

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 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 25 June 2018 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 81-104633

DEKRA Certification B.V.



drs. G.J. Zoetbrood
Managing Director



Kreny Lin
Certification Manager

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SPECIFICATION OF THE CERTIFIED PRODUCT**Product data**

Product	: Electronic controlgear for LED modules
Trade name(s)	: TCI 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)
Type of load	: LED modules, power LED
Class	: II for independent model
Protection degree	: IP20 for independent model
Ambient temperature	: From -25 to +50 °C

Product data – type DC JOLLY DALI (series)

Primary voltage	: 110-240 V
Nature of supply	: ac or dc
Rated frequency	: 50/60 Hz
Primary current	: From 0,16 to 0,18 A
Power factor	: From 0,95 to 0,98
Working voltage U-OUT	: From 55 V to 59 V
Rated maximum temperature (tc)	: From 75 to 80 °C
Type of thermal protection	: 110
Classification	: Independent, built in, integral

Product data – type DC JOLLY HC (series) and MP 39 (series)

Primary voltage	: 220-240 V
Nature of supply	: ac or dc
Rated frequency	: 50/60 Hz
Primary current	: 0,2 A
Power factor	: 0,95
Working voltage U-OUT	: 57 V
Rated maximum temperature (tc)	: From 80 to 85 °C
Type of thermal protection	: 120
Classification	: Independent, built in, integral

Product data – type DC JOLLY MD (series) and DC WOLF MP

Primary voltage	: 220-240 V
Nature of supply	: ac or dc
Rated frequency	: 50/60 Hz
Primary current	: From 0,13 to 0,17 A
Power factor	: From 0,75 to 0,97
Working voltage U-OUT	: From 55 V to 59 V
Rated maximum temperature (tc)	: From 70 to 75 °C
Type of thermal protection	: 110
Classification	: Independent

Product data – type DC JOLLY US (series), MP 22 (series) and MP 32 (series)

Primary voltage	: 110-240 V
Nature of supply	: ac
Rated frequency	: 50/60 Hz
Primary current	: From 0,12 to 0,18 A
Power factor	: From 0,95 to 0,98
Working voltage U-OUT	: From 55 V to 59 V
Rated maximum temperature (tc)	: From 70 to 80 °C
Type of thermal protection	: 110

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. 2102616.50 and 2102616.60 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

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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 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; 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).

Types Code 123xxx	Primary voltage (50/60 Hz) [1]	Max. primary current	Power Factor	Operative d.c. range (0 Hz)	Output Power (W) [3]	Output Parameter [4]	Uout (V)	t _a (°C)	t _c (°C) [5]	Thermal Protection [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	0,18 A	0,95 (220-240 V) 0,98 (110-127 V)	176-276 V 0,21 A [2]	11-11	250 mA	59 -	-	80	-
					14-14	300 mA				
					15-16	350 mA				
					15-18	400 mA				
					15-21	450 mA				
					15-23	500 mA				
					15-25	550 mA				
					15-28	600 mA				
					15-30	650 mA				
					15-32, 33*	700 mA				
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)					15-20	750 mA		-25..45	75	110 °C
DC JOLLY US D (K2809) *					11-11	12 V				
					15-20	24 V				
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)										

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [1] – Rated value for AC range; [2] – 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. [3] – Different values according to DIP switch selection (see label). [4] – According to DIP switch selection. [5] – t_c for OF version is measured on the cap of C14 capacitor. [6] –The products have an overheating protection (C.5.a) and comply with temperature limit of clause 4.16.2 of IEC 60598-1:03 (“F” triangle marking), IEC 60598-1:2014/AMD1:2017, VDE 0710 T14 (“MM” triangle marking).

