Mibbo

MPC1500-□ Series

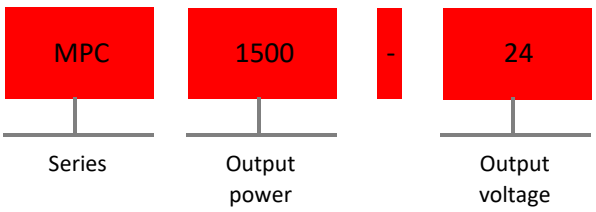
▲ Features

Universal AC input/Full range
High efficiency up to 91%
Built-in active PFC function
Output voltage programmable
Protections:Short circuit/Overload/Over voltage/Over temperatures
Built-in remote ON-OFF control/remote sense/auxiliary power/power OK signal
Active current sharing up to 6000W(3+1)
Optional conformal coating
Forced air cooling by built-in DC fan
5 years warranty

▲ Applicatic

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

▲ Model enco

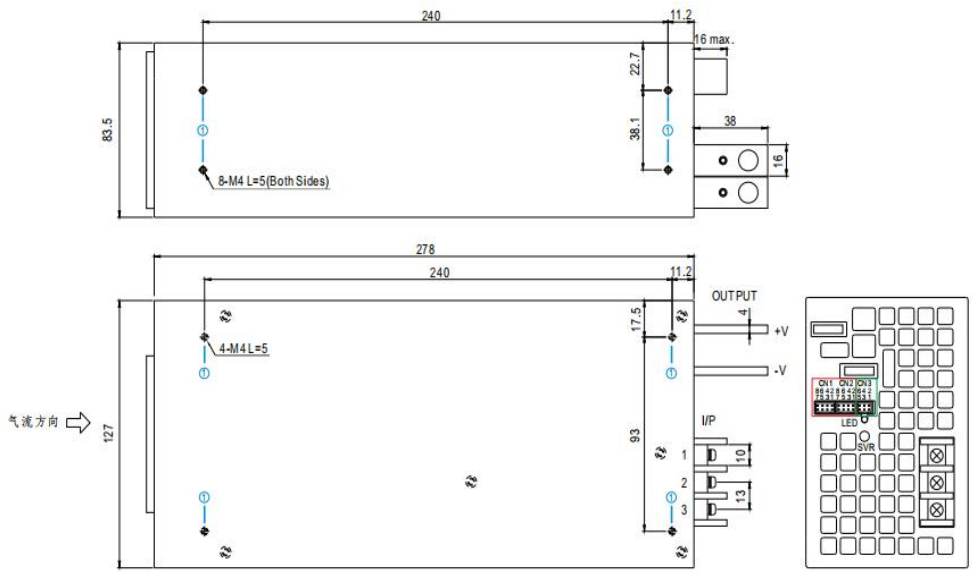


Mibbo

Specification

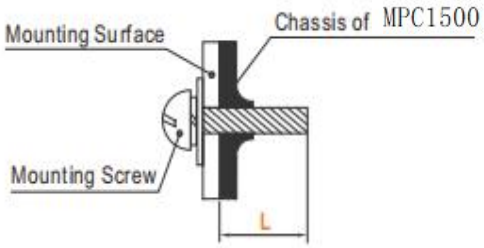
Input					
Voltage range NO.1	90-264VAC 127-370VDC				
Frequency range	47-63Hz				
Power factor (typ)	0.95/230VAC 0.98/115VAC(at full load)				
AC current (typ)	17A/115VAC 8A/230VAC				
Inrush current (typ)	30A/115VAC 60A/230VAC				
Leakage current	<2.0mA/240VAC				
Output					
DC voltage (V)	5V	12V	15V	24V	48V
Rated current (A)	240A	125A	100A	27A	32A
Current range (A)	0-240A	0-125A	0-100A	56A	0-32A
Rated power (W)	1200W	1500W	1500W	1512W	1536W
Efficiency (typ)	80.0%	87.0%	87.0%	90.0%	90.0%
Ripple&noise (max) NO.3	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p
Voltage ADJ.range	4.5-5.5V	10-13.5V	13.5-16.5V	24-30V	43-56V
Volage tolerance NO.4	±2%	±1%	±1%	±1%	±1%
Line regulation	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
Load regulation	±2%	±0.5%	±0.5%	±0.5%	±0.5%
Setup、rise time	1500ms, 100ms(at full load)				
Hold up time (typ)	10ms(at full load)		14ms(at full load)		16ms(at full load)
Protection					
Overload	105 ~135% rated output power				
	Protection type : Constant current limiting unit will shut down o/p voltage after 5sec. Re-power on to recover				
Over voltage (V)	5.75 ~ 6.75V	13.8 ~ 16.8V	17 ~ 20.5V	27.6 ~ 32.4V	57.6 ~ 67.2V
	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				
Output voltage programmable (PV)	Adjustment of output voltage is allowable to 70 ~ 100% of nominal output voltage. Please refer to the Function Manual.				
Current sharing	Up to 6000W or (3+1) units. Please refer to the Function Manual.				
Auxiliary power	12V @ 0.1A(Only for Remote ON-OFF control)				
