

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 is 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 the standard EN 61347-2-13:2014, EN 61347-2-13:2014/A1:2017, EN 61347-1:2015, EN 62384:2006 and EN 62384:2006/A1:2009
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 2033015

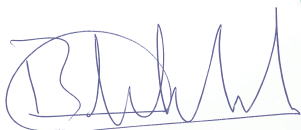
DEKRA hereby grants the right to use the ENEC certification mark.

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

This certificate is issued on 11 May 2020 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 81-113759

DEKRA Certification B.V.



B.T.M. Holtus
Managing Director



M. Triulzi
Certification Manager

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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 0,26 A
Working voltage U-OUT	: From 55 to 59 V
Secondary current	: From 150 to 1050 mA
Secondary voltage	: From 10 to 28 V
Classification	: Independent, built in, integral

TESTS**Test requirements**

EN 61347-2-13:2014
EN 61347-2-13:2014/A1:2017
EN 61347-1:2015
EN 62384:2006
EN 62384:2006/A1:2009

Test result

The test results are laid down in DEKRA test file 350033600.

Additional information

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

DEKRA test report No. 2102943.50 and 2102943.60 are laid down in DEKRA test file 350033600; they contain test results and critical component list.

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) as in the labels and in the catalogue. 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 lin. 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; BI stands for built-in models, OF for open frame versions (integral); all other models are independent, class II (MP 32 TCRL I in class I), IP20. Different commercial codes are assigned for dimmable models: PWM (cod. 122xxx, 123xxx, 127xxx), AM+PWM (cod. 125xxx, 126xxx), AM (cod. 151xxx).

Type codes: 123xxx	Primary voltage [1]	Max. primary current	Power Factor	Output Power (W) [2]	Output Parameter [3]	Uout (V)	t _a (°C)	t _c (°C) [4]	Thermal Protection [5]	Symbol [6]
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 V 50/60 Hz	0,18 A	0,95 (220-240 V)	11-11 14-14 15-16	250 mA 300 mA 350 mA	59	-	80	-	INT
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 V 0 Hz	0,21 A	0,98 (110-127 V)	15-18 15-21 15-23 15-25 15-28 15-30 15-32, 33*	400 mA 450 mA 500 mA 550 mA 600 mA 650 mA 700 mA	-	-25..45	75	110 °C	BI, MM
DC JOLLY US D (K2809) *				15-20	12 V 24 V					IND, 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)										IND, II, MM

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [1] – 176-276 V is the operative d.c. range at which the product can work; they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-250 V. [2] – Different values according to DIP switch selection (see label). [3] – According to DIP switch selection. [4] – t_c for OF version is measured on the cap of C14 capacitor. [5] –The products have an overheating protection (C.5.a) and comply with temperature limit of clause 4.16.2 of IEC 60598-1:2014/AMD1:2017. [6] – INT=integral; BI=built-in; IND=independent; II=class II; MM= models with bottom side suitable for direct mounting on normally flammable surfaces (EN 60598-1:2015, VDE 0710 T14 for "MM" triangle marking) at the ambient temperature and output power of final application; limit tc≤70 °C only at 30-33 W.

Type codes: 122xxx, 127xxx	Primary voltage [1]	Max. primary current	Power Factor	Output Power (W) [2]	Output Parameter [3]	Uout (V)	t _a (°C)	t _c (°C) [4]	Thermal Protection [5]	Symbol [6]
DC JOLLY HC OF (K2588); MP 39 OF (K2589)	220-240 V 50/60 Hz	0,20 A	0,95	15÷39	350÷1050 mA	57	-	80	-	INT
DC JOLLY HC BI (K2586); MP 39 BI (K2587)	170-280 V 0 Hz	0,26 A					-25... 45 /50 [4]	80 85 [▲]	120 °C	BI, NFS
DC JOLLY HC MV (K2582); DC JOLLY HC MV D (K2583) [▲] ; MP 39 K2 (K2584); MP 39 K2 D (K2585) [▲]										IND, II, NFS

