

# Industrial Computer ATX Series



## 500W/650W/750W Multiple Output Active PFC Data Sheet

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### Description

This is a high-power factor (PF), multiple-output AC to DC switching mode power supply unit which can provide up to 500/650/750 watts continuous with forced cooling by a smart FSC (fan speed control) circuitry. There is a built-in auxiliary converter (5VSB) for better energy saving. It complies with 80+gold as well as worldwide safety and EMC regulations (refer to details below). It is suitable for various industrial PC applications.

### Features

- \* Full AC input voltage range design.
- \* High power factor and less fictitious power.
- \* Withstand 300Vac surge voltage for 5 seconds.
- \* Full Protections: Short-circuit/ Over-voltage/ Over-current/ Over temperature.
- \* INTEL® standard ATX form factor.
- \* Meet 80+gold and support 200% peak power (note#6).
- \* IEC/EN 62368-1 design compliance.
- \* Up to 5000 meters operating altitude (note#4)
- \* High efficiency and high reliability.
- \* REM\_ON/OFF and PWR\_OK signal



### Electrical Specification

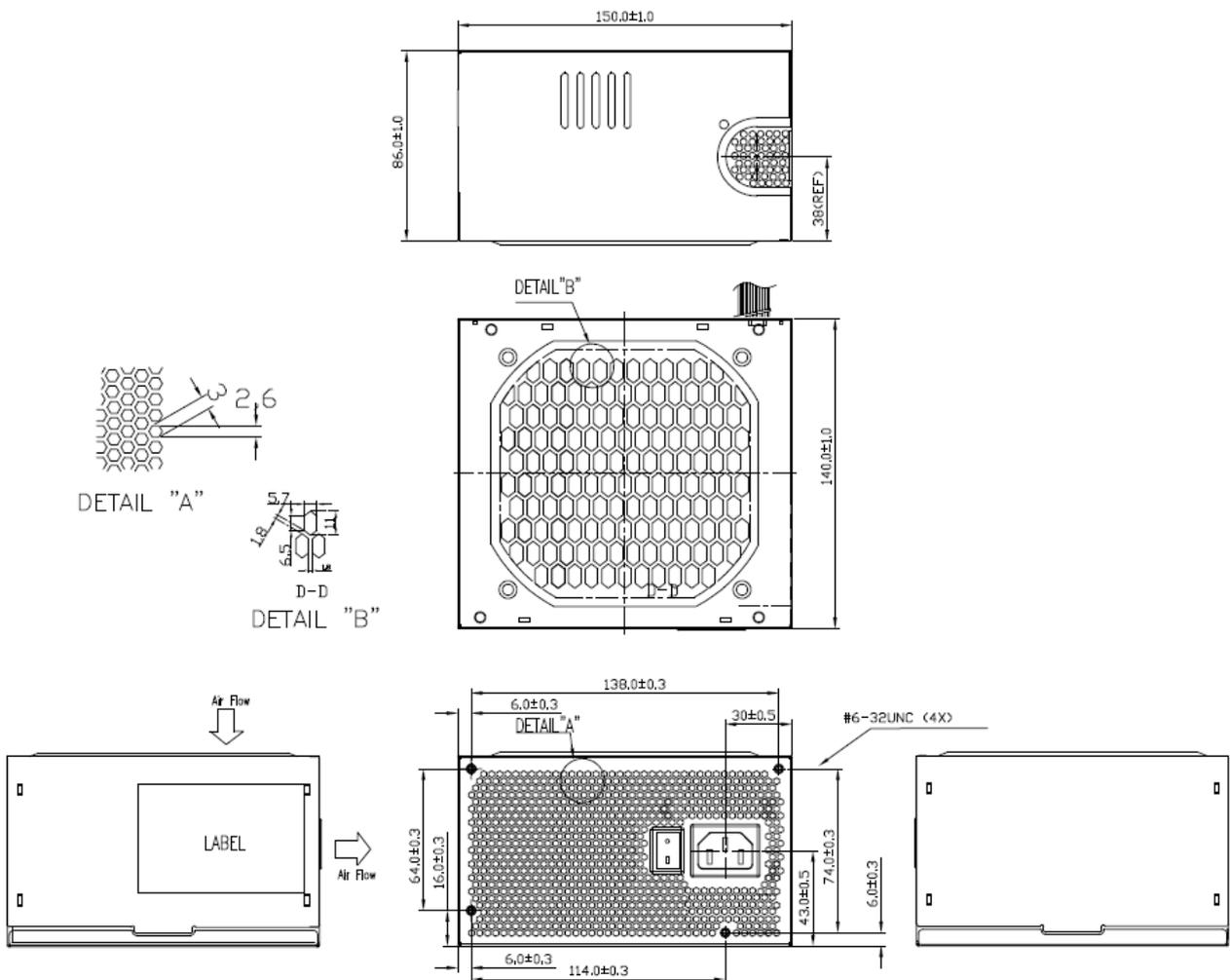
Model Name	PS-5501-50LG / PS-5651-50LG / PS-5751-50LG				
<b>Output</b>					
Rated power	500W / 650W / 750W				
Rated voltage	12V	5V	3.3V	-12V	5Vsb
Rated current	41.6A/54.1A/62.5A	20A	20A	0.3A	3A
Ripple & Noise(max.) (note #2)	120mV	50mV	50mV	120mV	50mV
Line & load regulation	±5%	±5%	±5%	±10%	±5%
Hold-up time(typ.) (note #5)	16ms				
Timing: AC ON delay / rising (max.)	2 sec / 20ms				
<b>Input</b>					
Rated voltage range	100~240Vac				
Operated voltage range	90~264Vac, 300Vac for 5 sec				

