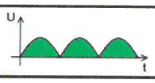
Technical requirements for electronic control gears for LED and fluorescent lumninaires (dimmable or non-dimmable) for operation on INOTEC central battery systems (CPS 220 / CPS FUSION) and emergency power supply systems (NEA)

- General requirements -

Manufacturer:	Type / Description:
OSRAM GmbH Marcel-Breuer-Str. 6 D-80807 München	Luminaire
	EVG: OTi DALI 75/220-240/400 D NFC TW L AM28015
	LED:
Project / Place / Project ID:	Specified by:
	Name: R.Brazinskas
	Company: OSRAM GmbH
	Date: 20.05.2019

	Features	Techn. data / INOTEC requirements	Explanation	Fullfilled (Yes / No)
1	Voltage range AC	**230V ± 10%**	Voltage range in normal mains operation	Yes
2	Voltage range DC	**186V - 260V**	Possible voltage range in emergency operation	Yes
3	Control gear suitable for "Joker-Voltage" ?	**B2-rectification of the AC voltage (without smoothing)**	Pulsating DC voltage 	Yes
4	Control gear compatible with change-over time of the system?	**Change-over time: 150 - 1000ms**	Typical change-over time of INOTEC systems between mains- and battery operation	Yes
5	Starting behavior of the control gear in **AC and DC operation**	**Stable current consumption within 1.6s**	Necessary for individual lamp monitoring (SV). The nominal current of the control gear must be reached within this time if the lamp is intact or defective.	Yes
6	Control gear complies with the standard: (only for fluorescent lamps)	**DIN EN 60929**	AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements	Not relevant
7	Control gear complies with the standard: (only for fluorescent lamps)	**DIN EN 61347-2-3 (incl. Attachment J)**	Particular requirements for AC and/or DC supplied electronic control gear for fluorescent lamps	Not relevant
8	Control gear complies with the standard: (only for LED)	**DIN EN 62384**	DC or AC supplied electronic control gear for LED modules - Performance requirements	Yes
9	Control gear complies with the standard: (only for LED)	**DIN EN 61347-2-13**	Lamp control gear - Part 2-13: Particular requirements for DC or AC supplied electronic control gear for LED modules	Yes
10	Control gear complies with the standard:	**DIN EN 55015 (Measurement on AC and DC)**	Limits and methods of measurement of radio interference	Yes
11	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 ≤ 16 A per phase)	Yes
12	Control gear complies with the standard:	**DIN EN 61547**	Equipment for general lighting purposes — EMC immunity requirements	Yes
13	Control gear complies with the DALI-standards:	**DIN EN 62386-101 /-102 / -207 *1**	The control and status information for monitoring the luminaire is provided via DALI commands. The DALI commands must be 100% compatible.	Yes

Note: VDE 0108 is not a standard for ECG, marking is not applicable

Technical requirements for electronic control gears for LED and fluorescent lumninaires (dimmable or non-dimmable) for operation on INOTEC central battery systems (CPS 220 / CPS FUSION) and emergency power supply systems (NEA)

- Technical specifications -

Manufacturer: OSRAM GmbH Marcel-Breuer-Str. 6 D-80807 München	Type / Description: Luminaire EVG: OTi DALI 75/220-240/400 D NFC TW L AM28015 LED:
Project / Place / Project ID:	Specified by: Name: R.Brazinskas Company: OSRAM GmbH Date: 20.05.2019

