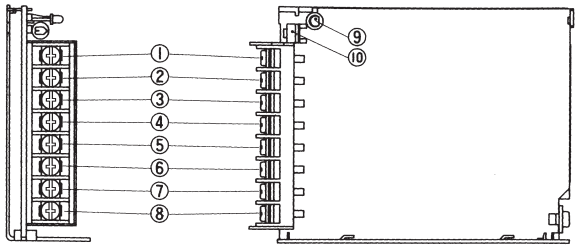
Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Input current [A]	Rated input fuse	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
						Material	Single sided	Double sided	Series operation	Parallel operation
RMC15A	Flyback converter	50 - 240	0.4	125V 2A	Thermistor	CEM-3	Yes		✻1	No
RMC30A	Flyback converter	40 - 230	0.8	125V 3A	Thermistor	CEM-3	Yes		✻1	No
RMC50A	Flyback converter	30 - 280	1.3	125V 3A	Thermistor	CEM-3	Yes		✻1	No

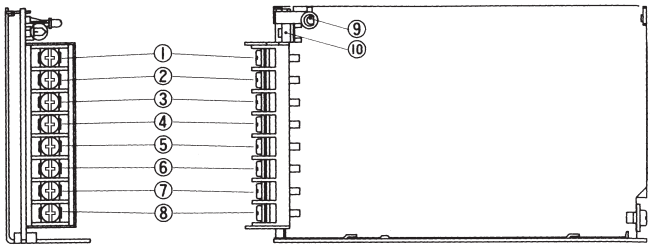
✻1 Series operation with V2 and V3 is possible. Please refer to Series/Parallel operation in the instruction manual.
✻ The switching frequency of single ended flyback method changes according to input voltage and load factor.
✻ The value of input current is at AC IN 100V and rated load.

1 Terminal Block

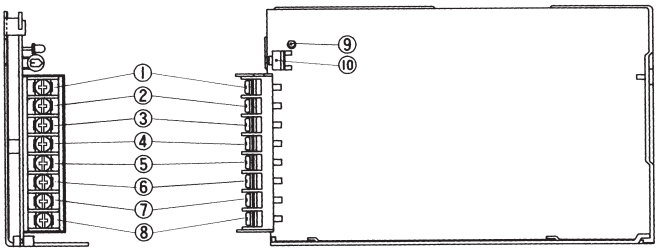
●RMC15A



●RMC30A



●RMC50A



①V1 Output
②G1(V1)GND
③V2 Output
④G1(V2, V3)GND
⑤V3 Output
⑥Frame ground
⑦AC(L)
⑧AC(N)
⑨LED(+5V)
⑩Output voltage adjustable potentiometer(+5V)

2 Function

2.1 Input voltage range

■The range is from AC85V to AC132V or DC110V to DC170V.

■AC input voltage must have a rage from AC85V to AC132V for normal operation. If the wrong input is applied, the unit will not operate properly and/or may be damaged.

■In cases that conform with safety standard, input voltage range is AC100-AC120V(50/60Hz).

2.2 Inrush current limiting

■Inrush current limiting is built-in.

■If a switch on the input side is installed, it has to be the one handling the input inrush current.

■The thermistor is used for protection from inrush current. When power is turned ON/OFF repeatedly within a short period of time, it is necessary to have enough time for power supply to cool down.

Table 2.1 Inrush current Unit:[A typ]

Model	Inrush current
RMC15A	20
RMC30A	30
RMC50A	30

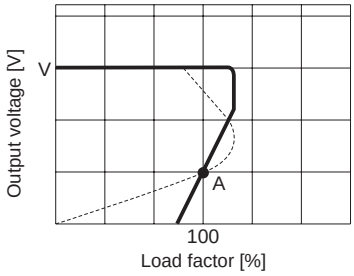
2.3 Overcurrent protection

■Overcurrent protection is built-in and comes into effect at over 105% of the rated current.

Overcurrent protection prevents the unit from short circuit and overcurrent condition of less than 20 sec.

The unit automatically recovers when the fault condition is cleared.

■The power supply which has a current foldback characteristics may not start up when connected to nonlinear load such as lamp, motor or constant current load. See the characteristics below.



———: Load characteristics of power supply.
---------: Characteristics of load (lamp, motor, constant current load, etc.).
Note: In case of nonlinear load, the output is locked out at A point.

Fig. 2.1 Current foldback characteristics

2.4 Overvoltage protection

●RMC15A

■Overvoltage protection circuit, clamping the output voltage by zener diode, is built-in and comes into effect at over 115% of the rated voltage. The unit in an overvoltage protection mode cannot be recovered by a user; it must be repaired at the factory.

Overvoltage protection(diode)also comes into effect if the voltage is externally applied to the output side.

Avoid applying voltage to the output side.

