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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
YS5	Flyback converter	270 - 1000	0.13	125V 3.1A	Resister	glass fabric base,epoxy resin		Yes	Yes	✻1
YS10	Flyback converter	200 - 1000	0.24	125V 3.1A	Resister	glass fabric base,epoxy resin		Yes	Yes	✻1
YS15	Flyback converter	210 - 1200	0.34	125V 3A	Resister	glass fabric base,epoxy resin		Yes	Yes	✻1
YW5	Flyback converter	270 - 1000	0.13	125V 3.1A	Resister	glass fabric base,epoxy resin		Yes	Yes	✻1
YW10	Flyback converter	200 - 1000	0.24	125V 3.1A	Resister	glass fabric base,epoxy resin		Yes	Yes	✻1
YW15	Flyback converter	210 - 1200	0.34	125V 3A	Resister	glass fabric base,epoxy resin		Yes	Yes	✻1

✻1 Refer to Instruction Manual.

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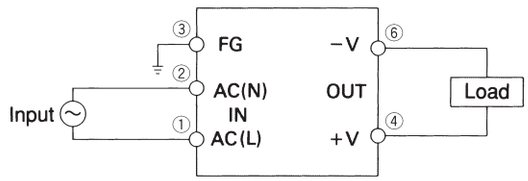
8 Input/Output Pin Y-18

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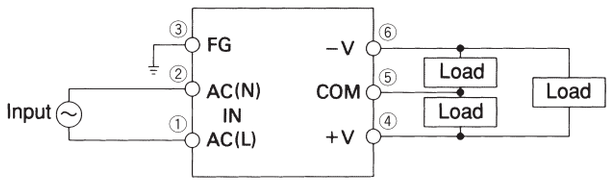
1 Pin Connection

No.	Pin connection	Function
①	AC(L)	Input pin AC85 - 132V 1φ 47 - 440Hz or DC110 - 170V
②	AC(N)	
③	FG	Frame ground
④	OUT +V	+side of output voltage
⑤	OUT COM	GND of output voltage(Only applicable for Dual output)
⑥	OUT -V	-side of output voltage

●Single Output



●Dual (±) Output



2 Function

2.1 Input voltage range

■Input voltage range of the power supplies is from AC85-AC132V or DC110-DC170V. In cases that conform with safety standard, input voltage range is AC100-AC120V(50/60Hz).

■AC input voltage must have a range from AC85V to AC132V 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.

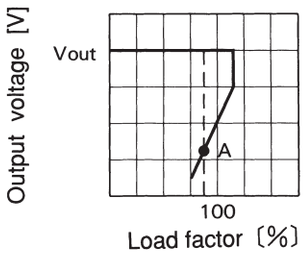
■If a switch on the input side is installed, it has to be the one handling the input inrush current.

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 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.

3 Wiring to Input/ Output Pin

■To decrease the ripple voltage further, install an external capacitor Co at output terminal as shown below.

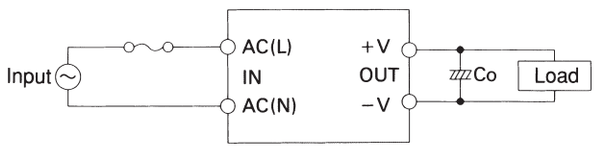


Fig.3.1 Connecting method of external capacitor at output terminal

Table 3.1 Capacity of external capacitor at output terminal: Co[μF]

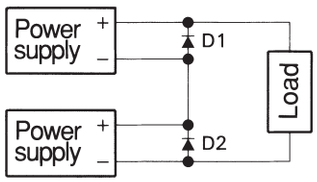
Model / Output voltage(V)	YS 5 YW 5	YS 10 YW 10	YS 15 YW 15
5	220	220	220
12	100	100	100
15	100	100	100

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4 Series Operation and Parallel Operation

4.1 Series operation

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



D1・D2: Please use Schottky Barrier Diode

Fig.4.1 Series operation

4.2 Redundancy operation

■Redundancy operation is available by connecting the units as show below.

