

# CSP-3 SWITCHING POWER SUPPLY

UL version available in option

## FEATURES

- Universal power AC90~264V/DC127~380V
- Build in power factor control circuit in high power model(120W~500W)
- Available for series and parallel operation
- To be a Back up power function with relay output in option( not available in model 20W and 24W)
- RoHS & UL version in option
- DIN rail mounting



## ORDERING INFORMATION

CSP-3- [Output Rating] - [Output Voltage] - [\*Optional Function]

CODE	OUTPUT RATING	CODE	OUTPUT VOLT	CODE	OPTIONAL FUNC.
020	20 Watts	05	5V	OV	Over voltage protection
024	24 Watts	12	12V	BP	Back up function
045	45 Watts	24	24V	Model 20W and 24W can not support the optional functions	
072	72 Watts	48	48V		
120	120 Watts	VO	Specify Voltage		
200	200 Watts	Please refer to the table of power rating on right side for the capability of output current.			
240	240 Watts				
500	500 Watts				

Power Rating	5V	12V	24V	48V
20 Watts	4A	X	X	X
24 Watts	X	2A	1A	X
45 Watts	9A	3.75A	1.875A	*0.93A*
72 Watts	*14.4A*	6A	3A	*1.5A*
120 Watts	X	*10A*	5A	*2.5A*
200 Watts	X	*16.6A*	8.3A	*4.2A*
240 Watts	X	*20A*	10A	*5A*
500 Watts	X	*41.6A*	20.8A	*10.4A*

\*\* Specifications orders production machine stock, mini order quantities of 300

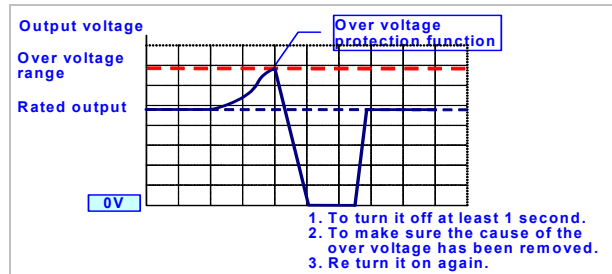
## TECHNICAL SPECIFICATION

Power	24W	45W	72W	120W	200W	240W	500W
<b>INPUT</b>							
<b>Voltage</b>	AC 90~264V, 47~63Hz and DC 127~380V			AC 115 and 230V switchable by switch	AC 90~264V, 47~63Hz and DC 127~380V		
<b>Efficiency (at 110V rated load)</b>	5V	60%	69%	70%	--	--	--
	12V	70%	65%	73%	73%	77%	78%
	24V	71%	75%	75%	75%	79%	80%
	48V	--	77%	75%	76%	80%	80%
<b>Power factor</b>	≥ 70%			≥ 95%(Build in PFC circuit)			
<b>Inrush Current</b>	110V	20A	20A	20A	20A	20A	20A
	220V	40A	40A	40A	40A	40A	40A
<b>OUTPUT</b>							
<b>Output indication</b>	Green LED						
<b>Voltage adjustment</b>	-10% to 10% (with VR adjustment)						
<b>Ripple (Vp-p)</b>	5V	50mV	50mV	70mV	--	--	--
	12V	100mV	100mV	100mV	100mV	100mV	100mV
	24V	150mV	150mV	150mV	150mV	150mV	150mV
	48V	--	300mV	250mV	250mV	250mV	250mV
<b>Voltage tolerance</b>	±1.0% max., (with rated input, 0 to 100% load)						
<b>Linearly</b>	±1.0% max., (with rated input, 0 to 100% load)						
<b>Load influence</b>	±1.0% max., (with rated input, 0 to 100% load)						
<b>Start up time</b>	3 seconds max. (at rated input/output voltage)						
<b>Hold time(at 110V)</b>	16ms						
<b>Over-voltage protection (V max.)</b>	Auto reset available in optional			Auto reset in standard			
	5V	11V	5.8~7.0V	--			
	12V	22V	15~18V	15~18V	15~18V		
	24V	44V	27.6~31V	27.6~31V	27.6~31V		
	48V	--	--	54~60V	54~60V		
<b>Overload protection</b>	105~150% rated output, and auto-reset after fault condition is removed						
<b>Short protection</b>	Auto reset in standard						
<b>Back up function</b>	Available in option(please specify in order code)						
<b>ENVIRONMENTAL</b>							
<b>Ambient temp.</b>	Operating: -15°C ~ 50°C; Storage: -20°C ~ 85°C (Non-condensing)						
<b>Ambient humidity</b>	Operating: 5 to 95 % RH; Storage: 5 to 95 % RH						
<b>Temp. influence</b>	0.05%/°C max.(0~50°C)						
<b>Voltage influence</b>	0.5% max. (at 85 to 264 VAC input, 100% load)						
<b>Vibration resistance</b>	10 to 500Hz, 2G, 10 min/cycle for 1 hour each in X, Y, and Z directions						
<b>Shock resistance</b>	150 m/s <sup>2</sup> (about 50g) 3 times each in X, Y, and Z directions						
<b>ELECTRICAL SAFETY</b>							
<b>Dielectric strength</b>	AC 2.0 kV for 1 min. (between input, output and housing; detection: 20 mA)						
<b>Insulation resistance</b>	100 MΩ min. (between input, output and housing) at 500 VDC						
<b>EMC</b>	EN55022 Class A, EN50082-1, EN55204, EN61000-3-2, -3, EN61000-4-2, -3, -4, -5, -6, -11						
<b>LVD</b>	IEC60950, EN60950						
<b>MTBF</b>	350khr	300khr	280khr	210khr	230khr	110khr	110khr

