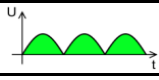


Technical requirements for electronic control gears for LED and fluorescent luminaires (dimmable or non-dimmable) for operation on INOTEC central battery systems (CPS 220 / CPS FUSION) and emergency power supply systems (NEA)

- General requirements -

Manufacturer:	Type / Description:
	Luminaire
	EVG:
Project / Place / Project ID:	LED:
	Specified by:
	Name:
	Company:
	Date:

Features		Techn. data / INOTEC requirements	Explanation	Fulfilled (Yes / No)
1	Voltage range AC	230V ± 10%	Voltage range in normal mains operation	
2	Voltage range DC	186V - 260V	Possible voltage range in emergency operation	
3	Control gear suitable for "Joker-Voltage" ?	B2-rectification of the AC voltage (without smoothing)	Pulsating DC voltage 	
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	
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.	
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	
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	
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	
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	
10	Control gear complies with the standard:	DIN EN 55015 (Measurement on AC and DC)	Limits and methods of measurement of radio interference	
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)	
12	Control gear complies with the standard:	DIN EN 61547	Equipment for general lighting purposes — EMC immunity requirements	
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.	

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:
Project / Place / Project ID:	LED:
	Specified by:
	Name:
	Company:
	Date:

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	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.	mA (186V) mA (216V) 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.	mA (186V) mA (216V) 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.	mA (186V) 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.	mA
19	Dimming level in emergency mode (DC or "Joker") (for dimmable control gear, if activated)	Important for the safety lighting design	%
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.	
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.	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 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 whether lamp is switched on (after 2 / 2.5 / 3 seconds and cyclically every 3 seconds)	

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

Stand: Apr. 2021

Philip Qiu

Philip Qiu
Signature

Manufacturer: Inventronics GmbH Berliner Allee 65 86153 Augsburg, Germany www.inventronicsglobal.com	Product: IT DALI 60_220-240_1A4 CS (AM48186)	Inventronics GmbH
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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= 28.4 V	Iout= 699 mA	not supported (125.2)	104.3	100.6	93.8	22.8	19.8	17.9	16.7
	P= 19.9 W		PF: 0.984	PF: 0.969	PF:0.963	PF: 0.947	PF: NA	PF: NA	PF: NA	PF: NA
Mid. Load /mA	Uout= 29.5 V	Iout= 1397 mA	not supported (256)	210.5	201.7	184.0	40.0	34.4	31.1	29.0
	P= 41.2 W		PF:0.991	PF: 0.989	PF:0.989	PF:0.985	PF: NA	PF: NA	PF: NA	PF: NA
Max. Load /mA	Uout= 41.3 V	Iout= 1400 mA	not supported (350.9)	288.1	276.8	250.4	52.1	44.8	40.5	37.4
	P= 57.8 W		PF:0.997	PF: 0.994	PF:0.993	PF:0.992	PF: NA	PF: NA	PF: NA	PF: NA
Short/Open Load			not supported (7.9)	8.7	8.8	9.5	1.2	1.2	1.1	1.1
			PF:0.229	PF: 0.177	PF:0.176	PF:0.168	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!