

# AC-DC Converter

**POWER  
SOLVE**

## PP200/PP350/PP500 Series 200W - 500W Active PFC Single Output

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### Features

- Universal AC Input with active PFC
- Operating Temperature Range -20°C to +70°C
- U-bracket low profile: 38mm
- High efficiency, long life and high reliability
- Remote ON/OFF Control (PP350 & PP500)
- Output Short Circuit Protection
- Overvoltage, Overload & Over Temperature Protections



PP200: 202(L) x 101.5(W) x 38(H) mm  
PP350: 231(L) x 101.5(W) x 38(H) mm  
PP500: 254(L) x 127(W) x 38(H) mm

### Electrical Specification

Input Voltage	90-264Vac full range, 47-63Hz / 127-370VDC
Power Factor	>0.92 @ 230Vac / >0.98 @ 115Vac
AC Input Current (typ.)	2.4A @ 115Vac / 1.2A @ 230Vac (PP200) 4A @ 115Vac / 2A @ 230Vac (PP350) 6A @ 115Vac / 3A @ 230Vac (PP500)
Inrush Current	25A @ 115Vac / 50A @ 230Vac (PP200) 22A @ 115Vac / 44A @ 230Vac (PP350) 30A @ 115Vac / 50A @ 230Vac (PP500)
Leakage Current	<2mA @ 230Vac
Output Voltage	See Table
Output Current	See Table
Voltage Tolerance	±2%
Overload Protection	>105% of rated output power.
Overvoltage Protection	115-150% of rated output voltage.
Over Temperature Protection	90°C ±5°C (PP200 & PP350) 105°C (PP500)
Operating Temperature Range	-20°C to +70°C. Above 50°C, derate linearly to 50% load at 70°C (PP200) -20°C to +65°C. Above 50°C, derate linearly to 50% load at 65°C (PP350) -20°C to +60°C. Above 50°C, derate linearly to 65% load at 60°C (PP500)
Operating Humidity	20-90% RH non-condensing
Storage Temperature Range	-40°C to +85°C
Storage Humidity	10-95% RH non-condensing
Temperature Coefficient	±0.03%/°C (0-50°C)
Vibration	10-500Hz, 2G 0.5Oct/min., period 60 mins. Each along X, Y & Z axis
Safety Standards	UL60950-1 2nd Edition, TUV EN60950-1: 2006+A11 Approved
Withstand Voltage	I/P-O/P: 4242VDC, I/P-FG: 2121VDC for 1 minute
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100MΩ / 500VDC
EMI Conduction & Radiation	EN55022: 2006 Class B, EN61204-3: 2000, EN61000-6-3: 2007
Harmonic Current	EN61000-3-2, 3: 2006
EMS Immunity	EN55024, EN61204-3: 2000, EN61000-6-1: 2007 (EN61000-4-2, 3, 4, 5, 6, 8, 11)
Cooling	Convection cooling (PP200) Convection cooling up to 300W, 10.5CFM fan for 350W (PP350) Convection cooling up to 400W, 23.5CFM fan for 500W (PP500)
Dimensions	202(L) x 101.5(W) x 38(H) mm (PP200) 231(L) x 101.5(W) x 38(H) mm (PP350) 254(L) x 127(W) x 38(H) mm (PP500)
Weight	0.70Kg (PP200) 1.06Kg (PP350) 1.70Kg (PP500)

#### Notes:

1. All parameters NOT specifically mentioned are measured at 230Vac input, rated load and 25°C ambient temperature
2. Ripple and noise are measured at 20MHz bandwidth by using a 12" twisted pair wire terminated with a 0.1µF ceramic & 47µF electrolytic capacitors across the output
3. Derating is required at low input voltages. Derate linearly to 80% load at 85Vac under 100Vac input
4. 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

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## Output Voltage and Current Ratings

