

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

Version 8

Manufacturer: OSRAM GmbH Marcel-Breuer-Str. 6 D-80807 München	Type / Description: Control gear: OT FIT 40 220-240 1A0 LT2 LP (ident code: AM05120)		
Specifications:	CEAG data:	Explanation:	Fulfilled: (Yes / No)
Control gear suitable for a DC voltage range:	186V - 260V DC (for Lead-Battery) 186V - 275V DC (for NiCD-Battery)	Possible voltage range of the battery in emergency mode. (Not for AT-S* Systems required)	YES
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	YES
Starting behavior of the control gear:	Stable current consumption after less than 1.6 sec. maximum.	Necessary for an individual monitoring. $\Delta I < 12,5 \text{ mA}$ per luminaire, with max. 20 luminaires per circuit $\Delta I \text{ sum} < 250 \text{ mA}$	YES
<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	Not relevant
<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	Not relevant
<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	YES
<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	YES
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	YES
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 $\leq 16 \text{ A}$ per phase)	YES
Control gear complies with the standard:	DIN EN 61000-3-2, Pkt. 7.3 a.)	see *Important note!	YES
Control gear complies with the standard:	DIN EN 61547	Equipment for general lighting purposes - EMC immunity requirements	(*2) YES

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

Specifications:	CEAG data:	Explanation:	Manufacturer specification:
<u>Important for function test:</u> Voltage-dependent Input current of the control gear incl. LED in DC and AC operation:	V-CG-S2: $>9,4 \text{ mA}$ or $>12,7 \text{ mA} = \text{OK}$ V-CG-S: $>16 \text{ mA}$ or $>47 \text{ mA} = \text{OK}$ V-CG-SE: $>16 \text{ mA}$ or $>47 \text{ mA} = \text{OK}$ V-CG-SUW: $>47 \text{ mA} = \text{OK}$ CG-K: $>16 \text{ mA}$ or $>47 \text{ mA} = \text{OK}$	Selection guide for the monitoring modules as well as for the calculation of the max. number of luminaires per circuit and the necessary battery capacity. In the voltage range of 186 - 275V DC and 189 - 264V AC the input current must be higher. see *Important note! (*1)	AC: see TABLE 1 DC: see TABLE 1
<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: $<5,8 \text{ mA}$ or $<7,9 \text{ mA} = \text{n.OK}$ V-CG-S: $<10 \text{ mA}$ or $<28 \text{ mA} = \text{n.OK}$ V-CG-SK: $<10 \text{ mA}$ or $<28 \text{ mA} = \text{n.OK}$ V-CG-SUW: $<28 \text{ mA} = \text{n.OK}$ CG-K: $<10 \text{ mA}$ or $<28 \text{ mA} = \text{n.OK}$	Selection guide for the monitoring modules. In the voltage range of 186 - 275V DC and 189 - 264V AC the no-load current must be lower. see *Important note! (*1)	AC: see TABLE 1 DC: see TABLE 1
<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) $\Rightarrow 120 \text{ A}$ SKU 1 x 6A (CG) $\Rightarrow 180 \text{ A}$ SKU 4 x 1,5A CG-S $\Rightarrow 60 \text{ A}$ SKU 2 x 3A CG-S $\Rightarrow 250 \text{ A}$ SKU 1 x 6A CG-S $\Rightarrow 250 \text{ A}$ SOU CG-S // S* $\Rightarrow 250 \text{ A}$ SU S* $\Rightarrow 250 \text{ A}$	Describes the max. inrush current of all luminaires in one circuit to calculate the maximum contact load of the circuit.	$I_{\text{peak}}=16\text{A}$ $T_{\text{H}}=195\mu\text{s}$
<u>Important for lighting design:</u> Luminous flux ratio: 186 V DC operation in comparison to 230 V AC operation	-	Light output in battery operation is needed for the light calculation.	100%

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 ($<25\text{W}$ as well) must have an active PFC! See DIN EN 61000-3-2, Pkt. 7.3 a.)
Note EOL detection (T5 > 14Watt): The AC preliminary time is valid for the complete system (e.g. ZB-S), not possible for individual circuits.

*1) 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.

*2) Not to be used in high risk areas, special release required

Date: 9.August.2017

Table1:

Manufacturer: OSRAM GmbH Marcel-Breuer Str. 6 D-80807 München	Product: OT FIT 40/220-240 700 LT2 LP	
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LED controller type	Values for load range	In in AC-operation (230V) / mA (trms)	In in AC- operation (240V) / mA (trms)	In in DC-operation (186V) / mA (trms)	In in DC- operation (216V) / mA (trms)	In in DC- operation (240V) / mA (trms)	In in DC- operation (260V) / mA (trms)
OT FIT 40/220-240 700 LT2 LP	Maximum Load /m Uout/V= 50 Iout/mA= 1050	214,11	205,65	263,27	224,30	201,08	184,78
	Minimum Load /m, Uout/V= 15 Iout/mA= 500		57,96			44,30	
	No Load		26,39	0,06		0,06	1,24
	Short Load			26,38	6,08		5,07

Maximum inrush current for ECG in AC Operation: $I_{peak} = 16A$

$T_H = 195\mu s$