Current range (max.)	8A/100Vac (500W); 8A/100Vac (650W); 10A/100Vac (750W)
Inrush current	No component damaged (<math>I^2 \cdot t</math>).
Frequency range	50-60Hz
Leakage current (max.)	3.5mA at 240Vac
Efficiency (min.)	87% - 90% - 87% (at 20% - 50% - 100% of rated loading)
Standby power saving (min.)	Pin<1W at 5Vsb/0.1A Pin<0.5W at Po=0.25W (at REM_OFF, efficiency>50%)
<b>Protection Function</b>	
Over voltage (max.)	140% of rated voltage, latch-off protection (for +12V/+5V/+3.3V)
Over current (max.)	Latch-off protection (for +12V/+5V/+3.3V)
Short circuit at O/P	Latch-off protection (for +12V/+5V/+3.3V)
Over temperature	Latch-off protection
<b>Others</b>	
MTBF (min.) (note#3)	700K hours @ rated load
<b>Environment</b>	
Temperature (note#5)	(operating) 0~50°C / (storage) -40~85°C
Humidity	(operating) 10~90% RH non-condensing / (storage) 5~95% RH
Altitude (max.)	5000 meters
<b>Mechanical</b>	
Dimension	150(L)*140(W)*86(H) mm
Vibration	10~500 Hz, 5G 20min./1cycle per axis for all axes (X, Y, Z)
Weight (typ.)	1.9kg
<b>Safety</b>	
Standard	CB/IEC62368-1,TUV62368-1,UL62368-1,EN62368-1
Withstand voltage	Input-Output: 4242VDC / Input-FG: 2150VDC
Isolation resistance(min.)	Input-Output: 100Mohm @ 500VDC, 25°C, 70%RH
<b>EMC</b>	
EN55032 (CISPR32)	Conducted EMI: class B / Radiated EMI: class B
FCC	Conducted EMI: class B / Radiated EMI: class B
EN61000-3-2	Harmonic distortion: Class D
EN61000-4-2	ESD: ±8KV contact discharge / ±15KV contact discharge
EN61000-4-3	Radiated RF immunity: 3V/m
EN61000-4-4	EFT: ±1KV (AC port)
EN61000-4-5	Surge: ±1KV DM / ±2KV CM
EN61000-4-6	Conducted RF immunity: 3V/m
EN61000-4-8	Magnetic field immunity: 3A/m
EN61000-4-11	Voltage dip immunity

