

# Chapter 1 Introduction

## TD2318 Series

Rack mount DC power supply | 1kV-120kV,10W-1.2kW,Digital display



- Voltage and Current Adjustable
- OC, OV, ARC protection
- Remote control interface
- Digital interface(Optional)
- Safety Interlock
- OEM available

### Introduction:

Teslaman TD2318 series is a high-performance, 19-inch standard rack-mountable high-voltage power supply. It offers selectable polarities, with both output voltage and current continuously adjustable. The output high voltage can achieve a linear and stable rise. Additionally, the TD2318 series power supply can be connected to an external potentiometer for remote control of output voltage and current. It also features external voltage and current display, OC, OV and short circuit protection at the high-voltage output terminal, arc protection, and safety interlock functions.

### Application:

Accelerator, capacitor charging, electron beam, ion beam, ion implantation, semiconductor manufacturing, lithography technology, electronic component aging, high voltage testing, electrostatic applications, laser, high power RF transmitter, X-ray system, scientific experiments, industrial applications.

### Specification:

<b>Input</b>	AC220V±10%,50Hz.
<b>Output</b>	Models available from 1kV to 120kV, model is available in positive , negative or reversible polarity output.
<b>Voltage Control</b>	Local:10-turn potentiometer on front panel Remote:0-10V external corresponding 0 to 100% rated output.
<b>Current Control</b>	Local:10-turn potentiometer on front panel. Remote:0-10V external corresponding 0 to 100% rated output.
<b>Voltage Regulation</b>	Load: 0.005% of maximum voltage +500mV for full load change. Line: ±0.005% of full voltage +500mV over specified input range
<b>Current Regulation</b>	Load: 0.01% of maximum current ±100µA for full voltage change. Line: ±0.005% of maximum current for a ±10% input line change.
<b>Ripple</b>	0.1%p-p+1 Vrms (0.05%p-p upon request)
<b>Environmental</b>	Operational:0°C to +50°C. Storage:-20°C to +80°C.
<b>Temp. Coefficient</b>	70ppm/°C voltage or current regulated.
<b>Stability</b>	100ppm/hour after 1/2 hour warm-up for both voltage and current regulation.
<b>Humidity</b>	10% to 90% relative humidity, non-condensing.
<b>Dimensions</b>	10W-300W 1kV-70kV:W 482mm, H 44mm, D 482.5mm. 600W – 1200W 80kV-120kV:W 482mm, H 88mm, D 609.6mm.
<b>Connector</b>	DB25 analog interface, RS-485/ RS-232 interface, Ethernet(optional)
<b>Output Cable</b>	2 meters of shielded high voltage cable removable at the rear panel.

## Model number description:

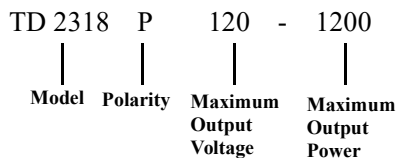
Model code represent properties and parameters:

Rated output voltage, unit: kV;

Rated output Power, unit: W;

Polarity: P: positive, N: negative;

PN: reversible polarity



### TD2318 selection table:

#### 1U

150 Watt			300 Watt	
kV	mA	Model	mA	Model
1	150	TD2318*1-150	300	TD2318*1-300
2	75	TD2318*2-150	150	TD2318*2-300
3	50	TD2318*3-150	100	TD2318*3-300
6	25	TD2318*6-150	50	TD2318*6-300
8	18.75	TD2318*8-150	37.5	TD2318*8-300
10	15	TD2318*10-150	30	TD2318*10-300
15	10	TD2318*15-150	20	TD2318*15-300
20	7.50	TD2318*20-150	15	TD2318*20-300
30	5.00	TD2318*30-150	10	TD2318*30-300
40	3.75	TD2318*40-150	7.5	TD2318*40-300
50	3.00	TD2318*50-150	6.0	TD2318*50-300
60	2.50	TD2318*60-150	5.0	TD2318*60-300
70	2.10	TD2318*70-150	4.28	TD2318*70-300
80	1.90	TD2318*80-150	3.75	TD2318*80-300
100	1.50	TD2318*100-150	3.00	TD2318*100-300
120	1.25	TD2318*120-150	2.50	TD2318*120-300