## DESCRIPTION OF TECHNICAL

### Over voltage protection

To avoid the possibility of an over voltage and damage the system, CSP-3 series has been designed over voltage protection function. When an excessive voltage that is approximately protection range (please refer to the technical specification), the output voltage will be shut OFF until the cause of the over voltage has been removed. Please reset the Power Supply by turning it OFF when an excessive voltage that is approximately protection range for at least 1 second and then turning it back ON again.



### Over load protection

The Power Supply is provided with an overload protection function that protects the power supply from possible damage by over current. When the output current rises above 105% min. of the rated current, the protection function is triggered, decreasing the output voltage. When the output current falls within the rated range, the over load protection function is automatically cleared.

### Short protection

The short protection function of idea is same as over load protection with more strictly condition. That protects the power supply from possible damage by short current.

### Back up function(option)

The CSP-3 series is provides parallel operation to be a back up power. However, the power was supplied is rated output of one, even the system has been parallel more than one unit.

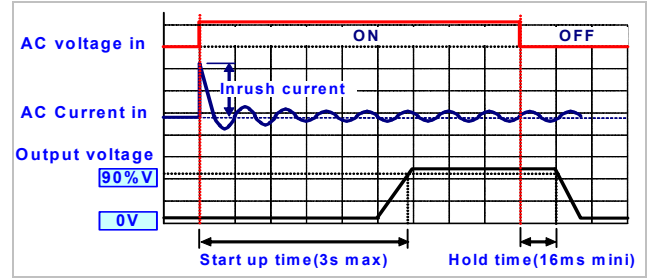
The typical application is to get a un-shunt down DC power supply system. For example, to parallel two still 50W DC power supply (the maximum power output is still 50W). If the load is 40W, the power output may separate 25W and 15W in two units. Someday, unit one is broken down cause of unknown reason, the unit two will increase output to supply the total 40W to avoid shunt down of system.

### Faulty alarm(option)

The user can specify the faulty alarm relay in ordering code to get a faulty signal for system. The rated of relay is 1A, 220V. Please refer to the connection diagram in detail.

