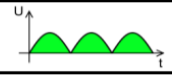


Technical requirements for electronic control gears for LED and fluorescent luminaires (dimmable or non-dimmable) for operation on INOTEC central battery systems (CPS 220 / CPS FUSION) and emergency power supply systems (NEA)
- General requirements -



Manufacturer:	Type / Description:
	Luminaire
	EVG: OTi DALI 100/220-240/24 1-4 CH P (4062172119191)
Project / Place / Project ID:	LED:
	Specified by:
	Name:
	Company: Inventronics GmbH
	Date: 25/04/2024

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 luminaires (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:
	Luminaire
	EVG: OTi DALI 100/220-240/24 1-4 CH P (4062172119191)
Project / Place / Project ID:	LED:
	Specified by:
	Name:
	Company: Inventronics GmbH
	Date: 25/04/2024

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 luminaires per circuit	See table 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.	See table mA (186V)
		See table mA (216V)
		See table 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.	See table mA (186V)
			See table mA (216V)
			See table 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.	See table mA (186V)
			See table 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.	See table 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 deactivable ? (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.	Not relevant
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.	52/200 A / μ s
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 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:

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: Inventronics GmbH Parkring 31-33 85748 Garching - Germany	Product: OTi DALI 100/220-240/24 1-4 CH P EAN: 4062172119191	Inventronics GmbH
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Table 1

Values for load range		AC-operation				DC-Operation (For DALI Devices @ default DC Dim level e.g. 15%)			
		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= 24.67 V Iout= 3942.15 mA	573.40	462.78	442.39	401.82	99.02	89.55	80.32	72.16
	P= 97.30 W	PF: 0.99	PF: 0.99	PF: 0.99	PF: 0.99	PF: NA	PF: NA	PF: NA	PF: NA
Mid. Load /mA	Uout= 24.67 V Iout= 3940.23 mA	572.42	462.20	441.84	401.47	98.63	88.06	79.52	72.61
	P= 97.26 W	PF: 0.99	PF: 0.99	PF: 0.99	PF: 0.99	PF: NA	PF: NA	PF: NA	PF: NA
Max. Load /mA	Uout= 24.67 V Iout= 3938.35 mA	571.82	461.52	441.39	401.08	98.24	87.41	78.16	70.93
	P= 97.21 W	PF: 0.99	PF: 1.00	PF: 0.99	PF: 0.99	PF: NA	PF: NA	PF: NA	PF: NA
Short/Open Load		571.53	461.39	441.15	400.79	97.99	86.98	77.84	71.72
		PF: 0.99	PF: 0.99	PF: 0.99	PF: 0.99	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 decisions . It is not a replacement for individual functional measurements!