osi1207 Series

1–100 kV; 500 W–1 kW; digital voltage/current indication



Product introduction

The OSIMAI osi1207 series is a high-performance standard 19-inch rack-mount high-voltage power supply with selectable positive or negative voltage. Output voltage/current are continuously adjustable, and high voltage rises linearly and smoothly. External potentiometers provide remote voltage/current control. External voltage/current monitoring, HV output overvoltage/short-circuit protection, arc protection and a safety interlock are provided.

Product features

- Output voltage 1–100 kV
- Output power 500 W–1 kW
- Overvoltage, overcurrent, short-circuit and arc protection
- Voltage/current adjustment
- Remote voltage/current adjustment
- Digital communication
- Safety interlock
- Customization to user requirements

Specifications

Parameter	Specification
Input	220 VAC ±10%, 50 Hz.
Output	Selectable maximum voltages from 1 to 100 kV; maximum output power 1 kW. Continuously adjustable from zero to maximum voltage; single negative output polarity.
Voltage control	Local: a built-in multi-turn potentiometer sets output voltage from zero to maximum. Remote: an external 0–10 V signal adjusts output voltage from zero to maximum.
Current control	Local: a built-in multi-turn potentiometer sets output current from zero to maximum. Remote: an external 0–10 V signal adjusts output current from zero to maximum.
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 voltage, RMS ripple is 0.1% of maximum output voltage; 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 monitoring	0 to +10 V; accuracy ±1% at rated output.
Dimensions	1–50 kV: width 482 mm, height 133.5 mm, depth 320 mm. 51–100 kV: width 482 mm, height 133.5 mm, depth 500 mm.
High-voltage cable	Recessed epoxy-resin insulating conduit and inserted high-voltage cable connected through a 16 mm diameter metal connector. Standard cable length 2 m.
Input/output connector	25-pin terminal connector containing control and monitoring signals.
Remote voltage/current control	External potentiometers can use the internal 10 V reference to remotely control output voltage and current.
Remote voltage/current monitoring	The 25-pin terminal connector includes 0–10 V voltage/current monitoring signals for external digital or analog meters.

Model selection — 1000 W (customizable)

Rated output (kV)	Rated output (mA)	Positive model	Negative model
5	200	osi1207P5-1000	osi1207N5-1000
10	100	osi1207P10-1000	osi1207N10-1000
20	50	osi1207P20-1000	osi1207N20-1000
30	33.33	osi1207P30-1000	osi1207N30-1000
40	25	osi1207P40-1000	osi1207N40-1000
50	20	osi1207P50-1000	osi1207N50-1000
60	16.67	osi1207P60-1000	osi1207N60-1000
80	12.5	osi1207P80-1000	osi1207N80-1000
100	10	osi1207P100-1000	osi1207N100-1000

Input terminals

Marking	Signal
L	Live
N	Neutral
G	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.

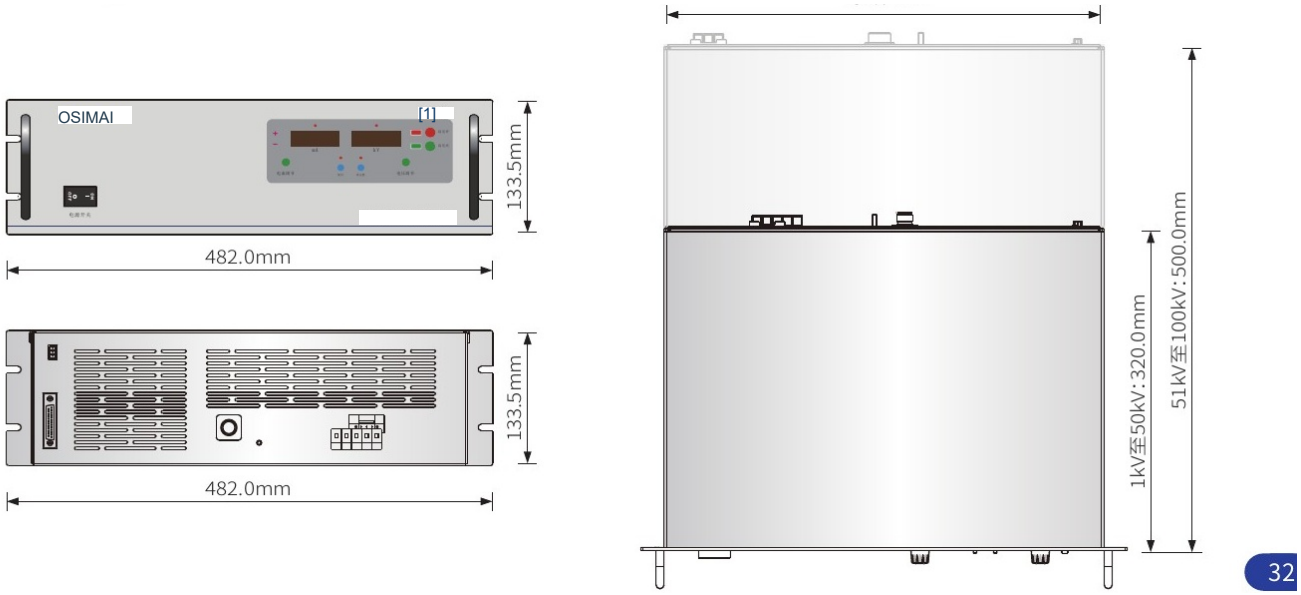
Typical applications

Ion implantation; Hi-POT testing; electrostatic flocking; withstand-voltage testing; electrical blasting; electrospinning; high-voltage field collection; high-voltage capacitor charging; scientific research and other applications.

Optional features

Option	Description
RS-485	RS-485 digital communication

Outline dimensions



[1] osi1207