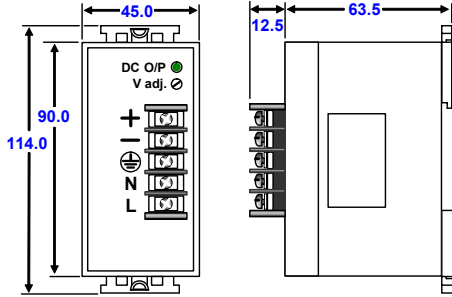
MODEL	24W	45W	72W	120W	200W	240W	500W
<b>MECHANICAL</b>							
<b>Dimensions</b>	104(H) x76(D) x45(W)	100(H) x83(D) x49(W)	100(H) x110(D) x60(W)	100(H) x110(D) x90(W)	100(H) x110(D) x90(W)	100(H) x120(D) x90(W)	210(H) x110(D) x109(W)
<b>Housing</b>	Self-extinguishing, black ABS, UL94V0		Aluminum				
<b>Terminals</b>	Screw terminal, up to 2 x 2.5mm <sup>2</sup> wire						
<b>Mounting</b>	35mm DIN rail (EN50022)						
<b>Weight</b>	190g	370g	500g	820g	830g	1260g	1790g

● Inrush Current, Start Up Time, Output Hold Time

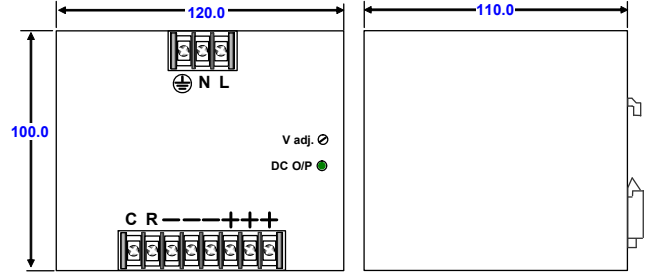


■ DIMENSIONS

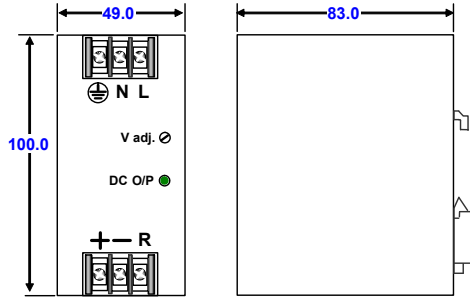
CSP-3-24W



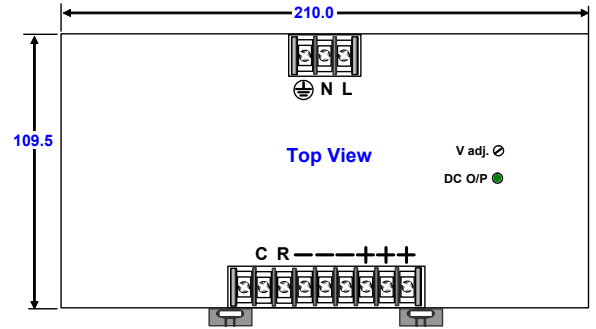
CSP-3-240W



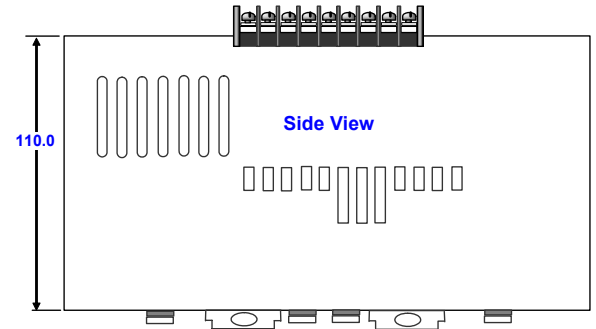
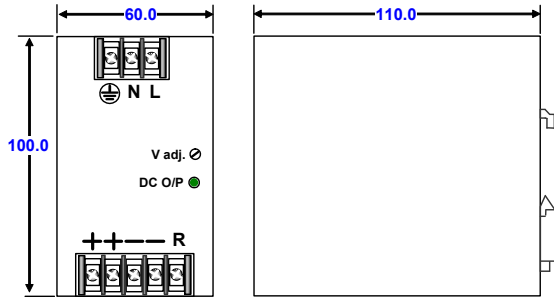
CSP-3-45W



