

Requirements for electronic non-dimmable control gears for fluorescent lamps and LED

Version 12

Manufacturer: OSRAM GmbH Marcel-Breuer-Str. 6 D-80807 München	Type / Description: Control gear: OT FIT 100/220-240/700 D NFC IND L (Identcode: AM16013)	Manufacturer information Complies: YES/NO
Specifications:	CEAG data:	Explanation:
Control gear suitable for a DC voltage range:	186V - 260V DC (for Lead-Battery)	Possible voltage range of the battery in emergency mode. (Not for AT-S+ Systems required)
Control gear compatible with the switch-over time of the system?	Switch-over time: 180 ms - 450 ms	Typical switch-over time of CEAG systems between mains supply and emergency power supply
Starting behavior of the control gear:	Stable current consumption after less than 1.6 sec. maximum.	A stable operation of the control gear after 1.6 seconds of start up is required for the right functionality of the individual monitoring. With max. 20 luminaires for one current circuit: ΔI in sum < 250 mA are allowed
<u>only for fluorescent lamps:</u> Control gear complies with the standard:	DIN EN 60929	AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements
<u>only for fluorescent lamps:</u> Control gear complies with the standard:	DIN EN 61347-2-3 (incl. Attachment J)	Particular requirements for AC and/or DC supplied electronic control gear for fluorescent lamps
<u>only for LED:</u> Control gear complies with the standard:	DIN EN 62384	AC or DC supplied electronic control gear for LED modules - Performance requirements
<u>only for LED:</u> Control gear complies with the standard:	DIN EN 61347-2-13	Particular requirements for AC or DC supplied electronic control gear for LED modules
Control gear complies with the standard:	DIN EN 55015 (Measured in AC and DC)	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
Control gear complies with the standard:	DIN EN 61000-3-2	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current \leq 16 A per phase)
Control gear complies with the standard:	DIN EN 61000-3-2, Pkt. 7.3 a.)	see *Important note!
Control gear complies with the standard:	DIN EN 61547	Equipment for general lighting purposes - EMC immunity requirements

Note: The labeling "according to VDE 0108" is not meaningful, because this is not a control gear standard!

Specifications:	CEAG data:	Explanation:	Manufacturer information:
<u>Important for function test:</u> Voltage-dependent Input current of the control gear incl. LED in DC and AC operation:	V-CG-S2: >9,4 mA or >12,7 mA = OK V-CG-S: >16 mA or >47 mA = OK V-CG-SE: >16 mA or >47 mA = OK V-CG-SUW: >47 mA = OK CG-K: >16 mA or >47 mA = OK	Minimum current of the LED driver with LED module to GOOD detection via the monitoring module. In the voltage range of 189 - 264V AC on AT-S+ or 186 - 260V DC on ZB-S/LP-STAR the input current must be higher than the specified current values. see *Important note!	AC: see TABLE 1 (AT-S+) DC: see TABLE 1 (ZB-S/LP-STAR)
<u>Important for function test:</u> Voltage-dependent No-load current of the control gear (without or defect LED module) in DC and AC - operation*:	V-CG-S2: <5,8 mA or <7,9 mA = n.OK V-CG-S: <10 mA or <28 mA = n.OK V-CG-SE: <10 mA or <28 mA = n.OK V-CG-SUW: <28 mA = n.OK CG-K: <10 mA or <28 mA = n.OK	Maximal current of the LED driver with LED module for BAD detection via the monitoring module. In the voltage range of 189 - 264V AC on AT-S+ or 186 - 260V DC on ZB-S/LP-STAR the input current must be lower than the specified current values. see *Important note!	AC: see TABLE 1 (AT-S+) DC: see TABLE 1 (ZB-S/LP-STAR)
Important for the power consumption of addressable ballast:	V-CG-S2 = 30 A V-CG-S = 30 A V-CG-SE = 30 A V-CG-SUW = 80 A CG-K = 30 A	The max. inrush current of each monitoring module has to be considered!	I _{peak} =4A Th=1.3ms

Note: Important for the planning - Max. no. Of luminaires per circuit

<u>Important for the contact load SKU:</u> Max. inrush current of each luminaire in AC operation	Max. permitted inrush current per circuit: SKU 2 x 3A (CG) => 120 A SKU 1 x 6A (CG) => 180 A SKU 4 x 1,5A CG-S => 60 A SKU 2 x 3A CG-S => 250 A SKU 1 x 6A CG-S => 250 A SOU CG-S // S* => 250 A SU S* => 250 A	Describes the max. inrush current of all luminaires in one circuit to calculate the maximum contact load of the circuit.
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Luminaires for emergency lighting must comply with DIN EN 60598-2-22 (Particular requirements -Luminaires for emergency lighting)

***Important note!**

For AT-S+ systems and for battery systems (ZB-S / LP-STAR) with active preliminary time for AC about 300 seconds (EOL detection of T5 lamps) for the function test, the current consumption must be sinusoidal, t.m. all control gears (<25W as well) must have an active PFC (Power Factor Correction)!

See DIN EN 61000-3-2, Pkt. 7.3 a.)

Note EOL (End of Life) detection (T5 > 14Watt): The AC preliminary time is valid for the complete system (e.g. ZB-S), not possible for individual circuits.

The modules of the V-CG-S series monitor the current consumption on the primary side of the control gear for LED modules within the specified limits. Failures of individual LEDs (low-impedance) on the secondary side do not inevitably lead to a modification of current consumption on the primary side, and in such cases cannot be detected as a failure.

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Table 1

LED controller type	Values for load range	I _{IN} in AC-operation (230V) / mA (trms)	I _{IN} in AC-operation (240V) / mA (trms)	I _{IN} in DC-operation (186V) / mA (trms)	I _{IN} in DC-operation (216V) / mA (trms)	I _{IN} in DC-operation (240V) / mA (trms)	I _{IN} in DC-operation (260V) / mA (trms)
OT FIT 100/220-240/700 D NFC IND L	Maximum Load /mA U _{out} = 200V I _{out} = 500mA	472	453	587	500	446	410
	Medium Load /mA U _{out} = 150V I _{out} = 320mA	240	231	287	242	218	202
	Minimum Load /mA U _{out} = 100V I _{out} = 280mA	158	154	177	147	134	125
	No Load	50	52	9	8	8	8
	Short Load	53	50	9	8	12	9

Maximum inrush current for ECG in AC Operation: I_{peak}=4A TH=1,3ms