

Chapter 1 Introduction

TMX6108 Series

DC-DC convertor | $\pm 8\text{kV}$, $100\mu\text{A}$, Polarity switch within 25ms



- $\pm 8\text{kV}$, polarity switch within 25ms
- Precise voltage and current monitor
- High stability
- Low ripple and noise
- High voltage inhibit function

Introduction:

Teslaman TMX6108 series is a high-performance high-voltage power supply featuring rapid polarity reversal, adjustable output, and high precision. It can quickly respond within 25ms and achieve polarity switching through a "hot swap" method. Utilizing advanced topology technology, the power supply boasts extremely low ripple, offering significant advantages in mass spectrometry analysis, particularly suitable for security detection systems, multiplier electrodes, sample ionization, capillary electrophoresis, and electrostatic printing applications. Moreover, the TMX6108 series is also applicable to Electron Ionization (EI) and Atmospheric Pressure Chemical Ionization (APCI) applications, meeting the stringent requirements of these fields. OEM customization services are available.

With features such as rapid polarity switching, precise adjustment, low ripple, and high customizability, the TMX6108 series demonstrates outstanding performance and broad application prospects in the field of mass spectrometry analysis and related applications.

Typical Applications:

Mass spectrometry; capillary electrophoresis; electrostatic printing.

Specifications:

Input	DC24V $\pm 10\%$, nominal continuous $< 0.5\text{A}$, during reversing $< 1.2\text{A}$
Output	0V to $\pm 8\text{kV}$ Linearity not guaranteed below 200V. Maximum offset $\pm 20\text{V}$ when programmed to zero or disabled using remote enable.), 0 to $100\mu\text{A}$ max.
Output Polarity	Remotely reversible via TTL logic signal
Polarity Reversal Time	$< 25\text{ms}$ from change of polarity command to 90% of output into 100pF load capacitance. (Unit incorporates circuitry to minimize the effects of low programmed current on reversing time. Polarity reversal time applies when current is programmed to $3\mu\text{A}$ or above.).
Regulation:	Line: $< 0.1\%$ for $\pm 10\%$ input voltage change Load: $< 0.1\%$ for 0 to full load
Ripple	$< 0.1\%$ p-p @ $100\mu\text{A}$
Temperature Coefficient	$< 100\text{ppm}$ per degree C
Environmental	Operating: 5°C to 45°C Storage: -35°C to 85°C

Humidity	10% to 85%, non-condensing
Stability	<0.05% per hour after 1 hour warm up
Protection	Arc and short circuit protected
Output Voltage Limit	Output voltage does not exceed $\pm 8kV \pm 250V$ under any input or output conditions
Dimensions	W82mm, H37.6mm, D240mm.
Weight	1.1kg
Input Connector	14 way Molex receptacle p/n 39-01-2140. Cable length 508mm, mating connector not provided
Output Connector	Alden F303RX, mating connector not provided

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;

TMX6108	PN	8	-	0.8
Model	Polarity	Maximum voltage		Maximum power

TMX6108 Series model:

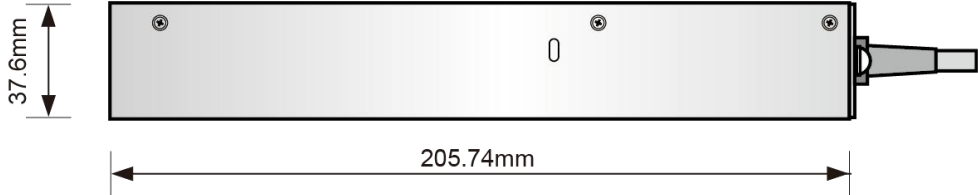
Rated output		Model
kV	mA	Reversible polarity
8	0.1	TMX6108PN8-0.8

Power and control 14 pin connector

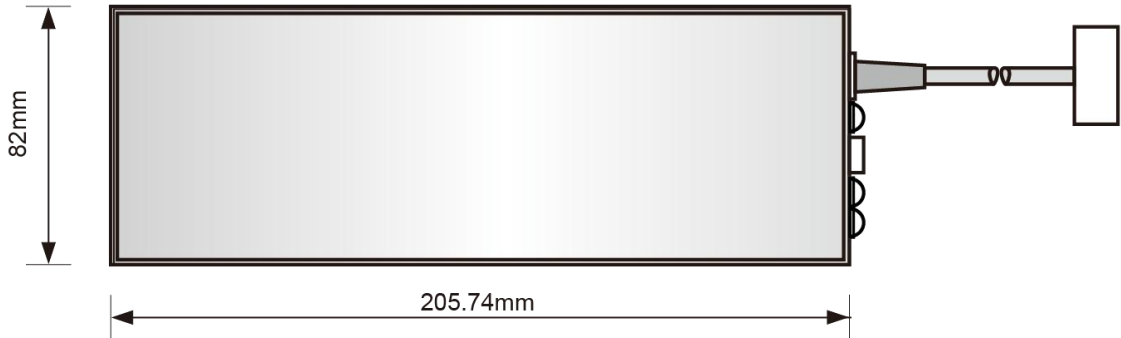
Pin	Signal
1	+24VDC Input
2	Ground return for +24VDC input
3	Enable/Inhibit input. TTL high is enabled, TTL low is disabled (see Note 1)
4	Output voltage monitor. 0 to +8V for 0V to $\pm 8kV$ output. Accuracy $\pm 1\%$
5	Voltage control input. 0 to +8V for 0V to $\pm 8kV$ output. Accuracy $\pm 1\%$
6	Current monitor output. 0 - 10V for 0A to 100 μA . Accuracy $\pm 2\%$
7	Current control input. 0 to +10V for 0A to 100 μA . Accuracy $\pm 1\%$
8	Polarity control input. TTL high is positive, TTL low is negative (see Note 1)
9	Analog ground
10	Current/Voltage control indicator. TTL compatible output (3.3V max). TTL high when in current mode. TTL low when in voltage mode.
11	NC
12	NC
13	NC
14	NC

Note 1: TTL input. The threshold is set to 1.65V for use with 3.3V or 5V input levels although the input will tolerate up to 15V being applied.

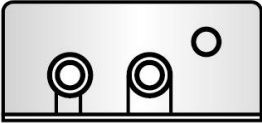
Dimensions:mm



Side View



Top View



Front View