

1kW Xenon lamp PSU

CA-509 Doc. Doc. Id. Edición Edition 04-02-2015 Fecha Date Página Page 1/6 M. Camacho Realizado Author Aprobado Approved A. Solé



DESCRIPTION

This single-phase rectifier has been designed to ensure correct operation and long life to short arc Xenon lamps up to 1000W. It is characterized by galvanic insulation, a soft inrush current, a low residual ripple value and a stable output current.

The unit includes:

- A boost circuit, which provides the necessary no-load voltage in order to guarantee the right lamp ignition.
- An auxiliary 24V 150W output.
- · Local and remote output current control.

The design allows connecting up 3 units in parallel (3kW lamps).

INPUT

AC input voltage Universal
AC input voltage range 90...264Vac
AC input frequency range 47...63Hz

Maximum input current 15A at 90Vac, 7A at 184Vac

Power factor > 0.95 Inrush current < 30A Efficiency > 87%

MAIN OUTPUT

Output current 30...55A according to the power selector Maximum output voltage 22.7...32V according to the power selector Boost voltage 90...130V according to the power selector Line regulation 1% Ripple <1App

AUXULIARY OUTPUT

Output voltage 24V
Maximum continuous current 6.3A
Total regulation 1%
Ripple <100mVpp

ENVIRONMENTAL

Storage temperature -50...70°C Operating temperature range -30...50°C

Cooling Internal forced air and heat conduction to cabinet

Environmental regulations RoHS according to directive 2002/95/EC

EMC

Emission according to norm/s

TEST	NORM	PORT	FREQUENCY	LIMITS
Radiated emissions	CISPR16-2-3	Case	30MHz-230MHz	Class-B 30dB(µV/m) Qpk at 10m
			230MHz-1GHz	Class-B 37dB(µV/m) Qpk at 10m
Conducted emissions	CISPR16-2-1	AC Input	150kHz-500kHz	Class-B 66-56dB(µV) Qpk
				Class-B 56-46dB(µV) Av
			500kHz-5MHz	Class-B 56dB(µV) Qpk
				Class-B 46dB(µV) Av
			5MHz-30MHz	Class-B 56dB(µV) Qpk
				Class-B 46dB(µV) Av
Harmonics	IEC61000-3-2	AC Input	5-2kHz	Class-D



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EN61000-6-1 Immunity according to norm/s

TEST	NORM	PORT	SEVERITY	CONDITIONS	CRIT.
Magnetic field	IEC61000-4-8	X/Y/Z Axis	3A/m	50/60Hz	Α
Radiated high-frequency	IEC61000-4-3	X/Y/Z Axis	3V/m	80M - 1GHz M. 80% 1kHz	Α
Conducted RF	IEC61000-4-6	Input	3V	0.15-80MHz M. 80% 1kHz	Α
		Output	3V	0.15-80MHz M. 80% 1kHz	Α
		Signal	3V	0.15-80MHz M. 80% 1kHz	Α
Electrostatic discharge	IEC61000-4-2	Case	±8kV	Air (isolated parts)	Α
		Case	±4kV	Contact (conductive parts)	Α
Fast transients	IEC61000-4-4	AC Input	±1kV	Tr/Th: 5/50 ns	Α
		Output	±500V	Tr/Th: 5/50 ns	Α
		Signal	±500V	Tr/Th: 5/50 ns	Α
Surges	IEC61000-4-5	AC L to L	±1kV	Tr/Th: 1.2/50µs	Α
		AC L to PE	±2kV	Tr/Th: 1.2/50µs	Α
Voltage DIPS/SAGS	IEC61000-4-11	AC Input	70%	10ms (zero crossing)	Α
		AC Input	40%	0.1s (zero crossing)	Α
		AC Input	5%	5s (zero crossing)	С
		AC Input	0%	4s (zero crossing)	С

