CERTIFICATE

Issued to:
Applicant:
TCI Telecomunicazioni Italia SrL
Via Parma 14
21047 Saronno (VA), Italy

Licensee:
TCI Telecomunicazioni Italia SrL
Via Parma 14
21047 Saronno (VA), Italy

Product	:	Electronic controlgear for LED modules
Trade name(s)	:	TCI, TCI (with little dragon), TCI LED, TCI LED (with little dragon), TCI LIGHT (with little dragon and ball in square), TCI LIGHT Saronno Italy or TN101
Type(s)/model(s)	:	DC JOLLY DALI (series), DC JOLLY HC (series), DC JOLLY MD (series), DC JOLLY US (series), DC WOLF MP, MP 22 (series), MP 32 (series) and MP 39 (series)

The product and any acceptable variation thereto as specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
- a type test according to EN 61347-2-13:2014, EN 61347-2-13:2014/A1:2017, EN 61347-1:2015, EN 61347-1:2015/A1:2021 and EN IEC 62384:2020
- an inspection of the factory location according to CENELEC Operational Document CIG 021
- a DEKRA certification agreement with the number 2033015

DEKRA hereby grants the right to use the ENEC certification mark.

The ENEC certification mark may be applied to the product as specified in this certificate for the duration and under the conditions of the ENEC certification agreement.

This certificate is issued on 12 July 2023 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 81-113759 REV.1

DEKRA Certification B.V.

B.T.M. Holtus
Managing Director

R Zhou
Certification Manager

ACCREDITED BY THE
DUTCH ACCREDITATION
COUNCIL

PRODUCTS
RvA C 001

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem, The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-product-safety.com Company registration 09085396

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	Electronic controlgear for LED modules
Trade name(s)	:	TCI, TCI (with little dragon), TCI LED, TCI LED (with little dragon), TCI LIGHT (with little dragon and ball in square), TCI LIGHT Saronno Italy or TN101
Type(s)/model(s)	:	DC JOLLY DALI (series), DC JOLLY HC (series), DC JOLLY MD (series), DC JOLLY US (series), DC WOLF MP, MP 22 (series), MP 32 (series) and MP 39 (series)
Primary voltage	:	110-240 V, 189-255 V d.c.
Nature of supply	:	alternate current, direct current
Rated frequency	:	50/60 Hz, 0 Hz
Primary current	:	From 0,12 to 0,2 A for a.c., from 0,14 to 0,26 A for d.c.
Secondary power	:	From 6 W to 39 W
Secondary current	:	From 0,15 to 1,05 A
Secondary voltage	:	From 10 to 28 V
Classification	:	Independent, built in, integral
Type of load	:	LED modules, power LED

TESTS

Test requirements

EN 61347-2-13:2014
EN 61347-2-13:2014/A1:2017
EN 61347-1:2015
EN 61347-1:2015/A1:2021
EN IEC 62384:2020

Test result

The test results are laid down in DEKRA test file 350908000.

Additional information

For specific Model/Type electrical rating refer to following pages.

DEKRA test report No. 3509080.200 and 3509080.201 are laid down in DEKRA test file 35090800; they contain test results. DEKRA test report No. 3509080.200 contains critical component list.

This certificate replaces certificate No. 81-113759 which we hereby declare invalid.

Conclusion

The examination proved that all requirements were met.

