

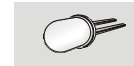
## Assembly instructions for mounting and installing of electronic control-gear for LEDs

### 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, 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 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 5)



## Additional mounting instructions for LED control gear

### Safety functions

**Overheating** The control gear is protected against overheating: Power reduction at "Tc max" , Shutdown at "Tc max" +5°. 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.**

**Any kind of load change during operation not advisable.**

**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 2kV  
Surges between L/N/PE up to 4kV

### Dimming function

**Phase cut dimming** Dimming from mains side by phase cutting dimmers is not allowed.

**Dimming frequency** LED current PWM 122Hz

**Dimming level** from 10 % (min.) to 100% (max.)

**Push** diming per push button is not possible

**DALI** Complete implementation of the DALI - standard according to EN 62386-102 (control gear), EN 62386-207 (LED modules)



**Dimming function**

MidNight  
Functionality  
and Programming

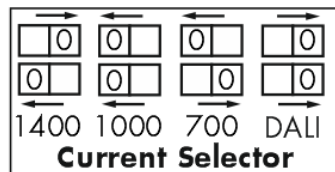
In MidNight mode the driver follows an internal pre-defined dimming scenario. Up to 10 dimming steps, including light OFF can be programmed. The driver will change the dimming levels according to the scenario with no need for external control (Stand-alone). The dimming scenario can be programmed through a timed sequence of switching the power line ON and OFF.

Programming is best performed using iCTT or iMICO modules. In MidNight mode, the driver waits 7 seconds after Power ON before it turns on the lamp, to make sure it is not being programmed to a new scenario. Thus, when the power is switched ON there is a 7 seconds delay until the lamp turns on. In case of an unwanted entry into the programming mode, a power ON for 120 seconds will exit the programming mode and switch the lamp ON.

**Current selection**

Selection of current      Selectable by DIP switches or by special DALI command (Extended DALI protocol).

Default setting          "DALI" position = 700mA





**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 mm<sup>2</sup>] of conductor from the power supply to the distributor and a further 15 m to the luminaire).

LED Driver	Possible number of control gear					
	B 10 A	B 13 A	B 16 A	Type of automatic cut-off		
				C10	C 13 A	C 16 A
ECXd1400.025	22		36	22		36

**Through wiring** Through wiring is not allowed / not possible

**Conductor** Primary and secondary conductor cross section: min. 0.5 mm<sup>2</sup> and max. 2.5 mm<sup>2</sup>

Type	Cross section	Max. lead length of secondary conductor
ECXd1400.025	0,5 mm <sup>2</sup>	0.8 m
	0,75 mm <sup>2</sup>	0.8 m
	1,0 mm <sup>2</sup>	0.8 m
	1,5 mm <sup>2</sup>	0.8 m
	2,5 mm <sup>2</sup>	0.8 m

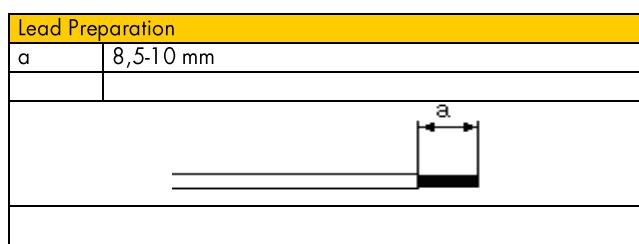
**Connections** Push in terminals with release button

**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





## Electrical information

Electronic control gear for LED's												
Type	Ref. no.	U <sub>PR1</sub>	Nominal Input current (I <sub>PR1</sub> , depends on selected current)	U (with load, depends on selected current)	U <sub>out</sub> without load	Prated (depends on selected output current)	I <sub>rated</sub> Nominal output current	t <sub>c</sub> max. (depends on selected output current)	t <sub>a</sub> Min/Max-Ambient temperature	Protection class	Degree of protection	Weight
		(V)	(mA)	(V)	(V)	(W)	(mA)	(°C)	(°C)			(g)
ECXd 1400.025	186367	220 – 240	450 – 400	44 – 115	<120	80,5	700 ±5%	70	-40...+50°C	I	IP20	395
			450 – 400	33 – 90		90,0	1000 ±5%	80	-40...+45°C			
			450 – 400	22 – 64		89,6	1400 ±5%	85	-40...+40°C			