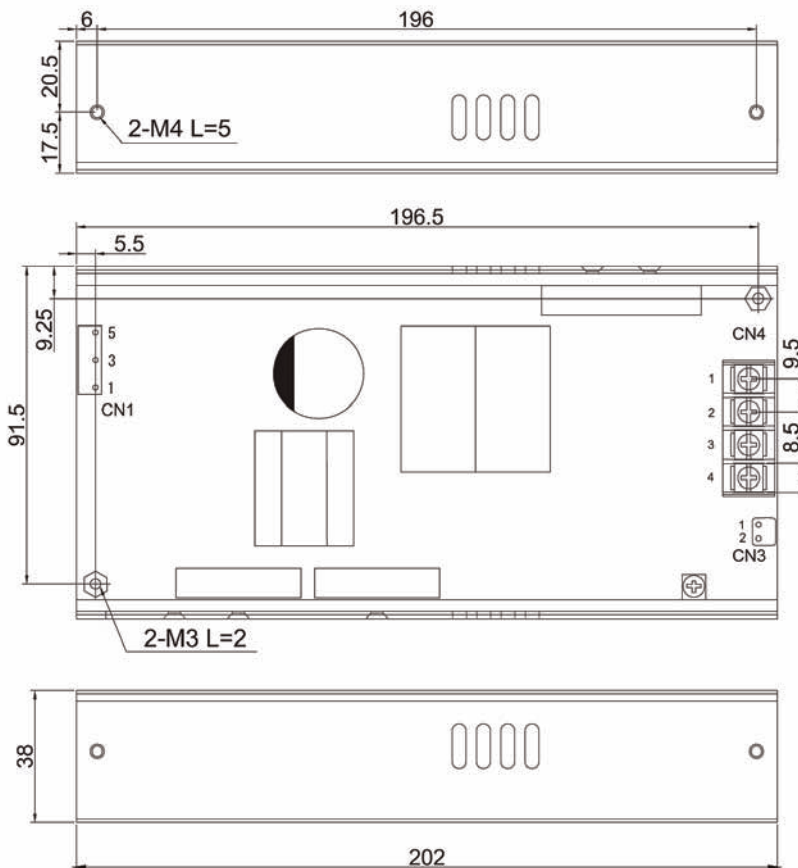
MODEL	OUTPUT VOLTAGE	MAX OUTPUT CURRENT	VOLTAGE Adj. RANGE	RIPPLE & NOISE	LINE REG.	LOAD REG.	POWER Max.	EFF.
PP200-12	12V	16.7A	10.8-13.2V	120mV p-p	±1%	±2%	200.4W	87%
PP200-15	15V	13.4A	13.5-16.5V	150mV p-p	±1%	±2%	201W	87%
PP200-24	24V	8.4A	21.6-26.4V	180mV p-p	±1%	±2%	201.6W	88%
PP200-48	48V	4.2A	43.2-52.8V	150mV p-p	±1%	±2%	200W	88%
PP350-12	12V	29.2A	10.8-13.2V	150mV p-p	±1%	±2%	350W	88%
PP350-15	15V	23.4A	13.5-16.5V	150mV p-p	±1%	±2%	351W	89%
PP350-24	24V	14.6A	21.6-26.4V	150mV p-p	±1%	±2%	350.4W	89%
PP350-48	48V	7.3A	43.2-52.8V	150mV p-p	±1%	±2%	350.4W	90%
PP500-12	12V	42A	10.8-13.2V	150mV p-p	±1%	±2%	504W	90%
PP500-15	15V	33.5A	13.5-16.5V	150mV p-p	±1%	±2%	502.5W	90%
PP500-24	24V	21A	21.6-26.4V	150mV p-p	±1%	±2%	504W	90%
PP500-48	48V	10.5A	43.2-52.8V	150mV p-p	±1%	±2%	504W	91%

**NOTE:**

Maximum current ratings shown for PP350 & PP500 units are with forced air cooling. See electrical specification table for required CFM and derating for convection cooling

## Mechanical & Connection Details

PP200: 202(L) x 101.5(W) x 38(H) mm; Weight: 700g; (Option: Molex Output Connector, consult sales office)



