

General Purpose Rectifier Modular water-cooled model

The MRM series of power modules is expanding with a water-cooled model. Outputs up to 4000A while maintaining the basic functions of the air-cooled model

Applications

- ▶ Plating
- ▶ Electrolysis
- ▶ Battery Charger
- ▶ Power supply for Electrical Discharge Machining



Power module
(water-cooled model: Output 15V/500A)



Remote control
(option)



Control module without operation panel is also available.

Water-cooled model features

■ Improved resistance to environment (power module)

Enhanced shielding of the power module circuitry for stable and durable operation. The rectifier can be installed close to the plating tanks, thus reducing wiring length and power loss.

■ Boosted cooling performance

When the rectifier is used as a single unit, it can withstand an ambient temperature up to 50°C.

■ Can use industrial water

Our original water pipe system allows the use of both pure water and industrial water.

Same features as our conventional rectifier

■ Universal input voltage

It is possible to select either 200V – 240V or 380 – 480V, and use our equipment in every country.

■ Various output currents and waveforms

Connect several power modules in parallel for a maximum output of 4000A. DC and Pulse modes are equipped as standard and support many applications such as plating on precious metals. The GOLDWAVE mode (Flexible waveform) allow you to create your own waveform (option).

■ Wide variety of applications

The control of constant voltage and constant current makes it a versatile product suitable for a wide array of usage.

■ External control function

Equipped with analog in/output and RS485 port as standard. Also supports open field network (option).

■ Integrated ammeter function

Effectively set integrated current value to manage your plating solution either on the control module or via remote control (option).

* Feel free to ask our sales staff for any details, including the installation environment.

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MRM Series

Common specifications (power module unit)

Product model	MRM-PM-15005-W
Input Specifications Voltage Tolerance	3-Phase 200-240V/380V-480V 50Hz/60Hz
Input Capacity	10.5kVA
Output Specifications	15V/500A
Control	Constant current or constant voltage
Accuracy	Voltage and current rated value $\pm 1\%$ (F.S.) max.
Adjustment Range	10% to 100% of the rated value for both voltage and current
External Dimensions	435 mm \times 150 mm \times 550 mm (W \times H \times D)
Weight	29 kg
Ambient temperature / Relative humidity	0°C ~ 50°C ※1 / 30% ~ 85%
Cooling method (water quality)	Water-cooled (pure water and industrial water)
Water temperature	5°C ~ 35°C (temperature should be above the dew point temperature.)
Flow rate	5 L/min

Product variation

● One control module supports 8 power modules.

Model	MRM-○○○○○-W	15005	15010	15015	15020	15025	15030	15035	15040	
Output Specifications		15V/500A	15V/1000A	15V/1500A	15V/2000A	15V/2500A	15V/3000A	15V/3500A	15V/4000A	
Power Module		1 unit	2 units	3 units	4 units	5 units	6 units	7 units	8 units	
Cabinet	MRM-RK/IK	3 racks cabinet ※2, ※3 520mm \times 835mm \times 570mm			6 racks cabinet 520mm \times 1370mm \times 570mm			8 racks cabinet ※2 520mm \times 1730mm \times 570mm		
Weight (Approx.)		69kg	99kg	130kg	178kg	213kg	242kg	293kg	322kg	
Input Specifications Voltage Tolerance		3-Phase 200V-240V / 380V-480V 50Hz/60Hz								
Input Capacity		10.7kVA	21.2kVA	31.7kVA	42.2kVA	52.7kVA	63.2kVA	73.7kVA	84.2kVA	
Control		Constant current or constant voltage								
Accuracy		Voltage and current rated value $\pm 1\%$ (F.S.) max.								
Adjustment Range		10% to 100% of the rated value for both voltage and current								
Ambient temperature/Relative humidity		0°C ~ 40°C / 30% ~ 85%								
Cooling method (water quality)		Water cooling (pure water and industrial water ※4)								
Water temperature		5°C ~ 35°C (temperature should be above the dew point temperature.)								
Flow rate ※5		5 L/min	5 L/min ※6	12 L/min ※6	16 L/min ※6	16 L/min ※6	21 L/min ※6	21 L/min ※6	21 L/min ※6	

※1 Only when using one power module. ※2 6 racks cabinet is standard. 3 racks and 8 racks cabinets are made-to-order products. ※3 You can stack up to 3 units without using a cabinet. ※4 Based on the water quality guidelines for refrigeration and air conditioning machinery (JRA-GL-02-1994). ※5 Supply pressure 0.12MPa (1kg/cm²) Discharge pressure 0.05MPa (0.5kg/cm²) ※6 The power module cooling piping is connected in parallel based on a two series circuit.

