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 MINI JOLLY DALI (series), DC MINIJOLLY (series), DC MINIJOLLY HV (series), DC MINIJOLLY LC (series), DC MINIJOLLY LC DALI (series), DC MINIJOLLY MD (series), UNIVERSALE 20 (series), UNIVERSALE 20 HC (series), UNIVERSALE 20 LC (series) and UNIVERSALE 20 WR (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 23 May 2018 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 81-104140

DEKRA Certification B.V.

drs. G.J. Zoetbrood
Managing Director

Jens Marggraf
Certification Manager

ACCREDITED BY THE DUTCH ACCREDITATION COUNCIL

PRODUCTS RvA C 001

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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 MINI JOLLY DALI (series), DC MINIJOLLY (series), DC MINIJOLLY HV (series), DC MINIJOLLY LC (series), DC MINIJOLLY LC DALI (series), DC MINIJOLLY MD (series), UNIVERSALE 20 (series), UNIVERSALE 20 HC (series), UNIVERSALE 20 LC (series) and UNIVERSALE 20 WR (series)
Type of load	:	LED modules, power LED
Class	:	II for independent model
Protection degree	:	IP20 for independent model
Rated maximum temperature (tc)	:	From 75 to 80 °C
Classification	:	Independent, built in, integral

Product data – type DC MINIJOLLY MD (series), UNIVERSALE 20 LC (series) and UNIVERSALE 20 (series)

Primary voltage	:	220-240 V
Nature of supply	:	alternate current
Rated frequency	:	50-60 Hz
Primary current	:	From 0,11 to 0,12 A
Power factor	:	From 0,85 C to 0,97
Working voltage U-OUT	:	From 55 V to 59 V
Ambient temperature	:	From -25 to +50 °C
Type of thermal protection	:	110

Product data – type DC MINI JOLLY DALI (series), DC MINIJOLLY HV (series), DC MINIJOLLY LC DALI (series), DC MINIJOLLY LC (series), DC MINIJOLLY (series) and UNIVERSALE 20 HC (series)

Primary voltage	:	110-240 V
Nature of supply	:	alternate or direct current
Rated frequency	:	0/50-60 Hz
Primary current	:	From 0,12 to 0,18 A
Power factor	:	From 0,91 C to 0,97
Working voltage U-OUT	:	From 49 V to 59 V
Ambient temperature	:	From -25 to +50 °C
Type of thermal protection	:	From 110 to 120

Product data – type UNIVERSALE 20 WR (series)

Primary voltage	:	110-277 V
Nature of supply	:	alternate or direct current
Rated frequency	:	0/50-60 Hz
Primary current	:	0,19 A
Power factor	:	0,95
Working voltage U-OUT	:	59 V
Ambient temperature	:	From -25 to +45 °C
Type of thermal protection	:	110

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. 2102673.50 and 2102673.60 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: These devices are electronic controlgears for LED modules with SELV output. The devices have a stabilized output current (CC) or voltage (CV) according to S1 DIP switch selection. The output can be reduced by NTC control signal (if present) in case of overheating on the LED module. Dimming features are detailed in the technical specification: PUSH L, 1-10V, MIDNIGHT, BILEVEL, BILEVEL N, PLV, DALI, Main Dimming. The models including the suffix "IM" differ only for the value of minimum dimming level. Different commercial codes are assigned for PWM (cod. 122xxx, 123xxx), AM+PWM (cod. 125xxx), AM (cod. 151xxx). UNIVERSALE models are not dimmable. OF models are integral controlgears; BI models are built-in; the other models are independent, class II, IP20.

