osi1101 Series

50 kV / 65 kV; 50 W / 65 W; integrated filament power supply; high precision; compact size



Product introduction

The OSIMAI osi1101 series high-voltage power supply is designed for compact X-ray machines. It integrates a 5 V DC filament power supply with current adjustable from 0.3 A to 3.5 A. The high voltage and filament current can rise smoothly.

External potentiometers can provide remote control of output voltage and current. External voltage/current monitoring and a safety interlock are provided. Remote digital interfaces are available for RS-485, Ethernet or RS-232 communication.

Product features

- Maximum output voltage 50 kV / 65 kV
- Maximum output current 2 mA
- Integrated adjustable filament power supply
- Voltage and current adjustment
- Remote emission-current adjustment
- DB15, RS-232, RS-485 and RJ45 control interfaces available
- CE certification can be provided

Specifications

Parameter	Specification
Input	24 VDC ±10%.
Output	50 kV / 65 kV selectable; maximum current 2 mA; maximum output power 65 W. Continuously adjustable from zero to the maximum voltage.
Voltage control	Local: the built-in multi-turn potentiometer sets output voltage between zero and maximum. Remote: an external 0–10 V control signal sets output between zero and maximum output voltage.
Emission current control	Local: the built-in multi-turn potentiometer sets electron-beam current between zero and maximum current. Remote: an external 0–10 V control signal sets electron-beam current between zero and maximum current.
DC filament supply	Constant-current output; adjustable current 0.3–3.5 A; output voltage limited to 5 V.
Voltage regulation	Load: better than 0.01% from no load to rated load. Line: ±0.01% for an input-voltage change of ±10%.
Current regulation	Load: better than 0.01% from no load to rated load. Line: ±0.01% for an input-voltage change of ±10%.
Ripple	Better than 0.1% p-p at rated output.
Ambient temperature	Operating: 0°C to +50°C. Storage: −40°C to +85°C.
Temperature coefficient	Voltage and current: better than 100 ppm/°C.
Stability	Less than 0.05% per 8 hours after a 0.5-hour warm-up.
Voltage/current monitoring	0 to +10 V represents zero to rated output; error ±1%.
Dimensions	50 kV: width 73.5 mm, height 127 mm, depth 203.5 mm. 50 kV (i option): width 73.5 mm, height 145 mm, depth 203.5 mm. 65 kV: width 73.5 mm, height 127 mm, depth 228 mm. 65 kV (i option): width 73.5 mm, height 145 mm, depth 228 mm.
High-voltage cable	The standard recessed epoxy-resin insulating conduit and inserted high-voltage cable are connected through a 16 mm diameter metal connector. Standard high-voltage cable length is 1 m. Other cable specifications or connectors can be customized.

Model selection — 50 W (customizable)

Rated output (kV)	Rated output (mA)	Model
25	2	osi1101P25-50
50	1	osi1101P50-50
50	2	osi1101P50-50
65	1	osi1101P65-65
65	2	osi1101P65-65

DB15 connector signal definitions

Pin	Signal
1	Ground
2	Voltage monitor
3	Current monitor
4	High-voltage enable
5	+10 V reference voltage
6	Filament current monitor
7	Voltage command input
8	Voltage command output
9	Filament limit monitor
10	Current command input
11	Current command output
12	NC
13	NC
14	Filament preheat monitor
15	Ground

Ethernet control interface

Pin	Signal
1	TX+
2	TX−
3	RX+
4	/
6	/
7	RX−
8	/
9	/

Power input / filament power output terminals

Marking	Signal
+24V	+24 V input
GND	+24 V ground
FIL OUT	Filament power output
FIL RET	Filament return ground

RS-232 digital communication interface

Pin	Signal
1	NC
2	RXD / receive data
3	TXD / transmit data
4	NC
5	Ground
6	RB
7	RA
8	NC
9	NC

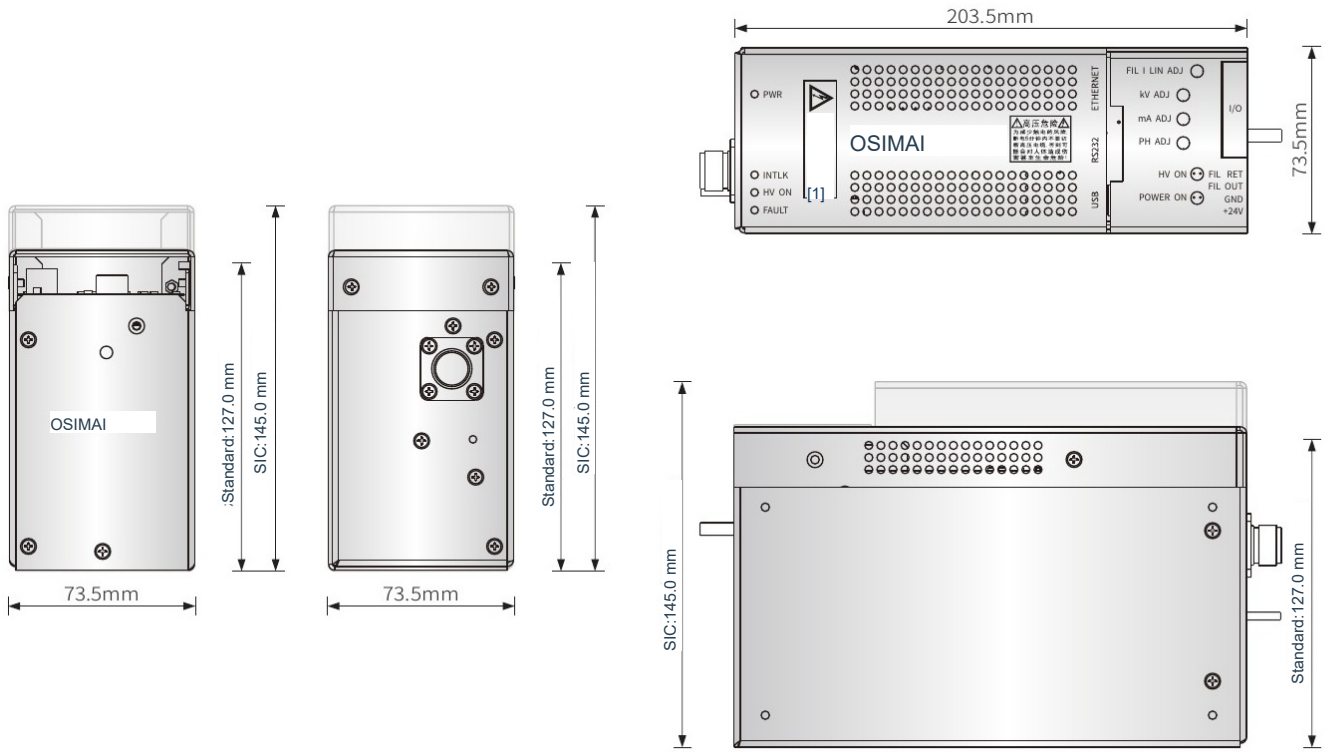
Typical applications

Liquid-level detection; thin-film thickness measurement; PCB inspection; grounded-cathode X-ray tubes from Kevex, Oxford, RTW, Superior, Varian, Trufocus and Kewei.

Optional features

Option	Description
XCC	Compatible with TXR1110 high-voltage cable
GB	Grid bias
SIC	Digital communication controller
ATS	Variable measurement ratio

Outline dimensions



[1] HIGH VOLTAGE