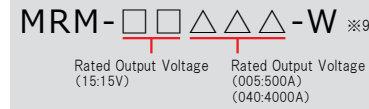
Functions

Functions	MRM-CM	Input/Output signals
External start / stop	●	Contact input
CV/CC output selection	●	Contact input
Abnormal output	●	Contact output
Output setting signal (CV/CC output individual setting)	●	Analog input
Output current monitor / Output voltage monitor	●	Analog output
RS-485 communication	●	Digital communication
Remote control	○	
Initial current setting	○※7	
Integrated current preset counter / Integrated current total counter	○※7	
Soft start (1 to 9999 seconds)	○※7	
Start/Stop	○※7	
Output adjustment(CC/CV output individual setting)	○※7	
Output waveform selection (DC / square wave)	○※7	
Digital ammeter / voltmeter	○※7	
Open field network	○※8	

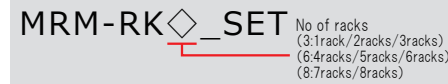
※7 Supported by a control module with operation panel or a remote control (option). ※8 Open field network supports DeviceNet and CC-Link (option).

Model

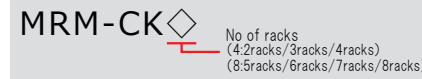
■ Control module, Power module, Rack cabinet ■ Control module



■ Rack cabinet



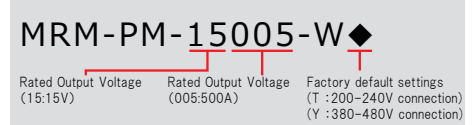
■ Cooling piping kit



■ Control module



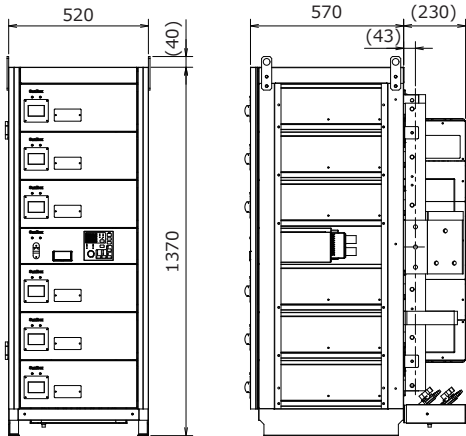
■ Power modular



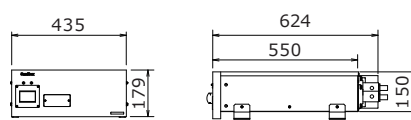
※9 Choose the specifications of the control and power modules based on the application and environment, by specifying the final letters for each model.

External dimensions

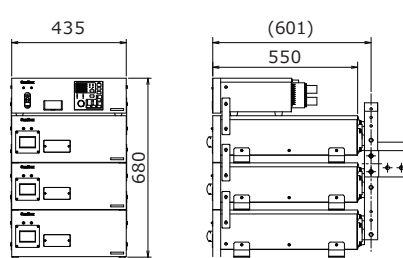
■ 6 racks cabinet



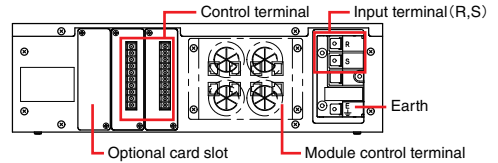
■ Power module (single unit)



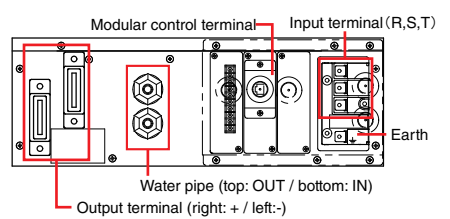
■ Control Module + Power Module 3 racks



■ Control Module



■ Power Module



For metal surface treatment, we have other peripheral equipment available like the CleanRex (Ultrasonic Cleaning System) used in the plating pretreatment process.



Caution To ensure correct and safe use, be sure to read the "Instruction Manual" carefully before installation and usage. Do not install the equipment in a place with a lot of water, humidity, steam, dust, oily smoke, etc. It may cause damage to the equipment or result in a fire or electrical shock.

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