Type/s (codes 122xxx)	PRI voltage (V)	PRI Current (A)	Power Factor	Output Power (W) [3]	SEC Parameter [4]	Uout (V)	t_a (°C)	t_c (°C) [5]	Prot. type (°C)
UNIVERSALE 20 (K2361)	220-240	0,11 [2]	0,97	13-20 16	0,25-0,7 A 24 V	59	-25..50	75/80	-
UNIVERSALE 20 BI (K2367)									
UNIVERSALE 20 OF (K2B24)							-	80	-
UNIVERSALE 20 LC (K2512)	220-240	0,12 [2]	0,91 C-0,95	5,4-20 9	0,1-0,38 A 24 V	59	-25..50	75	C.5.a 110 [6]
UNIVERSALE 20 LC BI (K2513)									
UNIVERSALE 20 LC OF (K2B25)							-	80	-
DC MINIJOLLY LC DALI (K2609)	110-240 [1]	0,18 [2]	0,91 C-0,95	5,4-20 9	0,1-0,38 A 24 V	59	-25..50	75	C.5.a 120 [6]
DC MINIJOLLY LC DALI BI (K2614)									
UNIVERSALE 20 HC (K2508)	110-240	0,17 [2]	0,95	15-20 20	0,35-0,9 A 24 V	49	-25..45/50 [5]	70/75	C.5.a 110 [6]
UNIVERSALE 20 HC BI (K2509)									
UNIVERSALE 20 HC TG (K2510)							-25..45/60 [5]	75/85	
UNIVERSALE 20 HC TG BI (K2511)									
UNIVERSALE 20 HC OF (K2B26)							-	80	-
UNIVERSALE 20 HC TG OF (K2B27)							-	80	-
DC MINIJOLLY HV (K2619), DC MINIJOLLY HV MIDNIGHT (K2620), DC MINIJOLLY HV BILEVEL (K2621), DC MINIJOLLY HV BILEVEL N (K2622), *DC MINIJOLLY HV PLV IM (K2623)	110-240	0,17 [2]	0,91 C-0,95 *0,94 C-0,95	13-20 7-16	0,25-0,7 A 10-24 V	59	-25..50	70/80	C.5.a 110 [6]
DC MINIJOLLY HV BI (K2624), DC MINIJOLLY HV MIDNIGHT BI (K2625), DC MINIJOLLY HV BILEVEL BI (K2626), DC MINIJOLLY HV BILEVEL N BI (K2627), *DC MINIJOLLY HV PLV IM BI (K2628)									
DC MINIJOLLY (K2781), DC MINIJOLLY MIDNIGHT (K2782), DC MINIJOLLY BILEVEL (K2783), DC MINIJOLLY BILEVEL N (K2784), DC MINIJOLLY PLV (K2785)	110-240	0,16 [2]	0,95	15-20 9-20	0,35-0,9 A 10-24 V	49	-25..50	75/80	C.5.a 110 [6]
DC MINIJOLLY BI (K2786), DC MINIJOLLY MIDNIGHT BI (K2787), DC MINIJOLLY BILEVEL BI (K2788), DC MINIJOLLY BILEVEL N BI (K2789), DC MINIJOLLY PLV BI (K2790)									
DC MINI JOLLY DALI (K2791)	110-240	0,18 [2]	0,92 C-0,97	10-20 16	0,25-0,7 A 24 V	55	-25..45	75	C.5.a 120[6]
DC MINI JOLLY DALI BI (K2792)									
DC MINIJOLLY LC (K2514), DC MINIJOLLY LC MIDNIGHT (K2610), DC MINIJOLLY LC BILEVEL (K2611), DC MINIJOLLY LC BILEVEL N (K2612), DC MINIJOLLY LC PLV (K2613)	110-240 [1]	0,12-0,16 [2]	0,91 C-0,95	5,4-20 9	0,1-0,38 A 24 V	59	-25..50	75	C.5.a 110 [6]
DC MINIJOLLY LC BI (K2515), DC MINIJOLLY LC MIDNIGHT BI (K2615),									

DC MINIJOLLY LC BILEVEL BI (K2616), DC MINIJOLLY LC BILEVEL N BI (K2617), DC MINIJOLLY LC PLV BI (K2618)									
Notes: see following page									

