



REMO-HSE

**MXR-S-300 Series
with 24V DC Input and 50kV Output**

Datasheet

Sophisticated High Voltage Modules



Description:

- Compact-sized 300W X-ray generator module designed for OEM applications
- Operates from a 24V DC input
- 50 kV maximum voltage rating with positive or negative polarity
- Optional integrated filament supply
- Low ripple, high stability and tight regulation

Features:

- Input voltage reverse polarity protection
- Remote analog control to set beam voltage, emission current and optional filament current
- Potential-free relay contacts for status messages such as over-voltage, over-current and over-temperature
- Spark protection
- Over-voltage, over-current and over-temperature protection
- High voltage output 100 % short-circuit proof to ground

Options:

- Automatic crossover from constant-voltage to constant-current regulation and vice versa
- Adjustable integrated floating filament supply for negative polarity or
- Adjustable integrated ground referenced filament supply for positive polarity
- The filament current is regulated by internal beam control loop and is limited by beam current demand and/or filament current demand
- Operating temperature up to 50°C

Typical Applications:

- Powering X-ray tubes from various suppliers
- Plastics Sorting
- Crystal Inspection
- Mineral Analysis
- Etc.

mxr-series-300w_ds_en-02

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Technical Specifications

Input

Input:	24V DC \pm 1V DC Max 18A
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Output

Voltage:	Output:	Continuous adjustment from 0 to 50kV. Full specification applies between 5kV and 50kV.
	Polarity:	Positive or negative output polarity
	Ripple:	< 50V peak to peak
	Static Load Regulation:	< 60V no load to full load
	Dynamic Load Regulation:	< 3kV; within 200ms recovery to within 1% of previous setting
	Line Regulation:	< 60V for a 1V change in the 24V supply
Current:	Output:	6mA max.
	Load Regulation:	< \pm 4 μ A for a 10% to 100% change of rated load
	Line Regulation:	< \pm 4 μ A for a 1 V change in the 24V supply
Power:	Maximum Output Power:	300W
	Efficiency:	Typically 87% at rated values

Stability

Temperature Coefficient:	100ppm / °C over operating temperature range
Drift:	0.2% of rating over an 8 hour period after 30 minutes warm up

Environmental Data

Operating Temperature Range:	0 to +40°C (optional up to +50°C)
Storage Temperature Range:	-25 to +70°C
Humidity:	80% maximum relative humidity up to +31°C, reducing linearly to 50% at +40°C Non condensing (ref. EN61010-1)
Altitude:	0 to 2000m

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PLC Controls and Monitors (15-Way Female D-Type Socket)

Controls (Input Resistance: approx 100kOhm)

Voltage Demand:	0 to 10V DC demands 0 to rated output voltage
Current Demand:	0 to 10 VDC demands 0 to rated output current
High Voltage On / Off	10 to 30 V active high

Monitors (Output Current: max 1mA)

Voltage:	0 to 10VDC for 0 to rated output voltage
Current:	0 to 10 VDC for 0 to rated output current

Status Messages (15-Way Female D-Type Socket)

Potential Free Relay Contact (24V DC, max. 1A):	Over-temperature
Potential Free Relay Contact (24V DC, max. 1A):	Over-voltage at high voltage output (and floating filament output, if present)
Potential Free Relay Contact (24V DC, max. 1A):	Over-current at high voltage output (and floating filament output, if present)

Protection

- ❖ Input voltage reverse polarity protection
- ❖ Over-voltage and over-current limitation on high voltage output (and floating filament output, if present)
- ❖ Over-temperature limitation
- ❖ 100 % short-circuit-proof against ground on high voltage output (and floating filament output, if present)

Additional Information

EMC:	This high voltage module is intended for installation as part of a system. Basic EMC filtering is provided.
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Mechanical Data	
Housing:	Aluminum case
Dimensions:	180 mm wide, 146.5 mm high (without fixing points), 350 mm deep
Weight:	Approx. 7.5 kg
Classification:	IP 20
Ventilation:	Internal fan

MXR-S-300N50-6m-DC24-FFD-type: Internal Floating DC Filament Supply	
Floating Filament Output	
Voltage:	Max 5.0V DC referenced to negative high voltage output
Current:	0 to 3.7 A referenced to negative high voltage output
Maximum Output Power:	18.5 W
Filament PLC Controls (Input Resistance: approx 100kOhm)	
Filament Current Demand:	0 to 10 V DC demands 0 to 3.7 A The filament current is regulated by internal beam control loop and is limited by beam current demand and/or filament current demand.
Filament Monitors (Output Current: max 1mA)	
Filament Voltage:	0 to 10 V DC for 0 to 5V
Filament Current:	0 to 10 VDC for 0 to 3.7 A

