



## AOJS500

## 500W AC/DC



### Features

- Wide Input voltage range Universal input voltage or user selectable voltage
- Over voltage protection
- Overcurrent protection
- Inrush Current Limit
- 3 Yr warranty**



MODEL/CHANNEL		Unit	AOJS500-3.3	AOJS500-5	AOJS500-9	AOJS500-12	AOJS500-15	
<b>OUTPUT</b>	Nominal Voltage	V	3.3	5	9	12	15	
	Setting Voltage Range	V	3.26 ~ 3.33	4.95 ~ 5.05	8.91 ~ 9.09	11.88 ~ 12.12	14.85 ~ 15.15	
	Current	A	90	90	50	37.5	30	
	Peak Current max 30minutes	A	100	100	55.5	41.7	33.3	
	Rated Power	W	297	450	450	450	450	
	Line Regulations	mV	25	25	45	60	75	
	Load Regulations	mV	50	50	90	120	150	
	Temperature Drift	mV	75	75	135	180	225	
	Ripple & Noise(pk-pk) (*1)	mV	120	120	150	150	150	
	Turn-on Time typ.	ms	600 typ (AC IN 100V, Io=100%)					
Hold-up Time typ.	ms	17 (AC IN 100V, Io=100%)						
<b>INPUT</b>	Voltage, Frequency	V	AC100-120/200-240V (AC88~132/176~264VAC), 50/60Hz(477-440) or DC240-370V (User selectable)					
	Current Typ.	110V	10					
		220V	5					
	Efficiency	110V 220V	%	77	77	79	81	80
	Inrush Current Typ.	110V 220V	A	20 (Ta=25 Degrees Celsius, I=100%, Cold Start)				
				40 (Ta=25 Degrees Celsius, I=100%, Cold Start)				
Leakage Current 1mA Max	110V 220V	mA	3.5					
			3.5					



## AOJS-500

## 500W Din Rail Mount

MODEL/CHANNEL		Unit	AOJS500-24	AOJS500-36	AOJS500-48	-	
<b>OUTPUT</b>	Nominal Voltage	V	24	36	48	-	
	Setting Voltage Range	V	23.76~24.24	25.74~26.26	47.52~48.48	-	
	Current	A	18.8	12.5	9.4	-	
	Peak Current Max 30 mins.	V	20.8	13.8	10.4	-	
	Rated Power	W	451	450	451	-	
	Line Regulation	mV	120	180	240	-	
	Load Regulation	mV	240	360	480	-	
	Temperature Drift	mV	360	540	720	-	
	Ripple & Noise(pk-pk) (*1)	mV	150	250	250	-	
	Start-up, Rise Time typ.	ms	600 typ (AC IN 100V, Io=100%)				-
Hold-up Time typ.	ms	17 (AC IN 100V, Io=100%)				-	
<b>INPUT</b>	Voltage, Frequency	V	AC100-120/200-240V(AC88~132/176~264VAC), 50/60Hz(47-440) or DC240-370V (User selectable)				-
	Current Typ.	110V 220V	A	10 5			-
	Efficiency	110V 220V	%	82	82	82	-
	Inrush Current Typ.	110V 220V	A	20 40			-
	Leakage Current Max	110V 220V	mA	3.5 3.5			-
<b>Function</b>	Over Voltage Protection	V	Works at 115~140% of rating, recover automatically				-
	Over Current Protection (*2)	A	Works @110%~140% of rating. OCP available				-
	Remote Sensing	-	Available				-
	Remote ON.OFF	-	Available				-
	Cooling/O.T.P	-	Forced cooling, OTP available				-
<b>Electrical Isolation</b>	(1) Input - Output	-	AC 3 KV 1 min., cut-off: 20mA / DC 500V 100 MO				-
	(2) Input - F.G	-	AC 2 KV 1 min., cut-off: 20mA / DC 500V 100 MO				-
	(3) Output - F.G	-	AC 0.5 KV 1 min., cut-off: 100mA / DC 500V 100 MO				-
<b>Environment</b>	Operating temp. & Humidity	-	-10~70°C with derating. 20~90% RH (NON condensing)				-
	Storage temp. & Humidity	-	-20~75°C. 20~90% RH (NON condensing)				-
	Vibration	-	10~55Hz @ 1 G 3 minutes PERIOD, 30 minutes along X,Y & Z axis				-
<b>Dimension</b>	Size(WxLxH) / Weight	mm/g	120Wx190Lx61H/800				-
Safety	CB, CE, RU	-	Approved, AOJS500-36 pending				-
Emission	Conducted Emission	-	Complies with CISPR22 FCC part 15, CISPR22-B, VCCI-B, EN55022-B				-

