osi1213 Series

2.5–12 kW;250 kV;low ripple



Product introduction

The OSIMAI osi1213 series is a high-performance HV DC power supply. Encapsulation, soft-switching topology, and optimized heat dissipation and insulation provide maximum output voltage250 kV and power12 kW, with efficiency above90%. Digital control supports online settings and varied applications. Nanosecond transient response, overvoltage, overcurrent, arc and overtemperature protection ensure fault-free operation. A full range of front-panel functions and control interfaces is provided. Customization is available.

Product features

- Output voltage1–250 kV
- Output power2.5–12 kW
- Encapsulated construction
- Digital communication
- Nanosecond protection response
- Overvoltage,overcurrent,short-circuit,arc and overtemperature protection
- Soft-switching topology;digital control
- Voltage/current adjustment
- Preset and editable protection values
- Customization to user requirements

Specifications

Parameter	Specification
Input	380 VAC ±10%,50/60 Hz.
Output	Selectable maximum voltages1–250 kV;maximum power10 kW. Continuously adjustable from zero to maximum;single negative polarity. Higher voltage ratings can be customized.
Front-panel indications	HV ON; HV OFF; voltage/current mode; single negative output polarity; overvoltage, overcurrent, overtemperature and arc protection; memory; reset; actual values; set values; protection values; custom-function button status; error codes.
Voltage control	Local: built-in rotary encoder sets output voltage between zero and maximum. Analog remote: external 0–10 V signal sets zero to maximum output. Digital control: standard Modbus over RS-485 sets output from zero to maximum voltage.
Current control	Local: built-in rotary encoder sets output current between zero and maximum. Analog remote: external 0–10 V signal sets zero to maximum output. Digital control: standard Modbus over RS-485 sets output from zero to maximum current.
Voltage regulation	Load: better than 0.01% from no load to rated load. Line: ±0.01% for ±10% input-voltage variation.
Current regulation	Load: better than 0.01% from no load to rated load. Line: ±0.01% for ±10% input-voltage variation.
Ripple voltage	At rated output, ripple is0.1% p-p of maximum output voltage.
Ambient temperature	Operating: 0°C to +50°C. Storage: −20°C to +80°C.
Temperature coefficient	Voltage and current: better than 100 ppm/°C.
Stability	Less than0.05% per8 hours after0.5-hour warm-up.
Weight	1–120 kV:approximately70 kg.225–250 kV:approximately280 kg.
Voltage/current indication	Four-digit LED display;accuracy±1% at rated output.
Remote voltage/current monitoring	The 25-pin terminal connector includes 0–10 V voltage/current monitoring signals for external digital or analog meters.
Dimensions	1–120 kV:width482.6 mm,height266 mm,depth647 mm.25–250 kV:width450 mm,height400.5 mm,depth1195 mm.
High-voltage cable	1–120 kV:recessed plastic insulating conduit and inserted cable connected through a metal connector;standard length2 m.225–250 kV:recessed plastic insulating conduit and inserted cable connected through a nylon connector;standard length2 m.

Model selection — 10 kW (customizable)

Rated output (kV)	Rated output (mA)	Positive model	Negative model
20	600	osi1213P20-12000	osi1213N20-12000
30	400	osi1213P30-12000	osi1213N30-12000
50	240	osi1213P50-12000	osi1213N50-12000
80	150	osi1213P80-12000	osi1213N80-12000
100	120	osi1213P100-12000	osi1213N100-12000
120	100	osi1213P120-12000	osi1213N120-12000
150	80	osi1213P150-12000	osi1213N150-12000
225	53.33	osi1213P225-12000	osi1213N225-12000
250	48	osi1213P250-12000	osi1213N250-12000