Factory location

TCI Telecomunicazioni Italia SrL
Via Parma 14
21047 Saronno (VA), Italy

General product information: The devices intended to supply high power Light Emitting Diodes or LED modules. The devices have a constant output current or voltage, depending on the selection of the DIP switch (S1/S50). The stabilized output (SEC) is dimmable by 1-10 V control devices or push button or DALI protocol or dimmable by trailing and leading edge dimmer for DC JOLLY MP models; the SYNC port can synchronize other devices as master/slave configuration. The output power can be up to Pout max with proportionate values of Iin. The MP models are not dimmable. The MP 32 TCRL, MP 32 TCRL I, MP 32 TCRL I, MP 32 TC models have a Twin Cap enclosure (TC) and output current selections with 50 mA steps. The HV models have current selections with higher output voltage. The HC models have current selections with higher output current. The DC JOLLY US MIDNIGHT, DC JOLLY US BILEVEL, DC JOLLY US BILEVEL N, DC JOLLY US PLV models are derived from DC JOLLY US only by changing the software. DC MAXI JOLLY MIDNIGHT: a light intensity sensor sends a control signal to the driver which automatically turns the LED module on when the natural light goes below a pre-set level; the driver decreases the LED intensity during an interval of its working cycle by 30/50/70% depending on the selected value. DC JOLLY US BILEVEL, DC JOLLY US BILEVEL N: a control signal reduce the brightness of the LED module at a selected value. DC JOLLY US PLV: a DC signal can send to PUSH terminals the command for dimming. All models have SELV output. Different commercial codes are assigned for dimmable models: PWM (cod. 122xxx, 123xxx, 127xxx), AM+PWM (cod. 125xxx, 126xxx), AM (cod. 151xxx).

Type codes: 123xxx	a.c. or *d.c. primary voltage (V)	Primary current (A)	Power Factor	Output Power (W)	Output Parameter	Uout (V)	t_a (°C)	t_c (°C) [1]	Use [2]
DC JOLLY US OF (K2820); DC JOLLY US MIDNIGHT OF (K2821); DC JOLLY US BILEVEL OF (K2822); DC JOLLY US BILEVEL N OF (K2823); DC JOLLY US PLV OF (K2824)	110-240	0,18	0,95 (220-240 V) 0,98 (110-127 V)	11-11 14-14 15-16 15-18 15-21 15-23 15-25	250 mA 300 mA 350 mA 400 mA 450 mA 500 mA 550 mA	59	-	80	OF
DC JOLLY US BI (K2815); DC JOLLY US MIDNIGHT BI (K2816); DC JOLLY US BILEVEL BI (K2817); DC JOLLY US BILEVEL N BI (K2818); DC JOLLY US PLV BI (K2819)	176-276*	0,21*		15-28 15-30 15-32, 33▲ 15-20 15-20 15-20	600 mA 650 mA 700 mA 750 mA 800 mA 850 mA		-25..45	75	BI, 110, MM
DC JOLLY US D (K2809) ▲				15-20	900 mA				IND, 110, II
DC JOLLY US (K2810); DC JOLLY US MIDNIGHT (K2811); DC JOLLY US BILEVEL (K2812); DC JOLLY US BILEVEL N (K2813); DC JOLLY US PLV (K2814)				11-11 15-20	12 V 24 V				IND, 110, II, MM

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. * Operative d.c. range. [1] – t_c for OF version is measured on the cap of C14 capacitor. [2] – OF= built-in without enclosure; BI=built-in; IND=independent; II=class II; 110= overheating protection (C.5.a); MM= models suitable for direct mounting on normally flammable surfaces at the ambient temperature and output power of final application; limit tc≤70 °C only at 30-33 W.

Type codes: 122xxx, 127xxx	a.c. or *d.c. primary voltage (V)	Primary current (A)	Power Factor	Output Power (W)	Output Parameter	Uout (V)	t_a (°C)	t_c (°C) [1]	Use [2]
DC JOLLY HC OF (K2588); MP 39 OF (K2589)	220-240 170-280*	0,20 0,26*	0,95	15÷39	350÷1050 mA	57	-	80	OF
DC JOLLY HC BI (K2586); MP 39 BI (K2587)							-25..45/50	80 85▲	BI, 120, MM
DC JOLLY HC MV (K2582); DC JOLLY HC MV D (K2583)▲; MP 39 K2 (K2584); MP 39 K2 D (K2585)▲									IND, 120, II, MM
Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. * Operative d.c. range. [1] – t_c for OF version is measured on the cap of C14/C15 capacitor. [2] – OF= built-in without enclosure; BI=built-in; IND=independent; 120=overheating protection (C.5.a); II=class II; MM= models with bottom side suitable for direct mounting on normally flammable surfaces at the ambient temperature and output power of final application; limit tc≤70 °C only at 30-39 W.									