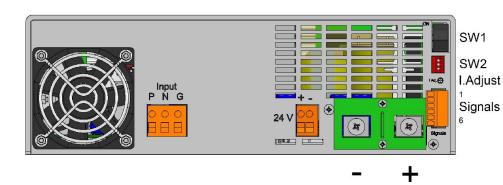
SAFETY

EN60950-1 Safety according to Dielectric strength Input / Output 4200Vdc Dielectric strength Input / Earth 1500Vac Dielectric strength Output / Earth 500Vac Protection Degree IP20

PROTECTIONS

- Lamp output protected against open circuit, overload or short-circuit. In any load condition, from open circuit to short circuit, the maximum output current and voltage is limited. The limits are set by the lamp selector.
- Input protected against over-currents by internal fuse (T 16A 250V). This fuse protects the installation against an internal short circuit.
- Over-temperature. An internal sensor measures the temperature of the output diodes. At >115°C the unit presents ALARM. At >125°C the unit shutdown. For restarting the unit it is necessary to eliminate the cause of the over-temperature, keep the unit with the fan running for a few minutes and disconnect the mains input for > 5 seconds.
- Input under-voltage lockout. The unit startup at Vin> 85Vac and shutdown at Vin < 80Vac.
- Auxiliary 24V output protected against over-currents by current limiting.

CONTROLS



SW1

GND

SW2							
		0.5 kW			-		
		1 kW		-			
		3 kW		-			
<u> </u>							
	Signals		Type		Voltage		
1	FAILURE (3)		Output		0 / 24V		
2	ALARM (3)		Output		0 / 24V		
3	GND		(-) 24\	/	0V		
4	ON/OFF (4)		Input		0 / 24V		
5 DIMMER (5)		Input		05V			

(-) 24V

ON

Lamp ON

ON (2)

OFF (1)

Lamp OFF

OFF

Note (1) The switch SW1 must remain in OFF position when the remote ON/OFF signal is used.

Note (2) Put the switch in the ON position to select the lamp power. The rest of switches must remain in the OFF position.

Note (3) The voltage of FAILURE and ALARM outputs turn on (24V) when an operating failure (overtemperature or lamp output error) or alarm (overtemperature alarm or lamp output short-circuit) are detected.

Note (4) To turn ON the lamp apply 24V in the remote signal using number 3 pin as GND. SW1 must be turned OFF to operate in remote mode.

Note-(5) To dimmer the lamp light apply an external voltage from 0V to 5V in the input dimmer signal using number 6 pin as GND.



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1. Switch

Turn ON or OFF the lamp.

Notes:

- The switch must remain in OFF position when remote ON/OFF is used.
- The auxiliary output of 24V remains active in any switch position
- When the switch is OFF a residual voltage 24V of high impedance appears at the output.

2. Power selector (DIP switch)

It sets the lamp power.

The selected power is in the ON position. None selected powers must remain in OFF position It works adjusting the ouput parameters at the appropriate value for the power lamp selected. For 3kW lamps select "3kW" it is necessary to connect three power supplies in parallel.

		500W	1kW	3kW	Tolerance
	Nominal Boost voltage	90V	130V	130V	±4%
ſ	Nominal output current	30A	55A	37A	±2%
	Nominal output voltage	22.7V	22.7V	32V	±2%

3. I. Adjust

It allows reduce the current set by DIP switch up to 50% acting on potentiometer "I. Adjust"

4. Failure

It gives a logical "1" (24V respect to GND) when an output failure occurs (Vo < 9.5V and lo < 15A)

5. Alarm

It gives a logical "1" (24V respect to GND) when an overload (Vo < 9.5V and Io > 15A) or over-temperature occurs.

6. Remote ON/OFF

It allows turn on the lamp applying 24V to remote ON/OFF input. Open circuit or less than 1V supposes turn OFF. Notes:

- This switch must remain in OFF position when remote ON/OFF is used.
- The auxiliary output of 24V remains active in any switch position
- When the switch is OFF a residual voltage 24V of high impedance appears at the output.

