SILVERSTONE®
Designing Inspiration

STRIDER

ST1000-NV

Exceptional power and flexibility in one

Dual +12V with continuous 70A combined output
100% modular cables with cable bag
Support dual PCI-E 8 pin connectors & six PCI-E 6 pin connectors
Silent running 135mm fan
Support for ATX 12V 2.2 & EPS 12V
Active PFC
Efficiency greater than 80%

SPECIFICATION

SilverStone Strider ST1000-NV
Switching Power Supply
With Active PFC
PS/2 Modular 1000W

1. AC INPUT

1-1. AC input requirements

The input voltage, current, and frequency requirements for continuous operation are stated below.

Table 1 AC Input Line Requirements

Parameter	Min.	Nom.	Max.	Unit
Vin(Full range)	90	100---240	264	VACrms
Vin Frequency	47	60----50	63	Hz
Iin		12-----6		Arms

Power factor correction (PF)>0.95 at full load.

1-2. Inrush current regulation

80 A @ 115Vrms

100 A @ 230Vrms (at 25℃ ambient cold start)

2. DC OUTPUT

2-1. DC voltage regulation

Parameter	Range	Min	Nom.	Max	Unit
+3.3V	+5/-4%	+3.16	+3.3	+3.47	Volts
+5V	+5/-4%	+4.8	+5	+5.25	Volts
+12V1	+5/-4%	+11.52	+12	+12.6	Volts
+12V2	+5/-4%	+11.52	+12	+12.6	Volts
-12V	+9/-5%	-11.40	-12	-13.08	Volts
+5VSB	+5/-3%	+4.85	+5	+5.25	Volts

2-2. Load ranges

Parameter	Min	Nom.	Max	Peak	Unit
+3.3V	0.8	-	25		Amps
+5V	0.5	-	30		Amps
+12V1	1	-	35		Amps
+12V2	1	-	35		Amps
-12V	0	-	0.5		Amps
+5VSB	0.1	-	3.0	3.5	Amps

1.Maximum continuous total DC output power should not exceed 1000W

2.Maximum continuous combined load on +3.3 VDC and +5 VDC outputs shall not exceed 200W

3.Maximum peak total DC output power should not exceed 1100 W

4.Peak power and current loading shall be supported for a minimum of 12 second.

5.Maximum combined current for the 12 V outputs shall be 70A.

6.Peak current for the combined 12V outputs shall be 75A.

2-3. Output Ripple

2-3-1. Ripple regulation

Parameter	Ripple&Noise	Unit
+3.3V	50	mVp-p
+5V	50	mVp-p
+12V1	120	mVp-p
+12V2	120	mVp-p
-12V	120	mVp-p
+5VSB	50	mVp-p

2-3-2. Definition

The ripple voltage of the outputs shall be measured at the pins of the output connector when terminated in the load impedance specified in figure 1. Ripple and noise are measured at the connectors with a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor to simulate system loading. Ripple shall be measured under any condition of line voltage, output load, line frequency,operation temperature.