Remote on-off control	Please see the Function Manual.				
Remote sense	Compensate voltage drop on the load wiring up to 0.3V,Please refer to the function manual				
Alarm signal output	Power OK signal. Please see the Function Manual				
Environment					
Working TEMP.	-20 ~ +70℃(Refer to "Derating Curve")				
Working humidity	20 ~ 90% RH non-condensing				
Storage/Humidity TEMP.	-40 ~ +85℃, 10 ~ 95% RH				
Temp.coefficient	±0.05%/℃ (0 ~ 50℃)				
Vibration	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes				
Safety&EMC					
Safety standards	Design reference UL62368-1, CAN/CSA C22.2 No. 62368-1, TUV BS EN/EN62368-1, BSMI CNS14336-1, AS/NZS62368.1,				
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	**Parameter**	**Standard**	**Test Level / Note**		
	Conducted	BS EN/EN55032(CISPR32)	Class B		
	Radiated	BS EN/EN55032(CISPR32)	Class A		
	Harmonic Current	BS EN/EN61000-3-2	.....		
	Voltage Flicker	BS EN/EN61000-3-3	.....		
EMC immunity	BS EN/EN55035, BS EN/EN61000-6-2, BSMI CNS13438				
	Parameter	**Standard**	**Test Level / Note**		
	ESD	BS EN/EN61000-4-2	Level 3,8KV air;Level 2,4KV contact		
	Radiated	BS/EN/EN61000-4-3	Level 3		
	EFT/Burst	BS/EN/EN61000-4-4	Level 2		
	Surge	BS/EN/EN61000-4-5	Level 3, 2KV/Line-Earth ; Level 2, 1KV/Line-Line		
	Conducted	BS/EN/EN61000-4-6	Level 3		
	Magnetic Field	BS/EN/EN61000-4-8	Level 4		
	Voltage Dips and Interruptions	BS/EN/EN61000-4-11	>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods		
Others					
MTBF	≥814.4Khrs MIL-HDBK-217F(25℃)				
Dimension	278*127*83.5mm				
Packing	3Kg				
Data	**Details**		**Model name**		
	MPC 1200W 240A/5V		MPC1500-5		
	MPC 1500W 125A/12V		MPC1500-12		
	MPC 1500W 100A/15V		MPC1500-15		
	MPC 1512W 63A/24V		MPC1500-24		
	MPC 1536W 32A/48V		MPC1500-48		

Installation Instruction

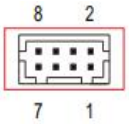


★Mounting instruction

Hole No.	Screw size	max penetration depth L	Recommended mounting torque
①	M4	5mm	7~10Kgf-cm



★Control Pin No. Assignment : HRS DF11-8DP-2DS or equivalent



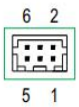
Mating Housing	HRS DF11-8DS or equivalent
Terminal	HRS DF11-**SC or equivalent

CN1 and CN2 are connected internally.