Types Codes: 122xxx, 127xxx	Primary voltage (50/60 Hz) [1]	Max. primary current	Power Factor	Operative d.c. range (0 Hz) [2]	Output Power (W) [3]	Output Parameter [4]	Uout (V)	t _a (°C)	t _c (°C) [5]	Thermal Protection [6]																						
MP 32 TCRL (K2384) MP 32 TCRL I (K2467)	110-240 V	0,16 A (220-240 V)	0,95-0,98	170-280 V I=0,21 A	12÷32 11÷20	250÷900 mA 12÷24 V	55 -	-25..50	70	110 °C																						
MP 32 TC (K2385)											0,18 A (110-127 V)	0,95 (Po>12 W)	176-276 V I=0,21 A	12÷33 11÷20	250÷900 mA 12÷24 V	57	-25... 45/50	65	110 °C													
MP 32 OF (K2337) MP 32 BI (K2336) MP 32 K2 (K2335) MP 32 K2 D (K2368) * MP 32/700 K2 (K2429)	110-240 V	0,16 A (220-240 V) 0,18 A (110-127 V)	0,95-0,98	170-280 V I=0,21 A	15÷32/33*	350÷900 mA 10÷24 V	55 -	-	80	-	-																					
9÷20					15÷32							700 mA	55	-	-	-	-	-														
17,5÷22																			350÷450 mA	59	-	-	80	-	-							
17÷32 (220-240 V)																										350÷700 mA	59	-	-	80	-	-
15 (110-127 V)																																
MP 22 OF (K2916) MP 22 BI (K2917) MP 22 K2 (K2918)	220-240 V	0,12 A	0,96	176-276 V I=0,14A	17,5÷22	350÷450 mA	59 -	-	80	-																						
MP 32 HV OF (K2371) MP 32 HV BI (K2370) MP 32 HV K2 (K2369)											110-240 V	0,16 A (220-240 V) 0,18 A (110-127 V)	0,95-0,98	170-280 V I=0,21 A	17÷32 (220-240 V) 15 (110-127 V)	350÷700 mA 24 V	59 -	-	80	-												
DC JOLLY HC OF (K2588); MP 39 OF (K2589)																					220-240 V	0,20 A	0,95	170-280 V I=0,26 A	15÷39	350÷1050 mA	57	-	80	-		
DC JOLLY HC BI (K2586); MP 39 BI (K2587)	-25... 45 /50 [4]	80 85 [▲]	120 °C																													
DC JOLLY HC MV (K2582); DC JOLLY HC MV D (K2583) [▲] ; MP 39 K2 (K2584); MP 39 K2 D (K2585) [▲]																																

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [2] – 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. [5] – t_c for OF version is measured on the cap of C15 capacitor. [x] – see following page

Types Codes: 123xxx, 125xxx	Primary voltage (50/60 Hz) [1]	Max. primary current	Power Factor	Operative d.c. range (0 Hz) [2]	Output Power (W) [3]	Output Parameter [4]	Uout (V)	t _a (°C)	t _c (°C) [5]	Thermal Protection [6]
DC JOLLY DALI OF (K2827, K2C71) DC JOLLY DALI BI	110-240 V	0,16 A (220-	0,95 (220-	170-280 V	12÷32	250÷700 mA	55	-	80	-
-25..									75	110 °C

(K2826, K2C70)		240 V)	240 V)	≤0,21 A			-	45 /50		
DC JOLLY DALI (K2825, K2C69)		0,18 A (110-127 V)	0,98 (110-127 V)		10÷20	12- **24 V		[4]		

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [2] –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 189-255 V. [x] – see following page

Types Codes: 151xxx	Primary voltage (50/60 Hz) [1]	Max. primary current	Power Factor	Operative d.c. range (0 Hz) [2]	Output Power (W) [3]	Output Parameter [4]	Uout (V)	t _a (°C)	t _c (°C) [5]	Thermal Protection [6]
DC JOLLY DALI OF (K2C74)	110-240 V	0,16 A (220-240 V)	0,95 (220-240 V)	170-280 V	12÷32	250÷700 mA	59	-	80	-
DC JOLLY DALI BI (K2C73)		0,18 A (110-127 V)	0,98 (110-127 V)	≤0,21 A			-	-25..50	75	110 °C
DC JOLLY DALI (K2C72)										

