

# TD2300 Series Rack Mount DC High Voltage Power Supply



**Output Range: 1kV-100kV. Maximum Output Power: 600W.**

Teslaman TD2300 series is a high performance 19" standard rack-mounted high voltage power supply. Operating with digital control, which can meet the functional requirements of customers' various control settings. The nanosecond arc protection response ability ensures the power supply to run without faults, and the built-in PFC circuit makes the power factor reach more than 0.99. Air natural convection cooling is adopted to dissipate heat. This series of products have complete functions, wide input and output range, and can also add the functions that customers need to customize through software.

- Soft Switching
- Output Voltage: 1kV-100kV
- Output Power: 300W@100kV, 600W@60kV
- Digitally Programmable
- Nanosecond Protection Response
- Over-Voltage, Over-Current, Short Circuit And Arc Protection
- RS-485 Isolated Digital Communication
- Secure Interlocking Function
- Low Ripple 0.1% P-P (Optional)

## Typical Application:

Ion implantation; Electrostatic spraying; Ion beam power supply; Electron beam power supply; Accelerator power supply; Hi-POT test; High voltage capacitor charging and discharging, other scientific research, etc.

## Specifications:

**Input:** AC220V  $\pm$  10%, 50/60 Hz, max 16A.

**Output:** Maximum output voltages could be designed from 1kV to 100kV, and the maximum output power is 600W@60kV. 0 to the highest voltage is continuously adjustable, and the output is positive or negative single polarity.

### 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.

**Front Panel Status Indication:** high-voltage on/off, voltage or current mode, output positive or negative single polarity, over-voltage, over-current, over-temperature, arc protection, memory, reset, actual value, set value, protection value, custom function key status indication, error code display function.

### 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 from 0 to rated voltage.

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

**Ripple Voltage:** Under rated output conditions, ripple voltage is 0.1% p-p of the highest output voltage.

### 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 hour warm-up.

**Voltage and Current Indication:** four-bit LED nixie tube, with accuracy of  $\pm$  1% under rated output conditions.

### Overall Dimensions:

60kV, 300W: 482mm wide, 88mm high and 320mm deep.

60kV, 600W: 482mm wide, 88mm high and 320mm deep.

**Connector:** Recessed plastic insulated conduit and probed high voltage cable are connected by metal connector with diameter of 16mm/28mm. The standard high voltage cable is 2 meters long.

**Weight:** About 15kg

**TD2300 Series High Voltage Power Supply Model Selection Table (300W):**

Output Rating		Model	
kV	mA	Positive Polarity	Negative Polarity
1.00	300.00	TD2300P1-300	TD2300N1-300
5.00	60.00	TD2300P5-300	TD2300N5-300
10.00	30.00	TD2300P10-300	TD2300N10-300
30.00	10.00	TD2300P30-300	TD2300N30-300
50.00	6.00	TD2300P50-300	TD2300N50-300
60.00	5.00	TD2300P60-300	TD2300N60-300
100.00	3.00	TD2300P100-300	TD2300N100-300
1.00	300.00	TD2300P1-300	TD2300N1-300

**TD2300 Series High Voltage Power Supply Model Selection Table (600W):**

Output Rating		Model	
kV	mA	Positive Polarity	Negative Polarity
5.00	120.00	TD2300P5-600	TD2300N5-600
10.00	60.00	TD2300P10-600	TD2300N10-600
30.00	20.00	TD2300P30-600	TD2300N30-600
50.00	12.00	TD2300P50-600	TD2300N50-600
60.00	10.00	TD2300P60-600	TD2300N60-600
100.00	6.00	TD2300P100-600	TD2300N100-600

**RS-485 Communication Interface JB3:**

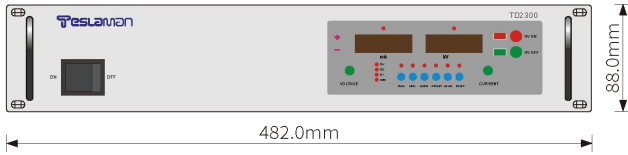
Foot Position	Description
1	RS485 A
2	Ground Wire
3	RS485 B