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [1] – 176-276 V is the operative d.c. range at which the product can work; they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-250 V. [2] – Different values according to DIP switch selection (see label). [3] – According to DIP switch selection. [4] – t_c for OF version is measured on the cap of C14/C15 capacitor. [5] –The products have an overheating protection (C.5.a) and comply with temperature limit of clause 4.16.2 of IEC 60598-1:2014/AMD1:2017. [6] – INT=integral; BI=built-in; IND=independent; II=class II; NFS= models with bottom side suitable for direct mounting on normally flammable surfaces (EN 60598-1:2015) at the ambient temperature and output power of final application; limit tc≤70 °C only at 30-39 W.

Type codes: 122xxx, 127xxx	Primary voltage [1]	Max. primary current	Power Factor	Output Power (W) [2]	Output Parameter [3]	Uout (V)	t _a (°C)	t _c (°C) [4]	Thermal Protection [5]	Symbol [6]
MP 32 TCRL (K2384)	110-240 V 50/60 Hz	0,16-0,18 A	0,95-0,98	12÷32	250÷900 mA 12÷24 V	55	-25..50	70	110 °C	IND, II, E, MM
MP 32 TCRL I (K2467)	170-280 V 0 Hz	0,21 A		11÷20		-				IND, I, MM
MP 32 TC (K2385)	110-240 V 50/60 Hz 176-276 V 0 Hz		0,95 (Po>12W)	12÷32 11÷20	250÷900 mA 12÷24 V	57	-25... 40/45	65	110 °C	IND, II, E, MM
MP 32 OF (K2337)	110-240 V 50/60 Hz	0,16-0,18 A	0,95-0,98	15÷32/33*	350÷900 mA	55	-	80	-	INT
MP 32 BI (K2336)	170-280 V 0 Hz	0,21 A		9÷20	10÷24 V	-	-25..50	75	110 °C	BI
MP 32 K2 (K2335)										IND, II, MM
MP 32 K2 D (K2368) *										
MP 32/700 K2 (K2429)				15÷32	700 mA	55				
MP 22 OF (K2916)	220-240 V 50/60 Hz	0,12 A	0,96	17,5÷22	350÷450 mA	59	-	80	-	INT
MP 22 BI (K2917)	176-276 V 0 Hz	0,14 A				-	-25..50	75	110 °C	BI, MM
MP 22 K2 (K2918)										IND, II, MM
MP 32 HV OF (K2371)	110-240 V 50/60 Hz	0,16-0,18 A	0,95-0,98	17÷32 (220-240 V)	350÷700 mA	59	-	80	-	INT
MP 32 HV BI (K2370)	170-280 V 0 Hz	0,21 A		15 (110-127 V)	24 V	-	-25.. 45/50	75	110 °C	BI, MM
MP 32 HV K2 (K2369)										IND, II, MM

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [1] – 176-276 V is the operative d.c. range at which the product can work; they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-250 V. [2] – Different values according to DIP switch selection (see label). [3] – According to DIP switch selection. [4] – t_c for OF version is measured on the cap of C14 capacitor. [5] –The products have an overheating protection (C.5.a) and comply with temperature limit of clause 4.16.2 of IEC 60598-1:2014/AMD1:2017. [6] – INT=integral; 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 (EN 60598-1:2015, VDE 0710 T14 for "MM" triangle marking) at the ambient temperature and output power of final application; limit tc≤70 °C only at 30-33 W.

