

# TLP2081 Series Rack Mount DC High Voltage Power Supply



**1kV-30kV, 15kW, Efficiency Reaches 94%, Parallel System Power Up to 1MW**

Teslaman TLP2081 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 over 94%. 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 1kV-30kV
- Digitally Programmable
- Nanosecond Protection Response
- RS-485 Isolated Digital Communication
- Security Interlock Function
- The Output Power is 15kW, in Parallel Could Reach 1MW
- Over-Voltage, Over-Current, Short Circuit, Arc And Over-Temperature Protection
- Charging And Continuous DC Operation Modes Are Optional
- 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:** AC 380V  $\pm$  10%, 50/60 Hz.

**Output:** Maximum output voltages could be designed from 1kV to 30kV and the maximum output power is 15kW. 0 to the highest voltage continuously adjustable, output positive or negative single polarity, voltage level can be customized.

### Voltage Control:

**Local control:** The multi-turn potentiometer of the power supply can set the output voltage between 0 and the highest voltage.

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

### Current Control:

**Local control:** The multi-turn potentiometer of the power supply can set the current between 0 and the highest current.

**External control:** The external 0 to 10V control signal can set the current between 0 and the highest current.

### Voltage Regulation Rate:

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

### Current Adjustment Rate:

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

### Optional Capacitor Charging Mode:

Peak charging power: 24kW.

Energy storage:  $<$  0.3 J.

Pulse repetition accuracy is less than 0.1% at 100Hz.

**Ripple Voltage:** Ripple Voltage RMS is 1% of the maximum output voltage (0.1% Vp-p optional) under rated output conditions.

### Environmental:

Operational: 0  $^{\circ}$ C to + 45  $^{\circ}$ C.

Storage: -20  $^{\circ}$ C to + 80  $^{\circ}$ C.

**Temperature Coefficient:** 0.01% per  $^{\circ}$ C.

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

**Overall Dimensions:** 482.6 mm wide, 266mm high and 666mm deep.

**Weight:** About 60kg.

### Remote Control of Output Voltage and Current:

External potentiometer can be used to control the output voltage and current remotely by using 10V reference voltage inside the power supply.

**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.

**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

**TLP2081 Series High Voltage Power Supply Model Selection Table (15kW):**

Output Rating		Type of Power Supply	
kV	mA	Positive Polarity	Negative Polarity
5.000	3.000	TLP2081P5-15000	TLP2081N5-15000
10.00	1.500	TLP2081P10-15000	TLP2081N10-15000

**Power input terminal J1:**

Identification	Signal	Identification	Signal
L1	Live Wire	L3	Live Wire
L2	Live Wire	G	Ground wire

**RS-485 Communication Interface J2:**

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

**TLP2081 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 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 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

