



REMO-HSE

MSR-S Series 30W / 60W

Regulated High Voltage Modules

Datasheet



Description:

- Regulated high voltage modules designed for OEM applications.
- Different maximum voltage ratings from 5kV to 30kV with positive or negative polarity
- Maximum 30 W or 60W output power
- The output voltage is adjustable between 0% and 100% of the rated output.

Features:

- 115V AC or 230V AC input
- Soft start
- Automatic crossover from constant-voltage to constant-current regulation and vice versa
- Spark protection
- High voltage output 100% short-circuit proof to ground

- PLC controls and monitors; signals are scaled 0-10V DC equals 0-100% of full scale


Options:

- Second high voltage output: E.g. for use in electrostatic filters various modules are available with a second voltage output for the collector. The module automatically controls the high voltage at flashover in the filter

Typical Applications:

- Electrostatic filters
- Electrostatic charging and discharging
- Capacitor Charging Systems
- Ion getter pumps
- Etc.

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Technical Specifications


Input and Output (Standard rated output values see model selection table)	
Input:	115V AC or 230V AC (-10 %, +10%) 50 to 60 Hz 30W model: max 0.35A at 230V or 0.6A at 115V or 60W model: max 0.6A at 230V or 1.2A at 115V
Output:	Continuous adjustment from 0% to 100% of the rated voltage or current by external 0 to 10V signals. Automatic crossover from constant-voltage to constant-current regulation. Accuracy better than 2% of the rated voltage. Available with either positive or negative polarity with respect to chassis ground.
Efficiency:	Better than 80% (30W) or 84% (60W) at rated values.

Special Features	
Soft Start:	At startup, recovery from sparks or short circuit the modules provide controlled ramp up to prevent dangerous voltage overshooting. At full load the output voltage will rise in approximately 150 ms to the rated voltage (other ramp-up times available on request).
Spark Sensing:	Internal circuitry senses sparks caused by external discharges. In case of a spark the module will turn off for approximately one second and will then ramp up automatically.

Environmental Data	
Operating Temperature Range:	0 to +45°C
Storage Temperature Range:	-25 to +70°C
Humidity:	80% maximum relative humidity up to +31°C, reducing linearly to 50% at +45°C Non condensing (ref. EN61010-1)
Altitude:	0 to 2000m

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PLC Controls and Monitors

Controls (Input Resistance: approx 10kOhm)

Voltage Demand:	0 to 10V DC demands 0 to rated output voltage
Current Demand:	0 to 10VDC demands 0 to rated output current
High Voltage On / Off	10 to 30V active high
	In case of over-voltage, over-current or over-temperature in which the module will shut down the high voltage must be turned off before restart

Monitors (Output Current: max 1mA)

Voltage:	0 to 10V DC for 0 to rated voltage
Current:	0 to 10V DC for 0 to rated current

Protection

- ❖ Over-current limitation
- ❖ High voltage output 100 % short-circuit-proof to ground
- ❖ Spark protection: In case of a spark the module will turn off for approximately one second and will then ramp up automatically.
- ❖ In case of over-voltage, over-current or over-temperature the module will shut down and the high voltage must be turned off before restart.

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:	Up to 20 kV output voltage: 86 mm wide, 60 mm high, 178 mm deep (without fixing points) Above 20 kV output voltage: 86 mm wide, 90 mm high, 178 mm deep (without fixing points)
Weight:	Approx 0.7 to 1.5kg (depending on output voltage)
Classification:	IP 20
Ventilation:	Cooling vents (convection)

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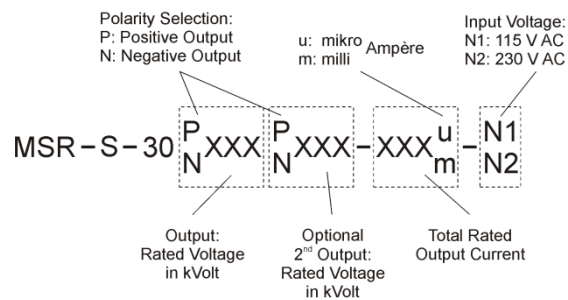
Options