Type codes: 123xxx, 125xxx	Primary voltage [1]	Max. primary current	Power Factor	Output Power (W) [2]	Output Parameter [3]	Uout (V)	t _a (°C)	t _c (°C) [4]	Thermal Protection [5]	Symbol [6]
DC JOLLY DALI OF (K2827, K2C71)	110-240 V 50/60 Hz	0,16-0,18 A	0,95-0,98	12÷32	250÷700 mA 12-24 V	55	-	80	-	INT
DC JOLLY DALI BI (K2826, K2C70)	170-280 V 0 Hz	0,21 A		10÷20		-	-25.. 45**/50 [4]	75	110 °C	BI, MM
DC JOLLY DALI (K2825, K2C69)										IND, II, MM
Type codes: 151xxx	Primary voltage [1]	Max. primary current	Power Factor	Output Power (W) [2]	Output Parameter [3]	Uout (V)	t _a (°C)	t _c (°C) [4]	Thermal Protection [5]	Symbol [6]
DC JOLLY DALI OF (K2C74)	110-240 V 50/60 Hz	0,16-0,18 A	0,95-0,98	12÷32	250÷700 mA	59	-	80	-	INT
DC JOLLY DALI BI (K2C73)	170-280 V 0 Hz	0,21 A					-25.. 50 [4]	75	110 °C	BI, MM
DC JOLLY DALI (K2C72)										IND, II, MM
Type codes: 122xxx	Primary voltage [1]	Max. primary current	Power Factor	Output Power (W) [2]	Output Parameter [3]	Uout (V)	t _a (°C)	t _c (°C) [4]	Thermal Protection [5]	Symbol [6]
DC JOLLY MD (K2139)	220-240 V 50/60 Hz	0,17 A	0,85 C- 0,97	17-32 10-22	350-750 mA 12-24-28 V	55 -	-25... 45 /50	75	110 °C	IND, II, MM
DC JOLLY MD 3C (K2F96)										IND, II, MM
DC WOLF MP (K2203)	220-240 V 50/60 Hz 176-280 V 0 Hz	0,17 A 0,21 A	0,88 C- 0,97			56 -		70		IND, II, MM
DC JOLLY MD LC (K2C54)	220-240 V	0,13 A	0,75 C- 0,96	7,2-24 6-14	150-500 mA 12-24-28 V	59 -	-25...50	70	110 °C	IND, II, MM

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [1] – 176-276 V or 170-280 V is the operative d.c. range at which the product can work; they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-250 V or 189-255 V. [2] – Different values according to DIP switch selection (see label). [3] – According to DIP switch selection. [4] – t_c for OF version is measured on the cap of C14 capacitor. [5] –The products have an overheating protection (C.5.a) and comply with temperature limit of clause 4.16.2 of IEC 60598-1:2014/AMD1:2017, VDE 0710 T14. [6] – INT=integral; BI=built-in; IND=independent; II=class II; MM= models with the bottom side suitable for direct mounting on normally flammable surfaces (EN 60598-1:2015, VDE 0710 T14 for "MM" triangle marking) at the ambient temperature and output power of final application; limit tc≤70 °C only at 30-32 W.

Type codes: 125xxx, 126xxx, 151xxx	Primary voltage [1]	Max. primary current	Power Factor	Output Power (W) [2]	Output Parameter [3]	Uout (V)	t _a (°C)	t _c (°C) [4]	Thermal Protection [5]	Symbol [6]
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 V 50/60 Hz 176-276 V 0 Hz	0,18 A 0,21 A	0,95- 0,98	13-13	250 mA	59	-	80	-	INT
				15-16	300 mA					
				15-18	350 mA					
				15-21	400 mA					
				15-23	450 mA					
				15-25	500 mA					
				15-27	550 mA					
				15-30	600 mA					
				15-32	650 mA					
				15-32, 33*	700 mA					
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)				15-20	750 mA					BI, MM
				15-20	800 mA					
				15-20	850 mA					
				15-20	900 mA					
				11-11	12 V [7]					
15-20	24 V [7]									
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)										IND, II, MM

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [1] – 176-276 V is the operative d.c. range at which the product can work; they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-250 V. [2] – Different values according to DIP switch selection (see label). [3] – According to DIP switch selection. [4] – t_c for OF version is measured on the cap of C14 capacitor. [5] – The products have an overheating protection (C.5.a) and comply with temperature limit of clause 4.16.2 of IEC 60598-1:2014/AMD1:2017, VDE 0710 T14. [6] – INT=integral; BI=built-in; IND=independent; II=class II; MM= models with the bottom side suitable for direct mounting on normally flammable surfaces (EN 60598-1:2015, VDE 0710 T14 for "MM" triangle marking); other models only at t_c≤85 °C at the ambient temperature and output power of final application; limit t_c≤70 °C only at 30-33 W. [7] – Not present for codes 151xxx.