	Features	Explanation	Manufacturer information
14	Nominal current of the control gear with connected illuminant in **AC- operation (230V)**	Selection guide for the calculation of the max. number of luminairs per circuit	Table 1, 2 mA
15	Nominal current of the control gear with connected illuminant in **DC- operation (186V / 216V / 240V)**	Selection guide for the calculation of the necessary battery capacity and selection guide for determination of the monitoring module to recognise a normal working lamp correctly. Note: If a dimming level is activated for a dimmable control gear, the rated currents must be specified for the set dimming level.	Table 1, 2 mA (186V) Table 1, 2 mA (216V) Table 1, 2 mA (240V)
16	Current consumption of the control gear **without** or with **defective** illuminant in **DC- operation (186V and 240V)**	Selection guide for determination of the monitoring module to recognise a lamp failure correctly.	Table 1, 2 mA (186V) Table 1, 2 mA (240V)
17	Dimming level in emergency mode (DC or "Joker") (for dimmable control gear, if activated)	Important for the safety lighting design	15 %
18	DC detection **completely** deactivalable ? (for dimmable control gear)	To ensure correct operation, the control gear should not react to a change of the input voltage (DC or "Joker"). In this case, the INOTEC DALI module (DALI-SV module or FMD 230/DALI) controls the control gear.	Yes
19	Max. inrush current of the control gear with connected illuminant in **AC- operation (230V)**	Important for determining the maximum permissible number of luminaires per circuit in order to take account of the maximum contact load capacity of the circuit changeover circuit or monitoring module.	22 / 255 A / µs
20	Use of DALI commands according to IEC 62386 part 102: - DPAC (level) - RECALL MAX LEVEL 0x05 - RECALL MIN LEVEL 0x06 - QUERY STATUS 0x90 - QUERY ACTUAL LEVEL 0xA0 - QUERY LAMP FAILURE 0x92	Control and status information for monitoring the luminaires: - Direct setting of a dimming value - Set maximum level - Set minimum level - Requests status telegram - Requests current dimming value - Requests lamp failure status (**after 2 / 2.5 / 3 seconds!**)	Yes

Luminaires, which should work as emergency lighting, have to be in accordance with DIN EN 60598-2-22. (Particular requirements - Luminaires for emergency lighting).

Notes:

See notes listed in Annex

For the correctness:

Garching, 20.05.2019

Place, Date

Martin Hutz
DI DS D EM

Bernhard Schemmel
DI DS QM LSC EM

Signature

Annex

Notes

1. Control of DALI-SV-Module to the DALI driver is 100% done via DALI-commands according to IEC 62386-101/-102, so the DALI driver must sign with the DALI logo.
2. For calculation the inrush current of the monitoring module must be considered!
3. Not to be used in high risk areas, special release required
4. The light input level is locked in DC-operation. Factory setting is 15% of the maximum level. lt is possible to change the behavior of the controlgear in DC-operation.
5. Only 1 DALI- Driver DT8 (1 address/2 channels) or DT6 (1 address/1 channel) to wire with one Dali-SV-Module oniy 1 address possible with one Dali-SV-Module.

Manufacturer: OSRAM GmbH Marcel-Breuer Str. 6 D-80807 München	Product: **OTi DALI 75/220-240/400 D NFC TW L**	**OSRAM GmbH**

Table 1 (DT6 - 1 DALI address/1 channel)

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)
OTi DALI 75/220-240/400 D NFC TW L	Maximum Load /mA	Uout= 210V Iout= 350mA	353	339	65	66	60	55
	Medium Load /mA	Uout= 150V Iout= 350mA	260	250	51	51	45	42
	Minimum Load /mA	Uout= 80V Iout= 350mA	153	148	31	30	27	25
	No Load		32	33	3	2	2	2
	Short Load		32	33	2	2	2	2

Maximum inrush current for ECG in AC Operation: Ipeak = 22 A TH = 255 µs

Manufacturer: OSRAM GmbH Marcel-Breuer Str. 6 D-80807 München	Product: **OTi DALI 75/220-240/400 D NFC TW L**	**OSRAM GmbH**

Table 2 (DT8 - 1 DALI address/2 channels; the two channels with identical current)

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)
OTi DALI 75/220-240/400 D NFC TW L	Maximum Load /mA Uout= 210V Iout= 700mA	265	255	61	59	52	49
	Medium Load /mA Uout= 150V Iout= 700mA	198	190	49	47	43	40
	Minimum Load /mA Uout= 90V Iout= 700mA	132	129	36	34	31	29
	No Load CH1	146	142	33	32	29	27
	No Load CH2	140	136	33	31	28	26
	Short Load CH1	145	141	34	32	29	27
	Short Load CH2	140	136	35	33	30	28
	No Load CH1&CH2	31	33	12	12	13	12

Maximum inrush current for ECG in AC Operation: Ipeak = 22 A TH = 255 µs