TLP2041 Series
Rack Mount DC High Voltage Power Supply

1kV~250kV，2.5kW~10kW

Teslaman TLP2041 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 that the power supply runs without faults, and the efficiency reaches more than 90%. This series of products have complete functions and wide output range, and can also add the functions that customers need to customize through software.

- Output Voltage 250kV
- Output Power2.5kW-10kW
- Solid Encapsulation
- Soft-Switching, Digital Programming
- Voltage and Current Regulation Function
- Protection Value Adjustable
- Nano Second Response
- Over-Voltage, Over-Current, Short Circuit, Arc and Over-Temperature Protection
- OEM 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:AC380V±10%,50/60Hz.

Output: Maximum output voltages could be designed from 250kV, and the maximum output power is 10kW. 0 to the highest voltage continuously adjustable, output positive and negative single polarity, higher voltage level can be customized.

Front Panel Status Indication:

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

Voltage Control:

Local control: The rotary encoder of the power supply can set the output voltage between 0 and the highest voltage.

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

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

Current Control: Local control: The rotary encoder included in the power supply can set the output current between 0 and the highest current.

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

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

Voltage Regulation:

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

Line: ±0.01% for ±10% change in input voltage.

Current Regulation:

Load: 0.01% of output current from 0 rated voltage.

Line: ±0.01% for ± 10% change in input voltage.

Ripple Voltage:

The RMS value of the ripple voltage is 0.7% of the maximum output voltage and 1.6% of the peak-to-peak value (0.1% Vp-p is optional) under rated output conditions.

Environmental:

Operational: 0 ℃ to + 50 ℃. Storage:-20 ℃ to + 80 ℃.

Temperature Coefficient: 0.01% per ℃.

Stability: less than 0.05% every 8 hours after 1/2 hour warm up.

Weight： 1kV-120kV:70kg.
225kV-250kV:280kg.

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

Remote Voltage and Current Indication:25-pin terminal contains 0 to 10V voltage and current indication signals, which can be externally connected with various digital or pointer meters.

Dimension：

1kV-120kV：W 482.6mm，H 266mm，D 647mm.

225kV-250kV：

W 450mm，H 400.5mm，D 1195mm.

High Voltage Cable and Connectors：

1kV-120kV:The recessed plastic insulated conduit and the probe high-voltage cable are connected through metal connectors, and the standard high-voltage cable is 2 meters long.

225kV-250kV:The recessed plastic insulated conduit and the probe high-voltage cable are connected through nylon connectors, and the standard high-voltage cable is 2 meters long.

TLP2041 Series High Voltage Power Supply Model Selection Table (10kW):

Output Rating		Type of Power Supply	
kV	mA	Positive Polarity	Negative Polarity
20.0	500	TLP2041P20-10000	TLP2041N20-10000
30.00	333.3	TLP2041P30-10000	TLP2041N30-10000
50.0	200	TLP2041P50-10000	TLP2041N50-10000
80.0	125	TLP2041P80-10000	TLP2041N80-10000
100.0	100	TLP2041P100-10000	TLP2041N100-10000
120.0	83.33	TLP2041P120-10000	TLP2041N120-10000
150.0	66.66	TLP2041P150-10000	TLP2041N150-10000
225.0	44.44	TLP2041P225-10000	TLP2041N225-10000
250.0	40	TLP2041P250-10000	TLP2041N250-10000

Power input terminal J1:

Pin Position	Signal	Description
1	G	Ground Wire
2	U	Live Wire
3	V	Live Wire
4	W	Live Wire

RS-485 Communication Interface J2:

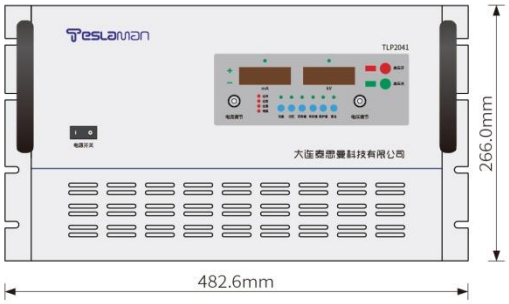
Pin Position	Signal	Description
1	A	RS485+
2	G	Ground Wire
3	B	RS485-

TLP2041 Power Supply DB25 Connector Signal Definition J3:

