

Industrial Computer Flex ATX Series



450W 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 450 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 Flex ATX (1U) form factor.
- * Meet 80+gold and support 150% peak power.
- * 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-5451-05LG | | | | |
|-------------------------------------|-----------------------------|------|------|-------|------|
| Output | | | | | |
| Rated power | 450W | | | | |
| Rated voltage | 12V | 5V | 3.3V | -12V | 5Vsb |
| Rated current | 37.5A | 18A | 15A | 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.) | 6.5A/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 | 150.0(L)*81.5(W)*40.5 (H) mm |
| Vibration | 10~500 Hz, 5G 20min./1cycle per axis for all axes (X, Y, Z) |
| Weight (typ.) | 860g |
| 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 |

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

(Refer to below drawing for case openings)