MXR-S-300P50-6m-DC24-GFD-type: Internal Ground Referenced DC Filament Supply	
Ground Referenced Filament Output	
Voltage:	Max 5.0 V referenced to ground
Current:	0 to 3.7 A referenced to ground
Maximum Output Power:	18.5 W
Filament PLC Controls (Input Resistance: approx 100kOhm)	
Filament Current Demand:	0 to 10 V DC demands 0 to 3.7 A The filament current is regulated by internal beam control loop and is limited by beam current demand and/or filament current demand.
Monitors (Output Current: max 1mA)	
Filament Voltage:	0 to 10 V DC for 0 to 5V
Filament Current:	0 to 10 VDC for 0 to 3.7 A

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Options

- ❖ Automatic crossover from constant-voltage to constant-current regulation and vice versa
- ❖ Floating or ground referenced AC filament supply for negative or positive polarity
- ❖ Other filament level available on request

Model Selection Table: MXR-S Series 300W with 24V DC Input Voltage^{*)}:

	Polarity	Max. Output Voltage (kV)	Max. Output Current (mA)	Filament Supply
Single Output				
MXR-S-300P50-6m-DC24	positive	50	6	--
MXR-S-300N50-6m-DC24	negative	50	6	--
Floating Filament				
MXR-S-300N50-6m-DC24-FFD	negative	50	6	DC floating
MXR-S-300N50-6m-DC24-FFA	negative	50	6	AC floating
Ground Referenced Filament				
MXR-S-300P50-6m-DC24-GFD	positive	50	6	DC ground referenced
MXR-S-300P50-6m-DC24-GFA	positive	50	6	AC ground referenced

^{*)} Further models are available on request.

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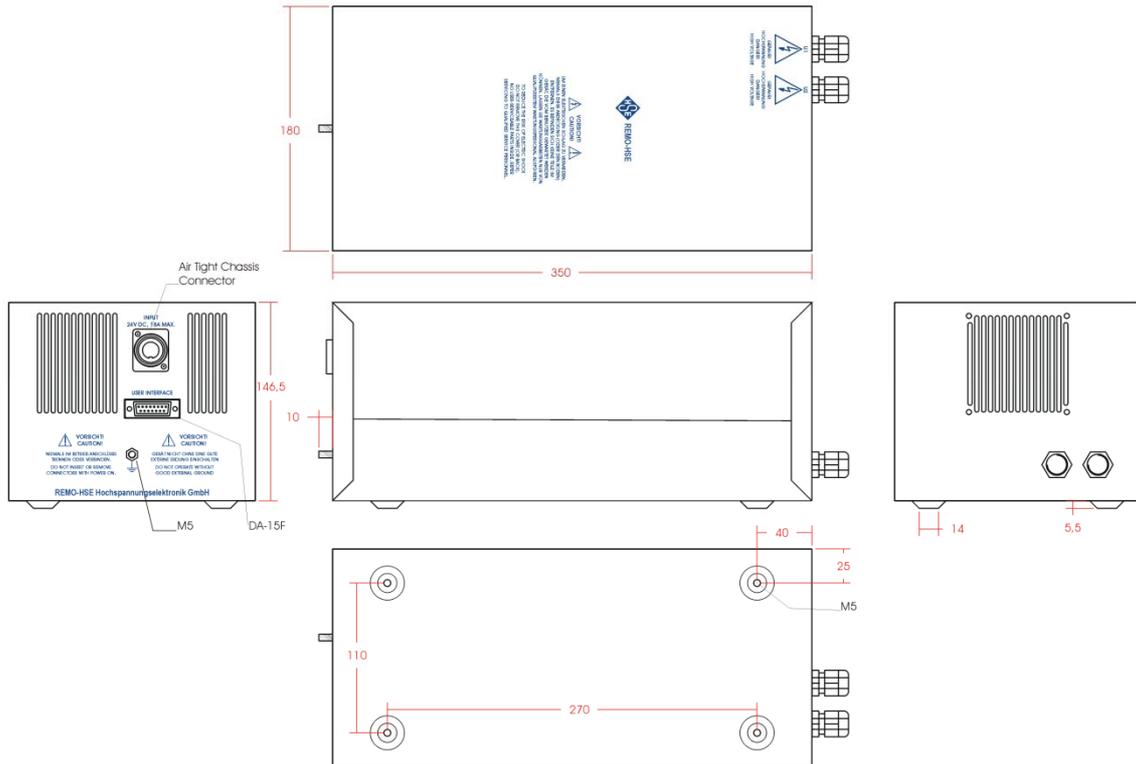
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Mechanical Drawings: MMR Series 400W



Dimensions: +/- 0,5mm

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