connections	
Connection to supply (PRI); Through wiring for earth (E)	Screw terminal block 0,5 (0,75 for independent models)-2,5 mm ² 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 mm ² for all other models
Connection to PUSH L	Screw terminal block 0,5 (0,75 for independent models)-2,5 mm ² for DC JOLLY MD models; screwless terminal block 0,5 (0,75 for independent models)-1,5 mm ²
Connection to DA1, DA2, OPERATION, RED ON, RED OFF	screwless terminal block 0,5 -1,5 mm ²
Connection to 1..10V, NTC, LEVEL, PUSH LV	screwless terminal block 0,5 -1,5 mm ²
Connection to SYNC	push connector
Connection to load (SEC)	screw terminal block 0,5 -2,5 mm ² 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 mm ² for all other models

Additional information						
All models have the following features: AC/DC P/S for LED; short-circuit proof type; impulse withstand category II; Pollution degree 2 (Normal Pollution); Material group IIIa; the material of enclosure was tested with favourable result for Glow-wire at temperature 850/950 °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 comply to Clauses 19.11.4, 22.42, 29, 30.2.3 and 30.2.4 of IEC 60335-1:2010/ COR1:2010/COR2:2010/AMD1:2013/COR1:2014/ AMD2:2016/COR1:2016 and have the input terminals for the looping of an external connection (max. 3 A).						
INSULATION: B= basic, S= supplementary, D= double or reinforced	PRI	Throgh connection terminal E	PUSH L, OPERATION, RED ON, RED OFF (if present)	DA1, DA2 (if present)	1..10V, NTC, SYNC, LEVEL, PUSH LV (if present)	SEC
PRI	-	B	-	B	D	D
Throgh connection terminal E	B	-	-	B	D	D
PUSH L, OPERATION, RED ON, RED OFF (if present)	-	-	-	B	D	D
DA1, DA2 (if present)	B	B	B	-	S	S
1..10V, NTC, SYNC, LEVEL, PUSH LV (if present)	D	B	D	S	-	-
SEC	D	B	D	S	-	-
1-10V control is only for local connections (sensors, signal interface). 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. The connections to the controlgears shall be according to IEC 60598-1 or national deviations of the country where installed. Creepage distances and clearances for built-in and OF (integrated without enclosure) models shall comply with the requirements of IEC/EN 60598-1 when the device is installed in the final application:						
INSULATION: B= basic, S= supplementary, D= double or reinforced	Between active parts and the bottom surface of enclosure		Between active parts and external surfaces of enclosure			
DC JOLLY US, DC JOLLY US MIDNIGHT, DC JOLLY US BILEVEL, DC JOLLY US BILEVEL N, DC JOLLY US PLV DC JOLLY US D, MP 32 TCRL, MP 32 TCRL I, MP 32 TC, MP 32 K2, MP 32 K2 D, MP 32/700 K2, MP 22 K2, MP 32 HV K2, DC JOLLY HC MV, DC JOLLY HC MV D, MP 39 K2, MP 39 K2 D, DC JOLLY DALI, DC JOLLY MD, DC JOLLY MD 3C, DC JOLLY MD LC, DC WOLF MP	D		D			
DC JOLLY US BI, DC JOLLY US MIDNIGHT BI, DC JOLLY US BILEVEL BI, DC JOLLY US BILEVEL N BI, DC JOLLY US PLV BI, MP 32 BI, MP 22 BI, MP 32 HV BI, DC JOLLY HC BI, MP 39 BI, DC JOLLY DALI BI	D		-			
DC JOLLY US OF, DC JOLLY US MIDNIGHT OF, DC JOLLY US BILEVEL OF, DC JOLLY US BILEVEL N OF, DC JOLLY US PLV OF, MP 32 OF, MP 22 OF, MP 32 HV OF, DC JOLLY HC OF, MP 39 OF, DC JOLLY DALI OF	-		-			