TEBM4502 Series

Electron Microscope High Voltage Power Supply | Accelerator 30kV, 6W Integrated Multi-Output power supply

- Integrated four channels power supply
- Extremely Low Ripple and Ultra-Stable Output
- With Arc and Short Circuit Protection
- Minimized Micro-Discharge Design
- Optically Isolated Digital Interface

Product Introduction:

The Teslaman TEBM4502 series high voltage power supply is specifically designed for field emission scanning electron microscope (M) applications. This series of power supplies integrates multiple outputs, including a 30kV 200μA accelerating high voltage power supply, a built-in3V 3A floating filament light source, a 10kV 700μA extraction power supply, and a 1kV 100μ suppression power supply. It can be installed in a 19-inch rack. All outputs provide ultra-low output ripple, minimal micro-discharge, excellent regulation, stability, low temperature coefficient, and are suitable for occasions with high requirements for image quality and resolution. Control is completed via an optical fiber RS-232 interface. All safety lock functions are based on hardware design.

Typical Applications:

Scanning electron microscope (SEM); Electron beam controller.

Specification Description:

Input	+ 24VDC, ± 5%, 4A. Surge current < 6A is suitable for 1 second.
Vacuum interlocking device	Vacuum interlocking is an optical interlocking, which works when light exists in optical fiber. When no light is present, this interlock does not work and this power supply turns off all outputs.
Front Panel Indication	Turn on: A green LED indicates the presence of + 24V power supply. It will be lit in the range of 22.8 to 25.2 V, and will flash for 1 second when it exceeds the range.
Vacuum Interlock	Yellow LED indicates that vacuum interlock is closed. The vacuum interlock must be lit to generate high pressure.
Test GUI	A product GUI can be provided free of charge to customers for testing and development work.
Environmental	Working time: + 10 ℃ to + 45 ℃. Storage: -20 ℃ to + 60 ℃.
Humidity	0 to 80% relative humidity, no condensation.
Machinery	This unit is equipped with a pair of detachable mounting flanges; These allow this unit to be installed in a 19 "rack system."
Overall Dimensions	The width is 482.6 mm, the height is 133.4 mm and the depth is 360.5 mm.
Weight	About 20kg.

Protection	All outputs are protected against arc in the load and continuous short circuit to ground and each other. All low voltage inputs have over-voltage protection of ± 30V. The power input has over-voltage protection and reverse connection protection. If beam energy has more than a 'A' arc during a nominal 'B' time (seconds), the unit will disable all outputs and set all programming to zero. If there are fewer than 'A' arcs, the unit will continue to run. The default values are A=8 and B=10. Both 'A' and 'B' can be set through optical bus commands and GUI. If the over-temperature condition exceeds 10 seconds, all outputs will be disabled. This unit reports fault or trip conditions through status flags. After a trip occurs (arc, over-current, over-voltage, over-temperature, etc.), the unit can be reset by software (fiber bus command) or power cycle.

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, N for negative output;

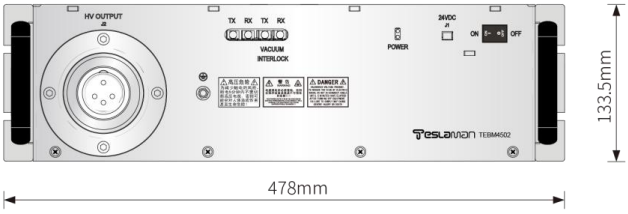
TEBM4502 N 30 - 6

Model	Polarity	Maximum voltage	Maximum power

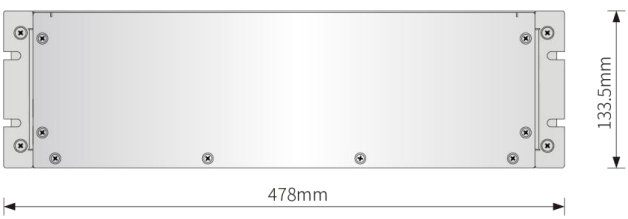
TEBM4502 Series High Voltage Power Supply Model Selection Table (Customizable):

Output Rating		Type of Power Supply
kV	**mA**	**Negative Polarity**
10	**0.6**	**TEBM4502N10-6**
20	**0.3**	**TEBM4502N20-6**
30	**0.2**	**TEBM4502N30-6**

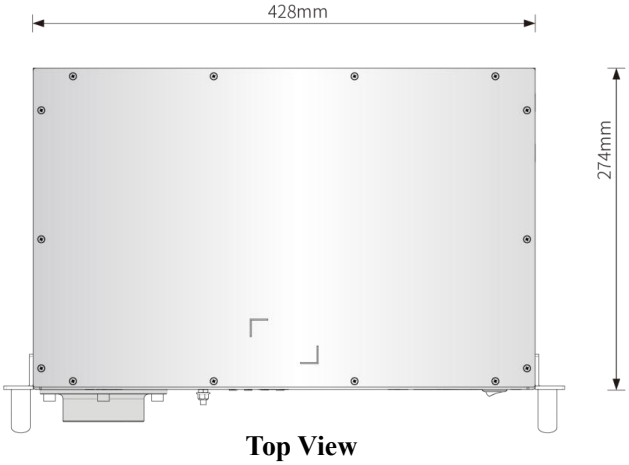
Dimensions: mm



Front View



Rear View



Top View