osi1206 Series

1–60 kV; 600 W; power factor 99%



Product introduction

The OSIMAI osi1206 series is a high-performance standard 19-inch rack-mount high-voltage supply. Digital control supports varied custom functions. Nanosecond current-protection response ensures fault-free operation. Built-in PFC achieves a power factor above 0.99. Natural air convection dissipates heat. Comprehensive functions and broad input/output ranges are provided; software can add user-required custom functions.

Product features

- Soft switching
- Output voltage 1–60 kV
- Output power 600 W
- Digitally programmable
- Nanosecond protection response
- Overvoltage, overcurrent, short-circuit and arc protection
- Isolated RS-485 digital communication
- Safety interlock
- Built-in active PFC
- Low ripple 0.1% Vp-p

Specifications

Parameter	Specification
Input	220 VAC ±10%, 50/60 Hz, maximum 16 A.
Output	Selectable maximum output voltages from 1 to 60 kV; maximum power 600 W. Continuously adjustable from zero to maximum; single negative output polarity.
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.
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 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	Better than 1% p-p at rated output; 0.1% p-p optional.
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 than 0.1% per 8 hours after a 0.5-hour warm-up.
Voltage/current indication	Four-digit LED display; accuracy ±1% at rated output.
Dimensions	60 kV: width 482 mm, height 88 mm, depth 320 mm. 100 kV: width 482 mm, height 89 mm, depth 380 mm.
High-voltage cable	Recessed plastic insulating conduit and inserted high-voltage cable connected through a 16 mm / 28 mm diameter metal connector. Standard cable length 2 m.
Weight	Approximately 15 kg.

Model selection — 300 W (customizable)

Rated output (kV)	Rated output (mA)	Positive model	Negative model
1	300	osi1206P1-300	osi1206N1-300
5	60	osi1206P5-300	osi1206N5-300
10	30	osi1206P10-300	osi1206N10-300
30	10	osi1206P30-300	osi1206N30-300
50	6	osi1206P50-300	osi1206N50-300
60	5	osi1206P60-300	osi1206N60-300
100	3	osi1206P100-300	osi1206N100-300

Model selection — 600 W (customizable)

Rated output (kV)	Rated output (mA)	Positive model	Negative model
5	120	osi1206P5-600	osi1206N5-600
10	60	osi1206P10-600	osi1206N10-600
20	30	osi1206P30-600	osi1206N30-600
50	12	osi1206P50-600	osi1206N50-600
60	10	osi1206P60-600	osi1206N60-600
100	6	osi1206P100-600	osi1206N100-600

Input terminals

Marking	Signal
L	Live
N	Neutral
G	Ground

RS-485 communication interface

Marking	Signal
A	Signal wire
B	Signal wire
G	Signal ground

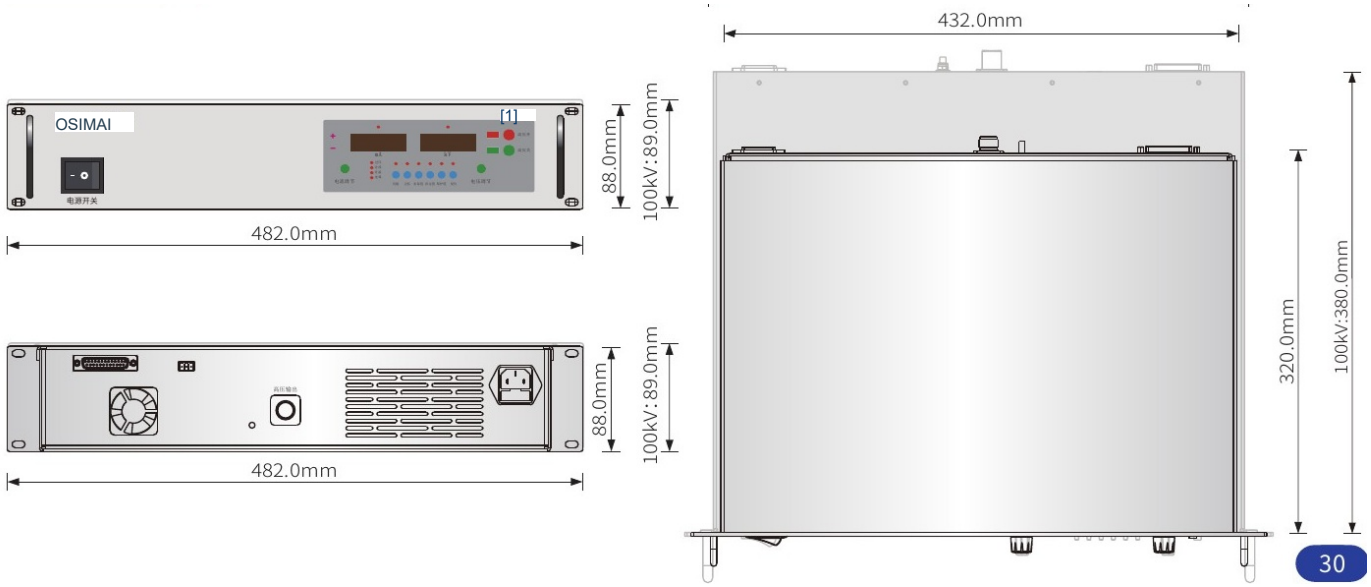
DB25 connector signal definitions

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.

Typical applications

Ion implantation; electrostatic spraying; ion-beam sources; electron-beam sources; accelerator supplies; Hi-POT testing; high-voltage capacitor charging and other scientific research.

Outline dimensions



[1] osi1206