

# TD2204 Series Rack Mount DC High Voltage Power Supply

1kV-50kV, 4kW, 3U Height



Teslaman TD2204 series is a high performance 19" standard rack-mounted high voltage power supply. The digital control mode can meet the functional requirements of customers' various control settings. The nanosecond arc transient response capability ensures the power supply to run without faults, with a full load efficiency of 95% and a power factor of 0.83. This series of products have complete functions and wide output range, and can also add special functional requirements of customers through software.

- Output Voltage 1kV-50kV
- Output Power 4kW
- Digitally Programmable
- Nanosecond Protection Response
- Over-Voltage, Over-Current, Over-Temperature Arc Protection
- RS-485 Isolated Digital Communication
- Security Interlock Function
- OEM Customization Available

## Typical Application:

Ion implantation; Electrostatic spraying; Electrostatic electret; Withstand voltage test; Particle acceleration; Electrostatic field; Ion beam power supply; Electron beam power supply; Accelerator power supply; Insulation test; Shore base of deep-sea observation network; High voltage capacitor charging; High voltage power taking; Scientific research, etc.

## Specifications:

**Input:** 3-phase AC380V  $\pm$  10%, 50/60 Hz, max 16A.

**Output:** Maximum output voltages could be designed from 1kV to 50kV, and the maximum output power is 4kW. 0 to the highest voltage is continuously adjustable, and the output is positive and negative single polarity.

### Front Panel Status Indication:

High voltage on/off, voltage and current mode, output positive or negative single polarity, over voltage, over current, over heat and arc protection, memory, reset, actual value, set value, protection value, custom function key state indication, power supply also has error code display function.

### Voltage Control:

**Local control:** The power supply comes with a rotary encoder to set the output voltage between 0 and the highest voltage.

**External analog control:** The external 0 to 10V control signal can adjust the output from 0 to the highest output voltage.

**Digital communication control:** Through RS-485 communication interface, the output can be adjusted from 0 to the highest voltage according to the standard Modbus communication protocol.

### Current Control:

**Local control:** The power supply comes with a rotary encoder to set the output current between 0 and the highest current.

**External analog control:** The external 0 to 10V control signal can adjust the output from 0 to the maximum current.

**Digital communication control:** Through RS-485 communication interface, the output can be adjusted from 0 to the maximum current according to the standard Modbus communication protocol.

### Voltage Regulation:

**Load:** 0.01% of output voltage no load to full load.

**Line:**  $\pm$ 0.01% for  $\pm$ 10% change in input voltage.

### Current Regulation:

**Load:** 0.01% of output current form 0 to rated voltage.

**Line:**  $\pm$ 0.01% for  $\pm$  10% change in input voltage.

**Ripple Voltage:** Ripple Voltage RMS is 1% of the maximum output voltage under rated output conditions (low ripple is optional).

### Environmental:

**Operational:** 0 °C to + 50 °C.

**Storage:**-20 °C to + 80 °C.

**Temperature Coefficient:** 0.01% per °C.

**Stability:** less than 0.1% every 8 hours after 1/2 hours warm up.

### Voltage and Current Indication:

Four-bit LED nixie tube, with an accuracy of 1% under rated output conditions.

**Overall Dimensions:** 482mm wide, 133.5 mm high and 320mm deep.

**Connector:** Metal connector, the total length of standard high voltage cable is about 2 meters.

**Weight:** About 19kg.

**TD2204 Series High Voltage Power Supply Model Selection Table (4000W):**

Output Rating		Type of Power Supply	
kV	mA	Positive Polarity	Negative Polarity
1.000	4000	TD2204P1-4000	TD2204N1-4000
5.000	800.0	TD2204P5-4000	TD2204N5-4000
10.00	400.0	TD2204P10-4000	TD2204N10-4000
15.00	266.7	TD2204P15-4000	TD2204N15-4000
20.00	200.0	TD2204P20-4000	TD2204N20-4000
30.00	133.3	TD2204P30-4000	TD2204N30-4000
40.00	100.0	TD2204P40-4000	TD2204N40-4000
50.00	80.00	TD2204P50-4000	TD2204N50-4000

