TXF1280 Series

X-ray high-voltage power supply | 225kV, 4.5kW, compact and bipolar output configuration

- 160kV, 225kV, 320kV, and 450kV are optional
- 1.8kW, 3kW, 4kW, and 4.5kW are available for selection
- Built-in PFC circuit
- Integrated dual-filament power supply
- Solid-state packaging
- Standard configuration includes USB, Ethernet, and RS-232 interfaces
- CE Certification

Product Introduction:

Teslaman TXF1280 series is a high-performance, compact X-ray high-voltage power supply featuring solid-state packaging. It offers a power range of 1.8kW to 4.5kW, with options for single negative polarity, single positive polarity, and bipolar output polarities. The maximum voltage for single polarity can reach up to 225kV, while for bipolar output, it can reach up to 450kV.

The adoption of active power factor correction (PFC) circuits has relaxed the requirements for input current, while inverter topology technology has improved power density and efficiency of the power supply.

The adoption of mutually independent module design has improved product reliability and maintenance convenience. For example, electromagnetic interference (EMI) on the circuit can be optimized by adjusting the parameters of the EMI module without affecting the normal operating conditions of other modules.

The power supply supports both analog interfaces (DB25) and digital interfaces (USB, Ethernet, RS-232), simplifying the integration of OEM systems. It also features a precise emission current regulation circuit, enabling the filament power supply to accurately and stably adjust the tube current through two DC outputs. The power supply is equipped with comprehensive fault detection for both internal circuits and external output points, providing functions such as detection, counting, and arc suppression in arc control. This ensures that in the event of a power supply failure, the system can be shut down promptly and the fault details can be recorded.

Typical Applications:

Non-destructive testing; X-ray scanning; Safety applications; Digital radiography (DR); Industrial computed radiography (CR); AI visual recognition.

Specification Description:

Input Voltage	AC220V±10%, 50/60Hz, with an active PFC input of ≥0.98.
Input Current	<30A.

Output Voltage	Accuracy: 0.25%. Stability: Less than 0.1% every 8 hours after 1 hour of startup. Load regulation: ±0.05% of rated output voltage with full load variation. Input regulation: ±0.05% of rated output power within the specified input voltage range.
Temperature Coefficient	Better than 50ppm/°C.
Emission Current	Accuracy: 0.25%. Stability: 100ppm/° C. Load regulation rate: The rated output voltage varies from 30% to 100%, and the rated output current is ± 0.05%. Input adjustment rate: ± 0.05% of the rated output current within the specified input voltage range.
Filament	Output: 0-6A, maximum 10VDC. Dual focus: small focus and large focus, selected through interface signals. Configuration: DC filament drive. The closed-loop emission control adjusts the filament settings to provide the desired X-ray tube emission current.
Output polarity	Specify positive or negative polarity when placing an order.
Control Interface	Remote interface: simulation USB、 Ethernet and RS-232. Control software: suitable for the "TXF1280 Upper Computer Software Name" software, making it easy for users to connect, control, and obtain power information.
Ambient Temperature	During operation: 0 ° C to+50 ° C. During storage: -40 ° C to+85 ° C.
Main input connector	Type 97-3102A-24-11P.
Interface connector	Digital - USB, Ethernet, and RS-232. Simulation -25 pin connector.
Cooling	Forced Ventilation
Compliant	CE.

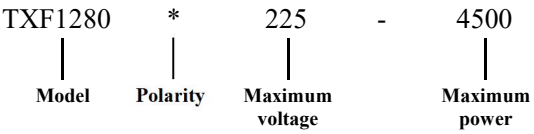
Description of Model Code

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;



TXF1280 SERIES SPECIFICATIONS(CUSTOMIZABLE):
160kV~350kV SPECIFICATIONS

	TXF1280 * 160-1800	TXF1280 * 160-3000	TXF1280 * 160-4000	TXF1280 PN160-1800	TXF1280 PN160-4500	TXF1280 PN175-4500
DC Output Voltage	**0 to 160kV**	**0 to 160kV**	**0 to 160kV**	**0 to ± 160kV**	**0 to ± 160kV**	**0 to ± 175kV**
Polarity*	**Positive or negative polarity**	**Positive or negative polarity**	**Positive or negative polarity**	**Bipolarity**	**Bipolarity**	**Bipolarity**
Output Rated Current	**0-30mA**	**0-30mA**	**0-50mA**	**0-30mA**	**0-30mA**	**0-30mA**
Output Power	**1.8kW**	**3.0kW**	**4.0kW**	**1.8kW**	**4.5kW**	**4.5kW**

Ripple/Noise (P-P)	<0.025%	<0.05%	<0.1%	<0.025%	<0.1%	<0.1%
Size	Width 609mm, height 436mm, depth 256mm. 2 x (width 609mm, height 436mm, depth 256mm)					
Weight	68kg	68kg	68kg	136kg	136kg	136kg
Output Connector	R24	R24	R24	Two R24	Two R24	Two R24

225kV~450kV Specifications

	TXF1280 *225-1800	TXF1280 * 225-3000	TXF1280 * 225-4000	TXF1280 PN 225-1800	TXF1280 PN 225-4500
DC output voltage	0 to 225kV	0 to 225kV	0 to 225kV	0 to 225kV	0 to 225kV
Polarity*	Positive or negative polarity	Positive or negative polarity	Positive or negative polarity	Bipolarity	Bipolarity
Output rated current	0-30mA	0-30mA	0-30mA	0-30mA	0-30mA
Output Power	1.8kW	3.0kW	4.0kW	1.8kW	4.5kW
Ripple/Noise (P-P)	<0.025%	<0.05%	<0.1%	<0.025%	<0.1%
Size	Width 432mm, height 404mm, depth 780mm.				
Weight	109kg	109kg	147.8kg	218kg	218kg
Output Connector	R28**	R28**	R28**	Two R28**	Two R28**

We can provide a positive polarity output power supply without filaments. Please refer to the model selection table for ordering details.