Type codes: 122xxx, 127xxx	a.c. or *d.c. primary voltage (V)	Primary current (A)	Power Factor	Output Power (W)	Output Parameter	Uout (V)	t_a (°C)	t_c (°C) [1]	Use [2]
MP 32 TCRL (K2384)	110-240 170-280*	0,16-0,18 0,21*	0,95-0,98	12÷32 11÷20	250÷900 mA 12÷24 V	55	-25..50	70	IND, II, E, 110, MM, DNC
MP 32 TCRL I (K2467)									IND, I, 110, MM, DNC
MP 32 TC (K2385)	110-240 176-276*		0,95 (Po>12 W)	12÷32 11÷20	250÷900 mA 12÷24 V	57	-25..40/45	65	IND, II, E, 110, MM, DNC
MP 32 OF (K2337)	110-240 170-280*	0,16-0,18 0,21*	0,95-0,98	15÷32/33▲ 9÷20	350÷900 mA 10÷24 V	55	-	80	OF
MP 32 BI (K2336)							-25..50	75	BI, 110, MM
MP 32 K2 (K2335)									IND, II, 110, MM, DNC
MP 32 K2 D (K2368)▲									IND, II, 110, MM
MP 32/700 K2 (K2429)				15÷32	700 mA	55			
MP 22 OF (K2916)	220-240 176-276*	0,12 0,14*	0,96	17,5÷22	350÷450 mA	59	-	80	OF
MP 22 BI (K2917)							-25..50	75	BI, 110, MM
MP 22 K2 (K2918)									IND, II, 110, MM, DNC
MP 32 HV OF (K2371)	110-240 170-280*	0,16-0,18 0,21*	0,95-0,98	15÷32 15÷17	350÷700 mA 24 V	59	-	80	OF
MP 32 HV BI (K2370)							-25..45/50	75	BI, 110, MM
MP 32 HV K2 (K2369)									IND, II, 110, MM, DNC

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. * Operative d.c. range. [1] – t_c for OF version is measured on the cap of C14 capacitor. [2] – OF= built-in without enclosure; 110= overheating protection (C.5.a); BI=built-in; IND=independent; I=class I; II=class II; E= through wiring for earth; MM= models with bottom side suitable for direct mounting on normally flammable surfaces at the ambient temperature and output power of final application; DNC=Do not cover.

Type codes: 123xxx, 125xxx	a.c. or *d.c. primary voltage (V)	Primary current (A)	Power Factor	Output Power (W)	Output Parameter	Uout (V)	t_a (°C)	t_c (°C) [1]	Use [2]
DC JOLLY DALI OF (K2827, K2C71)	110-240 170-280*	0,16-0,18 0,21*	0,95-0,98	12÷32 10÷20	250÷700 mA 12- ▲24 V	55	-	80	OF
DC JOLLY DALI BI (K2826, K2C70)							-25.. 45▲/50	75	BI, MM
DC JOLLY DALI (K2825, K2C69)									IND, II, 110, MM, DNC
Type codes: 151xxx	a.c. or *d.c. primary voltage (V)	Primary current (A)	Power Factor	Output Power (W)	Output Parameter	Uout (V)	t_a (°C)	t_c (°C) [1]	Use [2]
DC JOLLY DALI OF (K2C74)	110-240 170-280*	0,16-0,18 0,21*	0,95-0,98	12÷32	250÷700 mA	59	-	80	OF
DC JOLLY DALI BI (K2C73)							-25..50	75	BI, 110, MM
DC JOLLY DALI (K2C72)									IND, II, 110, MM, DNC
Type codes: 122xxx	a.c. or *d.c. primary voltage (V)	Primary current (A)	Power Factor	Output Power (W)	Output Parameter	Uout (V)	t_a (°C)	t_c (°C)	Use [2]
DC JOLLY MD (K2139)	220-240	0,17	0,85 C-0,97	17-32 10-22	350-750 mA 12-24-28 V	55	-25.. 45/50	75	IND, II, 110, MM, DNC
DC JOLLY MD 3C (K2F96)	220-240 176-280*	0,17 0,21*							
DC WOLF MP (K2203)			0,88 C-0,97		350-700 mA 12-24-28 V	56		70	
DC JOLLY MD LC (K2C54)	220-240	0,13	0,75 C-0,96	7,2-24 6-14	150-500 mA 12-24-28 V	59	-25..50	70	IND, II, 110, MM, DNC