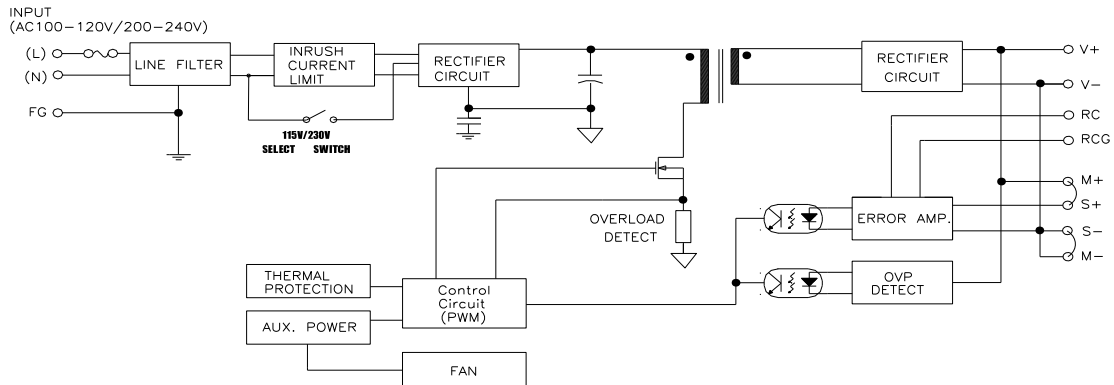




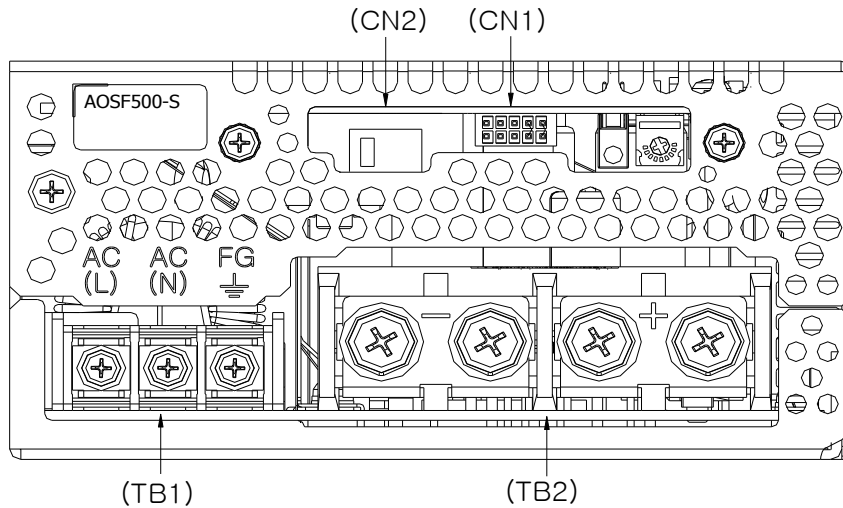
## AOJS-500

## 500W Din Rail Mount

### 1. BLOCK DIAGRAM



### 2. Terminal Connection



#### \* Terminal Connection

Symbol	JHGW	K6A.0&AA\$4'6&A	+EA4'6&A
TB1	L	AC Live line	SMPS AC input Terminal ( Fuse in Line)
	N	AC Neutral line	SMPS AC input Terminal
	FG	Frame ground	SMPS AC Grounding
TB2	+V	DC Output (+)	DC Output (+) Terminal
	-V	DC (-) Output	DC (-) output Terminal
CN1	+S	Sensing (+)	DC (+) Sensing
	-S	Sensing (-)	DC (-) Sensing
CN2	Selct Switch	AC 115V	AC 115V Selct Switch ( Right )
		AC 230V	AC 230V Selct Switch ( Light )

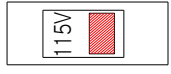
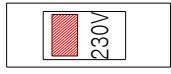
#### \* CN1 Connector Pin No. Assignment

