MKvantas

Two-Channel Flashlamp Driver for Pulsed Lasers

PS5073

FEATURES

- Output voltage up to **2500 V**
- Single unit for oscillator-amplifier systems
- Built-in serial ignition circuit
- Built-in simmer power supply
- Internal/external triggering
- Output voltage accuracy ±0.15 %
- LCD display
- RS232 / CAN / LAN interface for remote control

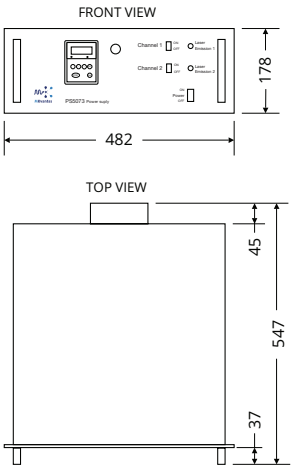
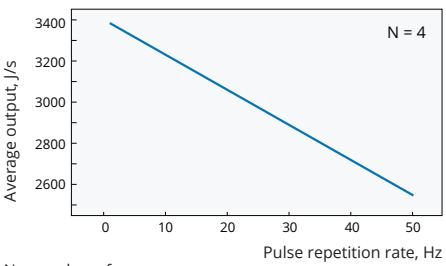


Fig. 1. Dimensions

Fig. 2. Control Panel



N – number of charging modules

Fig. 3. Average output power versus pulse repetition rate

Flashlamp driver PS5073 is designed for flashlamp-pumped lasers and presents a two-channel device consisting of two capacitor charging, simmer/trigger and pulse forming modules and control circuit. It is excellent choice for oscillator-amplifier laser systems.

The unit is manufactured in conformity with EN61010 and EN55011 standards.

PS5073 features microprocessor control and back illuminated LCD display where all output parameters of power supply are conveniently displayed. Driver can be remotely controlled through RS-232, CAN and LAN.

The unit is fitted into a 19" standard housing and may be comfortably mounted in your power supply stands.

The driver can be easily integrated with cooling unit PS1223. Up to 6 units can be mounted into up to 25U height 19" racks providing powerful yet compact laser pumping cabinets.

GENERAL SPECIFICATIONS

Model		PS5073-1/1	PS5073-1/2	PS5073-x/x
Number of independent outputs			2	
Number of charging modules for first and second channels		1+1	1+2	1+3 or 2+2
Max. average output power P_{avg} at 10 Hz PRR [1,2]		1.6 kJ/s	2.4 kJ/s	3.2 kJ/s
Max charging voltage U_{ch}			1000 – 2500 V [3]	
Pulse duration			fixed	
Max pulse repetition rate			< 150 Hz	
Pulse to pulse voltage stability			0.15 %	
Load regulation			0.15 %	
Linearity			0.2 %	
Resolution			1 V	
Ignition pulse voltage			16 kV [4]	
Ignition pulse duration			> 1000 ns	
Simmer current options			0.6 A; 1.2 A	
Simmer voltage			< 300 V	
Striking voltage			< 900 V	
Protection features			overvolt, overheat, flashlamp breakdown, interlock	
Error report			no simmer current, no charge, HV connectors	
Remote control			RS-232 / CAN / LAN	
Maximum C_{PFN} value			< 240 µF [1]	
Mains			single phase 230 V (-10%, +6%) or 3-phase 380 V (-10%, +6%) [5]	
Power consumption, average		3.2 kW	4.5 kW	5.8 kW
Power consumption, peak		4 kW	6 kW	8 kW
Operation conditions				
Ambient temperature	Storage		from +5 to +50 °C	
	Operation		from +15 to +40 °C	
Humidity			below 80 % non condensing	
Protection class			IP20	

[1] Total for both channels 200 V or 208 V mains
[2] See Fig. 3 for other pulse repetition rates
[3] Inquire for other voltages
[4] Optional 30 kV
[5] 3-phase 200 V or 208 V mains are optional

Specifications in table are given as reference. We always suggest to optimize power supply by customer's usage conditions.

Not all combinations of parameters can be possible at the same time. Specifications are subject to changes without advance notice.

CONFIGURATION EXAMPLES OF PS5073 SERIES POWER SUPPLIES

Ordering code	Channel	Discharge energy	Repetition rate	Maximal charging rate	Maximal voltage	Flashlamp recommended	Capaci-tance	Induc-tance
		J	Hz	J/s	V		µF	µH
PS5073-10-17/17-60/60-100/100-1/1	Ch 1	86.7	10	867	1700	2×5×58; 450 Torr	60	100
	Ch 2	86.7	10	867	1700	2×5×58; 450 Torr	60	100
PS5073-10-12/18-80/60-60/100-1/2	Ch 1	57.6	10	576	1200	5×90; 450 Torr	80	60
	Ch 2	97.2	10	972	1800	2×5×58; 450 Torr	60	100
PS5073-50-11/11-40/40-40/40-2/2	Ch 1	24.2	50	1210	1100	5×90; 450 Torr	40	40
	Ch 2	24.2	50	1210	1100	5×90; 450 Torr	40	40
PS5073-10-13/14-60/60-100/100-1/1	Ch 1	50.7	10	507	1300	2×5×58; 450 Torr	60	100
	Ch 2	58.8	10	588	1400	2×5×58; 450 Torr	60	100
PS5073-10-08/14-160/60-40/80-1/1	Ch 1	51.2	10	512	800	5x58; 450 Torr	160	40
	Ch 2	58.8	10	588	1400	2x5x58; 450 Torr	60	80

Contact MKvantas if your requirements are different as in this table. We will consult you and make suggestion best matching your requirements.

Ordering information

Please indicate following points by inquiry:

- Flash lamp type (bore diameter, gap length, gas type and pressure)
- Maximal pulse energy
- Pulse duration
- Maximal pulse repetition rate
- Mains voltage/phase(s)

Ordering code

PS5073-10-10/20-40/60-100/130-1/2

- Model
- Pulse repetition rate, Hz
- Charge voltage, in hundreds of Volts 1st channel/2nd channel
- Capacitance C, µF 1st channel/2nd channel
- Inductance L, µH 1st channel/2nd channel
- Number of charging modules 1st channel/2nd channel

Customized orders

Depending on customer needs, we can produce flashlamp drivers with specific average charging power, output voltage, pulse duration, repetition rate values or/ and specific application areas.