### Connection Details

CN1: AC Input Connector

Pin Function

1	Earth
2	No Pin
3	Neutral
4	No Pin
5	Live

CN3: Fan Power Connector

Pin Function

1	Com
2	+12V

CN4: DC Output Connector

Pin Function

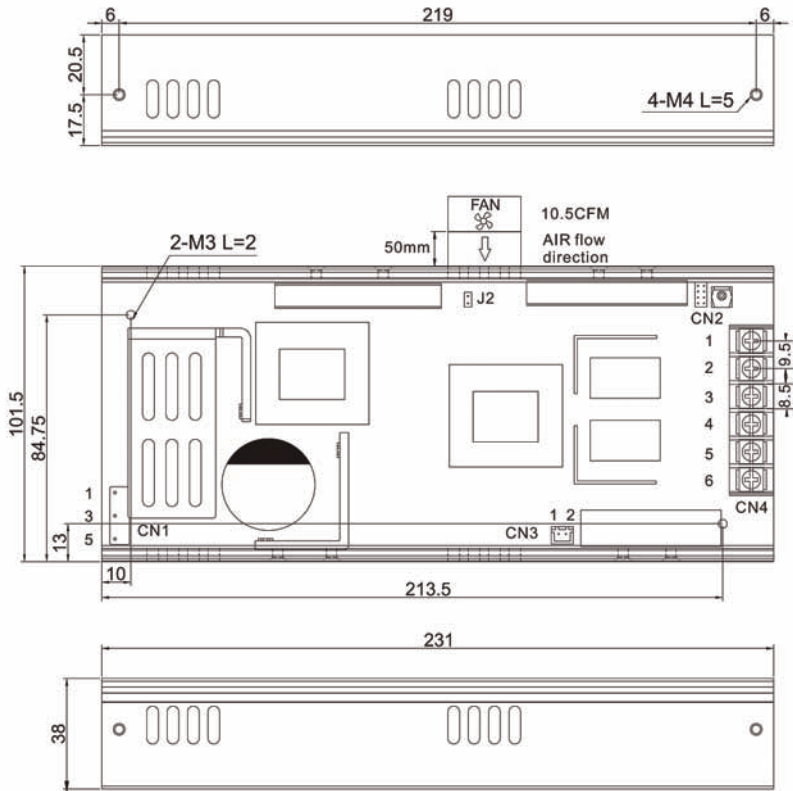
1	-Vo
2	-Vo
3	+Vo
4	+Vo

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PP350: 231(L) x 101.5(W) x 38(H) mm; Weight: 1060g; (Option: Molex Output Connector, consult sales office)