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. * Operative d.c. range. [1] – t_c for OF version is measured on the cap of C14 capacitor. [2] –IND=independent; II=class II; 110=overheating protection (C.5.a); MM= models with the bottom side suitable for direct mounting on normally flammable surfaces at the ambient temperature and output power of final application; DNC=Do not cover.

Type codes: 125xxx, 126xxx, 151xxx	a.c. or *d.c. primary voltage (V)	Primary current (A)	Power Factor	Output Power (W)	Output Parameter	Uout (V)	t_a (°C)	t_c (°C) [1]	Use [2]
DC JOLLY US OF (K2896, K2C77, K2C80); DC JOLLY US MIDNIGHT OF (K2897, K2C83, K2C86); DC JOLLY US BILEVEL OF (K2898, K2C89, K2C92); DC JOLLY US BILEVEL N OF (K2899, K2C95, K2C98); DC JOLLY US PLV OF (K2900 K2D02, K2D05)	110-240 176-276*	0,18 0,21*	0,95-0,98	13-13 15-16 15-18 15-21 15-23 15-25 15-27 15-30 15-32 15-32, 33▲ 15-20 15-20 15-20 15-20	250 mA 300 mA 350 mA 400 mA 450 mA 500 mA 550 mA 600 mA 650 mA 700 mA 750 mA 800 mA 850 mA 900 mA	59	-	80	OF
DC JOLLY US BI (K2891, K2C76, K2C79); DC JOLLY US MIDNIGHT BI (K2892, K2C82, K2C85); DC JOLLY US BILEVEL BI (K2893, K2C88, K2C91); DC JOLLY US BILEVEL N BI (K2894, K2C94, K2C97); DC JOLLY US PLV BI (K2895, K2D01, K2D04)							-25...45	75	BI, 110, MM
DC JOLLY US D▲ (K2809, K2D06, K2D07); DC JOLLY US (K2886, K2C75, K2C78); DC JOLLY US MIDNIGHT (K2887, K2C81, K2C84); DC JOLLY US BILEVEL (K2888, K2C87, K2C90); DC JOLLY US BILEVEL N (K2889, K2C93, K2C96); DC JOLLY US PLV (K2890, K2C99, K2D03)				11-11 15-20	12 V [3] 24 V [3]				IND, II, 110, MM

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. * Operative d.c. range. [1] – t_c for OF version is measured on the cap of C14 capacitor. [2] – OF= built-in without enclosure; BI=built-in; IND=independent; II=class II; 110= overheating protection (C.5.a); MM= models with the bottom side suitable for direct mounting on normally flammable surfaces only at tc≤70 °C at 30-33 W. [3] – Not present for codes 151xxx.