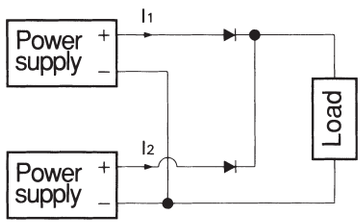


Fig.4.2 Redundancy operation

5 Assembling and Installation Method

5.1 Installation method

■The unit can be mounted in any direction. 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.

■Avoid placing the AC input line pattern lay out underneath the unit because it will increase the line conducted noise. Make sure to leave an ample distance between the line pattern lay out and the unit. Also, avoid placing the DC output line pattern underneath the unit because it may increase the output noise. Lay out the pattern away from the unit.

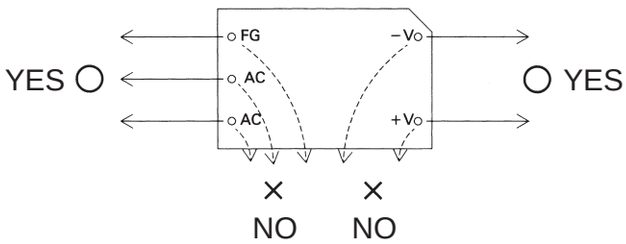


Fig.5.1 Pattern wiring

5.2 Derating

■By derating the output current, it is possible to operate the unit from -10℃ to +65℃ .

■When unit mounted any way other than in drawing below, it is required to consider ventilated environment by forced air cooling or temperature/load derating. For details, please consult our sales or engineering departments.

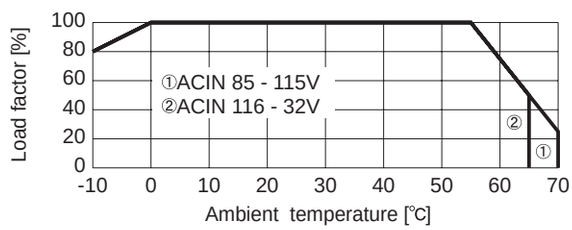


Fig.5.2 Derating curve

■The temperature increase of case surface at full load is shown by below table as referenced data.

Table 5.1 The surface temperature of case increase data (Y series) (Unit: deg)

Y

Input voltage	Output voltage	5W	10W	15W
AC100V	5V	33	51	49
	12V	26	44	42
	±12V	28	42	37
	±15V	27	43	42

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6 Cleaning

■Cleaning agents :

No.	Classification	Cleanig agents
1	Water type	Pine Alpha ST-100S(ARAKAWA CHEMICAL CO.)
2		Clean Through 750H(KAO Corporation)
3	Solvent type	IPA
4		Asahiklin AK-225AES(ASAHI GLASS CO.)

■Cleaning period : The total time of varnishing, ultrasonic wave and vapor should be within 2 minutes. In case of ultrasonic wave cleaning, the ultrasonic should be less than 15kw/m^3. During cleaning to drying (the condition that cleaning liquid is soaked into the ink of name plate), do not touch on the surface of name plate.

■After cleaning, dry them enough.

7 Soldering

■Flow soldering : 260℃ less than 15 seconds.

■Soldering iron (26W) : 450℃ less than 5 seconds.

8 Input/Output Pin

■When too much stress is applied on the input/output pins of the unit, the internal connection may be weakened. As below Fig.8.1, avoid applying stress of more than 9.8N (1kgf) on the pins horizontally and more than 19.6N (2kgf) vertically.

■The input/output pins are soldered on PCB internally, therefore, do not pull or bend them with abnormal forces.

■When additional stress is expected to be put on the input/output pins because of vibration or impacts, fix the unit on PCB (using silicone rubber or fixing fittings) to reduce the stress onto the input/output pins.

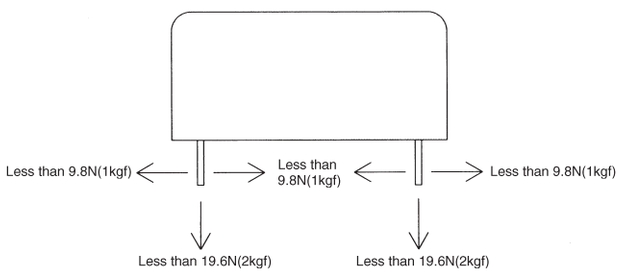


Fig.8.1 Stress onto the pins

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