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Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Input current ✻2 [A]	Rated input fuse	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
						Material	Single sided	Double sided	Series operation	Parallel operation
LEA50F	Active filter	80	0.7	250V 3.15A	Thermistor	CEM-3	Yes		Yes	✻1
	Forward converter	130								
LEA75F	Active filter	80	1.1	250V 3.15A	Thermistor	CEM-3	Yes		Yes	✻1
	Forward converter	130								
LEA100F	Active filter	80	1.4	250V 5A	Thermistor	CEM-3	Yes		Yes	✻1
	Forward converter	130								
LEA150F	Active filter	80	2.0	250V 5A	Thermistor	CEM-3	Yes		Yes	✻1
	Forward converter	130								

LEA

✻1 Refer to Instruction Manual.
✻2 The value of input current is at ACIN 100V and rated load.

1 Terminal Block LEA-12

2 Function LEA-12

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2.2 Inrush current limiting LEA-12
2.3 Overcurrent protection LEA-12
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5 Ground LEA-15

6 Others LEA-15

1 Terminal Block

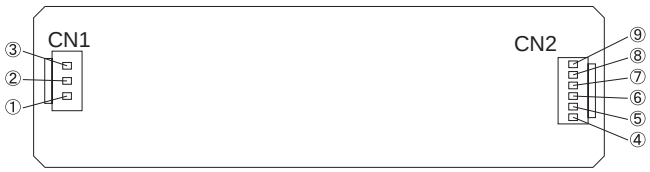
●LEA50F



①AC(L)
②AC(N)
③Frame ground

④ ⑤ +Output
⑥ ⑦ -Output

●LEA75F



①AC(L)
②AC(N)
③Frame ground

④ ⑤ ⑥ +Output

⑦ ⑧ ⑨ -Output

●LEA100F

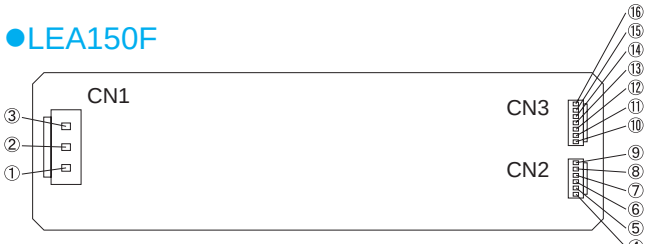


①AC(L)
②AC(N)
③Frame ground

④ ⑤ ⑥ ⑦ +Output

⑧ ⑨ ⑩ ⑪ -Output

●LEA150F



①AC(L)
②AC(N)
③Frame ground

④ ⑤ ⑥ ⑦ ⑧ ⑨ +Output

⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ -Output

2 Function

2.1 Input voltage range

■The range is from AC85V to AC264V or DC120V to DC370V.

■In cases that conform with safety standard, input voltage range is AC100-AC240V(50/60Hz).

■AC input voltage must have a range from AC85V to AC264V for normal operation. If the wrong input is applied, the unit will not operate properly and/or may be damaged.

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.

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. The unit automatically recovers when the fault condition is cleared.
When the output voltage drops more than 50% of the rated output voltage value at overcurrent, the average output current is reduced by intermittent operation of power supply.

2.4 Overvoltage protection

■The overvoltage protection circuit is built-in and comes into effect at 115 - 140% of the rated voltage (except 3V output voltage type: it operates at 4.00 - 5.25V). The AC input should be shut down if overvoltage protection is in operation. The minimum interval of AC recycling for recovery is 2 to 3 minutes (*).

* The recovery time varies depending 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 is possible by using potentiometer (only available to 3.3V output voltage type).

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

■Option "-Y" is recommended which can adjust the output voltatge.