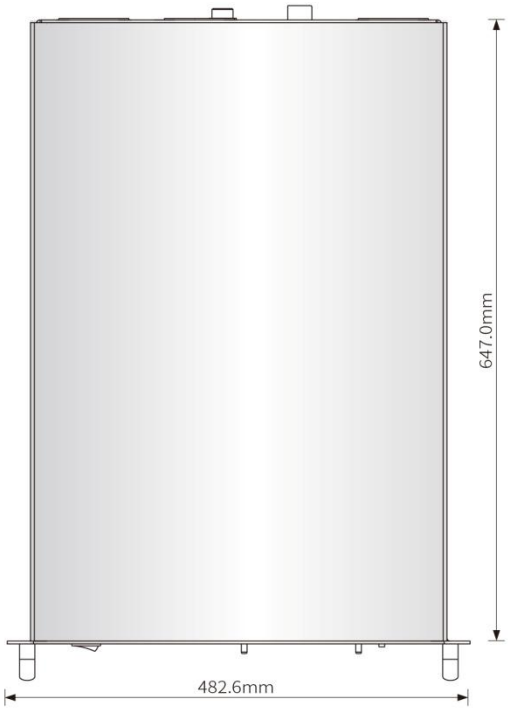
Pin	Signal	Signal
1	Remote Indication	Open collector and conduct is remote control
2	Constant Voltage Indication	Open collector, conduction means constant voltage output
3	High Voltage Off Indication	Open collector and turn it on, that is, turn off the high voltage output
4	High Voltage On Signal	The 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

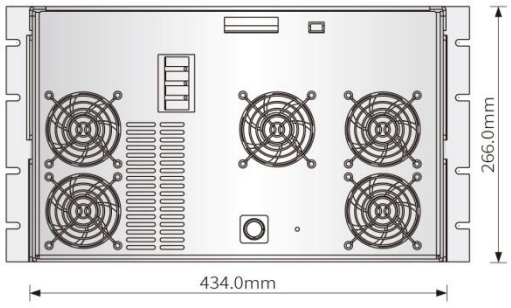
1kV-120kV



Front View

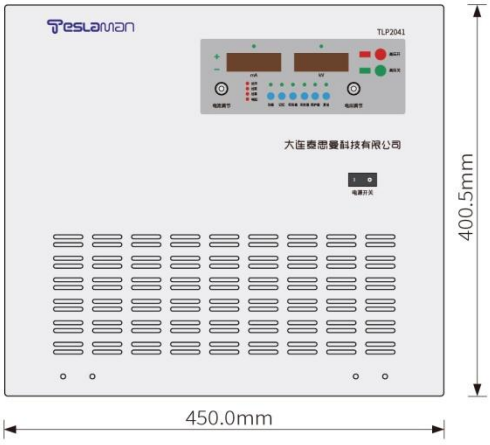


Top View

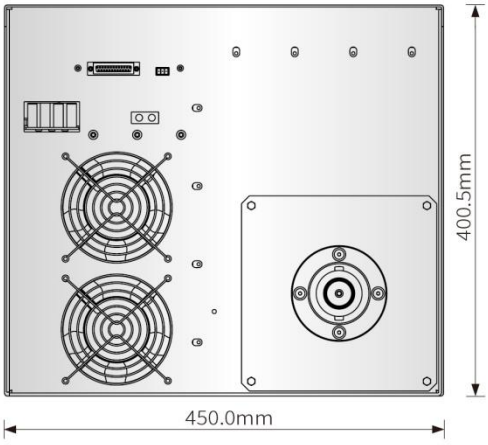


Rear View

225kV-250kV

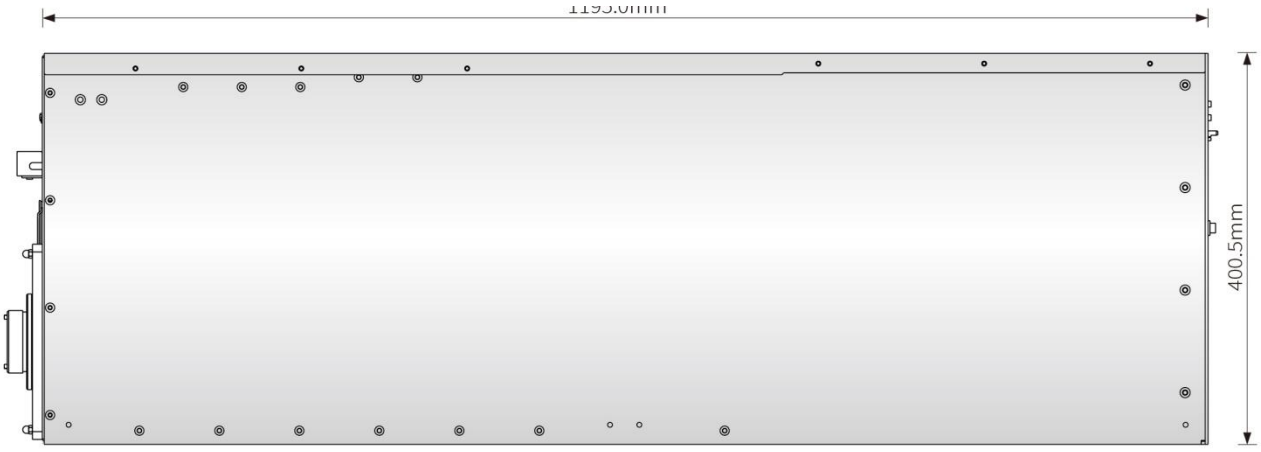


Front view



Rear View

Side view



Side view