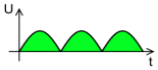
Technical requirements for electronic control gears for LED and fluorescent lumninaires (dimmable or non-dimmable) for operation on INOTEC central battery systems (CPS 220 / CPS FUSION) and emergency power supply systems (NEA)

- General requirements -

Manufacturer:	Type / Description:
Inventronics GmbH Parkring 31-33 85748 Garching - Germany	Luminaire
	EVG: OTi DALI 60/220…240/550 D LT2 L
	LED:
Project / Place / Project ID:	Specified by:
EAN: 4052899494206	Name:
	Company:
	Date: 02.01.2024

	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**	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:	Type / Description:
Inventronics GmbH Parkring 31-33 85748 Garching - Germany	Luminaire
	EVG: OTi DALI 60/220…240/550 D LT2 L
	LED:
Project / Place / Project ID:	Specified by:
EAN: 4052899494206	Name:
	Company:
	Date: 02.01.2024

	Features	Explanation	Manufacturer spec.
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	seeTabl 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.	seeTabl mA (186V) seeTabl mA (216V) seeTabl mA (240V)
16	Nominal current of the control gear with connected illuminant **at set dimming level** in **DC-operation (186V / 216V / 240V)** (for dimmable control gear)	Selection guide for determination of the monitoring module to recognise a normal working lamp correctly.	seeTabl mA (186V) seeTabl mA (216V) seeTabl mA (240V)
17	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.	seeTabl mA (186V) seeTabl mA (240V)
18	Current consumption of the control gear **without** or with **defective** illuminant in **AC- operation (230V)**	Selection guide for determination of the monitoring module to recognise a lamp failure correctly.	seeTable mA
19	Dimming level in emergency mode (DC or "Joker") (for dimmable control gear, if activated)	Important for the safety lighting design	15 %
20	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
21	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.	25/280 A / µs
22	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 POWER ON 0x93	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 status wheter lamp is switched on **(after 2 / 2.5 / 3 seconds and cyclically every 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:

For the correctness:

Place, Date

Signature

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. It 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:	Product:	
Inventronics GmbH Parkring 31-33 85748 Garching - Germany	**OTi DALI 60_220-240_550 D LT2 L**	Inventronics **GmbH**

Table 1

			AC-operation				DC-Operation (For DALI Devices @ default DC Dim level e.g. 15%)			
Values for load range			**189VAC/50Hz Itrms_in (mA)**	**230VAC/50Hz Itrms_in (mA)**	**240VAC/50Hz Itrms_in (mA)**	**264VAC/50Hz Itrms_in (mA)**	**186VDC Idc_in (mA)**	**216VDC Idc_in (mA)**	**240VDC Idc_in (mA)**	**260VDC Idc_in (mA)**
Min. Load /mA	Uout=	54.14 V	58.14	54.15	55.40	55.88	14.06	11.94	11.20	10.11
	Iout=	120.47 mA								
	P=	6.53 W	PF: 0.79	PF: 0.70	PF: 0.65	PF: 0.59	PF: NA	PF: NA	PF: NA	PF: NA
Mid. Load /mA	Uout=	81.86 V	168.31	145.21	140.42	131.37	33.54	28.65	25.72	23.75
	Iout=	335.58 mA								
	P=	27.47 W	PF: 0.96	PF: 0.94	PF: 0.93	PF: 0.90	PF: NA	PF: NA	PF: NA	PF: NA
Max. Load /mA	Uout=	109.42 V	351.64	297.41	285.12	260.62	62.45	53.77	48.17	44.61
	Iout=	550.67 mA								
	P=	60.26 W	PF: 0.99	PF: 0.98	PF: 0.98	PF: 0.97	PF: NA	PF: NA	PF: NA	PF: NA
Short/Open Load			129.49	111.56	108.63	103.30	0.01	-0.01	1.54	1.49
			PF: 0.94	PF: 0.90	PF: 0.89	PF: 0.85	PF: NA	PF: NA	PF: NA	PF: NA

Remarks:

1.) This table shows the currents consumption of the driver at three different operating points (Pmax, Pmid, Pmin) for AC and DC operation.
2.) This table is intended for rough design desicions . It is not a replacement for individual functional measurments!