**Power input terminal J1:**

Foot position	Signal	Description
1	L1	FireWire
2	L2	FireWire
3	L3	FireWire
4	E	Ground wire

**RS-485 Communication Interface J2:**

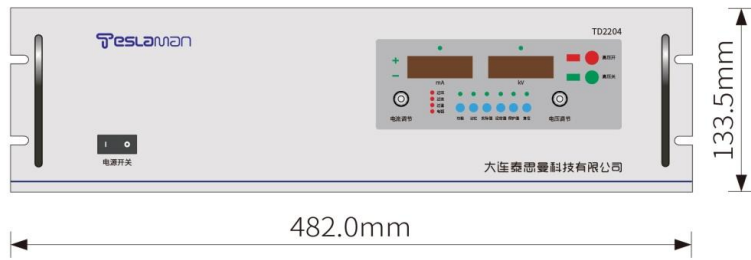
Foot position	Signal	Description
1	A	RS485 +
2	G	Ground wire
3	B	RS485-

**TD2204 Power DB25 Connector Signal Definition J3:**

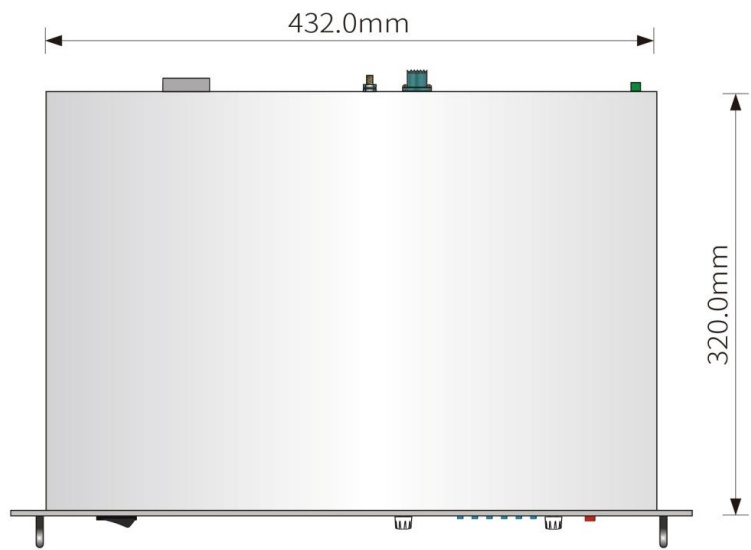
Pin	Signal	Description
1	Remote Indication	Open collector and conduct is remote control
2	Constant Voltage Indication	Open collector, conduction means constant voltage output
3	High Voltage Off Indication	Open the collector and turn it on, that is, turn off the high voltage output
4	High Voltage On Signal	The rising edge opens immediately (+ 15V for 17 feet)
5	Remote Enable	High (+ 15V) is effective
6	Security Lock Enabled	High (+ 15V) is effective
7	+ 15V	+ 15V, 100mA (max)
8	Current Setting	0 to 10V = 0 to 100% rated output
9	Voltage Setting	0 to 10V = 0 to 100% rated output
10	+ 15V	+ 15V, 100mA (max)
11	+ 10V	+ 10V, 1mA (max)
12	Voltage Display	0 to 10V = 0 to 100% rated output
13	Current Display	0 to 10V = 0 to 100% rated output
14	Fault Indication	Open the collector and turn it on, that is, the power supply is faulty
15	Constant Current Indication	Open collector, conduction means constant current output
16	High Pressure On Indication	Open collector, conduction, that is, high voltage output is turned on
17	High Voltage Off Signal	Falling edge is high pressure off
18	Fault Reset	High (+ 15V) is reset
19	Ground	Signal ground wire
20	Ground	Signal ground wire
21	Ground	Signal ground wire
22	Ground	Signal ground wire
23	Ground	Signal ground wire
24	Ground	Signal ground wire
25	Ground	Signal ground wire
Shielding	Ground	Signal ground wire



# Overall Dimensions: mm



Front View



Top View



Rear View