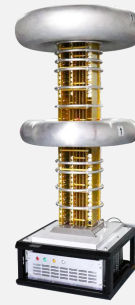


# TT8010 series

## Tower high-voltage power supply

450kV, 4kW, low ripple, high stability



Teslaman TT8010 series high-voltage power supply provides power up to 4kW, and the maximum output voltage can reach 450kV, and the whole range is adjustable. The power supply adopts a proprietary high-frequency resonant inverter, which enables it to operate reliably in extreme environments. The high-pressure pressure unit adopts a mixed design of air insulation, which reduces the overall size.

- 200-450kV output voltage is optional
- Low ripple
- High stability
- Overvoltage, overcurrent, short circuit, arc and overtemperature protection
- OEM available.

### Typical applications:

Ion implantation; particle accelerator; electronic gun.

### Specification:

#### Input:

2kW: 220VAC $\pm$ 10%, 16A, single-phase, 50/60Hz.

4kW: 380VAC $\pm$ 10%, 16A, single-phase, 50/60Hz.

#### Output:

A variety of maximum output voltages from 200kV to 450kV are available, with a maximum output power of 4kW. 0 to the highest voltage is continuously adjustable, and the output is positive and negative single polarity.

Suspended power supply module (optional): suspended (5-10) A (maximum power 85W) adjustable DC power supply;

#### Voltage adjustment rate:

Relative load: 0.01% (no load to rated load).

Relative input:  $\pm$ 0.01% (input voltage varies from  $\pm$ 10%).

#### Current adjustment rate:

Relative load: 0.01% (no load to rated load).

Relative input:  $\pm$ 0.01% (input voltage varies from  $\pm$ 10%).

**Ripple voltage:** Under the rated output condition, it is better than 0.2% rms (lower ripple is optional).

#### Environmental:

Working hours: 0°C to +50°C. Storage time: -20°C to +80°C.

**Temperature coefficient:** Voltage and current are better than 25ppm/°C.

**Stability:** After 0.5 hours of warm-up, the hour is less than 0.01%. Less than 0.05% every 8 hours.

**Protection:** Overvoltage, overcurrent, arc, overtemperature protection.

#### Size:

Inverter drive rack:

Width 482mm, height 267mm, depth 510mm.

High voltage unit: 600mm\*1691mm\*800mm.

**Communication interface:** DB25, RS-485

**TT8010 series high-voltage power supply model selection table (customizable):**

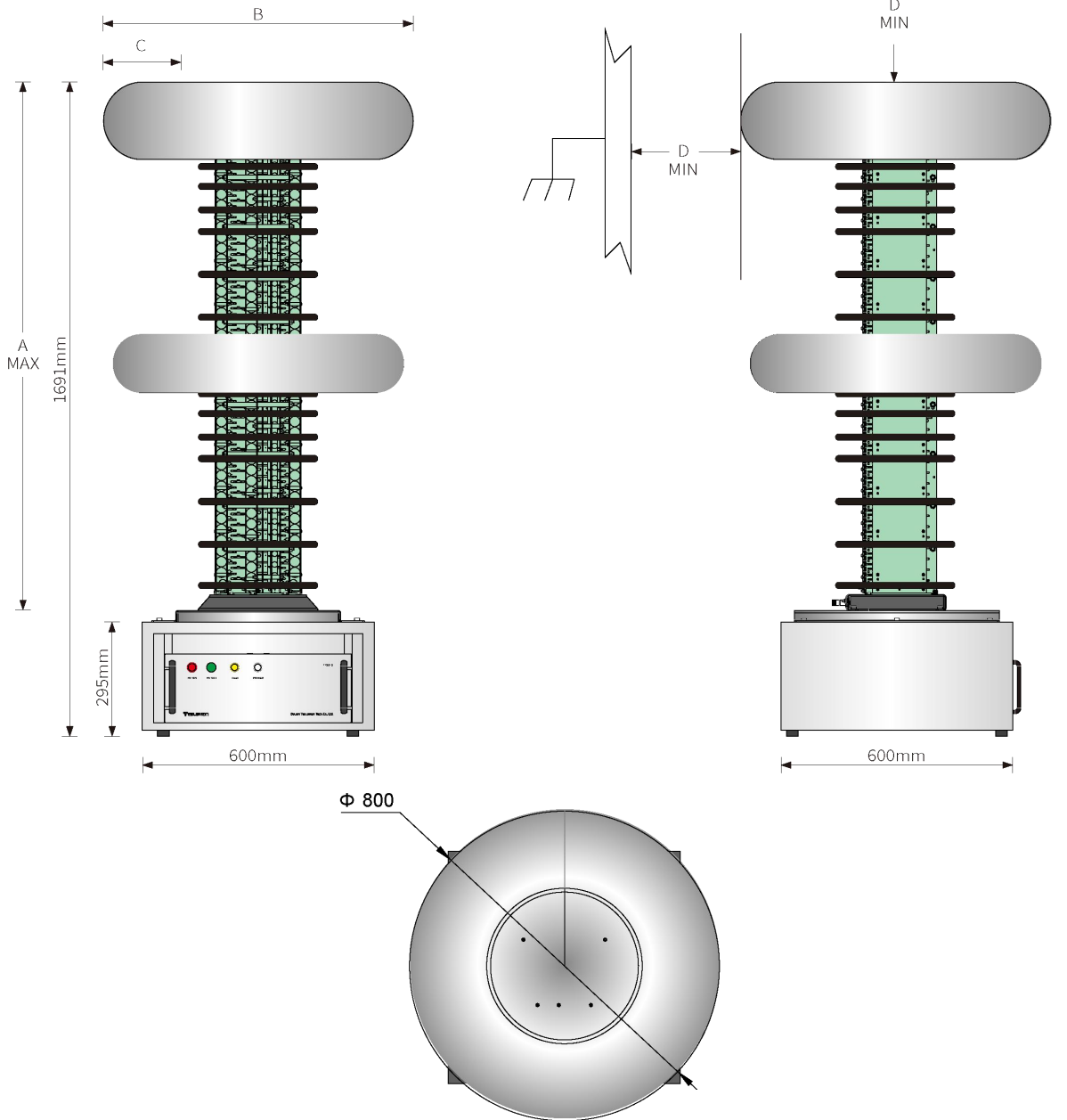
Output rating		Power supply model	
kV	mA	Positive polarity	Negative polarity
200	20	TT8010P200-4000	TT8010N200-4000
250	16	TT8010P250-4000	TT8010N250-4000
300	13.33	TT8010P300-4000	TT8010N300-4000
350	11.42	TT8010P350-4000	TT8010N350-4000
400	10	TT8010P400-4000	TT8010N400-4000
450	8.888	TT8010P450-4000	TT8010N450-4000

