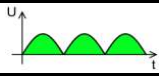


Technical requirements for electronic control gears for LED and fluorescent luminaires (dimmable or non-dimmable) for operation on INOTEC central battery systems (CPS 220 / CPS FUSION) and emergency power supply systems (NEA)

- General requirements -

Manufacturer: LEDVANCE GmbH Parkring 1-5, 85748 Garching, Germany	Type / Description: Luminaire
	EVG: DR EXTERNAL DALI-P -1X7-37W 220-240
	EAN10: 4099854295157
Project / Place / Project ID:	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	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:
LEDVANCE GmbH Parkring 1-5, 85748 Garching, Germany	Luminaire
	EVG: DR EXTERNAL DALI-P -1X7-37W 220-240
	EAN10: 4099854295157
Project / Place / Project ID:	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	Table 1 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.	Table 1 mA (186V) Table 1 mA (216V) Table 1 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.	Table 1 mA (186V) Table 1 mA (216V) Table 1 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.	Table 1 mA (186V) Table 1 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.	Table 1 mA
19	Dimming level in emergency mode (DC or "Joker") (for dimmable control gear, if activated)	Important for the safety lighting design	100(*1) %
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.	No
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.	20/250 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 whether 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:

*1) Joker voltage applied to driver will not be recognized as emergency mode. Dimming level at DC input could be dimmed by DALI bus.

For the correctness:

Place, Date

Stand: Apr. 2021

Signature

Current consumption with specified tubes/lamps

Table 1

Voltage for load range			AC - operation		DC - operation (current measured at driver's default DC level of 100%)			
			AC-operation @230V (mA)	AC-operation @240V (mA)	186V (mA)	216V (mA)	240V (mA)	260V (mA)
LED TUBE T5 EXTERNAL HE family			Driver output					
LEDTUBE T5 EXT P HE14 549 7,3W 8xx	Uout: Iout: Pout:	21 V 350mA 7,3W	45	44	52	46	40	35
2x LEDTUBE T5 EXT P HE14 549 7,3W 8xx in series	Uout: Iout: Pout:	42 V 350mA 14,6W	76	74	91	78	70	65
LEDTUBE T5 EXT P HE21 849 10,5W 8xx	Uout: Iout: Pout:	21 V 500mA 10,5W	61	59	67	58	52	48
2x LEDTUBE T5 EXT P HE21 849 10,5W 8xx in series	Uout: Iout: Pout:	42 V 500mA 21W	112	107	129	111	102	93
LEDTUBE T5 EXT P HE28 1149 16W 8xx	Uout: Iout: Pout:	41 V 400mA 16W	83	80	100	85	77	70
LEDTUBE T5 EXT P HE35 1449 18W 8xx	Uout: Iout: Pout:	41 V 450mA 18W	93	86	114	98	89	82
LED TUBE T5 EXTERNAL HO family			Driver output					
LEDTUBE T5 EXT P HO24 549 10,5W 8xx	Uout: Iout: Pout:	21 V 500mA 10,5W	61	59	67	58	52	48
2x LEDTUBE T5 EXT P HO24 549 10,5W 8xx in series	Uout: Iout: Pout:	42 V 500mA 21W	112	107	129	111	102	93
LEDTUBE T5 EXT P HO39 849 17W 8xx	Uout: Iout: Pout:	43 V 400mA 17W	88	84	99	85	77	75
LEDTUBE T5 EXT P HO49 1449 26W 8xx	Uout: Iout: Pout:	42 V 600mA 26W	128	121	149	128	115	110
LEDTUBE T5 EXT P HO54 1149 26W 8xx	Uout: Iout: Pout:	42 V 600mA 26W	128	121	149	128	115	110
LEDTUBE T5 EXT P HO80 1449 37W 8xx	Uout: Iout: Pout:	42 V 860mA 37W	184	71	221	190	175	169
LED TUBE T8 EXTERNAL family			Driver output					
LEDTUBE T8 EXT P 600 7,3W 8xx	Uout: Iout: Pout:	21 V 350mA 7,3W	45	44	52	46	40	35
2x LEDTUBE T8 EXT P 600 7,3W 8xx in series	Uout: Iout: Pout:	42 V 350mA 14,6W	76	74	91	78	70	65
LEDTUBE T8 EXT P 1200 15W 8xx	Uout: Iout: Pout:	42 V 350mA 15W	78	77	95	82	74	69
LEDTUBE T8 EXT P 1500 23W 8xx	Uout: Iout: Pout:	42 V 550mA 23W	116	109	135	116	105	99
Current consumption with defective or disconnected lamps								
No lamp / defective lamp			-	-	15	15	7	6