- ❖ Second high voltage output (fixed ratio compared to first high voltage output e.g. 50%)
- ❖ Status message indicating that the high voltage is off
- ❖ Status messages indicating over-temperature and sparks
- ❖ Analogue interface with IDC header instead of clamping yoke connection
- ❖ Holder for top-hat rail

Model Selection Table: MSR-S Series 30W *):


Positive Polarity	Negative Polarity	Max. Output Voltage (kV)	Max. Output Current (mA)
115 V AC Input, Single Output			
MSR-S-30P12-2.5m-N1	MSR-S-30N12-2.5m-N1	12	2.5
MSR-S-30P15-2m-N1	MSR-S-30N15-2m-N1	15	2
MSR-S-30P30-1m-N1	MSR-S-30N30-1m-N1	30	1
115 V AC Input, Double Output			
MSR-S-30P8P6-3.8m-N1	MSR-S-30N8N6-3.8m-N1	8 / 6	3.8
MSR-S-30P12P6-2.5m-N1	MSR-S-30N12N6-2.5m-N1	12 / 6	2.5
230 V AC Input, Single Output			
MSR-S-30P12-2.5m-N2	MSR-S-30N12-2.5m-N2	12	2.5
MSR-S-30P15-2m-N2	MSR-S-30N15-2m-N2	15	2
MSR-S-30P30-1m-N2	MSR-S-30N30-1m-N2	30	1
230 V AC Input, Double Output			
MSR-S-30P8P6-3.8m-N2	MSR-S-30N8N6-3.8m-N2	8 / 6	3.8
MSR-S-30P12P6-2.5m-N2	MSR-S-30N12N6-2.5m-N2	12 / 6	2.5

*) Further models are available on request.



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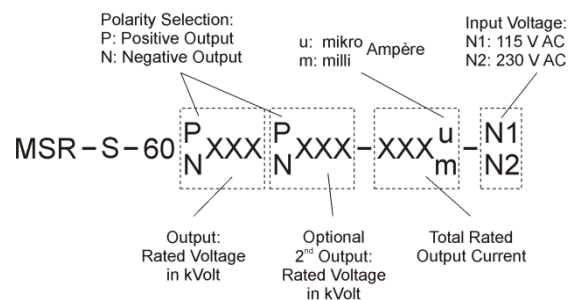
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Model Selection Table: MSR-S Series 60W *):

Positive Polarity	Negative Polarity	Max. Output Voltage (kV)	Max. Output Current (mA)
115 V AC Input, Single Output			
MSR-S-60P12-5m-N1	MSR-S-60N12-5m-N1	12	5
MSR-S-60P15-4m-N1	MSR-S-60N15-4m-N1	15	4
MSR-S-60P30-2m-N1	MSR-S-60N30-2m-N1	30	2
115 V AC Input, Double Output			
MSR-S-60P8P6-7.5m-N1	MSR-S-60N8N6-7.5m-N1	8 / 6	7.5
MSR-S-60P12P6-5m-N1	MSR-S-60N12N6-5m-N1	12 / 6	5
230 V AC Input, Single Output			
MSR-S-60P12-5m-N2	MSR-S-60N12-5m-N2	12	5
MSR-S-60P15-4m-N2	MSR-S-60N15-4m-N2	15	4
MSR-S-60P30-2m-N2	MSR-S-60N30-2m-N2	30	2
230 V AC Input, Double Output			
MSR-S-60P8P6-7.5m-N2	MSR-S-60N8N6-7.5m-N2	8 / 6	7.5
MSR-S-60P12P6-5m-N2	MSR-S-60N12N6-5m-N2	12 / 6	5

*) Further models are available on request.