Connections	
PRI (mains); E (Through wiring earth)	Screw terminal block 0,5 (0,75 for independent models)-2,5 mm² for MV models, DC JOLLY MD models, DC WOLF MP and MP 39 K2, MP 39 K2 D; screwless terminal block 0,5 (0,75 for independent models)-1,5 mm² for all other models
PUSH L	Screw terminal block 0,5 (0,75 for independent models)-2,5 mm² for DC JOLLY MD models; screwless terminal block 0,5 (0,75 for independent models)-1,5 mm²
DA1, DA2, OPERATION, RED ON, RED OFF	screwless terminal block 0,5 -1,5 mm²
ADIM or 1...10V, NTC, LEVEL, PUSH LV	screwless terminal block 0,5 -1,5 mm²
SYNC	push connector
SEC (load)	screw terminal block 0,5 -2,5 mm² for MP 32 TCRL, MP 32 TCRL I, MP 32 TC, DC JOLLY MD models, DC WOLF MP; screw-less terminal block 0,5 -1,5 mm² for all other models

Additional information

Features	All models have the following features: AC/DC P/S for LED; stabilized output current (CC) or output voltage (CV); multiple value load; short-circuit proof type; impulse withstand category ll and III; Pollution degree 2 (Normal Pollution); Material group llla; the material of enclosure was tested with favourable result for Glow-wire at temperature 750-960 °C. DC JOLLY MD models are dimmable by trailing and leading edge dimmer. TC and TCRL models have the input terminals for the looping of an external connection (max. 7,5 A). DC JOLLY MD models and DC WOLF MP has the input terminals for the looping of an external connection (max. 3 A). Total circuit power: 45 W for DC JOLLY HC models, MP 39 models; 38 W for DC JOLLY MD, DC JOLLY MD 3C, DC WOLF MP, MP 32 TCRL, MP 32 TC; 37 W for MP 32 HV models; 36 W for DC JOLLY DALI models, MP 32 models, DC JOLLY US models; 27 W for DC JOLLY MD LC; 24 W for MP 22 models
DC operation	The products were tested in the operative d.c. range 170-280 V or 176-275 V according to IEC 61347-2-13 and they can be used for centralized emergency installations in the rated 189-255 V or 196-250 V; d.c. operation for standards different from IEC/EN 61347 can be allowed with external fuse installed in front of the controlgear; d.c. operation can't be used for PUSH L/RED ON/OFF/ OPERATION features.

INSULATION B= basic, S= supplementary, D= double or reinforced	
PRI ↔ E; PRI ↔ DA1, DA2; DA1, DA2 ↔ E; DA1, DA2 ↔ PUSH L, OPERATION, RED ON, RED OFF	B
PRI ↔ SEC; PRI, E ↔ ADIM or 1..10V, NTC, SYNC, LEVEL, PUSH LV; PUSH L, OPERATION, RED ON, RED OFF ↔ ADIM or 1..10V, NTC, SYNC, LEVEL, PUSH LV; PUSH L, OPERATION, RED ON, RED OFF ↔ SEC	D
SEC ↔ E	B
SEC ↔ ADIM or 1..10V, NTC, SYNC, LEVEL, PUSH LV	-
active parts ↔ parts of built-in models that can be in contact with parts of luminaire	D
active parts ↔ external parts of independent models	D

ADIM or 1-10V control is only for local connections (sensors, signal interface); ADIM or 1..10V, NTC, SYNC, LEVEL, PUSH LV are part of SEC circuit. The OF models have been tested in the same enclosure of built-in models, the safety evaluations must be repeated if they will be assembled in a final luminaire in a different enclosure.

Assessment to EN 60598-2-22:2014/A1:2020 used in conjunction with EN IEC 60598-1:2021 has been performed.

Assessment to EN 62493:2015 has been performed.

Assessment to Clauses 8.1.4, 19.11.4, 22.5, 22.27, 22.42, 24.1.1, 24.1.2, 29, 30.2.3, 30.2.4 of EN 60335-1:2012, A11:2014, A13:2017, A1:2019, A14:2019, A2:2019 has been performed for the following models: DC JOLLY MD, DC JOLLY MD LC, DC WOLF MP, DC JOLLY MD 3C.
Assessment to EN IEC 62442-3:2022 has been performed.