Connector No.	Pin No.	Assignment	FUNCTION
 (CN1)	1	(+) M	Self Sensing Terminal
	2	(+) S	(+) Sensing
	3	(-) M	Self Sensing Terminal
	4	(-) S	(-) Sensing
	5	BLANK	-
	6	BLANK	-
	7	BLANK	-
	8	BLANK	-
	9	R.C	Remote ON/OFF
	10	R.C.G	Remote ON/OFF (GND)





\* CN2 Input Voltage Select Switch Assignment

Connector No.	Pin No.	Assignment	FUNCTION
	-	115VAC	Input Voltage 115VAC Selct Switch ( Right )
	-	230VAC	Input Voltage 230VAC Selct Switch ( Light )

\* Matching connectors and terminals on CN1

No.	Connector	Housing	Terminal	Manufactor
CN1	YDAW200-10P	YDH200-10	YST200	YEON-HO

3-1. Adjustable output voltage range

3-1. Adjustable output voltage range

o Output voltage can be adjustable within  $\pm 10\%$  but it could cause malfunction if it is out of Adjustable range

3-2. O.C.P : Over Current Protection

Over current protection circuit is to be in operation to cut off the output in order to protect SMPS if output current exceeds over 110% of rated output current due to malfunction of application system or short-circuit of external connection.

3-3. O.V.P : Over Voltage Protection

o Over voltage protection circuit is to be in operation to cut off the output in order to protect SMPS if output voltage exceeds over 115% of rated output voltage or reversal voltage occurs.

o Over voltage protection feature is to be off, once the system is restored after the problem for malfunction is resolved, followed by cutting off AC input power for 3 minutes. If output voltage is NOT restored to normal, however, it is highly recommended to consult with personnel at customer support to monitor possible internal damage to the product.





## AOJS-500

## 500W Din Rail Mount

### 3-4. O.T.P : Over Temperature Protection

- o Over voltage protection circuit is to be automatically in operation to cut off the output in order to protect SMPS if over voltage exceeding over 115% of rated output voltage outputs or inflows.
- o Over voltage protection feature is to be off, once the system is restored after the problem for malfunction is resolved, followed by cutting off AC input power for 3 minutes.

If output voltage is NOT restored to normal, however, it is highly recommended to consult with personnel at customer support as internal damage to the product is suspected.

(1) If remote sensing feature is NOT in use, please complete the connection as shown at Figure 1 (Basic connection.)

(2) Disassemble +M & +S and -M & -S using WR-PSF600-S-02 wire harness connected to CN1 then connect +S, -S to Load when remote sensing is in USE.

Notice) In order to avoid noise inflow, the Wire, connected to +S and -S, should be short in length with its wire twisted before the use.

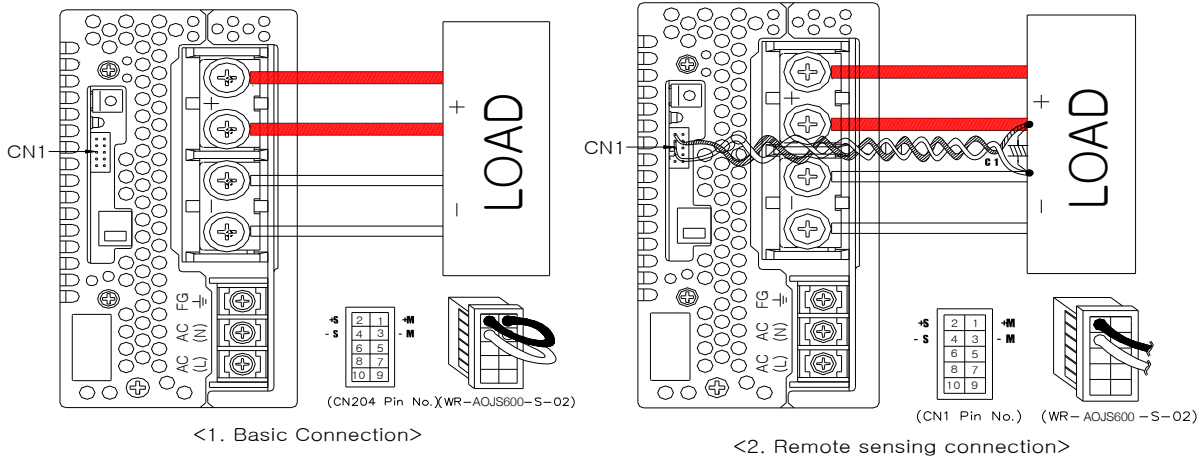
### 3-5. +S , -S : Remote Sensing

- o This feature is to compensate the output voltage of SMPS by sensing voltage directly at the load if output terminal of SMPS is distant from the load.