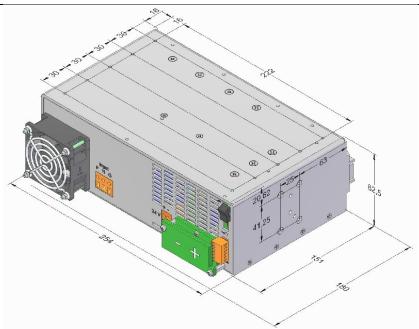
7. Input Dimmer

It allows reduce the current selected by DIP switch up to 50% by means of applying a voltage in this input, A voltage from 0 to 5V supposes an output current from 100% to 50% respectively of the selected power.

Notes

The negative pole of the 24V auxiliary power supply and the GND terminals of the signal connector are internally connected to negative lamp terminal.

MECHANICAL





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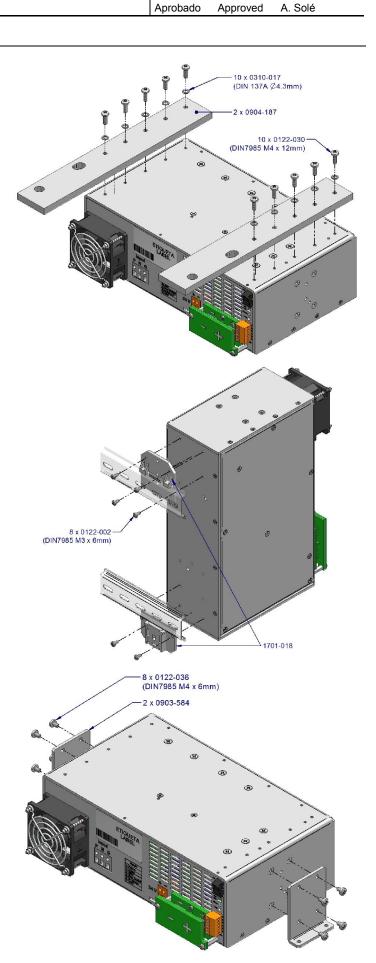
ACCESSORIES

MOUNTING PLATES

Code: **NP-9298** (content: 2 plates, 10 screws, 10 washers)

DIN RAIL CLIPS SET Code: NP-9299 (content: 2 clips, 8 screws)

MOUNTING BRACKETS Code: NP-9303 (Content: 2 brackets, 8 screws)





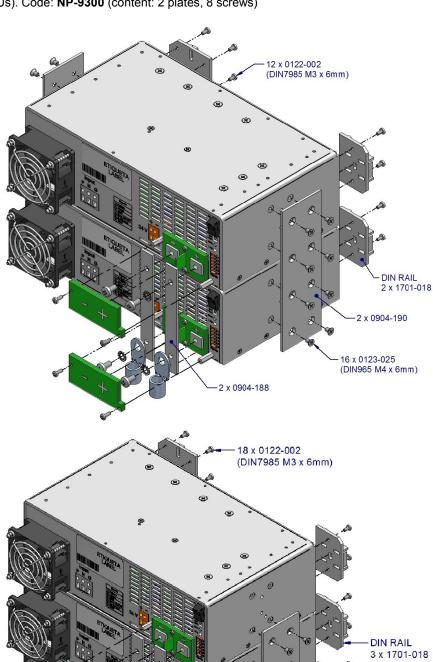
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2 x 0904-190

16 x 0123-025 (DIN965 M4 x 6mm)

JOINING PLATES (suitable for join 2 or 3 PSUs). Code: NP-9300 (content: 2 plates, 8 screws)



2 x 0904-189

CONNECTION BARS for 2 PSUs. Code NP-9301 (content: 2 bars 0904-188)

CONNECTION BARS for 3 PSUs. Code NP-9302 (content: 2 bars 0904-189)



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PARALLEL CONNECTION

For the parallel use, only is necessary to interconnect the output power terminals by means of the connection bars. Remote ON/OFF and Dimmer signals can work independently and also interconnected. The alarm signals work independently

The full interconnection is as follows:

