TPS7001 Series

Low ripple precision high-voltage power supply | Output voltage 1-10kV, maximum power 50W, ripple 200ppm, 5-bit display

- Output voltage 0-10kV
- Output power 50W
- 5-digit display
- Ripple voltage is better than 200ppm
- Nanosecond-level protection response
- Overvoltage/overcurrent protection
- RS-485 isolated digital communication
- Security interlock function
- It can be customized according to user requirements.

Product Introduction:

Teslaman TPS7001 series is a low ripple precision high-voltage power supply, 5 digits display, and the ripple voltage is less than 0.001% RMS at the rated voltage. The digital control method can meet the needs of customers for a variety of control functions, with a full load efficiency of more than 70%. This series of products has complete functions, high output accuracy, wide output range and small ripple. Custom functions can also be added through software.

Typical Applications:

High-energy particle injection; electrostatic spraying;
Ion beam power supply; electron beam power supply; accelerator power supply;
Hi-POT testing, high-voltage capacitor charging, scientific research, etc.

Specification Description:

Rated input voltage	AC220V±10%, 50Hz. 0.5A
Rated output voltage	10kV.
Rated output current	5mA.
Rated output power	50W.
Voltage control	Power supply front panel: The power supply comes with a rotary encoder to set the output voltage from 0 to the rated voltage. External analog control: The external 0 to 10V control signal can set the output to 0 to the rated voltage. Digital communication control: Through the RS-485 communication interface, the output can be set to 0 to the rated voltage according to the standard communication protocol.
Current control	Power supply front panel: The power supply comes with a rotary encoder to set the output current from 0 to the rated current. External analog control: The external 0 to 10V control signal can set the output to 0 to the rated current. Digital communication control: Through the RS-485 communication interface, the output can be set to 0 to the rated current according to the standard communication protocol.
Voltage adjustment rate	Relative load: 0.01% (no load to rated load). Relative input: ± 0.01% (input voltage change ±10%).
Current adjustment rate	Relative load: 0.01% (no load to rated load). Relative input: ± 0.01% (input voltage change ±10%).
Ripple voltage	better than 200ppm.
Ambient temperature	Working hours: 0℃ to +50℃. Storage time: -20℃ to +80℃.
Temperature coefficient	100ppm per degree Celsius.
Stability:	Les than 0.05% every 8 hours for half hour warm-up.
Humidity	10-90% no condensation.

Voltage and current indication	Five-bit LED digital tube, under rated output conditions, the error is 1% ± 1 word.
High Voltage Cable	It is protruded from the inside of the power supply and is a 50kV high-voltage line. The total length of the standard high-voltage cable is 2m.
Dimension	218.5mm wide, 44.5mm high and 269.5mm deep.
Weight	2.7kg~2.8kg.

Optional

Optional Code	Description of code
ELOC	Extended high voltage output cable (unit: meters)

Table 1.1 Options

All of the options are listed in Table 1.1. See Chapter 5 for details on the action and setup steps. With a few exceptions, these options can be changed quickly within the factory. Please contact Teslaman's sales department for price and more details.

Description of Model Code

The model code represents the performance and parameters of the power supply, which are:
Maximum output voltage in kV (kV);
Maximum output power in W (watt);
Output polarity, P for positive output, N for negative output;
Optional code, beginning with A, and every two digits indicate a function;

TPS7001 * 10 - 50

Model **Polarity** **Maximum voltage** **Maximum power**

Power input terminal J1:

Pin	Signal	Description
1	L	Live
2	N	Neutral
3	G	Ground

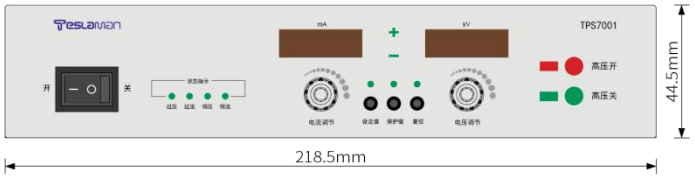
RS-485 communication port J2:

