REMO-HSE	GMR-D Series up to 120 kV 60W / 120W / 200W / 400W / 750W	Datasheet
	19" High Voltage Generator	

Description:

- Regulated high voltage generator in a 19" Rack Case
- Different maximum voltage ratings up to 120 kV with positive or negative polarity
- Depending on model 60W, 120W, 200W, 400W or 750W maximum output power
- The output voltage is adjustable between 0% and 100% of the rated output

Features:

- Depending on model wide range input with PFC or 230 Vac ±10% with PFC
- Soft start
- Automatic crossover from constant-voltage to constant-current regulation and vice versa
- High voltage output 100 % short-circuit proof to ground
- Spark sensing and monitoring
- Information bar with various status indicators
- Current and voltage indicators and digital potentiometers to adjust voltage and current.

Options:

- Different behavior in case of sparks/sparkovers
- Additional adjustable spark counter
- Analogue interface
- Remote control via serial RS-232 and USB
- Second high voltage output upon request.

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Technical Specifications

Input and Output

Input:

P = 115VAC -10% to 230 VAC +10% or
P2 = 230 VAC (±10%) with PFC

50 to 60 Hz

Maximal input current depending on output power:

	60W	120W	200W	400W	750W
P	0,8A	1,5A	---	5,5A	---
P2	---	---	2,0A	---	5,0A

Output:

Continuous adjustment from 0% to 100% of the rated voltage or current by digital potentiometer and/or external interface. Automatic crossover from constant-voltage to constant-current regulation.

Accuracy better than 1% of the rated voltage.

Ripple Peak-to-Peak about 1% of the rated voltage or less

Available with either positive or negative polarity with respect to chassis ground.

Efficiency:

At rated values typically:

60W	120W	200W	400W	750W
85-87%	85-87%	87%	85-88%	88%

The power factor is better than 98% at full load.

Control and Monitoring Elements

- Continuous adjustment of voltage and current via digital potentiometers
- Push-button for switching between set value and actual value readings of voltage and current
- Two 4-digit, 7-segment LED display visualise the pre-adjusted and actual values of voltage and current
- Information bar with various status indicators

Special Features

Soft Start:	At startup the generator provides controlled ramp up to prevent dangerous voltage overshooting. At full load the output voltage will rise within 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 the load.

Protection

- ❖ Over-voltage and over-current limitation
- ❖ Over-voltage, over-current and over-temperature shutdown
- ❖ High voltage output 100 % short-circuit-proof to ground
- ❖ In case of a spark the high voltage generator will turn off for approximately one second and will then ramp up automatically.

Status Messages

Mode of Operation:	Indicator shows, whether the generator operates in the voltage controlled or current controlled mode.
Sparks:	LED indicator flashes shortly if a spark/sparkover has been detected. Each detected spark will be counted for and the total number of sparks will be displayed after each spark for about a second.
Over-temperature:	LED indicator lights, if the generator has shut down due to excessive temperature inside the rack.

Environmental Data

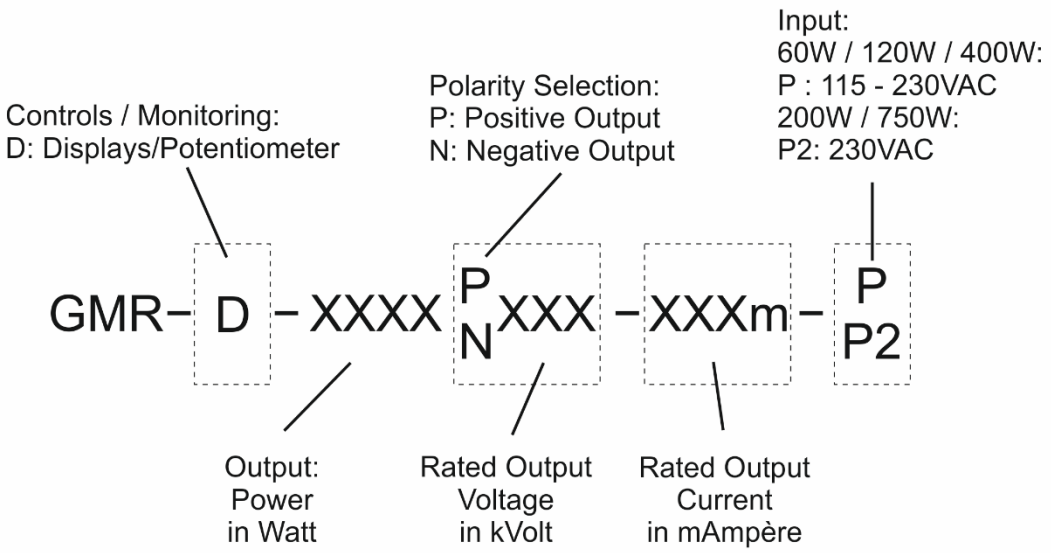
Operating Temperature Range:	0 to +40ºC
Storage Temperature Range:	-25 to +70ºC
Humidity:	80% maximum relative humidity up to +31ºC, reducing linearly to 50% at +40ºC
	Non condensing (ref. EN61010-1)
Altitude:	0 to 2000m

Additional Information	
Recovery Time:	Approximately 15 seconds following a disconnection of mains supply
Power Factor (with PFC):	Better than 98% at full load

Mechanical Data	
Housing:	19" Rack Case
Dimensions(approx):	3HU high, 84TU wide and 380 mm deep
Weight:	Approx.5 to 11kg (depending on output voltage)
Classification:	IP 20
Ventilation:	Cooling vents, above 200W internal van

Options	
GMR-D Option 1:	Shorter or extended timeout after a spark (by default 1 second).
GMR-D Option 2:	Shutdown behaviour in case of sparks/sparkovers (factory settings): If the number of sparks exceeds a certain value (8, 10, 20 or 40) per minute the generator turns off and can only be reset by turning off and on the high voltage or by first disconnecting the generator from mains supply before restarting it.
GMR-D Option 3:	Additional customer adjustable spark counter: If the number of sparks is equal to the preadjusted maximal number of sparks, the generator turns off and does not automatically restart.
GMR-D Option 4:	Analog interface for monitoring and recording of high voltage and current; 0-10V DC correspond to 0-100% of the maximum rated values (jacks for banana plugs).
GMR-D Option 5:	Remote control and monitoring via analog interface; 0-10V DC correspond to 0-100% of the maximum rated values.
GMR-D Option U:	Switchable from local controls to remote controls via serial RS-232 and USB interface; user interface for Windows.
Upon Request:	Second high voltage output and further options.

Model Code


Controls / Monitoring:
D: Displays/Potentiometer
Polarity Selection:
P: Positive Output
N: Negative Output
Input:
60W / 120W / 400W:
P : 115 - 230VAC
200W / 750W:
P2: 230VAC
GMR- D - XXXX P/N XXX - XXXm - P/P2
Output:
Power
in Watt
Rated Output
Voltage
in kVolt
Rated Output
Current
in mAmpère