2.6 Isolation

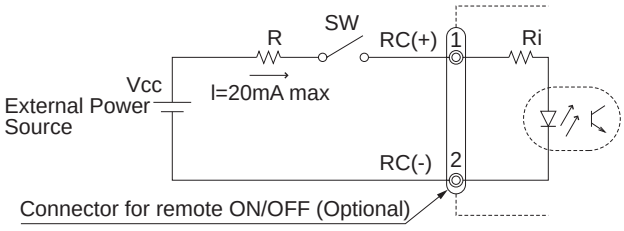
■For a receiving inspection, such as Hi-Pot test, gradually increase (decrease) the voltage for the start (shut down). Avoid using Hi-Pot tester with the timer because it may generate voltage a few times higher than the applied voltage, at ON/OFF of a timer.

If the unit is tested on the isolation between input & output and output & FG, remote ON/OFF must be shorted to output.

2.7 Remote ON/OFF (Optional "-R")

■Option "-R" is available for remote ON/OFF.

Between RC(+) and RC(-)	Output
SW ON (4.5 - 12.5V)	ON
SW OFF (0 - 0.5V)	OFF



■When external power source is in the range of 4.5 - 12.5V, current limit resistance R is not required. However, when external power source exceeds 12.5V, current limit resistance R must be connected.

To calculate the current limit resistance use following equation:

$$R[\Omega]=\frac{Vcc - (1.1+Ri \times 0.005)}{0.005}$$

Where;

Vcc = External Power Source

Ri = The internal resistance (780Ω)

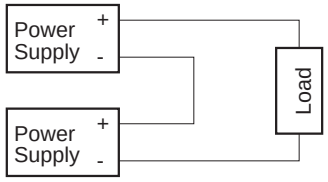
■A wrong connection may damage the internal components of the unit.

■Remote ON/OFF circuit (RC(+), RC(-)) is isolated from input, output and FG.

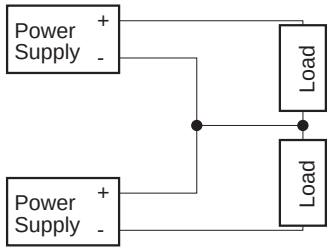
3 Series Operation and Parallel Operation

■Series operation is available by connecting the outputs of two or more power supplies with the same output voltage, as shown below. Output current in series connection should be lower than the lowest rated current in each unit.

(a)

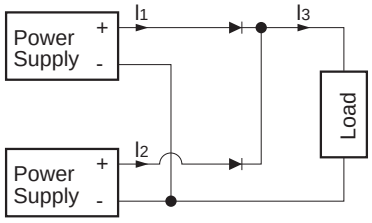


(b)



■Parallel operation is not possible.

■Redundancy operation is available by wiring as shown below.



■Even a slight difference in output voltage can affect the balance between the values of I_1 and I_2.

Please make sure that the value of I_3 does not exceed the rated current of a power supply.

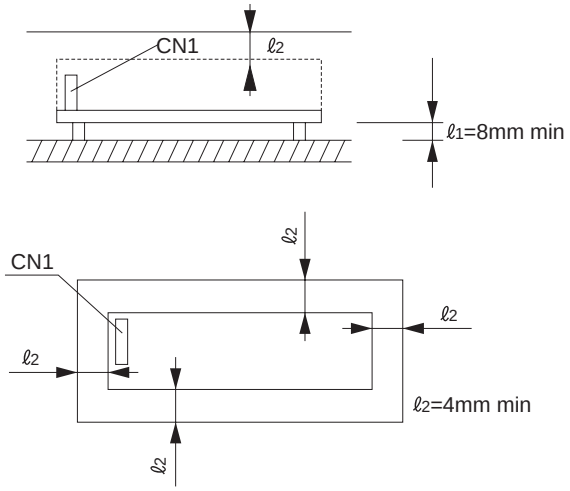
$I_3 \leqq$ the rated current value

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.

■In case of metal chassis, keep the distance between l_1 & l_2 for to insulate between lead of component and metal chassis. If it is less than l_1 & l_2, insert the insulation sheet between power supply and metal chassis.



