MEAN WELL

500W Single Output with PFC Function

RSP-500 series

User's Manual

Dimension

L	*	W	*	H	
230	*	127	*	40.5(1U)	mm
9.06	*	5	*	1.59(1U)	inch



R33100 RoHS | AS/NZS62368-1 | UL62368-1 | BS EN/EN62368-1 | GB4943.1 | TPTC004 | IS13252 (except 48V)

Industrial | Automate | Telecom | Network | EV

IEC62368-1

Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 90.5%
- Forced air cooling by built-in DC fan (Note.5)
- Built-in remote ON-OFF control / remote sense
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 3 years warranty

Applications

- Factory control or automation apparatus
- Test and measurement instrument
- Laser related machine
- Burn-in facility
- RF application

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

RSP-500 is a 500W single output enclosed type AC/DC power supply. This series operates for 85~264VAC input voltage and offers the models with the DC output mostly demanded from the industry. Each model is cooled by the built-in fan with fan speed control, working for the temperature up to 70℃. Moreover, RSP-500 provides vast design flexibility by equipping various built-in functions such as remote ON-OFF control, remote sense,etc.

Model Encoding / Order Information

RSP - 500 - 24

- 24 → Output voltage (3.3V/4V/5V/12V/15V/24V/27V/48V)
- 500 → Output wattage
- RSP → Series name

MEAN WELL

500W Single Output with PFC Function

RSP-500 series

SPECIFICATION

MODEL		RSP-500-3.3	RSP-500-4	RSP-500-5	RSP-500-12	RSP-500-15	RSP-500-24	RSP-500-27	RSP-500-48
OUTPUT	DC VOLTAGE	3.3V	4V	5V	12V	15V	24V	27V	48V
	RATED CURRENT	90A	90A	90A	41.7A	33.4A	21A	18.6A	10.5A
	CURRENT RANGE	0 ~ 90A	0 ~ 90A	0 ~ 90A	0 ~ 41.7A	0 ~ 33.4A	0 ~ 21A	0 ~ 18.6A	0 ~ 10.5A
	RATED POWER	297W	360W	450W	500.4W	501W	504W	502.2W	504W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	120mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	2.8 ~ 3.6V	3.6 ~ 4.3V	4.5 ~ 5.5V	10 ~ 13.2V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 30V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1500ms, 80ms/230VAC 3000ms, 80ms/115VAC at full load							
	HOLD UP TIME (Typ.)	18ms/230VAC 14ms/115VAC at full load							
INPUT	VOLTAGE RANGE Note.4	85 ~ 264VAC 120 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR (Typ.)	PF>0.95/230VAC PF>0.98/115VAC at full load							
	EFFICIENCY (Typ.)	81%	83%	84%	88%	88%	89%	89.5%	90.5%
	AC CURRENT (Typ.)	4.2A/115VAC 2.1 A/230VAC		5.3A/115VAC 2.65 A/230VAC					
	INRUSH CURRENT (Typ.)	20A/115VAC 40A/230VAC							
	LEAKAGE CURRENT	<2mA / 240VAC							
PROTECTION	OVERLOAD	105 ~ 130% rated output power							
		Protection type : Constant current limiting, recovers automatically after fault condition is removed							
	OVER VOLTAGE	3.8 ~ 4.5V	4.5 ~ 5.3V	5.75 ~ 6.75V	13.8 ~ 16.2V	18.8 ~ 21.8V	27.6 ~ 32.4V	32.9 ~ 38.3V	58.4 ~ 68V
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down							
FUNCTION	REMOTE CONTROL	POWER ON:open or 0~0.8VDC between RC+(Pin 4)&RC-(Pin3) on CN100 POWER OFF: 4~10VDC between RC+(Pin 4)&RC-(Pin3) on CN100							
	REMOTE SENSE	Compensate voltage drop on the load wiring up to 0.3V							
	FAN CONTROL (Typ.)	RTH2≧50℃±10℃ Fan on ; RTH2≦40℃±10℃ Fan off (Fan always on for 3.3~5V,Fan ON/OFF control for 12~48V)							
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC (Note.4)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, AS/NZS 62368.1, EAC TP TC 004 , CCC GB4943.1 , BSMI CNS15598-1, BIS IS13252(Part1): 2010/IEC 60950-1:2005(except for 48V) approved							
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH							
	EMC EMISSION	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020,GB/T 9254, CNS15936 Class B							
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, BS EN/EN61000-6-2, EAC TP TC 020							
OTHERS	MTBF	1372.4K hrs min. Telcordia SR-332 (Bellcore) ; 187.9K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	230*127*40.5mm (L*W*H)							
	PACKING	1.3Kg; 9pcs/12.7Kg/0.7CUFT							