2-3-3. Ripple voltage test circuit

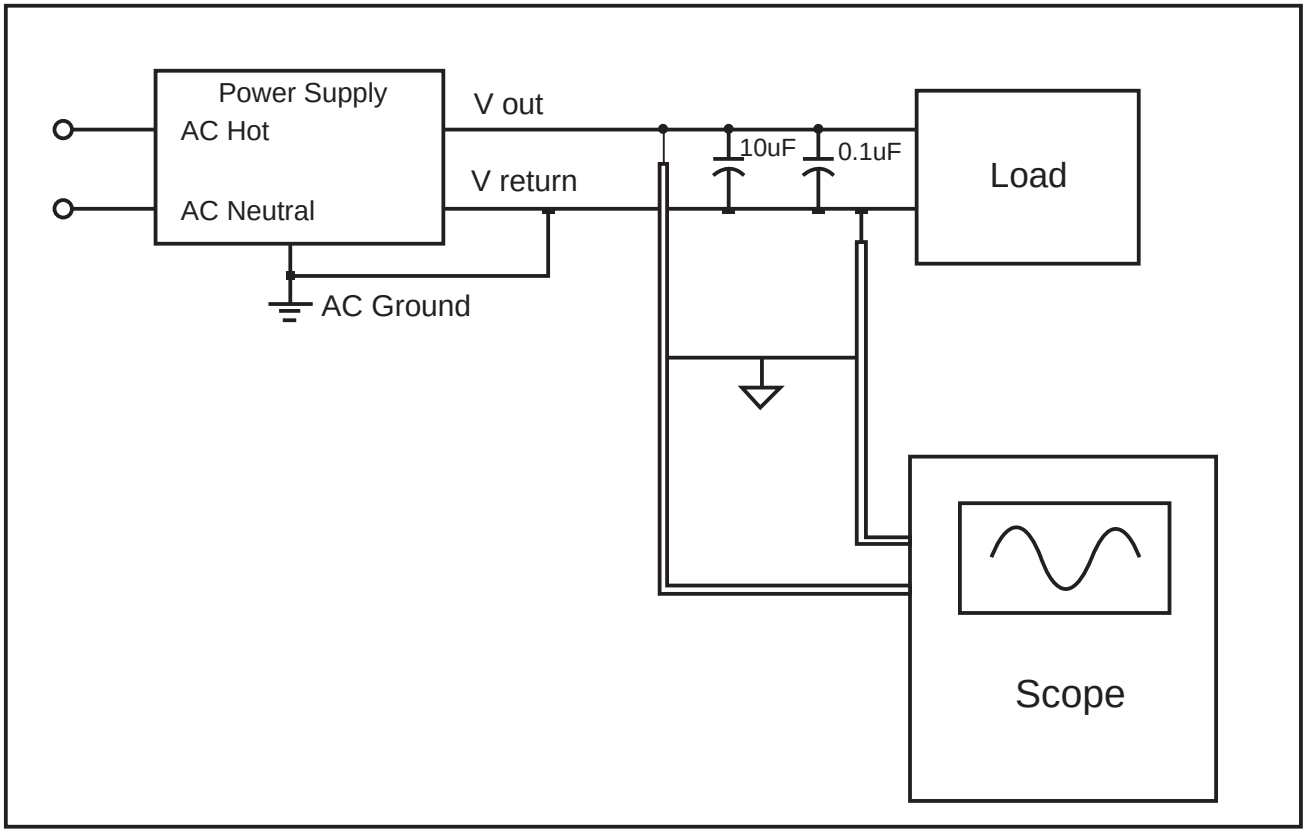


Figure 1. Ripple voltage test circuit

2-4. Overshoot

Any overshoot at turn on or turn off shall be less 10% of the normal voltage value, all outputs shall be within the regulation limit of section 2.0 before issuing the power good signal of section 5.0.

2-5. Efficiency

Power supply efficiency typical 80% at normal AC main voltage and full load on all outputs.

2-6. Remote ON/OFF control

When the logic level "PS-ON" is low, the DC outputs are to be enabled.

When the logic level is high or open collector, the DC outputs are to be disabled.

3. PROTECTION

3-1. Over current protection

The power supply shall have current limit to prevent the +3.3V,+5V,and +12V1,+12V2 outputs from exceeding the values shown in the following Table.If the current limits are exceeded the power supply shall shutdown and latch off.

Voltage	Over Current Limit (Iout limit)
+12V1	40A minimum; 50A maximum
+12V2	40A minimum; 50A maximum
+5V	33A minimum; 48A maximum
+3.3V	30A minimum; 50A maximum

3-2. Under voltage protection.

In an under voltage fault occurs, the supply will latch all DC outputs into a shutdown state when +12V,+5V & +3.3V outputs under 85% of it's maximum value.

3-3. Over voltage protection

The over voltage sense circuitry and reference shall reside in packages that are separate and distinct from the regulator control circuity and reference.No single point fault shall be able to cause a sustained over voltage condition on any or all outputs.The supply shall provide latch-mode over voltage protection as defined in Table.

output	Minimum	Nominal	Maximum	Unit
+12 VDC	13.4	15.0	15.6	Volts
+5 VDC	5.74	6.3	7.0	Volts
+3.3 VDC	3.76	4.2	4.3	Volts

3-4. Short circuit

An output short circuit is defined as any output impedance of less than 0.1 ohms.The power supply shall shut down and latch off for shorting the +3.3 VDC,+5 VDC,or+12 VDC rails to return or any other rail. Shorts between main output rails and +5VSB shall not cause any damage to the power supply. The power supply shall either shut down and latch off or fold back for shorting the negative rails.+5VSB must be capable of being shorted indefinitely,but when the short is removed,the power supply shall recover automatically or by cycling PS_ON#.The power supply shall be capable of withstanding a continuous short-circuit to the output without damage or overstress to the unit

3-5. No load operation

No damage or hazardous condition should occur with all the DC output connectors disconnected from the load.The power supply may latch into the shutdown state.