4.2 Derating

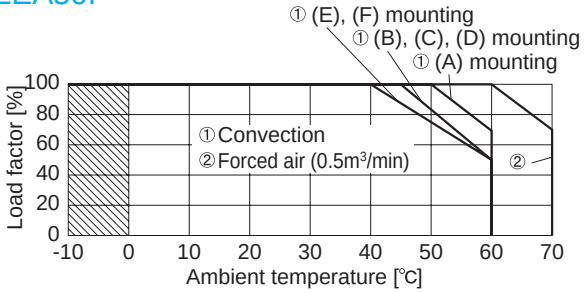
■The operative ambient temperature is different by with / without case cover or mounting position. Please refer drawings as below.

■In case②, ventilation must keep the temperature of C119 below 85℃. See External View for the location of C119.

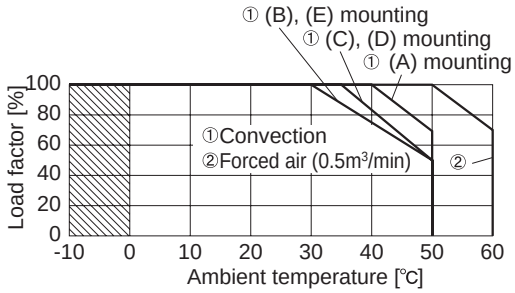
Note: In the hatched area, the specification of Ripple, Ripple Noise is different from other area.

✱ Please be careful of electric shock or earth leakage in case of temperature measurement, because C119 is live potential.

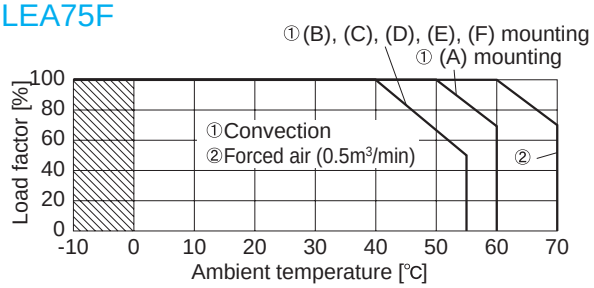
●LEA50F



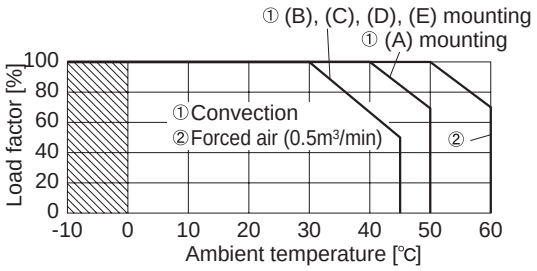
●LEA50F-□-SN (Requirement: Min. AC90V)



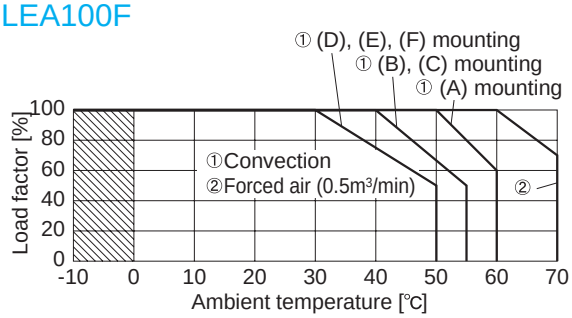
●LEA75F



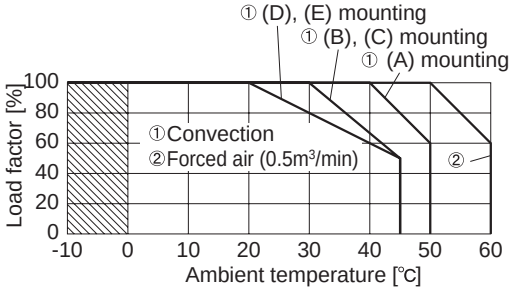
●LEA75F-□-SN (Requirement: Min. AC90V)