**TT8010 DB25 Interface:**

Pin	Signal	Description
1	Remote control	Open collector, conduct for remote control.
2	Constant Voltage Indicate	Open collector, conduct for constant voltage output.
3	High-voltage off indicate	Open collector, conduct for high-voltage output off.
4	HV- ON signal	The rising edge for HV On (+15V for Pin17)
5	Remote enabling	High level (+15V) is effective
6	Main Feedback circuit power Enable	High level (+15V) is effective
7	+15V	+15V, 100mA (maximum)
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 (maximum)
11	+10V	+10V, 1mA (maximum)
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, conduct for fault.
15	Constant current indication	Open collector, conduct for constant current output.
16	High-Voltage on indicate	+15V rising edge for high-voltage output on
17	High-voltage off signal	+15V rise edge for high-voltage off
18	Fault reset	High level (+15V) for reset
19	Ground	Signal ground
20	Ground	Signal ground
21	Ground	Signal ground
22	Ground	Signal ground
23	Ground	Signal ground
24	Ground	Signal ground
25	Ground	Signal ground
Shield	Ground	Signal ground

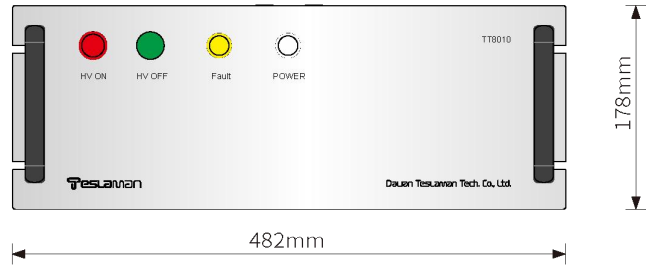
**Dimensions: mm**

Schematic diagram (450kV):

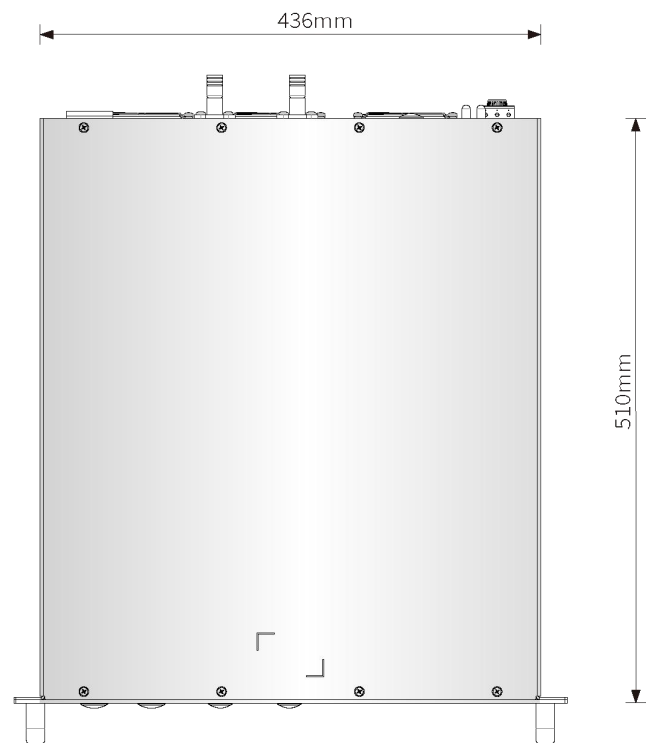


Voltage	"A"	"B"	"C"	"D"
Unit kV	Unit mm			
200	724	610	127	610
250	908	711	178	787
300	1016	711	178	965
350	1448	864	216	1143
400	1575	965	254	1321
450	1676	965	254	1524

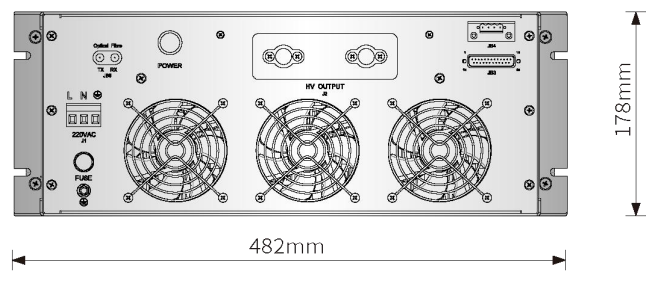
**Inverter drive unit (450kV):**



**Front View**



**Top View**



**Back View**