***Specify 'P' as positive polarity or 'N' as negative polarity.**

***If using Comet high-voltage cables with R28SL plugs, please order Tasman high-voltage cable flanges.**

J1 main and auxiliary input power supply type MS3106A24-11S (single-phase power supply)

PIN	Signal	Description
A	Auxiliary AC live power supply	AC180-264V
B	auxiliary	Ground
C	Auxiliary communication neutral line	neutral wire
D	Main AC live power supply	AC180-264V
E	Main location	Ground
F	Main communication neutral line	neutral wire

J2 auxiliary AC input power supply

PIN	Signal	Description
A	Line 1	AC208V, ± 10%, 50/60Hz (3-phase source L1, L2)
B	Line 2	AC 208V, ±10%, 50/60Hz (3-phase source L1, L2)
C	Line 3	Ground

System Ground: Connect the system ground wire (minimum 10AWG) to the power terminal ground E1 GND, using a grounding pole M6 X20MM and an M6 nut.

High voltage connector - J3 R24/R28:

PIN	Signal	Description
C	High voltage output	160kV and 320kV correspond to R24 connectors, while 225kV and 450kV correspond to R28 connectors
S	Small filament output	0 to 6A, 10VDC
L	Headlight wire output	0 to 6A, 10VDC

Ethernet digital interface JB7 8-pin RJ45 connector:

PIN	Signal	Description
1	TX+	Sending data+
2	TX-	Sending data-
3	RX+	Receive data+
4	NC	/
5	NC	/
6	RX-	Receive data
7	NC	/
8	NC	/

USB digital interface JB6-pin USB "B" type connector:

PIN	Signal	Description
1	VBUS	+5VDC
2	D-	Data-
3	D+	Data+
4	GND	Ground

RS-232 digital interface JB8 9-pin female D-type connector:

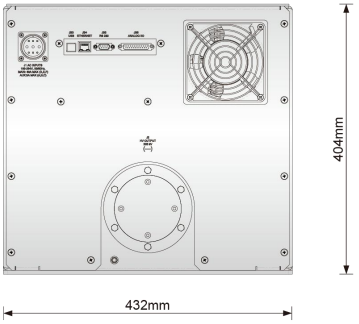
PIN	Signal	Description
1	NC	/
2	TX out	Receive data
3	RX in	Send data
4	NC	/
5	SGND	land
6	NC	/
7	NC	/
8	NC	/
9	NC	/

JB9 simulation interface -25 pin D-type connector:

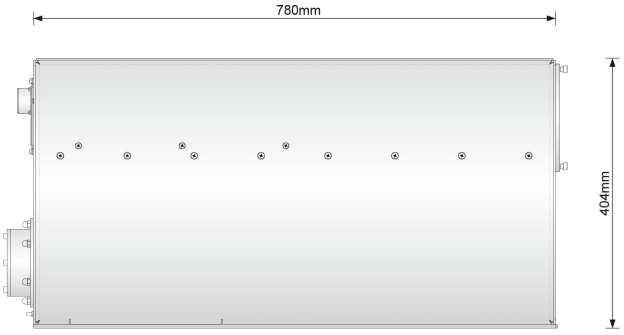
PIN	Signal	Description
1	power failure	Low level, total faults, one fault detected in the high voltage power supply, open collector, 50V maximum 10mA.
2	MA programming	0 to 10V=0 to full scale Z in=10M Ω
3	KV programming	0 to 10V=0 to full scale Z in=10M Ω
4	Reference for filament limit large/small*	0 to 10V=0 to full scale Z in=10M Ω
5	Reference for filament preheating large/small*	0 to 10V=0 to full scale Z in=10M Ω
6	KV monitoring	0 to 10V=0 to full range Z out=4.99K Ω
7	MA monitoring	0 to 10V=0 to full range Z out=4.99K Ω
8	Filament current monitoring*	0 to 10V=0 to full range Z out=4.99K Ω
9	Signal Ground	land
10	X-ray enablement	DC+24V=X-ray activation, connected to pin 14 through a dry contact relay.
11	The filament is turned on*	Filament on state, low level,
12	Interlock 1	The filament is turned on
13	Interlock 2	Open collector, 50V maximum 10mA.
14	DC+24V	Low level, interlock closed,
15	The filament is turned on*	Safely activate high voltage.

16	Filament control*	Low level, interlock closed,
17	Filament size selection	Safely activate high voltage.
18	Confirmation of filament size	DC+24V maximum 100mA
19	High voltage power supply ready	Low level, turn the filament to turn on.
20	X-ray on status	Low level, the filament is regulated by ECR (high voltage must be turned on). Not activated, the filament is adjusted by preheating reference.
21	Interlocking state	Large or small filament selection, low level=select small filament.
22	land	Open collector, 50V maximum 10mA.
23	X-ray preheating is activated	Filament selection confirmation, low level=select small focal point.
24	reset	Low level=High voltage power supply ready, open collector, 50V maximum 10mA.
25	Arc fault	Low level=X-ray opens collector open circuit, 50V maximum 10mA.

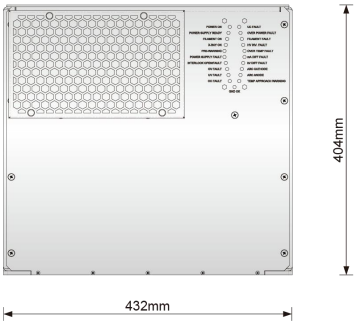
Dimensions: mm



Front view



Side view



Rear view