to be disconnected for min. 1 min. for finding the root cause to fix the issue and connect / switch on power supply.
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 is protected against overload. Short overload does not damage the LED driver. To start normal operation after in case of overload protection, the power supply needs to be disconnected for min. 1 min. for finding the root cause to fix the issue and connect / switch on power supply. Please check before switch on main power supply that the selected LED load is suitable (see Electrical information's at page 4)
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

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).

Possible number of control gear / **120V**						
LED Driver	Type of automatic cut-off					
	B 10 A	B 13 A	B 16 A	C10	C 13 A	C 16 A
ECXe500.210	32	41	51	32	41	51

Possible number of control gear / **230V**						
LED Driver	Type of automatic cut-off					
	B 10 A	B 13 A	B 16 A	C10	C 13 A	C 16 A
ECXe500.210	32	41	51	53	69	85

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
ECXe500.210	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.

Secondary load

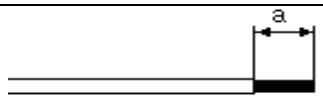
The sum of forward voltages of LED-loads are within the tolerance which is highlighted in Electrical information under U.

Parallel connection

Connecting LED's in parallel at secondary side is not allowed

Switching on and off

Switching on/off at secondary side is not allowed

Lead Preparation	
a	8,5-9,5 mm
	

Electrical information

Electronic control gear for LED's												
Type	Ref. no.	U_{PRI} (V)	Nominal Input current (I_{PRI}) (mA)	U (with load) (V)	Uout without load (V)	Prated (W)	Irated Nominal output current (mA)	tc max. (°C)	ta Min/Max-Ambient temperature (°C)	Protec-tion class	Degree of protec-tion	Weight (g)
ECXe 500.210	186554	120 – 240	280 – 140	19 – 57	<250	28,5	500 ±5%	70	-25…+50°C	I	IP20	152