### 3-6. RC : Remote ON/OFF Control

- o Compensating output voltage (Vc) should be within 110% of rated output voltage (Vo), while output can be cut off by over voltage protection feature if it goes over 110%.
- o Operable output power (Pc), while output voltage compensating feature is in use, should be lower than rated output power (Po). ( $P_c \leq P_o$ )

Output Power (Pc) = Compensating output voltage (Vc) X load current in use (I)



### 3-6. RC : Remote ON/OFF Control

- o ON / OFF control for SMPS output voltage is possible by making RC and RCG terminal of CN1 as Fig3-1

\* RC and RCG terminal in Fig.3-1 is isolated with Input, Output and FG terminal

\* Operating current of RC, RCG terminal is about 5mA(typ.) and it should be used below 10mA MAX.

Table 1 shows output voltage and operating status of FAN based on Switch control of Fig.3-1

- o Table 2 shows fixed condition of resistance(R1) affected by external voltage when external power(V1) is used in Fig.3-1



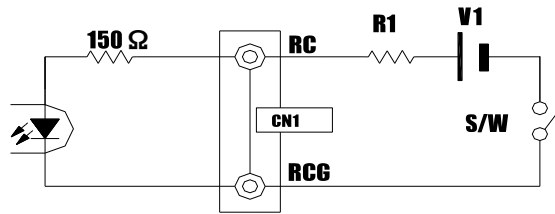
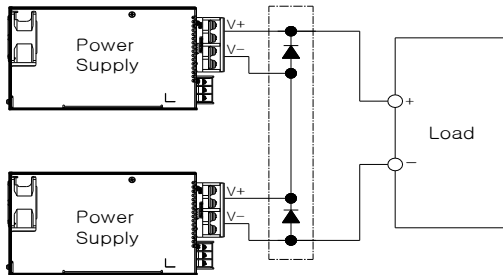


Table1. Remote ON/OFF Control Operation

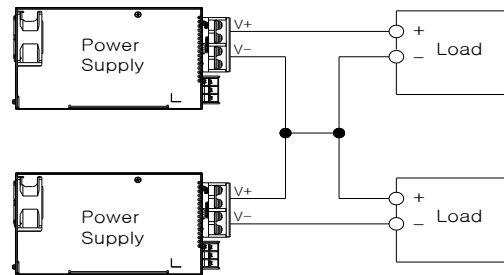
Switch Logic	Action	Output Condition	Fan motor
	Switch Open	ON	Rotate
	Switch Close	OFF	Stop

Table2. Fixing Resistance (R1) against external power(V1) (I = 5mA typ.)

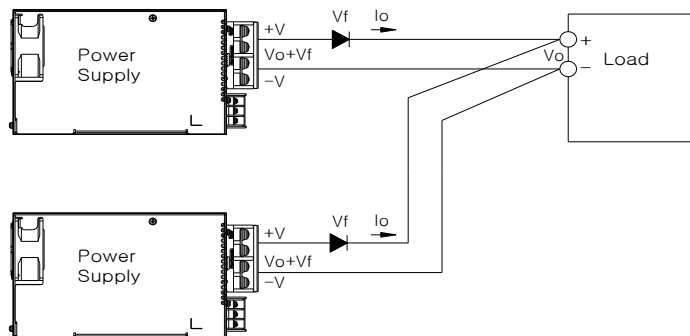
V1	5V	12V;	24V
R1 (0.5W)	620Ω	1.5KΩ	4.7KΩ



<Fig. 1 Series operation A>



<Fig. 2 Series operation B>



<Fig. 3 Parallel operation A>

#### 4. Series operation / Parallel operation

4-1. Both connection systems as shown at Figure 1 or Figure 2 can be used during series operation.

4-2. In parallel operation A at Figure 4, current capacity cannot be increased, while it should be used for backup only. Moreover, diode that is to be added during parallel operation should be selected after considering its voltage drop (Vf), output voltage (Vo) and current capacity (Io).





