osi1106 Series

20–40 kV; 5 kW; for mammography imaging



Product introduction

The OSIMAI osi1106 series is a high-performance, low-cost mammography X-ray high-voltage power supply.

It integrates dual filament supplies and a dual-speed starter. The DC filament supply combines fast response with stable emission current. Encapsulation of the high-voltage section improves stability and convenience.

Communication control is available through RS-232 or optional Ethernet. The osi1106 supports advanced mammography functions including intelligent AEC exposure, automatic filament calibration and X-ray tube anode heat calculations, and can be matched with various X-ray tubes. Compact dimensions, complete functions, high performance and low cost make the OSIMAI osi1106 a fundamental choice for a new generation of mammography X-ray high-voltage supplies.

Product features

- Fast settling reduces unnecessary X-ray exposure
- Designed specifically for mammography imaging
- Dual-speed starter with start/stop capability
- Space-saving compact modular construction
- RS-232 and optional Ethernet interfaces
- Low-cost, value-added design

Specifications

Parameter	Specification
Input voltage	220 VAC ±10%, single phase, 50/60 Hz.
Input current	Minimum input current 35 A when operating at 5 kW.
Output voltage range	20–40 kV.
Polarity	Positive; suitable for grounded-cathode X-ray tubes.
Accuracy	Within 1% of the programmed value.
Repeatability	<0.5%.
Settling time	<10 ms.
Ripple	Better than 1% p-p at rated output; 0.1% p-p optional.
Stability	Less than 0.1% per 8 hours after a 0.5-hour warm-up.
Temperature coefficient	Voltage and current: better than 100 ppm/°C.
Output current range	10–200 mA.
Output power	5 kW at 0.1 s loading time.
Maximum mAs	600 mAs.
Exposure timer	5 ms–10 s.
Current accuracy	After current rises to the steady DC level, the measured value is within 2% of the programmed value.
Current repeatability	<0.5%.
Current settling time	<10 ms.
Filament configuration	DC filament drive; closed-loop emission control and intelligent learning algorithms automatically correct the filament preheat setting.
Filament output	0–6 A; 5.5 V maximum.
Dual-speed starter	High speed (180 Hz) and low speed (60 Hz) are selected through a serial interface. Starting and braking capability is provided.
High-voltage connector	60 kV, Claymount CA-3 type or equivalent connector.
Optional communication interface	RS-232; Ethernet (RJ45).
Ground point	An M5 ground screw is provided on the chassis.
Ambient temperature	Operating: 10°C to 40°C. Storage: −40°C to +85°C.
Humidity	Relative humidity 20% to 85%, non-condensing.
Cooling	Convection cooling, without an internal fan. Forced-air cooling is not required.
Dimensions	Width 169.9 mm, height 240.8 mm, depth 304.8 mm.
Weight	Approximately 10 kg.

DB25 connector signal definitions

Pin	Signal
1	GND
2	+5 VDC output
3	RS-232 transmit output
4	RS-232 receive input
5	Reserved
6	Ready
7	Rotor rotation
8	Exposure
9	X-ray ON 75% status
10	X-ray ON status
11	NC
12	X-ray OFF / AEC
13	RS-232 isolated ground
14	HV generator fault status
15	Status bit 1
16	Status bit 2
17	Status bit 3
18	NC
19	NC
20	kV monitor
21	Emission-current monitor
22	Filament-current monitor
23	Programming/monitor return
24	+24 VDC output
25	Shield/ground

TB2 rotor interface

Pin	Signal	Description
TB2-1	PHASE	To X-ray tube auxiliary winding.
TB2-2	RUN	To X-ray tube main winding.
TB2-3	COM	To X-ray tube common winding.
TB2-4	Ground	To X-ray tube body ground.

USB digital interface

Pin	Signal
TB3-1	Small filament
TB3-2	Common terminal
TB3-3	Large filament
TB3-4	Ground
TB3-5	Interlock 2+
TB3-6	Interlock 2−
TB3-7	Interlock 3+
TB3-8	Interlock 3−
TB3-9	Safety interlock+
TB3-10	Safety interlock−
TB3-11	Anode cable shield+
TB3-12	Anode cable shield−
TB3-13	NC
TB3-14	NC
TB3-15	Tube current+
TB3-16	Tube current−

Typical applications

Mammography machines.

Outline dimensions