●RMC30A · RMC50A

■In V1, overvoltage protection circuit is built-in to be operated at 115 - 140% of the rated voltage. When this function operates, input should be shut off, and then wait for 2 to 3 minutes(✱). Output voltage will be recovered after applying input voltage.

✱ The recovery time depends on input voltage.

Remarks:

Please avoid applying the over-rated voltage to the output terminal. Power supply may operate incorrectly or fail.In case of operating a motor etc. , please install an external diode on the output terminal to protect the unit.

2.5 Output voltage adjustment range

■Adjustment of output voltage for V1 is possible by using potentiometer.

■Output voltage is increased by turning potentiometer clockwise and is decreased by turning potentiometer counterclockwise.

2.6 Isolation

■For a receiving inspection, such as Hi-Pot test, gradually increase (decrease)the voltage for the start(shut down).

Avoid using Hi-Pot tester with the timer because it may generate voltage a few times higher than the applied voltage, at ON/OFF of a timer.

If the unit is tested on the isolation between input & output and output & FG, output terminals must be shorted.

3 Series Operation and Parallel Operation

■Series operation with V2 and V3 is available by connecting the outputs of the unit as shown below. Output current in series connection should be lower than the lowest output current of the unit.

■Series operation with other model is not possible.

■By adding diode externally at output side, series operation with V1 and V2 or V3 is available. For details, please consult our sales or engineering department.

■Parallel operation is not possible.

4 Assembling and Installation Method

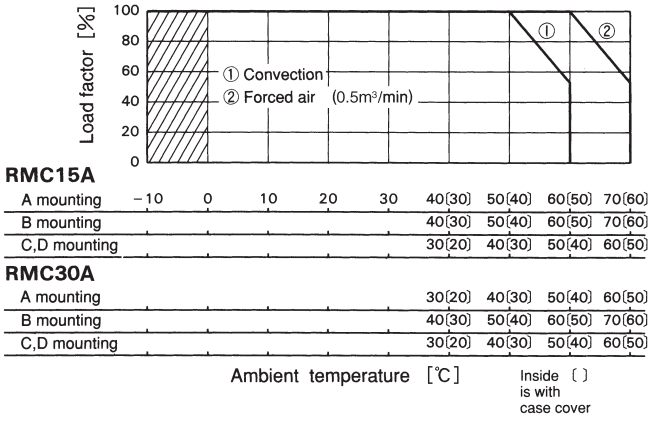
4.1 Installation method

■When two or more power supplies are used side by side, position them with proper intervals to allow enough air ventilation. Ambient temperature around each power supply should not exceed the temperature range shown in derating curve.

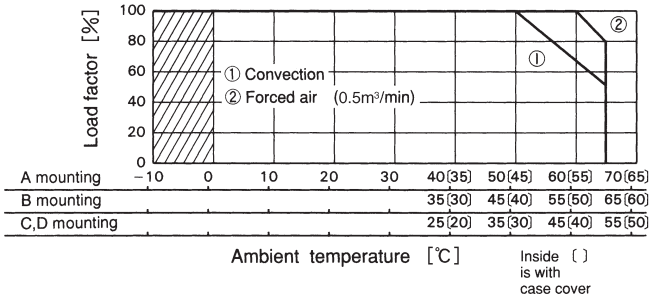
4.2 Derating

■The operative ambient temperature is different by with/without case cover or mounting position. Please refer drawings as below.

●RMC15A · RMC30A



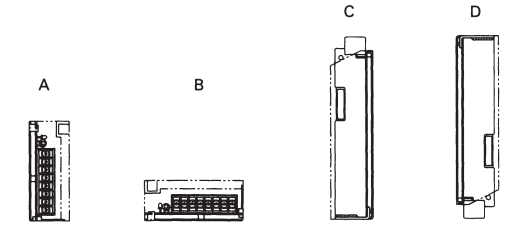
●RMC50A



Note:

In the hatched area, the specification of Ripple, Ripple Noise is different from other area.

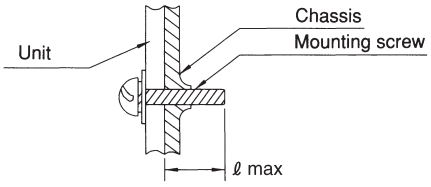
■When unit mounted except below drawings, it is required to consider ventilated environment by forced air cooling for temperature/load derating. For details, please consult our sales or engineering departments.



Normal position

4.3 Mounting screw

■Keep isolation distance between screw and internal components as below chart.



Unit:[mm]

Model	ℓ max
RMC15A	6
RMC30A	6
RMC50A	8

5 Peak Loading

■Peak load current of V2 for RMC50A-1 is possible to draw 30 seconds. It will damage devices inside the power supply when the peak load current continues more than 30 seconds.