

CERTIFICATE

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

Manufacturer/Licensee:
TCI Telecomunicazioni Italia Srl
Via Parma 14
21047 Saronno (VA), Italy

Product : Electronic controlgear for LED modules
Trade name(s) : TCI and TN101
Type(s)/model(s) : LV HR (series), LV RGBW (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 20 November 2017 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 81-101995

DEKRA Certification B.V.



drs. G.J. Zoetbrood
Managing Director



Henk Schendstok
Certification Manager

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SPECIFICATION OF THE CERTIFIED PRODUCT**Product data**

Product	: Electronic controlgear for LED modules
Trade name(s)	: TCI and TN101
Type(s)/model(s)	: LV HR and LV RGBW
Primary voltage	: 10-52 V
Nature of supply	: constant current
Rated frequency	: 0 Hz
Primary current	: From 0,32 to 1,3 A
Power factor	: -
Type of load	: LED modules, power LED
Working voltage U-OUT	: From 13 V to 57 V
Class	: II for LV RGBW 500 BLL, LV RGBW 500 BLL EX
Protection degree	: IP20 for LV RGBW 500 BLL, LV RGBW 500 BLL EX
Rated maximum temperature (Tc)	: From 75 to 80 °C
Ambient temperature	: From -25 to +60 °C
Type of thermal protection	: From 100 to 110 °C
Overheating protection	: -
Classification	: Independent or Built in or Integral (OF)

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. 2102590.50 and 2102590.60 are laid down in DEKRA test file 350033600; they contain both 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 are controlgears for LED modules supplied by DC or PWM modulated (max. 1 kHz) with short circuit protection, suitable for class III applications; input voltage is SELV; models with multiple output current can be set to desired value by JP1 and JP2 jumpers; the options are detailed both in the technical specification and in the labels. Input voltage should be SELV.										
Type/s	PRI		SEC				t _a (°C)	t _c (°C)	Classification	Thermal Protection
	DC Vin (V)	max. lin (A)	I _o rated (mA)	V _o max (V)	U _{out} (V)	P _o (W)				
LV HR (K2516)	10 12 24 48 52	0,67	350/500/700 [1]	6 9 20 40 44	57	[2]	-25..50-60 [3]	75	Built-in [5]	C.5.a 100 °C [6]
LV HR 350mA (K2518)		0,32	350 [1]				-25..60			
LV HR 500mA (K2519)		0,47	500 [1]				-25..55			
LV HR 700mA (K2520)		0,67	700 [1]				-25..50			
LV HRT (K2517)	10 12 24 48 52	0,56	220/400/600 [1]	8 10 20 44 48	57	-25..50-60 [4]				
LV HR 48 (K2521)	48	0,62	350 500 700	-	53	1-13,4/15,3 1-18,9/21,6 1-26,0/30,5	-25..50-60 [3]			
LV HR 24 (K2522)	24	0,65	350 500 700	-	26	1-6,4/7,5 1-9,0/10,6 12,3-14,3				
LV HR 12 (K2523)	12	0,65	350 500 700	-	13	1-3,0/3,4 1-4,1/4,8 1-5,4/6,4				

Notes: [1] – Controlgear with output current not constant for all primary voltage. [2] – The products have been tested in the range: from 1 W up to P_omax=I_o x V_omax. [3] – T_a=50 °C for I_o=700mA; t_a=55 °C for I_o=500mA; t_a=60 °C for I_o=350mA. [4] – T_a=50 °C for I_o=600mA; t_a=55 °C for I_o=400mA; t_a=60 °C for I_o=220mA. [5] – Suitable for class III luminaire. [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 60598-1:2015 and VDE 0710 T14 ("MM" triangle marking).

The devices are controlgears for LED modules supplied by DC or PWM modulated (max. 1 kHz) with short circuit protection, suitable for class III applications (without PUSH HV connection); the options are detailed both in the technical specification and in the labels. Input voltage is SELV. The stabilized outputs (OUT) can be dimmed by the PUSH HV or PUSH LV ports or by BLL wireless control devices; PUSH LV can switch on/off all outputs. The output power can be up to P _{out} max with proportionate values of I _{in} .										
Type/s	IN		OUT			t _a (°C)	t _c (°C)	Classification	Thermal Protection	
	V _{in} (V)	I _{in} (A)	I _o rated (mA)	P _o (W)	U _{out} (V)					
LV RGBW 500 BLL (K2913), LV RGBW 500 BLL EX (K2A99)	12-24	1,3	4x 500	4x3	35	-25..45	80	Independent	C.5.a 110 °C [2]	
LV RGBW 500 BLL BI (K2914), LV RGBW 500 BLL EX BI (K2B01)								Built-in		
LV RGBW 500 BLL OF (K2915), LV RGBW 500 BLL EX OF (K2B02)								-	80 [1]	Integral

Notes: [1] – The t_c position is on the top of C_{6A} capacitor. [2] – The products have an overheating protection and comply with temperature limit of clause 4.16.2 of EN 60598-1:04 ("F" triangle marking) and VDE 0710 T14 ("MM" triangle marking).

triangle marking); the products are suitable for direct mounting on normally flammable surfaces (EN 60598-1:2015) only at $t_c \leq 76$ °C at the ambient temperature and output power of final application.
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Common parameters	LV RGBW (series)	LH HR (series)	
Supply (IN)	screwless terminal block (0,5...1,5 mm ²)	screw terminal block (0,5...2,5 mm ²)	
Load (OUT)	screwless terminal block (0,5 mm ²)	screw terminal block (0,5...2,5 mm ²)	
Control (PUSH HV)	screw terminal block (0,5...2,5 mm ²)	-	
Control (PUSH LV)	screwless terminal block (0,5 mm ²)	-	
Additional information			
All models fulfil the requirements for: DC/DC P/S for LED; multiple value load control gear, short-circuit proof type; impulse withstand category II; Pollution degree 2 (Normal Pollution); Material group IIIa; the material of enclosure (independent and built-in models) was tested with favourable result for Glow-wire at temperature 850-960 °C. LV RGBW models, LV HR 48, LV HR 24, LV HR 12 have stabilized output current.			
INSULATION for LV RGBW (series)		IN, OUT, PUSH LV (if present)	PUSH HV
IN, OUT, PUSH LV (if present)		-	double
PUSH HV		double	-
OF models do not have an enclosure and are composed of printed circuit boards and electrical components, and shall comply with the requirements of IEC 60598-1 when built into a different luminaire (minimum housing as built-in or independent model). In the final application the connections of external wiring shall be according to IEC 60598-1 or national deviations of the country where installed. Creepage distances and clearances for built-in and OF models shall comply with the requirements of IEC/EN 60598-1 when the device is installed in the final application:			
MODELS:	INSULATION:	Between active parts and the bottom surface of enclosure	Between active parts and external side of enclosure
LV RGBW 500 BLL, LV RGBW 500 BLL EX		double	double
LV RGBW 500 BLL BI, LV RGBW 500 BLL EX BI, LV HR, LV HR 350mA, LV HR 500mA, LV HR 700mA, LV HRT, LV HR 48, LV HR 24, LV HR 12		double	-
LV RGBW 500 BLL OF, LV RGBW 500 BLL EX OF		-	-