Pin No.	Function	Description
1	RCG	Remote ON-OFF Ground
2	RC2	Remote ON-OFF
3	-S	Negative sensing for remote sense
4	TRIM	Connection for output voltage programming
5	LS(Current Share)	Current Share
6	+S	Postive sensing for remote sense

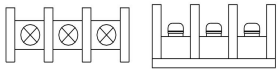
★Control Pin No. Assignment : HRS DF11-6DP-2DS or equivalent

Mating Housing	HRS DF11-6DS or equivalent
Terminal	HRS DF11-**SC or equivalent

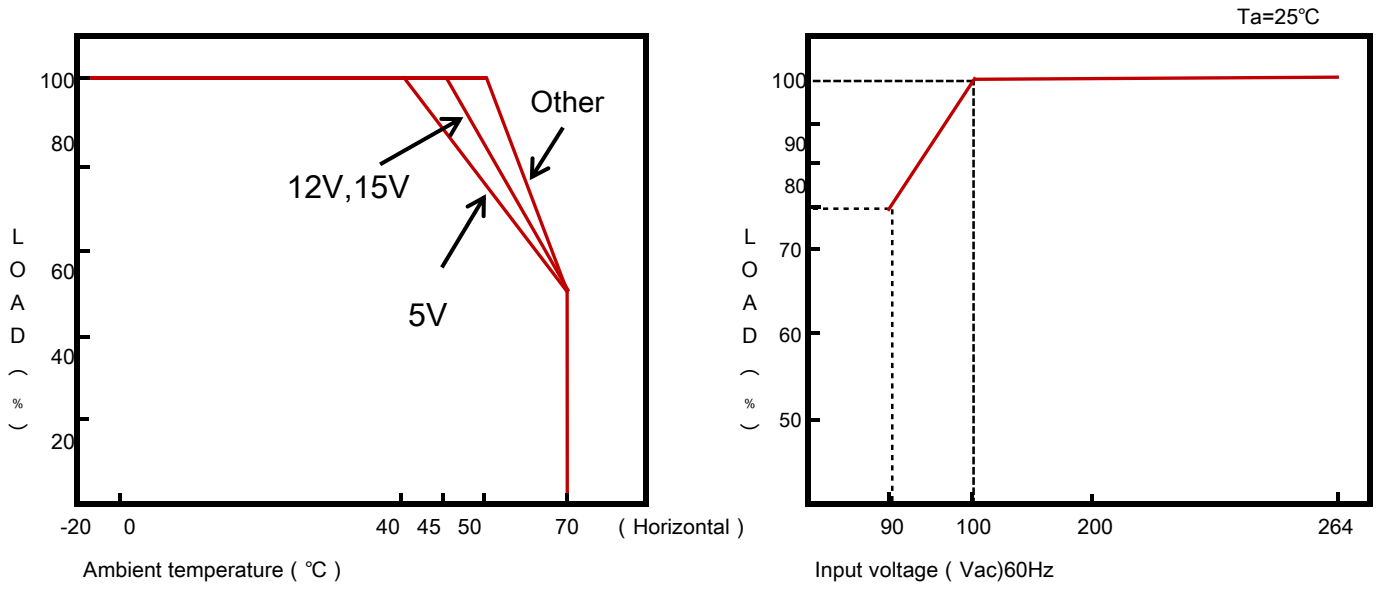


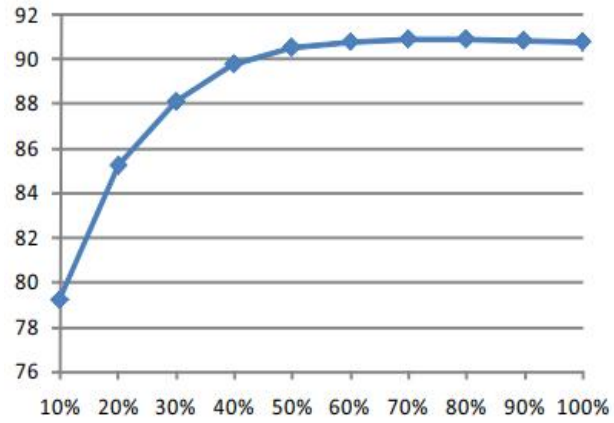
Pin No.	Function	Description
1	P OK GND	Power OK Ground
2	P OK	Power OK Signal
3	RCG	Remote ON-OFF Ground
4	AUXG	Auxiliary Ground
5	RC1	Remote ON-OFF
6	AUX	Auxiliary Output

★AC Input Terminal Pin No. Assignmen

Pin No.	Assignment	Diagram	Maximum mounting torque
1	FG⏚		18Kgf-cm
2	AC/N		
3	AC/L		

Derating curve





MODEL / Input	5V	12V	15V
100-264VAC	1200W 240A	1500W 125A	1500W 100A
90VAC	960W 192A	1200W 100A	1200W 80A
MODEL / Input	24V	48V	/
100-264VAC	1512W 63A	1536W 32A	/
90VAC	1209.6W 50.4A	1228.8W 25.6A	/

Note:

1.Derating may be needed under low input voltages,Please check the derating curve for more details

2.All parameters NOT specially mentioned are measured at 230VAC input,rated load and 25℃ of ambient temperature.