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## 500W Din Rail Mount

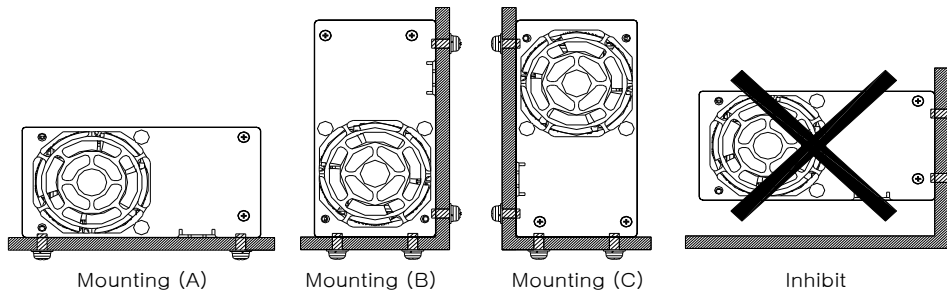


Fig 4. Installation

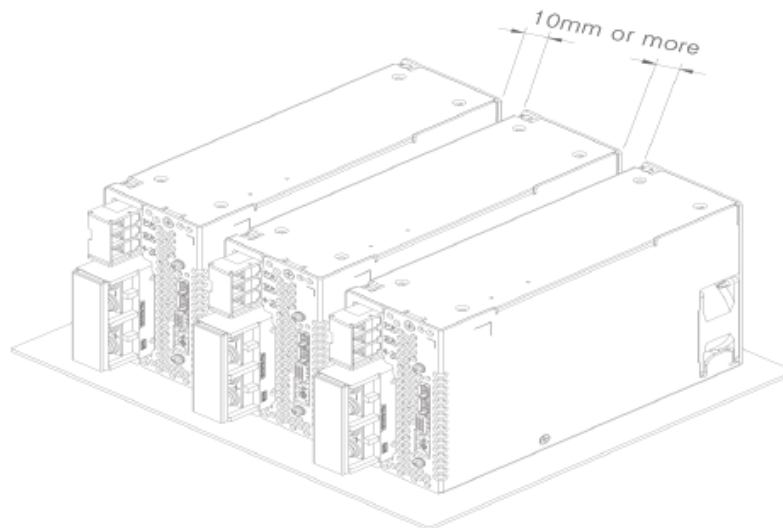
### 5. Mounting method

5-1. It should be mounted as follow in the consideration of air cooling

- o Mounting method should be considered with airflow as shown in Fig4, Fig5, Fig6
- o O.T.P functionc could be operated if the inside temperature rises by interruption of airflow of FAN.
- o Life span of The air cooling fan for JSF500 is approximately 70,000 Hrs at 25°C

Notice) the expected life span would be shorter when ambient temperature is over 25°C

- o Screw used for installation is M4 and please pay attention not to get into products deeper than 6mm.



# ETA-USA

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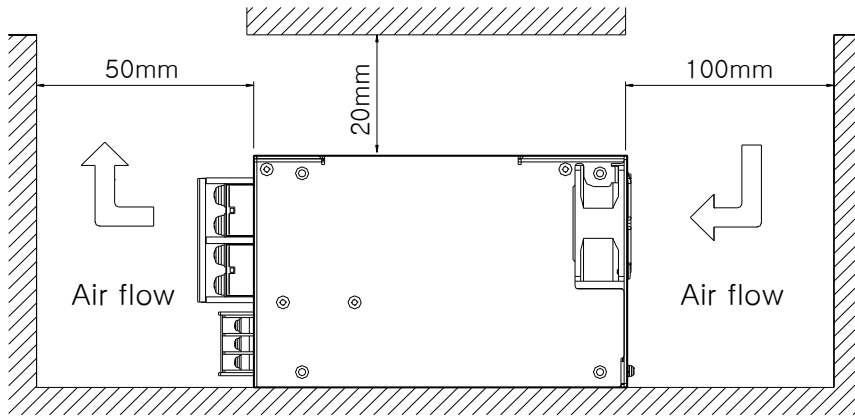


Fig 6.

## Output Derating Curve

Note: When using the product between  $-25^{\circ}\text{C} \sim 0^{\circ}\text{C}$ , the output ripple and noise could exceed its specification.