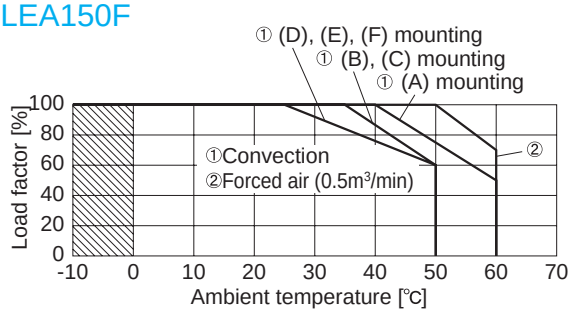
●LEA100F



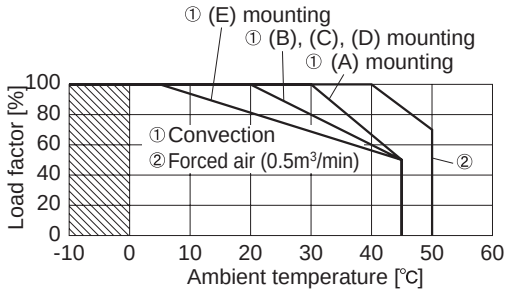
●LEA100F-□-SN (Requirement: Min. AC90V)



●LEA150F

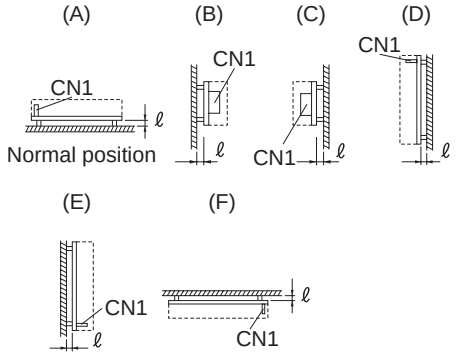


●LEA150F-□-SN (Requirement: Min. AC90V)



■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.

Mounting method

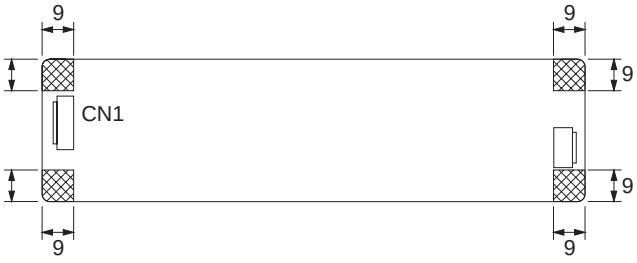


■(F) mounting is not possible when unit is with case cover, but if need to operate unit by (F) positioning with case cover, temperature/load derating is necessary. For more details, please consult our sales or engineering departments.

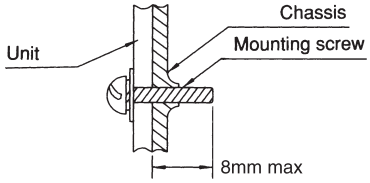
4.3 Mounting screw

■The mounting screw should be M3. The hatched area shows the allowance of metal parts for mounting.

■Please be carefull with that metal parts do not touch mounted parts at front side, where major components are mounted, when a power supply is installed with them.



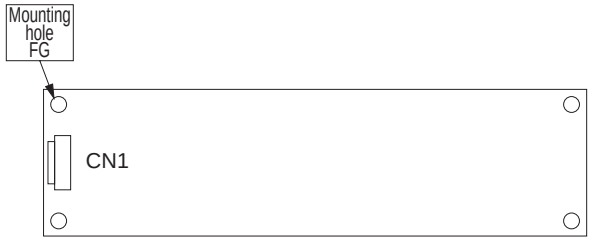
■Keep isolation distance between screw and internal components in case of option "-S", "-SN", as below chart.



LEA

5 Ground

■When installing the power supply with your unit, ensure that the input FG terminal or mounting hole FG is connected to safety ground of the unit. However when applying the safety agency, connect the input FG terminal to safety ground of the unit.



6 Others

■This power supply is the rugged P.C.B. type. Do not drop conductive object in the power supply.

■At light load, there remains high voltage inside the power supply for a few minutes after power OFF. So, at maintenance, take care about electric shock.

■This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.

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