

Industrial Computer ATX Series



300W 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 300 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.
- * 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	HS-5301-12A1				
Output					
Rated power	300W				
Rated voltage	12V	5V	3.3V	-12V	5Vsb
Rated current	25A	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				
Input					
Rated voltage range	100~240Vac				
Operated voltage range	90~264Vac, 300Vac for 5 sec				

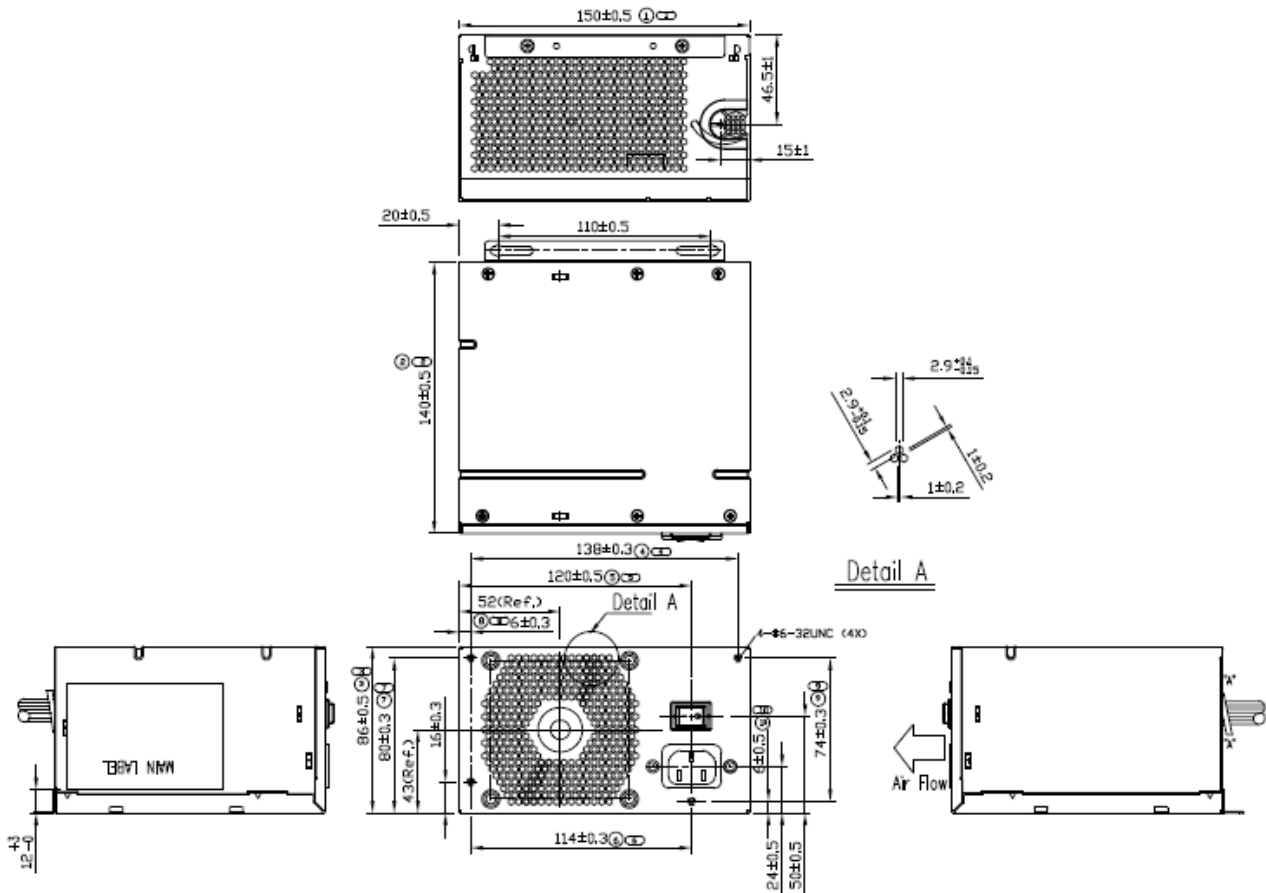
Current range (max.)	6.0A/100Vac
Inrush current	No component damaged ($i^2 \cdot t$).
Frequency range	50-60Hz
Leakage current (max.)	3.5mA at 240Vac
Efficiency (min.)	87% - 90% - 87% (at 20% - 50% - 100% of rated loading)
Standby power saving (min.)	Pin<1W at 5Vsb/0.1A Pin<0.5W at Po=0.25W (at REM_OFF, efficiency>50%)
Protection Function	
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
Others	
MTBF (min.) (note#3)	700K hours @ rated load
Environment	
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
Mechanical	
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.)	1250g
Safety	
Standard	CB/IEC62368-1,TUV62368-1,UL62368-1,EN62368-1, CCC GB4943.1,BSMI CNS15598-1,KC62368-1
Withstand voltage	Input-Output: 4242VDC / Input-FG: 2150VDC
Isolation resistance(min.)	Input-Output: 100Mohm @ 500VDC, 25°C, 70%RH
EMC	
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
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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.

Mechanical Specification



CONNECTOR	PIN #	FUNCTION	TYPE	
			COLOR	
P1 Minifit 20+4pin	1	3.3V	ORANGE	20AWG #1007
	2	3.3V	ORANGE	
	3	GND	BLACK	
	4	5V	RED	
	5	GND	BLACK	
	6	5V	RED	
	7	GND	BLACK	
	8	POK	GRAY	22AWG #1007
	9	5Vsb	PURPLE	20AWG #1007
	10	+12V	YELLOW	
	11	+12V	YELLOW	
	12	3.3V	ORANGE	
	13	3.3V	ORANGE	
	13-1	3.3Vsense	BROWN	22AWG #1007
	14	-12V	BLUE	20AWG #1007
	15	GND	BLACK	
	15-1	GND	BLACK	20AWG #1007
	16	PS ON	GREEN	22AWG #1007
	17	GND	BLACK	20AWG #1007
	18	GND	BLACK	
	19	GND	BLACK	
	20			
	21	5V	RED	
	22	5V	RED	
23	5V	RED		
24	GND	BLACK		
P2 Minifit 4+4pin	1	GND	BLACK	18AWG #1007
	2	GND	BLACK	
	3	GND	BLACK	
	4	GND	BLACK	
	5	+12V	YELLOW	
	6	+12V	YELLOW	
	7	+12V	YELLOW	
	8	+12V	YELLOW	
PA, PB, PD, PE B4P	1	+12V	YELLOW	20AWG #1007
	2	GND	BLACK	
	3	GND	BLACK	
	4	+5V	RED	
PC, PF S4P	1	+5V	RED	20AWG #1007
	2	GND	BLACK	
	3	GND	BLACK	
	4	+12V	YELLOW	
PG, PH SATA	1	3.3V	ORANGE	20AWG #1007
	2	GND	BLACK	
	3	+5V	RED	
	4	GND	BLACK	
	5	+12V	YELLOW	

