

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	Luminaires – 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, ceiling'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 luminaires 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 gear is protected against overheating by the internal electronic switch of the integrated circuit. In case of overheating the output is switched off. After cooling down it's switched on again.

No Load operation The control gear is protected against no load operation (open load)

Short circuit protection The control gear will be electronically disconnected in the event of a short-circuit on the secondary side; once the short-circuit has been eliminated, the converter will switch on again automatically.

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)
 ECXe350.018 – standard surge immunity (L-N: 0,5kV)
 ECXe350.192 – improved surge immunity (L-N: 1,0kV)



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% I _{peak} [μs]
ECXe350.018	4,4	230
ECXe350.192	6,77	133

Possible number of control gear						
LED Driver	Type of automatic cut-off					
	B 10 A	B 13 A	B 16 A	C 10	C 13 A	C 16 A
ECXe350.018	50	65	80	50	65	80
ECXe350.192	93	121	150	156	203	250

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
ECXe350.018 ECXe350.192	0,5 mm ²	1.0 m
	0,75 mm ²	1.0 m
	1,0 mm ²	1.0 m
	1,5 mm ²	1.0 m

Connections Push in terminals with release button

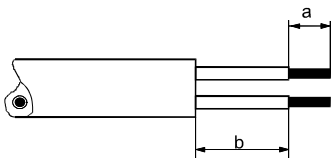
Wiring Primary wires must be as short as possible, and need to be separated between primary and secondary wiring.

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	6-8 mm
b	max. 12 mm
	
Type of lead: H03-VVH2-F 2X0,75 H05-VVH2-F 2X0,75 H03-VV-F 2X0,75 H05-VV-F 2X0,75	

Electrical information

Electronic control gear for LED's												
Type	Ref. no.	U _{PR1}	Nominal Input current (I _{PR1} , depends on selected current)	U (with load, depends on selected current)	U _{out} without load	Prated (depends on selected output current)	I _{rated} Nominal output current	t _c max. (depends on selected output current)	t _a Min/Max-Ambient temperature	Protection class	Degree of protection	Weight
		(V)	(mA)	(V)	(V)	(W)	(mA)	(°C)	(°C)			(g)
ECXe 350.018	186180	176 - 264	60 - 41	2 - 24	<60	8,40	350 ±5%	80	-20...+50°C	II	IP20	33
		220 - 240	91 - 88									
ECXe 350.192	186519	176 - 264	60 - 39	3 - 25	<60	8,75	350 ±5%	80	-25...+50°C	II	IP20	35
		220 - 240	79 - 73									