## Notes

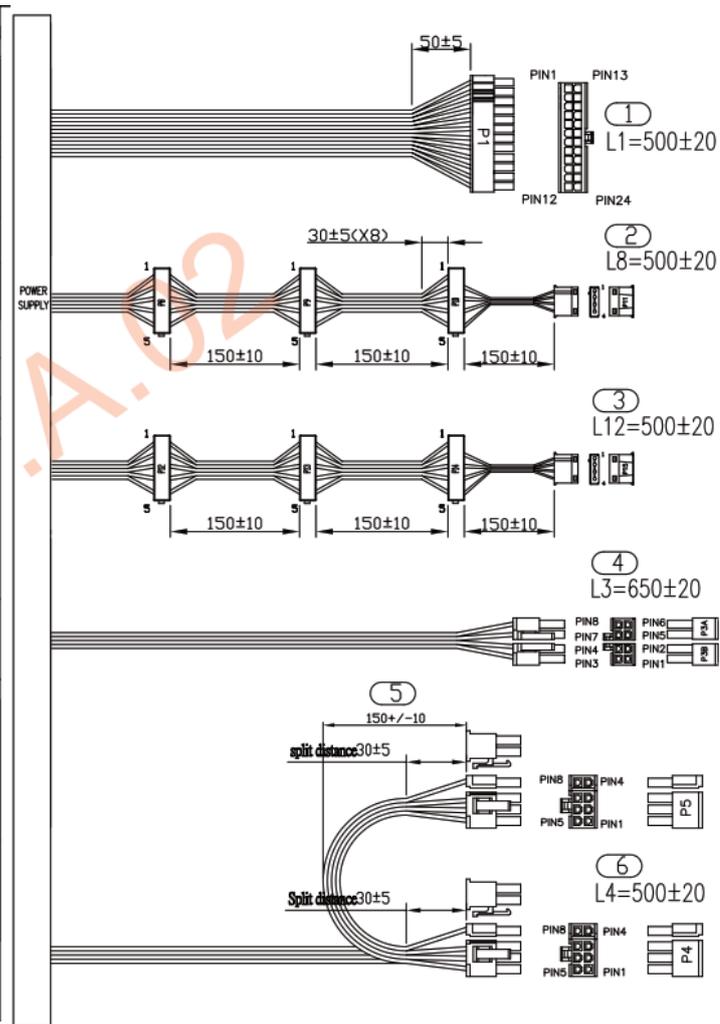
- #1: All specification defined at 230Vac/50Hz, rated power and 25°C ambient temperature if not mentioned specifically.
- #2: Ripple noise is measured with 0.1uF MLCC & 10uF low ESR capacitor.
- #3: Calculated by Telcordia SR332 at 25°C ambient temperature.
- #4: When operating altitude is higher than 2000m, the environment temperature derating factor is 0.36°C/100m.
- #5: Hold up time will be evaluated at 80% of rated load.
- #6: With 12V-2x6 connector, it can support 200% peak power. Without 12V-2x6 connector, it can support 150% peak power.