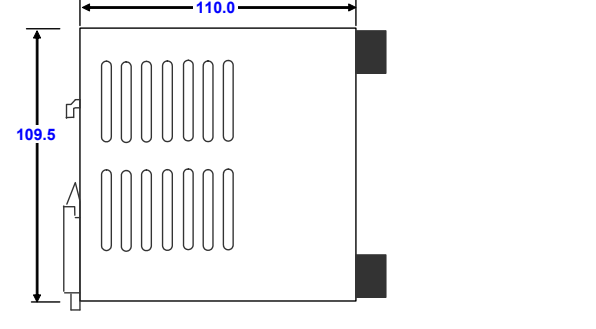
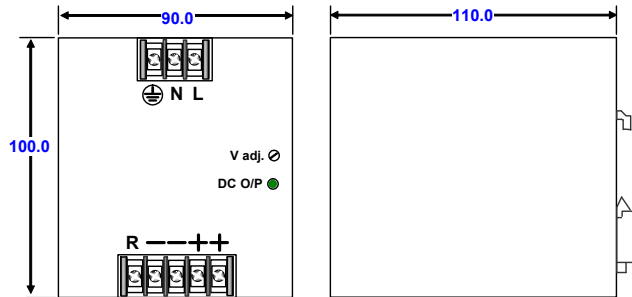
CSP-3-500W



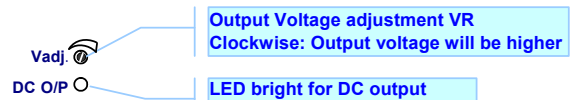
CSP-3-72W



CSP-3-120W/200W



■ OUTPUT VOLTAGE ADJUSTMENT



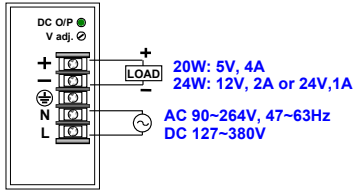
Output Voltage adjustment VR  
Clockwise: Output voltage will be higher

LED bright for DC output

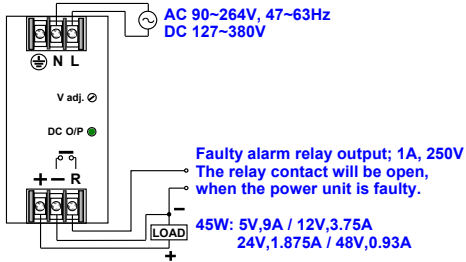
## CONNECTION DIAGRAM

Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker.

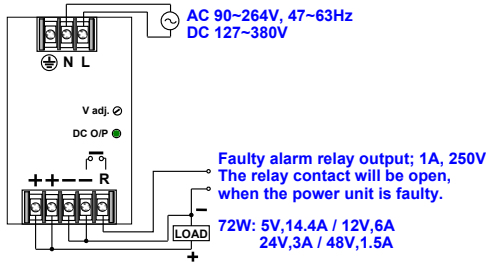
### CSP-3-24W



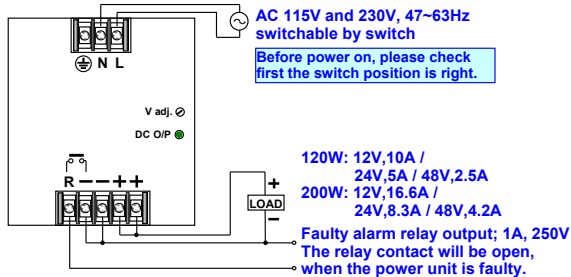
### CSP-3-45W



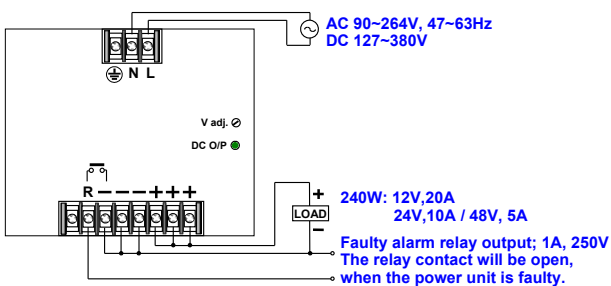
### CSP-3-72W



### CSP-3-120W/200W



### CSP-3-240W



### CSP-3-500W