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

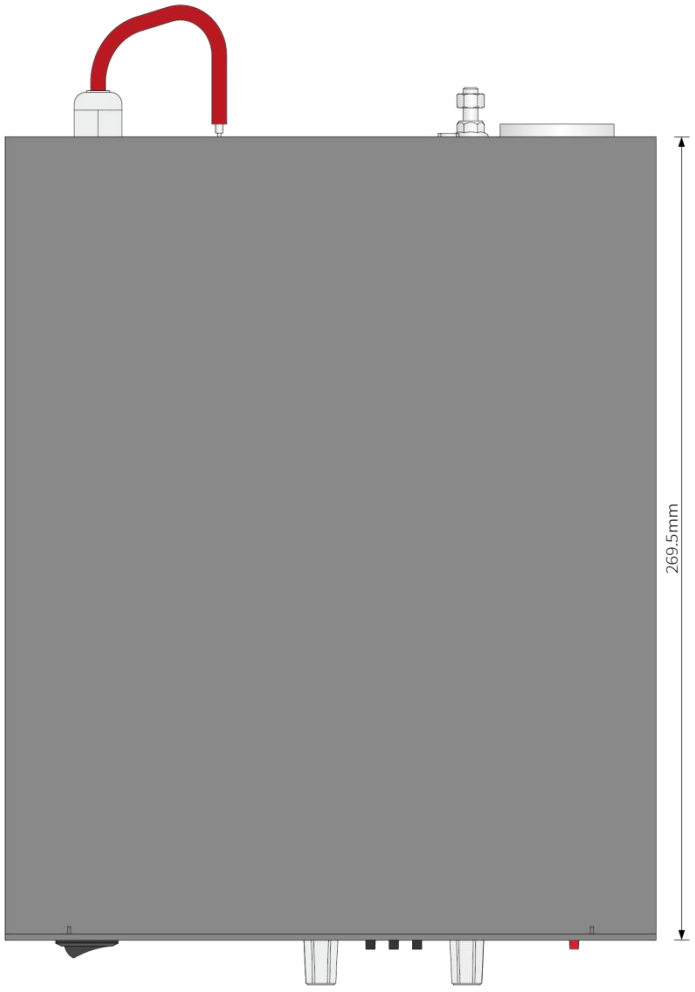
TPS7001 Power Supply DB25 Connector Signal Definition J3:

Pin	Signal	Description
1	Remote Enable	Open collector, conduct for remote control.
2	Constant Voltage Indicate	Open the collector, conduct for constant voltage output.
3	High-voltage off Indication	Open collector, conduct for high-voltage output off
4	High-voltage on Signal	On at the rising edge (+15V for pin17)
5	Remote Enable	High level (+15V) is effective.
6	Safety Lock Enable	High level (+15V) is effective.
7	+15V	+15V, 100mA (maximum)
8	Current Setting	0 to 10V = 0 to 100% of rated output
9	Voltage Setting	0 to 10V = 0 to 100% of rated output
10	+15V	+15V, 100mA (maximum)
11	+10V	+10V, 1mA (maximum)
12	Voltage Display	0 to 10V = 0 to 100% of rated output
13	Current Display	0 to 10V = 0 to 100% of rated output
14	Fault Indication	Open collector, conduct for Fault.
15	Constant Current Indication	Open collector, conduct for constant current output.
16	High-voltage on Indication	Open collector, conduct for high-voltage output.
17	High-voltage signal	The descending edge is the high pressure level.
18	Fault reset	High level (+15V) is reset
19	Ground	Signal ground line
20	Ground	Signal ground line
21	Ground	Signal ground line
22	Ground	Signal ground line
23	Ground	Signal ground line
24	Ground	Signal ground line
25	Ground	Signal ground line
Shield	Ground	Signal ground line

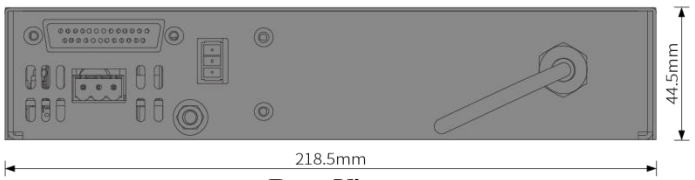
Dimensions: mm



Front View



Top View



Rear View