## Connection Details

CN1: AC Input Connector

Pin	Function
1	Earth
2	No Pin
3	Neutral
4	No Pin
5	Live

CN2: Auxiliaries Connector

Pin	Function
1	+VS
2	Comm.
3	-INH
4	N/C
5	-VS
6	POK
7	+INH
8	-VS

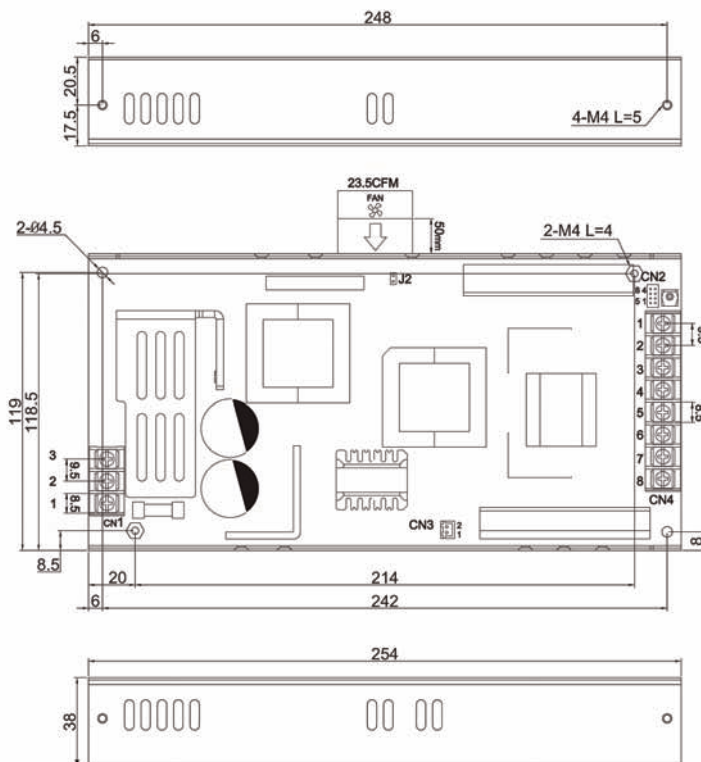
CN3: Fan Power Connector

Pin	Function
1	Comm.
2	+12V

CN4: DC Output Connector

Pin	Function
1-3	-Vo
4-6	+Vo

PP500: 254(L) x 127(W) x 38(H) mm; Weight: 1700g



## Connection Details

CN1: AC Input Connector

Pin	Function
1	Live
2	Neutral
3	Earth

CN2: Auxiliaries Connector

Pin	Function
1	+VS
2	Comm.
3	-INH
4	N/C
5	-VS
6	POK
7	+INH
8	-VS

CN3: Fan Power Connector

Pin	Function
1	Comm.
2	+12V

CN4: DC Output Connector

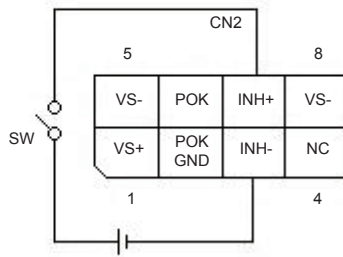
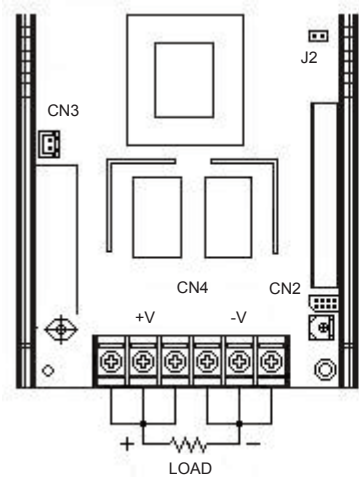
Pin	Function
1-4	-Vo
5-8	+Vo

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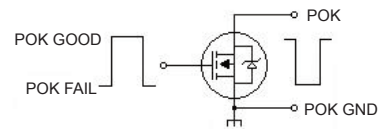
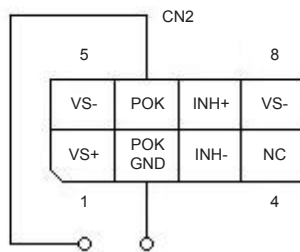
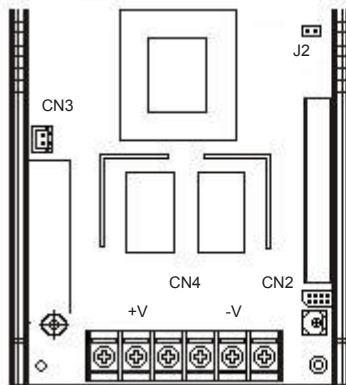
PP350 & PP500: Remote Control - PSU can be turned ON/OFF using the remote control function



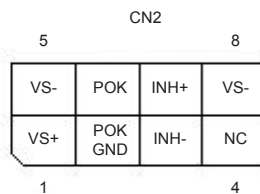
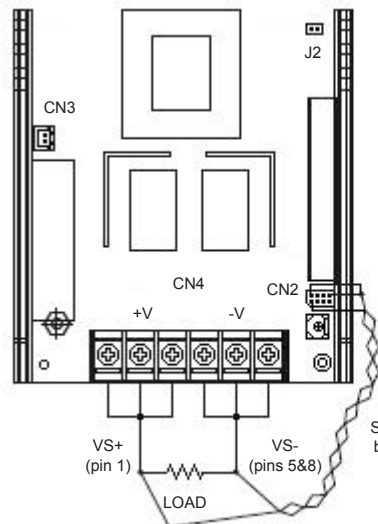
### J2 Pin & CN2 Connections

J2	INH+(pin 7)/INH-(pin 3)	Output Status
Open	SW ON (>2.5V)	ENABLE
Open	SW OFF (<0.8V)	DISABLE
Closed	SW ON (>2.5V)	DISABLE
Closed	SW OFF (<0.8V)	ENABLE

PP350 & PP500: P-OK Control - POK signal uses open drain MOSFET control, Max. 30Vds, 0.1A



PP350 & PP500: Remote Sense - compensates voltage drops in the load wiring up to 0.5V



Sense lines should be twisted in pairs

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## Derating Curves