**TD2300 Power DB25 Connector Signal Definition:**

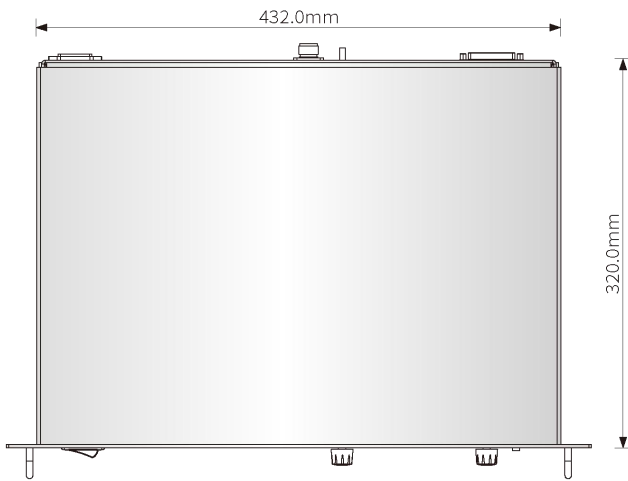
Pin	Signal	Description
1	Remote Indication	Open Collector, Conduction for Remote Control
2	Constant Voltage Indication	Open Collector, Conduction for Constant Voltage Output
3	High Voltage off Indication	Open Collector, Conduction for High Voltage Output Off
4	High Voltage on Signal	The Rising Edge Opens Immediately (+ 15V for Pin17)
5	Remote Enable	High level(+ 15v) is Effective
6	Security Lock Enabled	High level (+ 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 Collector, Conduction for Malfunction
15	Constant Current Indication	Open Collector, Conduction for Constant Current Output
16	High Voltage Indication	Open Collector, Conduction for High Voltage On
17	High Voltage off Signal	Falling Edge For High Voltage Off
18	Fault Reset	High level(+ 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

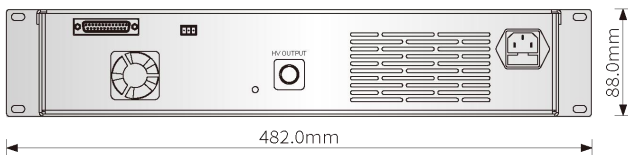
60kV:



Front View

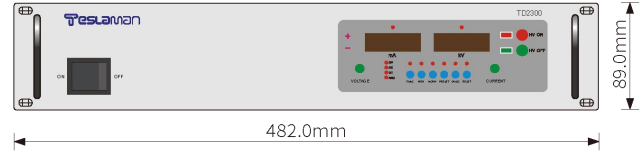


Top View

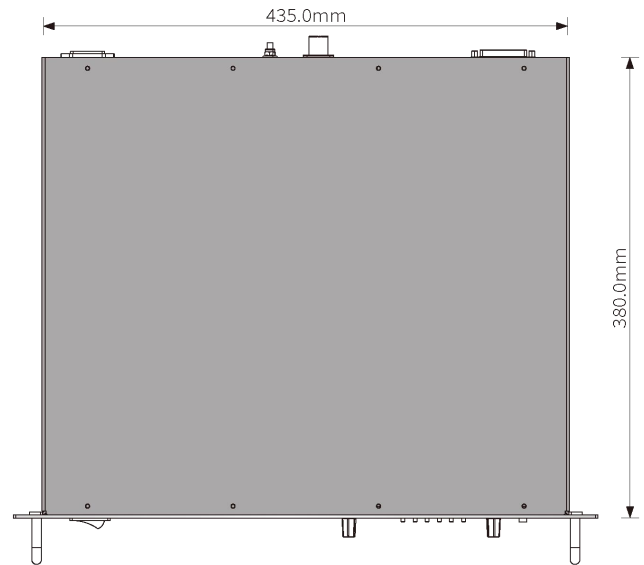


Rear View

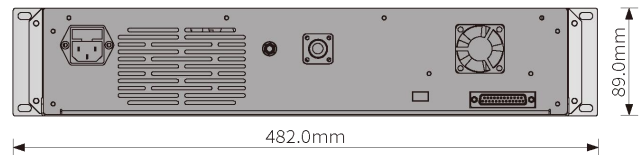
100kV:



Front View



Top View



Rear View