

TMPD6068 Series

High-Voltage Power Supply Module | 1kV~30kV, 10W, High Stability, Low Ripple



- Compact 10W high-performance module
- Multiple control interfaces
- Differential analog
- RS-232, RS-485
- Voltage and current monitoring
- High stability
- Low ripple and noise
- Compact design
- Multi-unit operation, current control, status flags, swing function

Product Introduction:

Teslaman TMPD6068 series is a 10 W high-voltage DC power supply with a modular structure, delivering a maximum output voltage up to 30 kV. It features low noise, high efficiency, compact package, low ripple and high stability.

The TMPD series can be controlled via analog or digital interfaces. Both interfaces provide remote user control and adjustment through a 15-pin D-sub connector. In digital control mode, the current is configurable from 0-110% of the set value; in analog control mode, the current is set to 110%.

Typical Applications:

Electrostatic Chuck (ESC), Photomultiplier Tube (PMT), Electrostatic Printing, Electron Beam and Ion Beam, Electron Multiplier Detector, Mass Spectrometry, Microchannel Plate Detector (MCP Detector), Electrostatic Lens, Atomic Energy Instruments, AI Vision Recognition.

Typical Applications:

Variable Current Control
High Stability
Special options are available upon advance order

Specification Description:

Input Voltage	+24VDC, ± 2 VDC, 1A.
Input Current	Max. 1A
Output Voltage	1kV to 30kV optional (7 models available).
Output Polarity	Positive or negative polarity to be specified at the time of order.
Power	10W (11W under current-limiting condition).
Voltage Regulation	Line Regulation: Better than 10 ppm for 1V input variation within the specified input voltage range Load Regulation: Better than 10 ppm for 0-100% load variation at rated output voltage.
Ripple	Better than 10 ppm (p-p) under rated output condition.
Stability	After one-hour warm-up, better than 10 ppm per hour; better than 25 ppm per 8 hours
Protection Features	Over-voltage, under-voltage, over-current, over-temperature, arc and short-circuit protection.
Temperature Coefficient	Better than 10 ppm/ $^{\circ}$ C for both voltage and current.
Ambient Temperature	Operating: 0 $^{\circ}$ C to 50 $^{\circ}$ C. Storage: -35 $^{\circ}$ C to 85 $^{\circ}$ C.
Humidity	20% to 85% RH, non-condensing.
Cooling	Convection cooling.

Dimensions	10kV model: W 70 mm × H 30 mm × D 130 mm. 15/20kV models: W 70 mm × H 30 mm × D 165 mm. 25/30kV models: W 75 mm × H 35 mm × D 215 mm.
Weight	10kV model: approx. 420 g. 15/20kV models: approx. 615 g.
Interface Connector	15-pin male D-sub connector.
Earthing Method	Chassis ground.
Output Wiring	Cable outlet.
Output Connection	Supplied with one 1-meter long fixed shielded high-voltage cable.

Description of Model Code

The model code represents the performance and parameters of the power supply, which are:

Maximum output voltage in kV;

Maximum output power in W;

Output polarity, P for positive output, N for negative output;

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Model Polarity Maximum Voltage Maximum Power

TMPD6068 Series High Voltage Power Supply Model Selection Table (Customizable):

Output rating		Type of power supply	
kV	mA	Positive polarity	Negative polarity
1	10	TMPD6068P1-10	TMPD6068N1-10
2.5	4	TMPD6068P2.5-10	TMPD6068N2.5-10
5	2	TMPD6068P5-10	TMPD6068N5-10
10	1	TMPD6068P10-10	TMPD6068N10-10
15	0.66	TMPD6068P15-10	TMPD6068N15-10
20	0.5	TMPD6068P20-10	TMPD6068N20-10
30	0.33	TMPD6068P30-10	TMPD6068N30-10

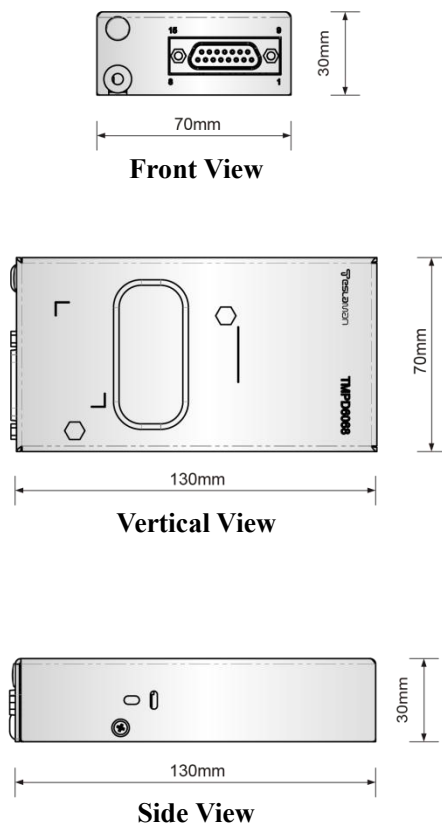
External interface-15 pin male D connector:

