# **Industrial Computing ATX Series**



650W 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 650 watts continuous with forced cooling by a smart FSC (fan speed control) circuitry. There is a built-in auxiliary converter (5VSB) for energy saving purpose. It complies with 80+bronze as well as worldwide safety and EMC regulations (refer to details below). It is suitable for various industrial PC applications.

- \* 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/ Overcurrent/ Over temperature.
- \* INTEL® standard ATX form factor.
- \* 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-8651-2							
Output								
Rated power	650W							
Rated voltage	12Va	12Vb	12Vc	12Vd	5V	3.3V	-12V	5Vsb
Rated current	14.5A	18.5A	15A	15A	15A	8.0A	0.3A	4.0A
Ripple & Noise(max.) (note #2)	120mV			50mV	50mV	120mV	50mV	
Line & load regulation	±5%			±5%	±5%	±10%	±5%	
Hold-up time(min.) (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.)	10A/100Vac							

	0.00 (4.00)				
Power factor (typ.)	>0.99/115Vac; >0.95/230Vac				
Inrush current (typ.)	No component damaged ( <i<sup>2*t)</i<sup>				
Frequency range	50-60Hz				
Leakage current (max.)	1.0mA at 240Vac				
Efficiency (min.)	82% - 85% - 82% (at 20% - 50% - 100% of rated load)				
Standby power saving (min.)	Pin<1.0W at 5Vsb/0.1A, Pin<0.5W at 5Vsb/0.05A (at REM_OFF)				
Protection Function					
Over voltage (max.)	145% of rated voltage, latch-off protection for +12V/+5V/+3.3V				
Over current (max.)	<35A for 12V; <240VA for +5V/+3.3V				
	<8A, hiccup protection for +5Vsb				
Short circuit at O/P	No damage, latch-off protection for +12V/+5V/+3.3V				
	No damage, hiccup protection for +5Vsb				
Over temperature	No damage, latch-off protection				
Others					
MTBF (min.) (note#3)	700K hours @ rated load				
Environment					
Temperature	(operating) 0~50°⊂ / (storage) -40~85°⊂				
Humidity	(operating) 10~90% RH non-condensing / (storage) 5~95% RH				
Altitude (max.)	5000 meters				
Mechanical					
Dimension	150.0(L)*140.0(W)*86.0mm(H)				
Vibration	10~500 Hz, 5G 20min./1cycle per axis for all axes (X, Y, Z)				
Weight (typ.)	1515g				
Safety					
Standard	IEC/EN 60950-1, K60950-1, IEC/EN 62368-1, CNS14336-1				
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				
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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 0.47uF MLCC & 47uF low ESR capacitor.
- #3: Calculated by Telcordia SR332 at 25° ⊂ ambient temperature.
- #4: When operating altitude is higher than 2000m, the environment temperature derating factor is  $0.36^{\circ}\text{C}/100\text{m}$ .
- #5: Hold up time will be evaluated at 80% of rated load.

## **Mechanical Specification**