3.Ripple&noise are measured at 20MHZ of bandwidth by using a 12"twisted pair-wire terminated with a 0.1uf&47uf parallel capacitor"

4.Tolerance:includes set up tolerance,line regulation and load regulation

5.The power supply is considered a componment which will be installed into a final equiment

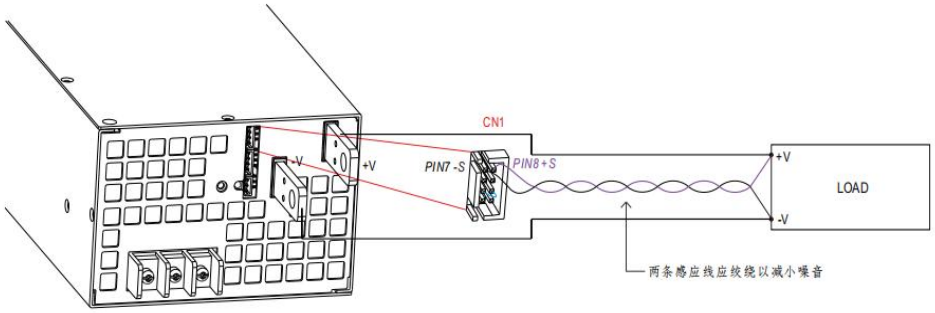
6.The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft)

Mibbo

Function Manual

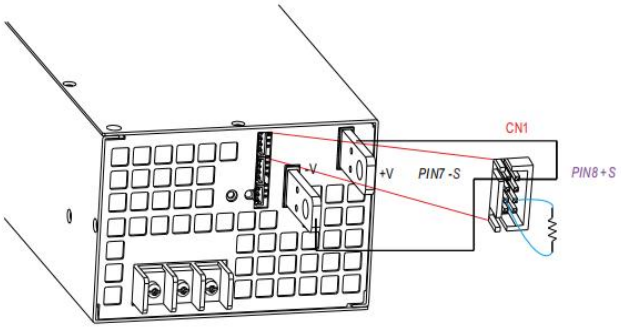
1.Remote Sense

★The Remote Sense compensates voltage drop on the load wiring up to 0.3V

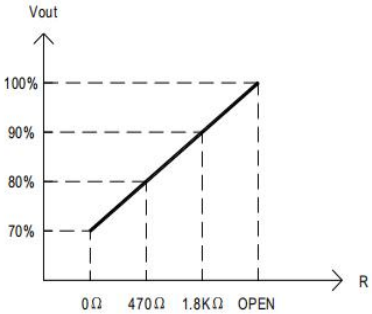


2.Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)

■In addition to the adjustment via the built-in potentiometer, the output voltage can be trimmed to 70~100%(Typ.) of the nominal voltage by applying

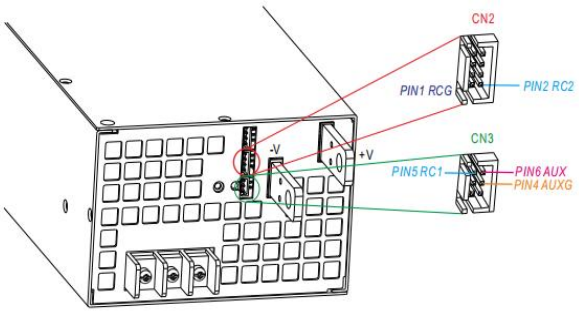


■Connect an external resistor between & on CN1 or CN2, and +S & +V, -S & -V also need to be connected.