Type/s (codes 123xxx)	PRI voltage (V)	PRI Current (A)	Power Factor	Output Power (W) [3]	SEC Parameter [4]	Uout (V)	t_a (°C)	t_c (°C) [5]	Prot. type (°C)
DC MINIJOLLY (K2B38), DC MINIJOLLY MIDNIGHT (K2B39), DC MINIJOLLY BILEVEL (K2B40), DC MINIJOLLY BILEVEL N (K2B41), DC MINIJOLLY PLV (K2B42)	110-240	0,16 [2]	0,95	15-20	0,35-0,9 A 12-24 V	49	-25..50	75/80	C.5.a 110 [6]
DC MINIJOLLY BI (K2B43), DC MINIJOLLY MIDNIGHT BI (K2B44), DC MINIJOLLY BILEVEL BI (K2B45), DC MINIJOLLY BILEVEL N BI (K2B46), DC MINIJOLLY PLV BI (K2B47)									
DC MINIJOLLY OF (K2B21)							-	80	-
DC MINI JOLLY DALI (K2B48)	110-240	0,18 [2]	0,92 C-0,97	10-20 16	0,25-0,7 A 24 V	55	-25..45	75	C.5.a 120[6]
DC MINI JOLLY DALI BI (K2B49)									
DC MINI JOLLY DALI OF (K2B22)							-	80	-
DC MINIJOLLY HV (K2B06), DC MINIJOLLY HV MIDNIGHT (K2B09), DC MINIJOLLY HV BILEVEL (K2B12), DC MINIJOLLY HV BILEVEL N (K2B15), DC MINIJOLLY HV PLV (K2B18)	110-240	0,17 [2]	0,91 C-0,95	13-20 16-20	0,25-0,7 A 24-48 V	59	-25..50	70/80	C.5.a 110 [6]
DC MINIJOLLY HV BI (K2624), DC MINIJOLLY HV MIDNIGHT BI (K2B10), DC MINIJOLLY HV BILEVEL BI (K2B13), DC MINIJOLLY HV BILEVEL N BI (K2B16), DC MINIJOLLY HV PLV BI (K2B19), MINIJOLLY HV PLV IM BI									
DC MINIJOLLY HV OF (K2B08), DC MINIJOLLY HV PLV OF (K2B20)							-	80	-
DC MINIJOLLY LC DALI (K2B50)	110-240	0,12-0,18 [2]	0,91 C-0,95	5,3-20 9	0,1-0,38 A 24 V	59	-25..50	75	C.5.a 120 [6]
DC MINIJOLLY LC DALI BI (K2B04)									
DC MINIJOLLY LC DALI OF (K2B05)							-	80	-
Notes: [1] – The products are ENEC only in 220-240 V; [2] – The frequency of primary voltage is 50/60 Hz for all models; the products were tested also in 176-280 V operational range and they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-255 V; Idc max=0,14 A for all models. DC not used for PUSH L/RED ON/OFF/ OPERATION features. [3] – Maximum output power according to DIP switch selection (see label). Max. 15 W at 110-127 V. [4] – Output parameter where the product is declared as “stabilized”; the value is according to DIP switch selection (see label). [5] – see labels for the t_a and t_c values; tc is on the cap of C15 capacitor for OF models. [6] – The products have an overheating protection and comply with temperature limit of clause 4.16.2 of EN 60598-1:04 ("F" triangle marking), EN 60598-1:2014, VDE 0710 T14 ("MM" triangle marking).										

Type/s (codes 125xxx)	PRI voltage (V)	PRI Current (A)	Power Factor	Output Power (W) [2]	SEC Parameter [3]	U_{OUT} (V)	t_a (°C)	t_c (°C) [4]	Prot. type (°C)
DC MINI JOLLY DALI (K2C29)	110-240	0,18 [1]	0,92 C-0,97	12-20 16	0,25-0,7 A 24 V	55	-25..45	75	C.5.a 120[5]
DC MINI JOLLY DALI BI (K2C30)									
DC MINI JOLLY DALI OF (K2C31)							-	80	-
Notes: [1] – The frequency of primary voltage is 50/60 Hz for all models; the products were tested also in 176-280 V operational range and they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-255 V; Idc max=0,14 A for all models. DC not used for PUSH L/RED ON/OFF/ OPERATION features. [2] – Maximum output power according to DIP switch selection (see label). Max. 15 W at 110-127 V. [3] – Output parameter where the product is declared as “stabilized”; the value is according to DIP switch selection (see label). [4] – see labels for the t_a and t_c values; tc is on the cap of C15 capacitor for OF models. [5] – The products have an overheating protection and comply with										

temperature limit of clause 4.16.2 of EN 60598-1:04 ("F" triangle marking), EN 60598-1:2014, VDE 0710 T14 ("MM" triangle marking).