## Mechanical Specification



PS-5501-50LG

CONNECTOR	PIN #	FUNCTION	WIRE(UL2468)	
			COLOR	TYPE
P1	1	+3.3V	BLACK	20AWG
	2	+3.3V	BLACK	
	3	CDM	BLACK	
	4	+5V	BLACK	22AWG
	4-1	+5V sense	BLACK	
	5	CDM	BLACK	20AWG
	6	+5V	BLACK	
	7	CDM	BLACK	
	8	PWDK	BLACK	22AWG
	9/9-1	5.0BVS	BLACK	
	10	+12V	BLACK	20AWG
	11	+12V	BLACK	
	12	+3.3V	BLACK	
	13	+3.3V	BLACK	22AWG
	13	3.3V Sense(Option)	BLACK	
	14	-12	BLACK	20AWG
	15	CDM	BLACK	
	16	PS_ON	BLACK	22AWG
	17	CDM	BLACK	
	18	CDM	BLACK	20AWG
	19	CDM	BLACK	
	20	CDM	BLACK	
	21	+5V	BLACK	20AWG
	22	+5V	BLACK	
23	+5V	BLACK		
24	CDM	BLACK		
P3	1&5	CDM	BLACK	20AWG
	2&6	CDM	BLACK	
	3&7	+12V	BLACK	
	4&8	+12V	BLACK	
P4, P5	1	+12V	BLACK	20AWG
	2	+12V	BLACK	
	3	+12V	BLACK	
	4	CDM	BLACK	
	5	CDM	BLACK	
	6	CDM	BLACK	
	7	CDM	BLACK	
	8	CDM	BLACK	
P8, P9 P10 P12, P13 P14	1	+3.3V	BLACK	20AWG
	2	CDM	BLACK	
	3	+5V	BLACK	
	4	CDM	BLACK	
	5	+12V	BLACK	
P15, P11	1	+12V	BLACK	20AWG
	2	CDM	BLACK	
	3	CDM	BLACK	
	4	+5V	BLACK	





PS-5751-50LG

CONN CTOR	PIN #	FUNCTION	WIRE(UL2468)		CONN CTOR	PIN #	FUNCTION	WIRE(UL2468)	
			COLOR	TYPE				COLOR	TYPE
P1	1	+3.3V	BLACK	18AWG	P4-P6 & P16	1	+12V	BLACK	18AWG
	2	+3.3V	BLACK						
	3	CDM	BLACK						
	4	+5V	BLACK						
	4-1	+5V Sence	BLACK	20AWG		5	CDM	BLACK	
	5	CDM	BLACK	6		CDM	BLACK		
	6	+5V	BLACK	7		CDM	BLACK		
	7	CDM	BLACK	8		CDM	BLACK		
	8	PGD	BLACK	20AWG	600W	1	+12V	BLACK	UL1480 16AWG
	9	+5Vsb	BLACK	2		+12V	BLACK		
	10	+12V	BLACK	3		+12V	BLACK		
	10-1	+12V Sence	BLACK	4		+12V	BLACK		
	11	+12V	BLACK	5		+12V	BLACK		
	12	+3.3V	BLACK	6		+12V	BLACK		
	13	+3.3V	BLACK	7		CDM	BLACK		
	13-1	+3.3V Sence	BLACK	8		CDM	BLACK		
	14	-12	BLACK	9		CDM	BLACK		
	15	CDM	BLACK	10		CDM	BLACK		
	15-1	CDM	BLACK	11		CDM	BLACK		
	16	PS ON	BLACK	12		CDM	BLACK		
17	CDM	BLACK	S1	CARD-PWR_STABLE	BLACK				
18	CDM	BLACK	S2	CARD-CHL_PRES	BLACK				
19	CDM	BLACK	S3	SENSE 0	BLACK				
20	CDM	BLACK	S4	SENSE 1	BLACK				
18AWG	21	+5V	BLACK	18AWG	P2	1	CDM	BLACK	18AWG
	22	+5V	BLACK						
	23	+5V	BLACK						
	24	CDM	BLACK						
18AWG	1&5	CDM	BLACK	P3A& P3B		2&6	CDM	BLACK	
	3&7	+12V	BLACK						
	4&8	+12V	BLACK						
20AWG	1	+3.3V	BLACK	P8-P10 & P12-P14		1	+12V	BLACK	
	2	CDM	BLACK						
	3	+5V	BLACK						
	4	CDM	BLACK						
	5	+12V	BLACK						
20AWG	1	+12V	BLACK	P11& P15	1	+12V	BLACK	20AWG	
	2	CDM	BLACK						
	3	CDM	BLACK						
	4	+5V	BLACK						