Stitch	Signal	Description
1	Power Ground	Ground
2	24V Input	+24Vdc, 1A (Max.)
3	Voltage Monitor Output	0- 10V = 0- 100% rated output, ±1%(Relative to signal ground), Zout=10KΩ
4	Voltage Reference Output	+10Vdc, 10mA Max.
5	Voltage Program Input	0- 10V = 0- 100% rated output, ±1%, Zin=10MΩ
6	Voltage Programming Differential Amplifier Output	0- 10V = 0- 100% rated output, Zout=10KΩ
7	Voltage Programming Differential Amplifier Input- Positive	Differential 0- 10V between Pin7 and Pin9 = 0- 100% rated output.Diode- clamped to ground, Zin=38kΩ
8	Current Monitor Output	0- 10V = 0- 100% rated output, ±1%(Relative to signal ground), Zout=10KΩ
9	Voltage Programmed Differential Amplifier Input-Negative	Differential 0- 10V between Pin7 and Pin9 = 0- 100% rated output.Diode- clamped to ground, Zin=38kΩ
10	Voltage Programming Digital Output	0- 10V = 0- 100% rated output, Zout=10KΩ

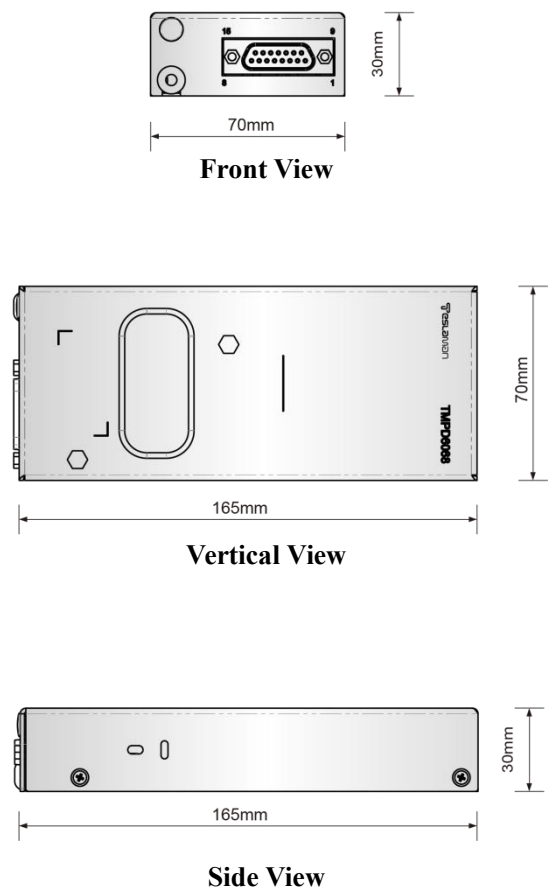
11	Analog Signal Ground	Analog signal ground for control and monitoring
12	Enable Input	Low level = Enable. TTL, CMOS, Open-Collector compatible.
13	Digital Mode	RS-232 / RS-485 configuration. Low level = RS-485, Open = RS-232
14	RS-232TxD/RS-485 (-)	Transmit Data (Output), referenced to Pin1 or RS-485 inverted signal
15	RS-232RxD/RS-485 (+)	Receive Data (Input), referenced to Pin1 or RS-485 non-inverted signal

Dimensions: mm

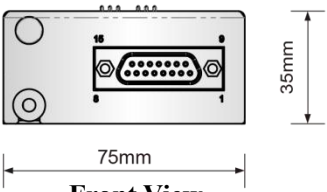
10kV:



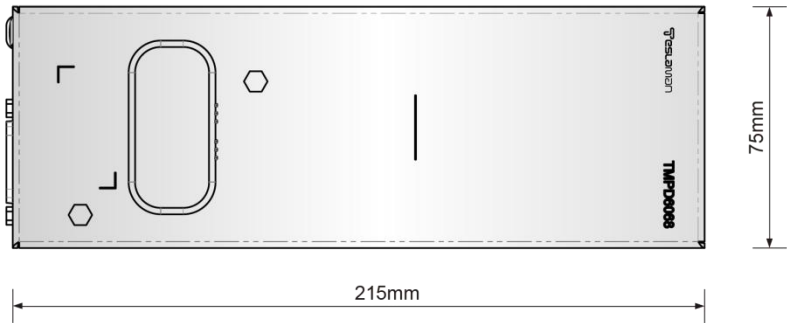
15kV/20kV:



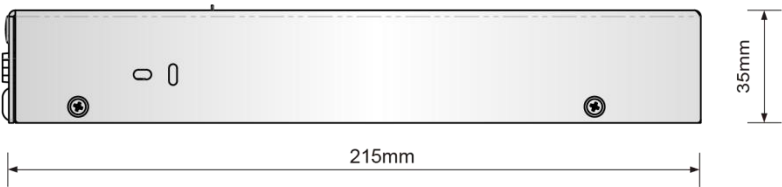
25kV/30kV:



Front View



Vertical View



Side View