osi1617 Series

30 kV; 10 W; ripple ≤2 ppm



Product Introduction

The OSIMAI osi1617 series is a high-stability precision high-voltage power module. Maximum output voltages of 1–30 kV and powers of 5–10 W are available. Stability is 10 ppm/1 h, 10 ppm/8 h and 10 ppm/1000 h; ripple is ≤2 ppm, with no microdischarges. The temperature coefficient is 10 ppm. It is mainly used in mass spectrometers and electron microscopes. Its high-voltage output has overvoltage, arc and short-circuit protection and a safety interlock. Ethernet and RS-232 are standard; an RS-485 digital interface is optional. This high-stability precision high-voltage module is an ideal choice for OEM applications.

Product Features

- 1–30 kV, 5–10 W selectable
- Stability: 10 ppm/1 h, 20 ppm/8 h, 100 ppm/1000 h
- Ripple ≤2 ppm; no microdischarges
- Temperature coefficient: 10 ppm
- Ethernet and RS-232 control; RS-485 optional
- Overvoltage, arc and continuous short-circuit protection
- Six-sided metal shielding provides strong interference immunity
- Customization available

Specifications

Parameter	Description
Input	+24 VDC ±10%; maximum current 1.5 A.
Output	Selectable maximum output voltage 1–30 kV; output powers 5–10 W available.
Stability	After 0.5 h warm-up: 0.001%/1 h, 0.002%/8 h, 0.01%/1000 h.
Temperature coefficient	Voltage and current: better than 10 ppm/°C.
Ripple	Better than 2 ppm peak-to-peak at rated output.
Voltage/current monitoring	0 to +10 VDC represents 0–100% rated output; accuracy ±1%.
Internal output voltage control	Internal potentiometer sets voltage to 0–100% rated output.
External output voltage control	External 0 to +10 VDC control signal sets voltage to 0–100% rated output.
Internal output current control	Internal potentiometer sets current to 0–100% rated output.
External output current control	External 0 to +10 VDC control signal sets current to 0–100% rated output.
Voltage load regulation	0.001%, no load to rated load.
Voltage line regulation	±0.001% for an input-voltage change of ±10%.
Current load regulation	0.001%, no load to rated load.
Current line regulation	±0.001% for an input-voltage change of ±10%.
Ambient temperature	Operating: 0 to +50°C. Storage: −35 to +85°C.
Cooling	Natural cooling.
Humidity	20–85% RH, non-condensing.
Dimensions	H 65 × W 115 × D 150 mm.
Weight	Approximately 1.55 kg.

Power Input / Filament Output Interface

Pin	Signal	Description
1	+24 VDC input	+24 VDC ±10%; maximum current 5.0 A
2	+24 VDC ground	Power ground

Analog Port

Pin	Signal	Description
1	+10 VDC reference	+10 VDC reference voltage
2	Voltage monitor	0 to +10 VDC = 0–100% rated output; Zout = 10kW
3	Remote voltage control input	0 to +10 VDC = 0–100% rated output; Zin = 10MW
4	Local voltage control output	0 to +10 VDC, potentiometer adjusted
5	Current monitor	0 to +10 VDC = 0–100% rated output; Zout = 10kW
6	Remote current control input	0 to +10 VDC = 0–100% rated output; Zin = 10MW
7	Local current control output	0 to +10 VDC, potentiometer adjusted
8	External interlock	Ground = high voltage ON
9	Interlock return	Ground

RS-232 / RS-485 Digital Port

Pin	RS-232	Pin	RS-485
1	NC	1	NC
2	TXD / transmit data	2	RS-485B
3	RXD / receive data	3	NC
4	NC	4	RS-485A

USB Digital Port

Pin	Signal	Description
1	RX+	Receive data +
2	RX−	Receive data −
3	TX+	Transmit data +
4	NC	/
5	NC	/
6	TX−	Transmit data −
7	NC	/
8	NC	/

Typical Applications

Scanning electron microscopes; critical-dimension scanning electron microscopes; high-resolution length-measuring instruments; mass spectrometers; electron beams; ion beams; flat-panel detectors.

Dimensions