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μF & 47 μF parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the derating curve for more details.
5. Fan always on for 3.3~5V,Fan ON/OFF control for 12~48V.
6. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.For guidance on how to perform these EMC tests, please refer to “EMI testing of component power supplies.” (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
7. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).

※ Product Liability Disclaimer：For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

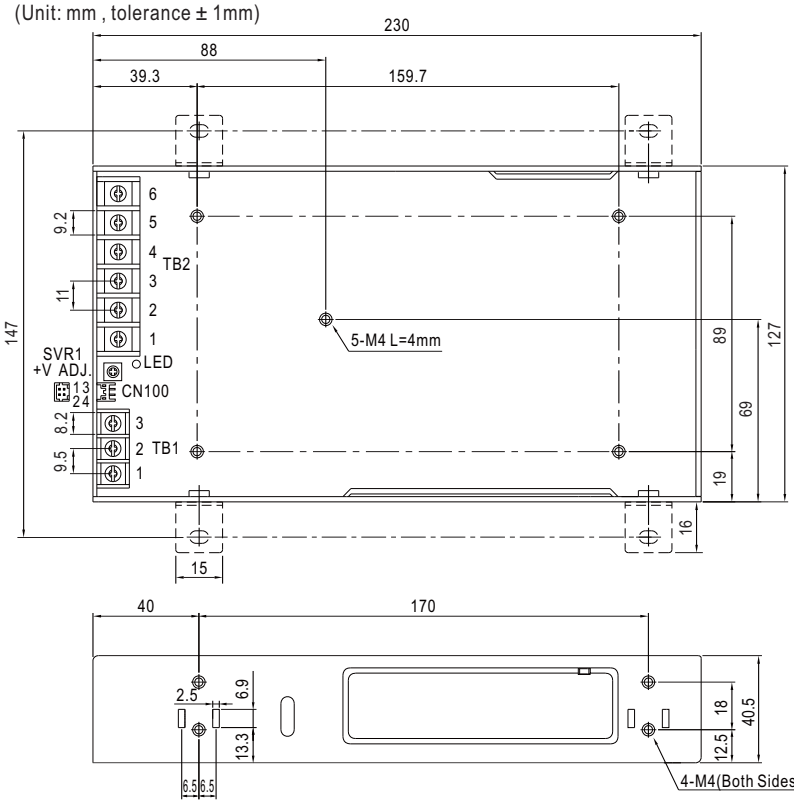
RSP-500 series

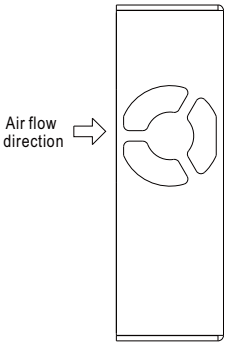
500W Single Output with PFC Function

Mechanical Specification

(Unit: mm , tolerance ± 1mm)

Case No.226A





AC Input Terminal
Pin No. Assignment (TB1)

Pin No.	Assignment
1	AC/L
2	AC/N
3	FG ⏚

DC Output Terminal
Pin No. Assignment (TB2)