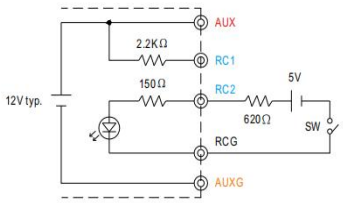


3.Remote ON-OFF

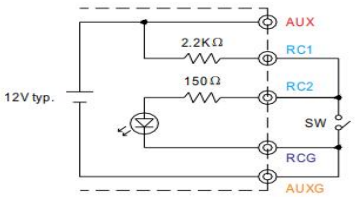
■ Remote ON-OFF is activated by the configuration with respect to CN1,CN2 and CN3 as shown in the following diagram



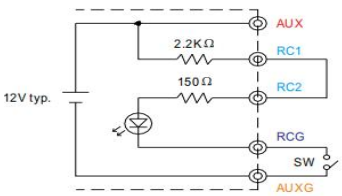
Example 3.2(A): Using external voltage source



Example 3.2(C): Using internal 12V auxiliary output



Example 3.2(B): Using internal 12V auxiliary output

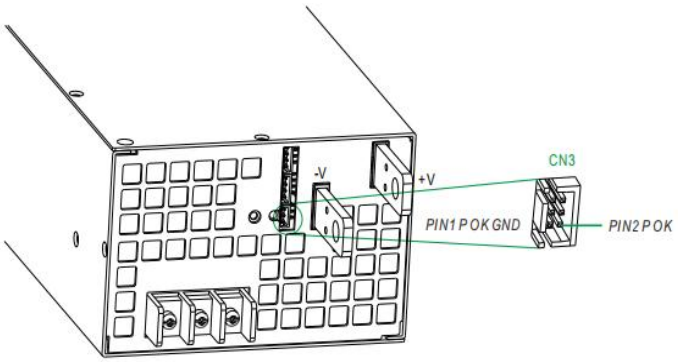


■ Connection Method

		Fig. 3.2(A)	Fig. 3.2(B)	Fig. 3.2(C)
SW Logic	Output on	SW Open	SW Open	SW Close
	Output off	SW Close	SW Close	SW Open

4.Alarm Signal Output

Alarm signal is sent out through " " & " " and pins on CN3. Please acknowledge an external voltage source is required for this f P OK P OK GND unction



Function	Description	Output of alarm(P OK)
P OK	The signal is "Low" when the power supply is above 65% of the rated output voltage, or say, Power OK	Low (0.5V max at 10mA)
	The signal turns to be "High" when the power supply is under 65% of the rated output voltage, or say, Power Fail	High or open (External applied voltage 10mA max.)

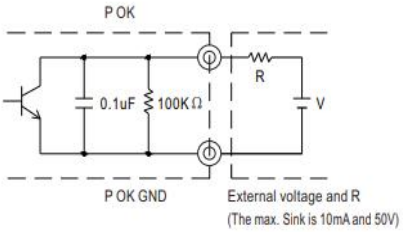


Fig. 4.1 Internal circuit of P OK (Open collector method)

5.Current Sharing with Remote Sense

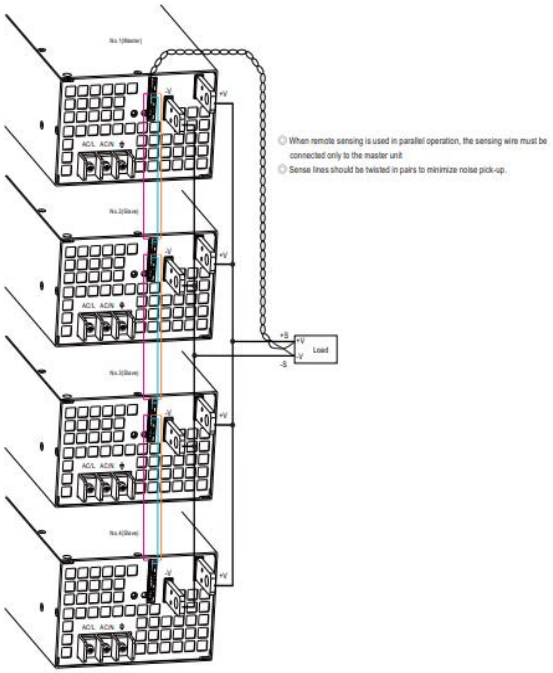
MPC1500 has the built-in active current sharing function and can be connected in parallel, up to 4 units, to provide higher output power as exhibited

The power supplies should be paralleled using short and large diameter wiring and then connected to the load.

Difference of output voltages among parallel units should be less than 0.2V

The total output current must not exceed the value determined by the following equation:

Maximum output current at parallel operation=(Rated current per unit) (Number of unit) 0.9



+S,-S and CS are connected mutually in paralle