osi1903 Series

±5 kV; 20 W; 1-second polarity-switching response



Product Introduction

The OSIMAI osi1903 series high-voltage supply is designed for electrostatic chucks. It produces an accurate voltage within 10 ms and changes polarity within 1 second to protect semiconductor processes. It offers reversible ground-referenced output polarity or floating bipolar voltage with a corresponding floating interface. Comprehensive fault diagnostics and status monitoring transmit data to the user interface. Its compact, lightweight package is suitable for OEM use.

Product Features

- Floating bipolar output; switchable polarity
- Center-point monitoring
- Analog control
- RS-485 control
- Ethernet control

Specifications

Parameter	Description
Input voltage	+24 VDC ±5%, 5 A.
Output polarity	Floating bipolar output; switchable polarity.
Maximum output voltage	0 to ±5 kV.
Maximum output current	2 mA.
Maximum output power	20 W.
Voltage regulation	Load: ≤0.001%, no load to rated load.
Transition time	1 second, typical.
Maximum cycling frequency	0.5 Hz.
Overshoot	<10% of setpoint.
Ripple	Better than 0.1% peak-to-peak at rated output.
Line	<0.1% for 10% input-voltage change under any load.
Load	<1.3% from zero to full load.
Voltage indication	Resolution 100 V. Accuracy ±1% of actual output, with ±10 V offset.
Current indication	Resolution 100 µA. Accuracy ±2% of actual output, with ±100 µA offset.
Typical load capacitance	<20 nF; contact OSIMAI for other load capacitances.
Protection	Arc and short-circuit protection; input and output current limits. Output current limit adjustable from 0.1–2 mA. Continuous-arc protection requires customization.
Communication	DB9 analog control; optional RS-485 serial, USB or Ethernet control. Note: serial communication is disabled when Ethernet is connected to the LAN port / 485 connection.
Front-panel control	Front-panel buttons for local control.
Polarity switching	Manually changes output polarity.
Output ON/OFF	Soft switching controls high-voltage output.
Rotary control / entry	Navigation and changing entered values.
Stability	Less than 0.3% per 8 hours after a 1-hour warm-up.
Temperature coefficient	Voltage and current: better than 100 ppm/°C.
Ambient temperature	Operating: 0 to +45°C. Storage: −20 to +70°C.
Humidity	0–85% RH, non-condensing.
Cooling	Natural cooling.

Typical Applications

E-Chuck; electrostatic chucks; electrostatic suction cups; electrostatic adsorption systems.