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [2] –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 189-255 V. [x] – see following page

Types Codes: 122xxx	Primary voltage (50/60 Hz) [1]	Max. primary current	Power Factor	Operative d.c. range (0 Hz) [2]	Output Power (W) [3]	Output Parameter [4]	Uout (V)	t _a (°C)	t _c (°C)	Thermal Protection [6]
DC JOLLY MD (K2139)	220-240 V	0,17 A	0,85 C-0,97	-	17-32 10-22	350-750 mA 12-24-28 V	55	-25...	75	110 °C
DC WOLF MP (K2203)			0,88 C-0,97	170-280 V ≤0,21 A			56	45 /50		
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

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [2] –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 189-255 V. [x] – see following page

Types Codes: 125xxx, 126xxx, 151xxx	Primary voltage (50/60 Hz) [1]	Max. primary current	Power Factor	Operative d.c. range (0 Hz)	Output Power (W) [3]	Output Parameter [4]	Uout (V)	t _a (°C)	t _c (°C) [5]	Thermal Protection [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	110-240 V	0,18 A	0,95 (220-240 V)	0,21 A (176-276 V) [2]	13-13	250 mA	59	-	80	-
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									

(K2900 K2D02, K2D05)					15-32	650 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)					15-32, 33*	700 mA		-25..45	75	110 °C
					15-20	750 mA				
					15-20	800 mA				
					15-20	850 mA				
					15-20	900 mA				
DC JOLLY US BILEVEL N BI (K2894, K2C94, K2C97); DC JOLLY US PLV BI (K2895, K2D01, K2D04)					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)										

Notes: the Kxxxx can replace the type according to this table; different commercial codes are representative for model updating. [1] – Rated value for AC range; [2] – 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. [3] – Different values according to DIP switch selection (see label). [4] – According to DIP switch selection. [5] – t_c for OF version is measured on the cap of C14 capacitor. [6] – The products have an overheating protection (C.5.a) and comply with temperature limit of clause 4.16.2 of IEC 60598-1:03 ("F" triangle marking), IEC 60598-1:2014/AMD1:2017, VDE 0710 T14 ("MM" triangle marking). [7] – Not for codes 151xxx.

Common parameters for all models	
Connection to supply (PRI); Through connection terminal	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 DA , 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. MP 32 TCRL I: the input terminal has a pole for the looping of the earth; the earth is not used inside the device. MP 32 TCRL: the input terminal has a pole for the looping of an external connection. 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

INSULATION: B= basic, S= supplementary, D= double or reinforced	PRI	PUSH L, Throgh connection terminal, OPERATION, RED ON, RED OFF (if present)	DALI (if present)	1..10V, NTC, SYNC, LEVEL, PUSH LV (if present)	SEC
PRI	-	B	B	D	D
PUSH L, Throgh connection terminal, OPERATION, RED ON, RED OFF (if present)	B	-	B	D	D
DALI (if present)	B	B	-	S	S
1..10V, NTC, SYNC, LEVEL, PUSH LV (if present)	D	D	S	-	-
SEC	D	D	S	-	-
In the final application 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 D, DC JOLLY DALI, DC JOLLY US MIDNIGHT, DC JOLLY US BILEVEL, DC JOLLY US BILEVEL N, DC JOLLY US PLV, MP 32 K2, MP 32 K2 D, MP 32/700 K2, MP 22 K2, MP 32 HV K2, MP 32 TCRL, MP 32 TCRL I, MP 32 TC, DC JOLLY HC MV, DC JOLLY HV MD D, MP 39 K2, MP 39 K2 D, DC JOLLY MD, DC WOLF MP, DC JOLLY MD LC			D	D	
DC JOLLY US BI, DC JOLLY DALI 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			D	-	
DC JOLLY US OF, DC JOLLY DALI 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			-	-	