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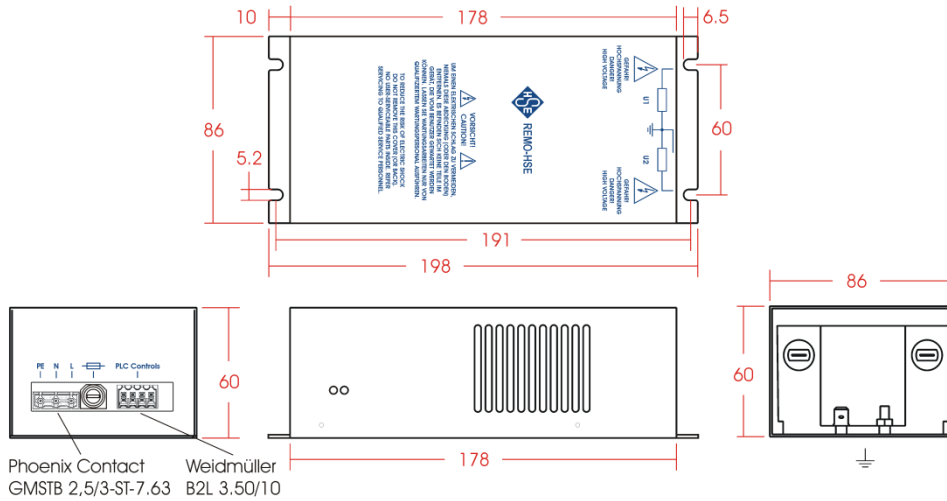
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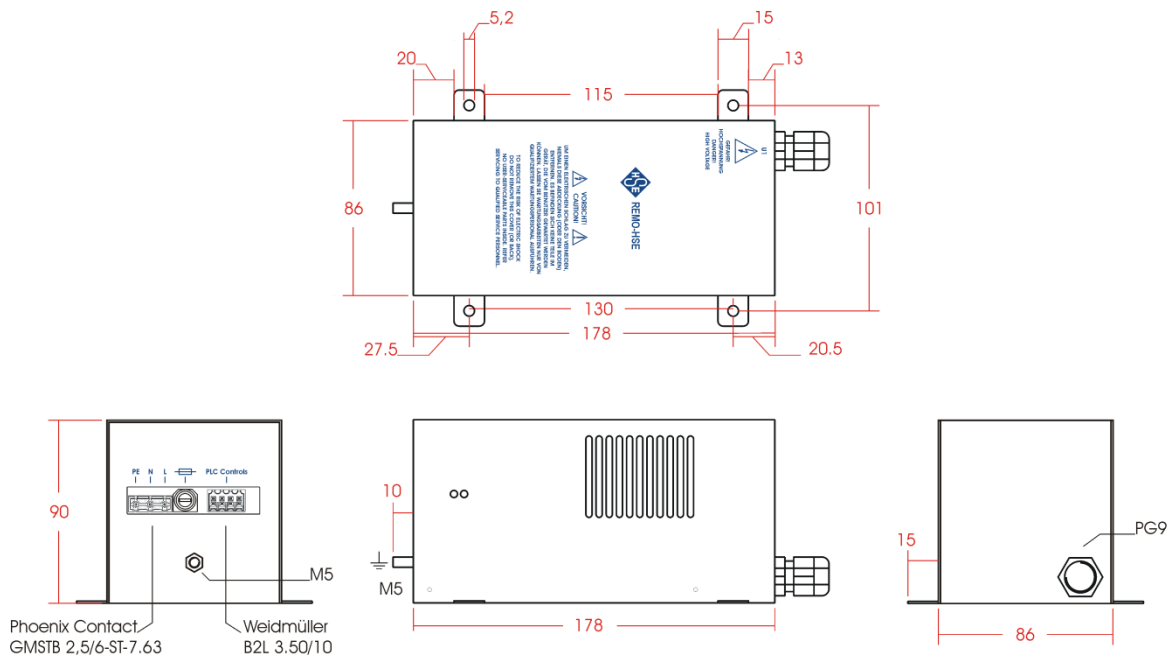
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Mechanical Drawings: MSR-S Series 30W / 60W



Output Voltage up to 20kV: Dimensions: +/- 0,5mm



Output Voltage above 20kV: Dimensions: +/- 0,5mm

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