DB25 connector signal definitions

Pin	Signal	Description
1	Remote indication	Open collector; conducting = remote control.
2	Constant-voltage indication	Open collector; conducting = constant-voltage output.
3	HV OFF indication	Open collector; conducting = HV OFF.
4	HV ON signal	Rising edge enables HV; pin 17 is +15 V.
5	Remote enable	High level (+15 V) active.
6	Safety-interlock enable	High level (+15 V) active.
7	+15 V	+15 V, 100 mA maximum.
8	Current setting	0–10 V = 0–100% rated output.
9	Voltage setting	0–10 V = 0–100% rated output.
10	+15 V	+15 V, 100 mA maximum.
11	+10 V	+10 V, 1 mA maximum.
12	Voltage monitor	0–10 V = 0–100% rated output.
13	Current monitor	0–10 V = 0–100% rated output.
14	Fault indication	Open collector; conducting = power-supply fault.
15	Current-flow indication	Open collector; conducting = current output.
16	HV ON indication	Open collector; conducting = HV ON.
17	HV OFF signal	Falling edge disables HV.
18	Fault reset	High level (+15 V) resets.
19	Ground	Signal ground.
20	Ground	Signal ground.
21	Ground	Signal ground.
22	Ground	Signal ground.
23	Ground	Signal ground.
24	Ground	Signal ground.
25	Ground	Signal ground.
Shield	Ground	Signal ground.

RS-485 communication interface

Marking	Signal
A	RS485+
B	RS485−
G	Ground

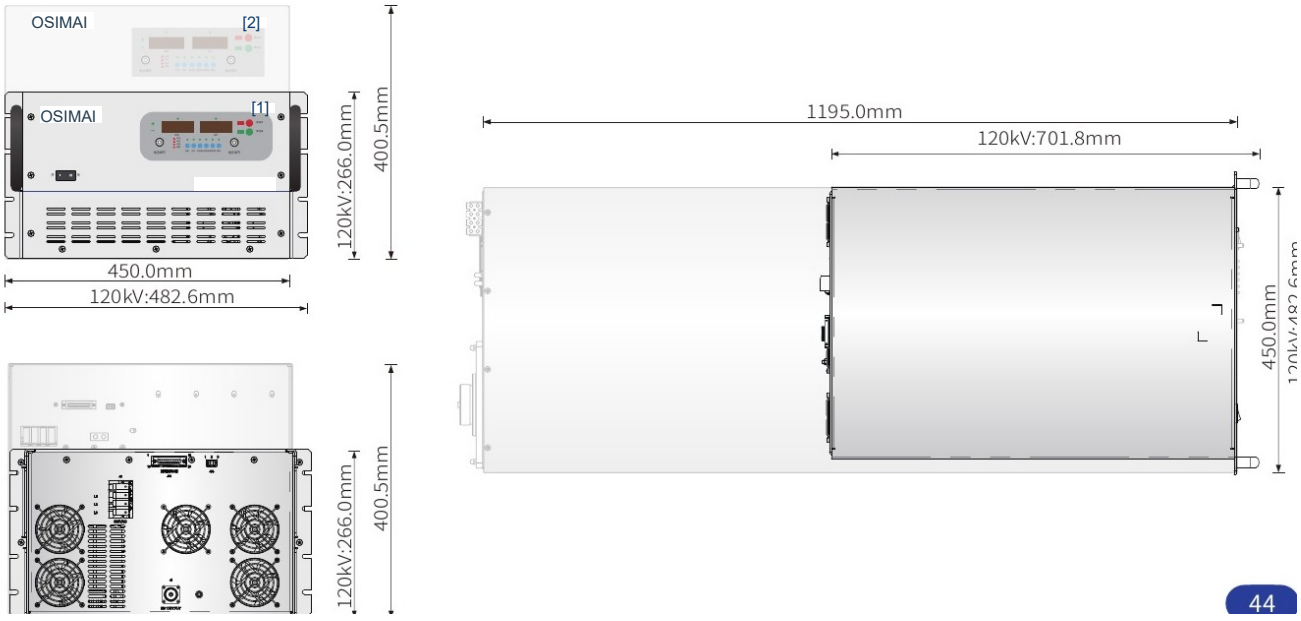
Input terminals

Marking	Signal
U	Live
V	Live
W	Live
G	Ground

Typical applications

Ion implantation; electrostatic spraying; electrostatic flocking; withstand-voltage testing; particle acceleration; electrostatic fields; ion-beam supplies; electron-beam supplies; accelerator supplies; insulation testing; deep-sea dual-grid shore stations; high-voltage capacitor charging; high-voltage field collection; scientific research and other applications.

Outline dimensions



[1] osi1213

[2] osi1213