Type/s (codes: 127xxx)	PRI voltage (V)	PRI Current (A)	Power Factor	Output Power (W) [2]	SEC parameter [3]	Uout (V)	t_a (°C)	t_c (°C) [4]	Prot. type (°C)
UNIVERSALE 20 WR (K2B34)	110-277	0,19 [1]	0,95	13-20 15-16	0,25-0,7 A 24 V	59	-25..45	75	C.5.a 110 [5]
UNIVERSALE 20 WR BI (K2B35)									
UNIVERSALE 20 W OF (K2B36)							-	80	-
DC MINIJOLLY MD (K2C45)	220-240	0,12 [1]	0,85C-0,97	12-20 11-20	0,25-0,9 A 12-24 V	55	-25..45/50 [4]	75	C.5.a 110 [5]
DC MINIJOLLY MD BI (K2C46)									
DC MINIJOLLY MD OF (K2C47)							-	80	-

Notes: [1] – The frequency of primary voltage is 50/60 Hz for all models; the products were tested also in 176-280 V operational range and they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-255 V; Idc max=0,14 A for all models. [2] – Maximum output power according to DIP switch selection (see label). Max. 15 W at 110-127 V. [3] – Output parameter where the product is declared as “stabilized”; the value is according to DIP switch selection (see label). [4] – see labels for the t_a and t_c values; tc is on the cap of C15 capacitor for OF models. [5] – The products have an overheating protection and comply with temperature limit of clause 4.16.2 of EN 60598-1:04 ("F" triangle marking), EN 60598-1:2014, VDE 0710 T14 ("MM" triangle marking).

Type/s (codes 151xxx)	PRI voltage (V)	PRI Current (A)	Power Factor	Output Power (W) [2]	SEC Parameter [3]	U_{OUT} (V)	t_a (°C)	t_c (°C) [4]	Prot. type (°C)
DC MINIJOLLY (K2C32), DC MINIJOLLY MIDNIGHT (K2C33), DC MINIJOLLY BILEVEL (K2C34), DC MINIJOLLY BILEVEL N (K2C35), DC MINIJOLLY PLV (K2C36)	110-240	0,18 [1]	0,95	13-20	0,25-0,9 A	59	-25..50	75/80	C.5.a 110 [5]
DC MINIJOLLY BI (K2C37), DC MINIJOLLY MIDNIGHT BI (K2C38), DC MINIJOLLY BILEVEL BI (K2C39), DC MINIJOLLY BILEVEL N BI (K2C40), DC MINIJOLLY PLV BI (K2C41)									
DC MINIJOLLY OF (K2C42)							-	80	-
DC MINI JOLLY DALI (K2C51)				12-20	0,25-0,7 A		-25..45	75	C.5.a 120 [5]
DC MINI JOLLY DALI BI (K2C52)									
DC MINI JOLLY DALI OF (K2C53)							-	80	-

Notes: [1] – The frequency of primary voltage is 50/60 Hz for all models; the products were tested also in 176-280 V operational range and they can be used for centralized emergency installations (EN 50171 and EN 50172) in the rated 196-255 V; Idc max=0,14 A. DC not used for PUSH L/RED ON/OFF/ OPERATION features. [2] – Maximum output power according to DIP switch selection (see label). Max. 15 W at 110-127 V. [3] – Output parameter where the product is declared as “stabilized”; the value is according to DIP switch selection (see label). [4] – see labels for the t_a and t_c values; tc is on the cap of C15 capacitor for OF models. [5] – The products have an overheating protection and comply with temperature limit of clause 4.16.2 of EN 60598-1:04 ("F" triangle marking), EN 60598-1:2014, VDE 0710 T14 ("MM" triangle marking).

Connections		
Input supply	PRI	screwless terminal block 0,5…1,5 mm² (0,75…1,5 mm² for independent models)
Input dimming (if present)	DA1, DA2, PUSH L, OPERATION, RED ON, RED OFF	screwless terminal block 0,5…1,5 mm² (0,75…1,5 mm² for independent models)
Input feedback (if present)	NTC, 1..10V, LEVEL, PUSH LV	screwless terminal block 0,5…1,5 mm²
Output load	SEC	screwless terminal block 0,5…1,5 mm²

Additional information

All models have the following features: AC/DC P/S for LED; stabilized output current or voltage; multiple value load; 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 850-960 °C with favourable result.

INSULATION: B= basic, S= supplementary, D= double or reinforced	PRI	PUSH L, RED OFF, RED ON, OPERATION	DA1, DA2	NTC, 1-10V, LEVEL, PUSH LV	SEC
PRI	-	B	B	D	D
PUSH L, RED OFF, RED ON, OPERATION	B	-	B	D	D
DA1, DA2	B	B	-	S	S
NTC, 1-10V, LEVEL, PUSH LV	D	D	S	-	-
SEC	D	D	S	-	-

