osi1616 Series

2.5–20 kV; 10 W; high stability; low stability coefficient



Product Introduction

The osi1616 series is a 10 W high-voltage power module with output voltages from 2.5 kV to 20 kV. It offers low noise, high efficiency, compact design, solid encapsulation, ultra-low ripple and high stability. A full-featured remote user interface is provided through a 15-pin D connector and RS-232/RS-485 serial interface. Fully analog or fully digital control is defined by the interface connector. This compact, lightweight module is available with positive or negative output polarity and is suitable for OEM applications.

Product Features

- Digital or differential analog voltage programming
- Standard RS-232/RS-485 control
- 10 W output power
- Voltage and current monitoring
- High stability
- Ultra-low ripple and noise
- Compact design; solid encapsulation

Specifications

Parameter	Description
Input voltage	+24 VDC ±2 VDC.
Input current	Maximum 1 A.
Output voltage	2.5–20 kV; five models available.
Output polarity	Positive or negative; single polarity.
Power	Maximum 10 W.
Voltage regulation	Load: ≤10 ppm from no load to rated load. Line: ≤10 ppm for a 1 V input-voltage change.
Current limit	110% of rated output current.
Ripple	Better than 5 ppm peak-to-peak at rated output.
Stability	After one hour: 10 ppm per hour, 25 ppm per 8 hours, and 100 ppm per 1000 hours.
Temperature coefficient	Voltage and current: better than 10 ppm/°C.
Protection	Arc and short-circuit protection. Cannot withstand continuous arcing.
Ambient temperature	Operating: 0–50°C. Storage: −35–85°C.
Humidity	20–85% RH, non-condensing.
Cooling	Convection cooling.
Dimensions	2.5–10 kV: W 70 × H 30 × D 130 mm. 15–20 kV: W 70 × H 30 × D 165 mm.
Weight	2.5/5/10 kV: approximately 0.45 kg. 15/20 kV: approximately 0.65 kg.
Interface connector	15-pin male D connector.
High-voltage cable	One fixed 1 m high-voltage cable is supplied.

Model Selection (Customizable)

Output kV	Output mA	Positive model	Negative model
2.5	4	osi1616P2.5-10	osi1616N2.5-10
5	2	osi1616P5-10	osi1616N5-10
10	1	osi1616P10-10	osi1616N10-10
15	0.66	osi1616P15-10	osi1616N15-10
20	0.5	osi1616P20-10	osi1616N20-10

DB15 Connector Signal Definitions

Pin	Signal	Description
1	Power ground	Ground
2	+24 VDC input	+24 VDC; maximum 1 A
3	Voltage monitor output	0–10 VDC represents zero to full-scale output, ±1% relative to signal ground; Zout = 10 kΩ
4	Voltage reference output	10 VDC, maximum 1 mA
5	Voltage programming input	0–10 VDC = 0–100% rated output ±1%; Zin = 10 MΩ
6	Voltage programming differential amplifier output	0–10 VDC = 0–100% rated output; Zout = 10 kΩ
7	Voltage programming differential amplifier input, positive	0–10 VDC differential between pins 7 and 9 = 0–100% rated output; diode-clamped to ground; Zin = 38 kΩ
8	Current monitor output	Voltage monitoring 0–10 VDC represents zero to full-scale output ±1% relative to signal ground; Zout = 10 kΩ
9	Voltage programming differential amplifier input, negative	0–10 VDC differential between pins 7 and 9 = 0–100% rated output; diode-clamped to ground; Zin = 38 kΩ
10	Voltage programming digital output	0–10 VDC = 0–100% rated output; Zout = 10 kΩ
11	Analog signal ground	Analog signal ground for control and monitoring
12	Enable input	Low = enabled; TTL, CMOS, or open collector
13	Digital mode	RS-232 or RS-485 configuration: low = RS-485; open = RS-232
14	RS-232 TxD / RS-485 (−)	Transmit data (output), relative to pin 1, or RS-485 inverting
15	RS-232 RxD / RS-485 (+)	Receive data (input), relative to pin 1, or RS-485 non-inverting

Typical Applications

Photomultiplier tubes; electrostatic printing; electron and ion beams; electron-multiplier detectors; mass spectrometry; microchannel-plate detectors; electrostatic lenses; nuclear instrumentation.

Dimensions

