osi1104 Series

−60 kV; 1200 W; high precision; low ripple



Product introduction

The OSIMAI osi1104 series X-ray generator is a precision-adjustable high-voltage power supply with maximum output voltage −60 kV. Advanced resonant-conversion technology achieves very low ripple. Extremely stable voltage and emission-current outputs significantly improve on earlier technology. The osi1104 provides power, control and support functions for X-ray applications, including a ground-referenced adjustable AC filament supply. Functions include local/remote programming, monitoring, safety interlock, short-circuit protection and overload protection.

Product features

- Maximum output voltage −60 kV
- Integrated ground-referenced filament supply
- Low ripple
- Hot switching
- Negative polarity
- Local and remote programming
- Customization to user requirements

Specifications

Parameter	Specification
Input voltage	600 W: 115 VAC ±10%, 11.4 A, 50–60 Hz, single phase; or 220 VAC ±10%, 5.9 A, 50–60 Hz, single phase. 1200 W: 220 VAC ±10%, 11.8 A, 50–60 Hz, single phase.
Voltage/current control	Local: a ten-turn potentiometer continuously adjusts from zero to maximum rated value. Remote: 0 to +10 VDC proportionally controls zero to full output.
Accuracy	±1%.
Input impedance	10 MΩ.
Filament	12 V, 5 A; preheat level 0.45 A in standby mode.
Voltage regulation	Load: 0.005% of full output voltage from no load to full load. Line: 0.005% for changes within the input-voltage range.
Current regulation	Load: 0.05% of full current ±100 μA from zero to full voltage. Line: 0.05% of rated current over the specified input range.
Ripple	Better than 1% rms at rated output; 0.1% rms optional.
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.
Cooling	Fan cooling.
Metering	Digital voltage/current meters, 3.5 digits; accuracy 1%.
Voltage/current monitoring	0 to +10 VDC proportional to rated output.
High-voltage output	75 kV, three-core standard X-ray connector.
I/O connector	25-pin D-type control interface; mating connector supplied.
Dimensions	Width 482 mm, height 88 mm, depth 320 mm.
Compliance	Conforms to EEC EMC and EEC low-voltage directives.

Model selection — 1200 W (customizable)

Rated output (kV)	Rated output (mA)	Negative-polarity model
−30	40	osi1104N30-1200
−40	30	osi1104N40-1200
−50	24	osi1104N50-1200
−60	20	osi1104N60-1200

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.

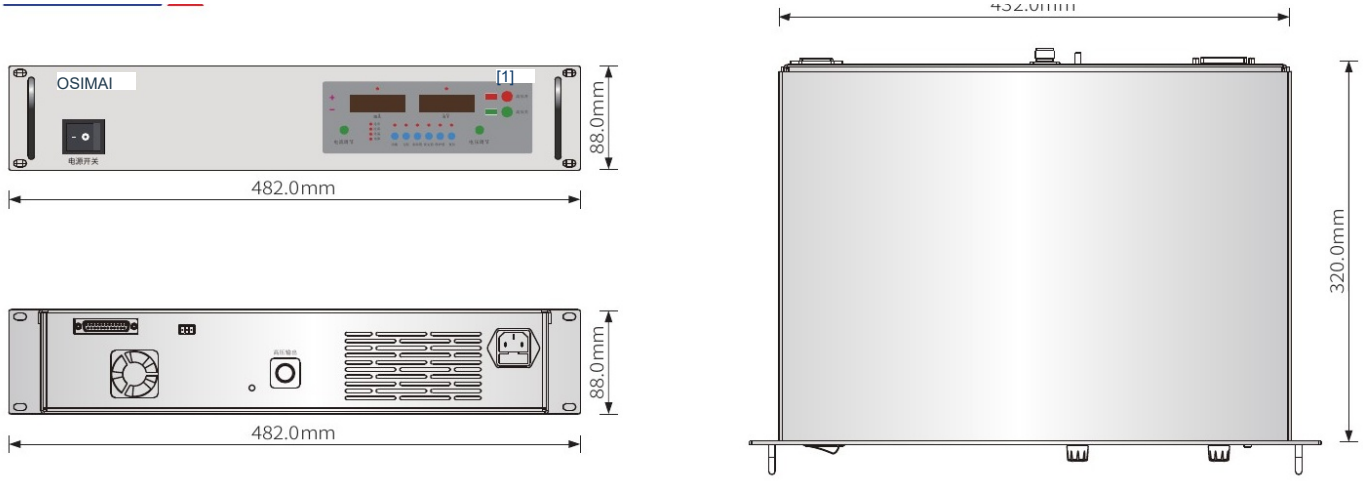
Optional features

Option	Description
APT	Adjustable power limit
AT	Current trip
SS(x)	Non-standard slow start
NSS	No slow start
IO	Immediate start
SL	Slide rails

Typical applications

Plastic sorting; crystal inspection; diamond inspection.

Outline dimensions



[1] osi1104