DC MINIJOLLY, DC MINIJOLLY MIDNIGHT, DC MINIJOLLY BILEVEL, DC MINIJOLLY BILEVEL N, DC MINIJOLLY PLV, UNIVERSALE 20, DC MINIJOLLY LC, DC MINIJOLLY LC MIDNIGHT, DC MINIJOLLY LC BILEVEL, DC MINIJOLLY LC BILEVEL N, DC MINIJOLLY LC PLV, UNIVERSALE 20 LC, DC MINIJOLLY HV, DC MINIJOLLY HV MIDNIGHT, DC MINIJOLLY HV BILEVEL, DC MINIJOLLY HV BILEVEL N, DC MINIJOLLY HV PLV IM, DC MINIJOLLY BI, DC MINIJOLLY MIDNIGHT BI, DC MINIJOLLY BILEVEL BI, DC MINIJOLLY BILEVEL N BI, DC MINIJOLLY PLV BI, UNIVERSALE 20 BI, UNIVERSALE 20 HC BI, UNIVERSALE 20 HC TG BI, DC MINIJOLLY LC BI, DC MINIJOLLY LC MIDNIGHT BI, DC MINIJOLLY LC BILEVEL BI, DC MINIJOLLY LC BILEVEL N BI, DC MINIJOLLY LC PLV BI, UNIVERSALE 20 LC BI, DC MINIJOLLY HV BI, DC MINIJOLLY HV MIDNIGHT BI, DC MINIJOLLY HV BILEVEL BI, DC MINIJOLLY HV BILEVEL N BI, DC MINIJOLLY HV PLV IM BI, UNIVERSALE WR, UNIVERSALE WR BI were tested positively according to IEC60335-1:2010 / EN 60335-1:2012, clauses 19.11.4, 22.42, 29, 30.2.3, 30.2.4. The OF models have been tested in the same enclosure of BI models, the safety evaluations must be repeated if they will be assembled in a final luminaire in a different enclosure. The connections of controlgears in the final application 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: / **MODELS:**	Between active parts and the bottom surface of enclosure	Between active parts and external surfaces of enclosure
Independent models: UNIVERSALE 20, UNIVERSALE 20 LC, DC MINIJOLLY LC DALI, UNIVERSALE 20 HC, UNIVERSALE 20 HC TG, DC MINIJOLLY HV, DC MINIJOLLY HV MIDNIGHT, DC MINIJOLLY HV BILEVEL, DC MINIJOLLY HV BILEVEL N, DC MINIJOLLY HV PLV IM, DC MINIJOLLY, DC MINIJOLLY MIDNIGHT, DC MINIJOLLY BILEVEL, DC MINIJOLLY BILEVEL N, DC MINIJOLLY PLV, DC MINI JOLLY DALI, DC MINIJOLLY LC, DC MINIJOLLY LC MIDNIGHT, DC MINIJOLLY LC BILEVEL, DC MINIJOLLY LC BILEVEL N, DC MINIJOLLY LC PLV, DC MINIJOLLY LC DALI, UNIVERSALE 20 WR, DC MINIJOLLY MD	double	double
Built-in models: UNIVERSALE 20 BI, UNIVERSALE 20 LC BI, DC MINIJOLLY LC DALI BI, UNIVERSALE 20 HC BI, UNIVERSALE 20 HC TG BI, DC MINIJOLLY HV BI, DC MINIJOLLY HV MIDNIGHT BI, DC MINIJOLLY HV BILEVEL BI, DC MINIJOLLY HV BILEVEL N BI, DC MINIJOLLY HV PLV IM BI, DC MINIJOLLY BI, DC MINIJOLLY MIDNIGHT BI, DC MINIJOLLY BILEVEL BI, DC MINIJOLLY BILEVEL N BI, DC MINIJOLLY PLV BI, DC MINI JOLLY DALI BI, DC MINIJOLLY LC BI, DC MINIJOLLY LC MIDNIGHT BI, DC MINIJOLLY LC BILEVEL BI, DC MINIJOLLY LC BILEVEL N BI, DC MINIJOLLY LC PLV BI, DC MINIJOLLY LC DALI BI, UNIVERSALE 20 WR BI, DC MINIJOLLY MD BI	double	-
Integral models: UNIVERSALE 20 OF, UNIVERSALE 20 LC OF, UNIVERSALE 20 HC OF, UNIVERSALE 20 HC TG OF, DC MINIJOLLY OF, DC MINI JOLLY DALI OF, DC MINIJOLLY HV OF, DC MINIJOLLY LC DALI OF, UNIVERSALE 20 WR OF, DC MINIJOLLY MD OF	-	-