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. 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 has no overload protection. 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

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]
ECXe700.147	30	285
ECXe700.148	25	250
ECXe175.173	24,4	242
ECXe250.174	24,4	242
ECXe325.175	24,4	242
ECXe425.178	30,5	281
ECXe650.179	30,5	281
ECXe250.218	24,4	242

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
ECXe700.147	9	12	15	15	20	24
ECXe700.148	12	16	20	21	28	34
ECXe175.173	12	16	20	21	28	34
ECXe250.174	12	16	20	21	28	34
ECXe325.175	12	16	20	21	28	34
ECXe425.178	9	12	15	15	20	24
ECXe650.179	9	12	15	15	20	24
ECXe250.218	12	16	20	21	28	34

Through wiring

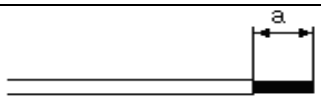
Through wiring is not allowed / not possible

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
ECXe700.147 ECXe700.148 ECXe175.173 ECXe250.174 ECXe250.218 ECXe325.175 ECXe425.178 ECXe650.179	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	8,5-10 mm
	

Electrical information

Electronic control gear for LED's												
Type	Ref. no.	U_{PRI} (V)	Nominal Input current (I_{PRI}, depends on selected current) (mA)	U (with load, depends on selected current) (V)	U_{out} without load (V)	Prated (depends on selected output current) (W)	Irated Nominal output current (mA)	tc max. (depends on selected output current) (°C)	ta Min / Max-Ambient temperature (°C)	Protec-tion class	Degree of protec-tion	Weight (g)
ECXe 700.147	**186443**	220 – 240	390 – 420	60 – 120	<250	85,0	700 ±5%	80	-25…+50°C	I	IP20	250
			390 – 420	80 – 170		85,0	500 ±5%	75				
			370 – 400	120 – 225		78,9	350 ±5%	70				
ECXe 700.148	**186444**	220 – 240	210 – 200	28 – 57	<250	39,9	700 ±5%	80	-25…+60°C	I	IP20	227
			205 – 190	40 – 80		40,0	500 ±5%	75				
			200 – 190	57 – 114		39,9	350 ±5%	75				
ECXe 175.173	**186486**	220 – 240	150 – 140	155 – 220	<250	27,5	125 ±5%	70	-25…+60°C	I	IP20	220
			175 – 165	130 – 220		33,0	150 ±5%	70				
			200 – 190	110 – 220		38,5	175 ±5%	70				
ECXe 250.174	**186487**	220 – 240	220 – 205	112 – 220	<250	44,0	200 ±5%	70	-25…+60°C	I	IP20	220
			230 – 220	104 – 208		47,0	225 ±5%	70				
			235 – 220	94 – 188		47,0	250 ±5%	70				
ECXe 325.175	**186488**	220 – 240	235 – 220	85 – 170	<250	46,8	275 ±5%	75	-25…+60°C	I	IP20	220
			235 – 220	78 – 156		46,8	300 ±5%	75				
			235 – 220	72 – 144		46,8	325 ±5%	75				
ECXe 425.178	**186491**	220 – 240	410 – 375	113 – 220	<250	82,5	375 ±5%	65	-25…+50°C	I	IP20	243
			420 – 385	105 – 212		84,8	400 ±5%	65				
			420 – 390	100 – 200		85,0	425 ±5%	65				
ECXe 650.179	**186492**	220 – 240	420 – 390	77 – 154	<250	84,7	550 ±5%	65	-25…+50°C	I	IP20	244
			420 – 390	71 – 141		84,6	600 ±5%	70				
			420 – 390	65 – 131		85,1	650 ±5%	70				
ECXe 250.218	**186569**	220 – 240	270 – 250	94 – 215	<250	53,8	250 ±5%	70	-25…+60°C	I	IP20	220

Mounting instruction Linear Family (25.07.2017)

ECXe700.147	ECXe325.175
ECXe700.148	ECXe425.178
ECXe175.173	ECXe650.179
ECXe250.174	ECXe250.218