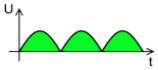
Technical requirements for electronic control gears for LED and fluorescent lumninaires (dimmable or non-dimmable) for operation on INOTEC central battery systems (CPS 220 / CPS FUSION) and emergency power supply systems (NEA)

- General requirements -

Manufacturer:	Type / Description:
Inventronics GmbH Berliner Allee 65 86153 Augsburg, Germany	Luminaire EVG: OT DX 165/170-240/1A0 DIMA NFC G2 CE LED:
Project / Place / Project ID:	Specified by:
EAN: 4052899631717	Name: A.Giacomel Company: Inventronics s.r.l Date: 08.05.2023

	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 Berliner Allee 65 86153 Augsburg, Germany	Luminaire
	EVG: OT DX 165/170-240/1A0 DIMA NFC G2 CE
	LED:
Project / Place / Project ID:	Specified by:
EAN: 4052899631717	Name: A.Giacomel
	Company: Inventronics s.r.l
	Date: 08.05.2023

	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	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.	Table mA (186V) Table mA (216V) 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.	Table mA (186V) Table mA (216V) 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.	Table mA (186V) 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.	Table mA
19	Dimming level in emergency mode (DC or "Joker") (for dimmable control gear, if activated)	Important for the safety lighting design	(*1) 100 %
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.	3.3/3000 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 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:

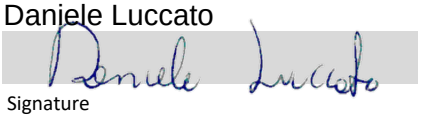
(*1) Emergency feature is disable and factory setting is 100% of the Dali light level. In DC mode at the 100% of Dali light level, the output current is limited. It is possibe enable Emergency feature with DALI magic and Tuner 4 Tronic.

For the correctness:

Treviso, 08.05.2023

Place, Date

Daniele Luccato

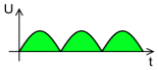


Signature

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 Berliner Allee 65 86153 Augsburg, Germany	Luminaire EVG: OT DX 165/170-240/1A0 DIMA NFC G2B CE LED:
Project / Place / Project ID:	Specified by:
EAN: 4052899631724	Name: A.Giacomel Company: Inventronics s.r.l Date: 08.05.2023

	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
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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
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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 Berliner Allee 65 86153 Augsburg, Germany	Luminaire
	EVG: OT DX 165/170-240/1A0 DIMA NFC G2B CE
	LED:
Project / Place / Project ID:	Specified by:
EAN: 4052899631724	Name: A.Giacomel
	Company: Inventronics s.r.l
	Date: 08.05.2023

	Features	Explanation	Manufacturer spec.
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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.	71A/173µs 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 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

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For the correctness:

Treviso, 08.05.2023

Place, Date

Daniele Luccato

Signature

Manufacturer:	Products:		INVENTRONICS GmbH
Inventronics GmbH Berliner Allee 65 86153 Augsburg, Germany www.inventronicsglobal.com	**OT DX 165/170-240/1A0 DIMA NFC G2 CE** **OT DX 165/170-240/1A0 DIMA NFC G2B CE**	EAN: 4052899631717 EAN: 4052899631724	inventronics

Table 1

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)
OT DX 165/170-240/1A0 DIMA NFC G2 CE **OT DX 165/170-240/1A0 DIMA NFC G2B CE**	Maximum Load /mA Uout = 38 V Iout = 1050 mA	771	739	799	663	620	565
	Medium Load /mA Uout = 38 V Iout = 525 mA	392	377	478	407	366	360
	Minimum Load /mA Uout = 15 V Iout = 150 mA	90	91	83	64	65	60
	No Load	44	46	8	9	9	10
	Short Load	44	46	7	9	9	10

Maximum inrush current for ECG in AC Operation:

	Ipeak [A]	TH [µs]
OT DX 165/170-240/1A0 DIMA NFC G2 CE	3.3	3000
OT DX 165/170-240/1A0 DIMA NFC G2B CE	71	173