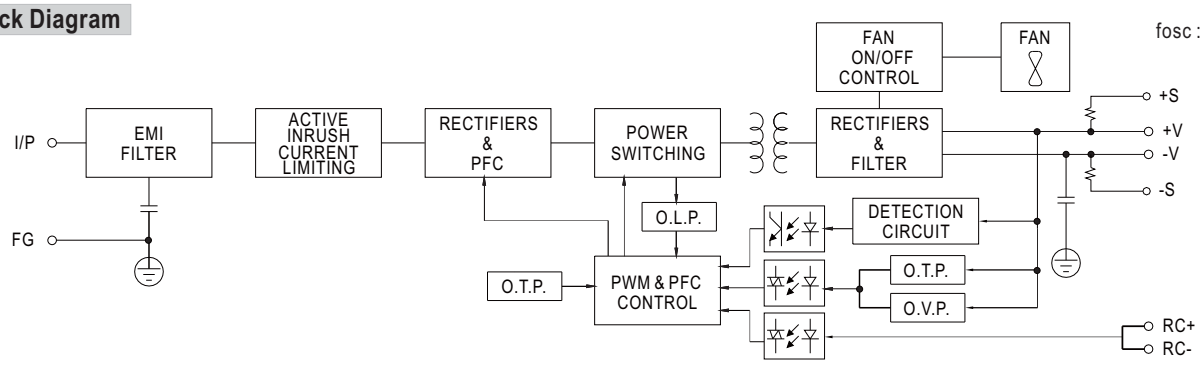
Pin No.	Assignment
1~3	DC OUTPUT -V
4~6	DC OUTPUT +V

Connector Pin No. Assignment (CN100) :
HRS DF11-04DP-2DS or equivalent

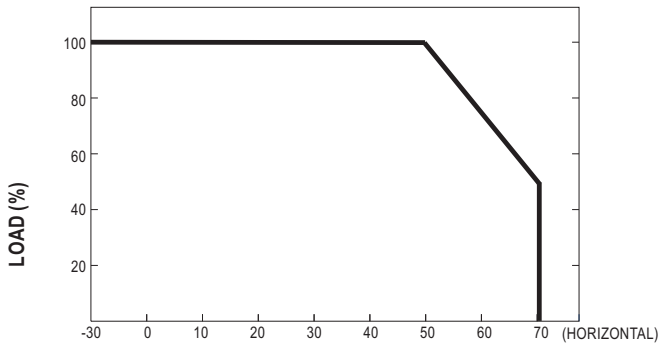
Pin No.	Assignment	Mating Housing	Terminal
1	-S	HRS DF11-4DS or equivalent	HRS DF11-**SC or equivalent
2	+S		
3	RC-		
4	RC+		

Block Diagram

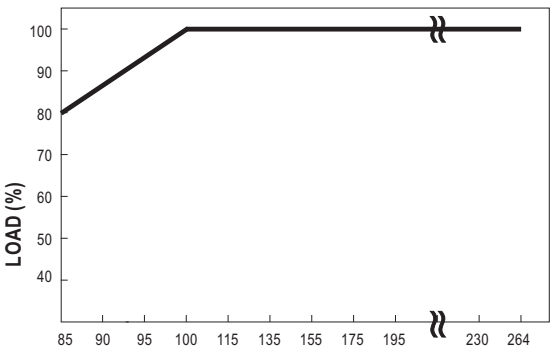
fosc : 70KHz



Derating Curve



Static Characteristics



■ Function Description of CN100

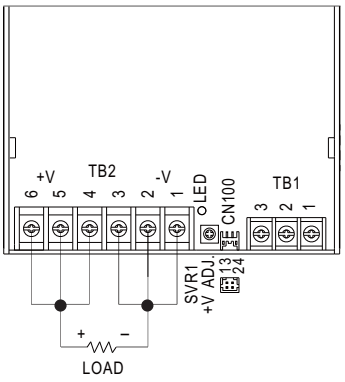
Pin No.	Function	Description
1	-S	Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V.
2	+S	Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V.
3	RC-	Return for RC+ signal input.
4	RC+	Turns the output on and off by electrical or dry contact between pin 4 (RC+) and pin 3 (RC-). 0~0.8VDC or open: Power ON, 4~10VDC: Power OFF.

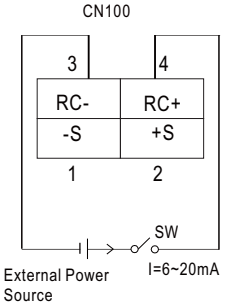
■ Function Manual

1.Remote Control

The PSU can be turned ON/OFF by using the "Remote Control" function.

Between RC-(pin3) and RC+(pin4) on CN100	PSU Status
SW OFF (0 ~ 0.8VDC) or open	ON
SW ON (4 ~ 10V)	OFF





2.Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.3V