#### 2U

600 Watt			1200 Watt	
kV	mA	Model	mA	Model
1	600	TD2318*1-600	1200	TD2318*1-1200
2	300	TD2318*2-600	600	TD2318*2-1200
3	200	TD2318*3-600	400	TD2318*3-1200
6	100	TD2318*6-600	200	TD2318*6-1200
8	75	TD2318*8-600	150	TD2318*8-1200
10	60	TD2318*10-600	120	TD2318*10-1200
15	40	TD2318*15-600	80	TD2318*15-1200
20	30	TD2318*20-600	60	TD2318*20-1200
30	20	TD2318*30-600	40	TD2318*30-1200
40	15	TD2318*40-600	30	TD2318*40-1200
50	12	TD2318*50-600	24	TD2318*50-1200
60	10	TD2318*60-600	20	TD2318*60-1200
70	8.6	TD2318*70-600	17	TD2318*70-1200
80	7.5	TD2318*80-600	15	TD2318*80-1200
100	6.0	TD2318*100-600	12	TD2318*100-1200
120	5.0	TD2318*120-600	10	TD2318*120-1200

#### INPUT J1:

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

#### RS-485/RS-232 Interface JB3 (optional):

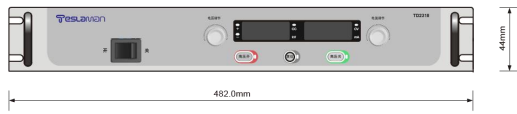
Pin	Signal	Description
1	A	RS485+
2	G	Ground
3	B	RS485-

**TD2318 DB25 Analog Interface JB4:**

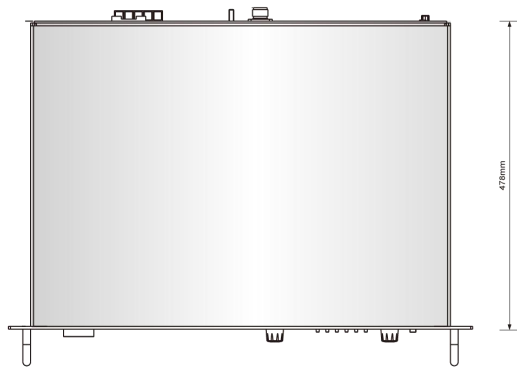
<b>Pin</b>	<b>Signal</b>	<b>Parameters</b>
1	Remote Indication	Open Collector, Conduction for Remote Control
2	Constant Voltage Indication	Open Collector, Conduction for Constant Voltage Output
3	High Voltage off Indication	Open Collector, Conduction for High Voltage Output Off
4	High Voltage on Signal	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

# Dimensions:mm

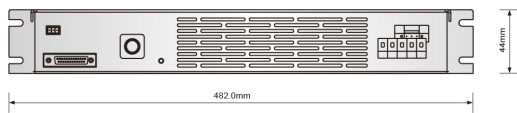
1kV to 70kV



Front View

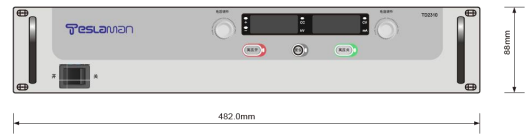


Top View

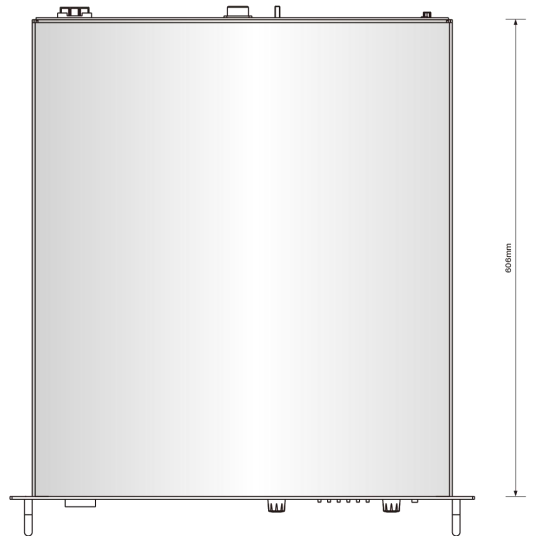


Rear View

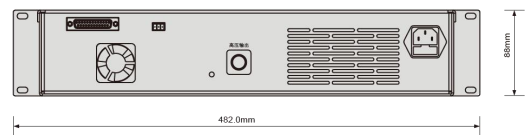
80kV to 120kV



Front View



Top View



Rear View