4. TIMING

4-1. Signal timing drawing

Figure 2. is a reference for signal timing for main power connector signals and rails.

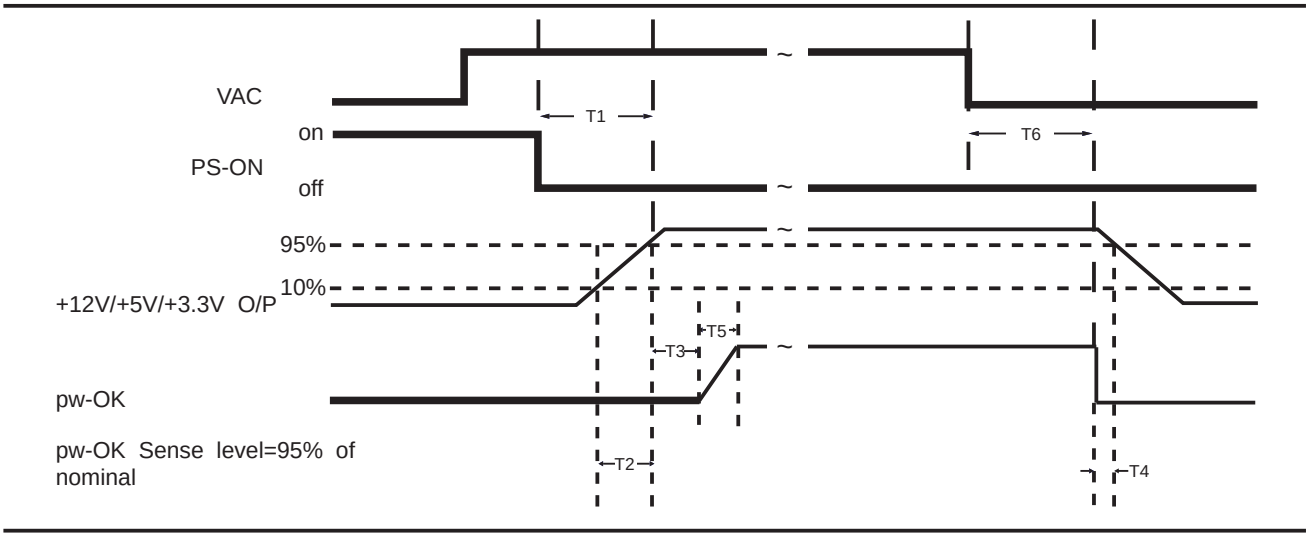


Figure 2. PW-OK Timing Sequence

(1)T3: Power good signal turn on delay time (100ms~500ms)

(2)T4: Power good signal turn off delay time (1ms min)

(3)T5: Rise time (5~70ms max)

(4)T6: Hold up time (17ms min)

4-2. Hold up time

When the power loss its input power, it shall maintain 17ms in regulation limit at normal input voltage. (AC:115V/60Hz or 230V/50Hz)

5. ENVIRONMENT

5-1. Operation

Temperature	0 to 40℃
Relative Humidity	10 to 90%, non-condensing

5-2. Shipping and Storage

Temperature	-20 to 60℃
Relative Humidity	5 to 95%, non-condensing

5.3 Altitude

Operating	10,000FT max
Storage	50,000FT max

6. SAFETY

6-1. Underwriters Laboratory (UL) recognition.
The power supply designed to meet UL 1950.

6-2. The power supply must bear the German Bauart Mark from TUV.

7. ELECTROMAGNETIC COMPATIBILITY (EMC)

7-1. IEC 1000-4-2 ESD LEVEL X20KV4.

7-2. IEC 1000-4-3 radiated electrical field requirement.

7-3. IEC 1000-4-4 BURST.

7-4. IEC 1000-4-5 surge Voltages

7-5. EN61000-3-2 harmonic current emissions.
If applicable to sales in Japan or Europe, the power supply shall meet the requirements of EN 61000-3-2 class D and the guidelines for the suppression of harmonics in appliances and general use equipment class D for harmonic line current content at full-rated power.

7-6. EN55024 class B radio interference (CISPR 22)

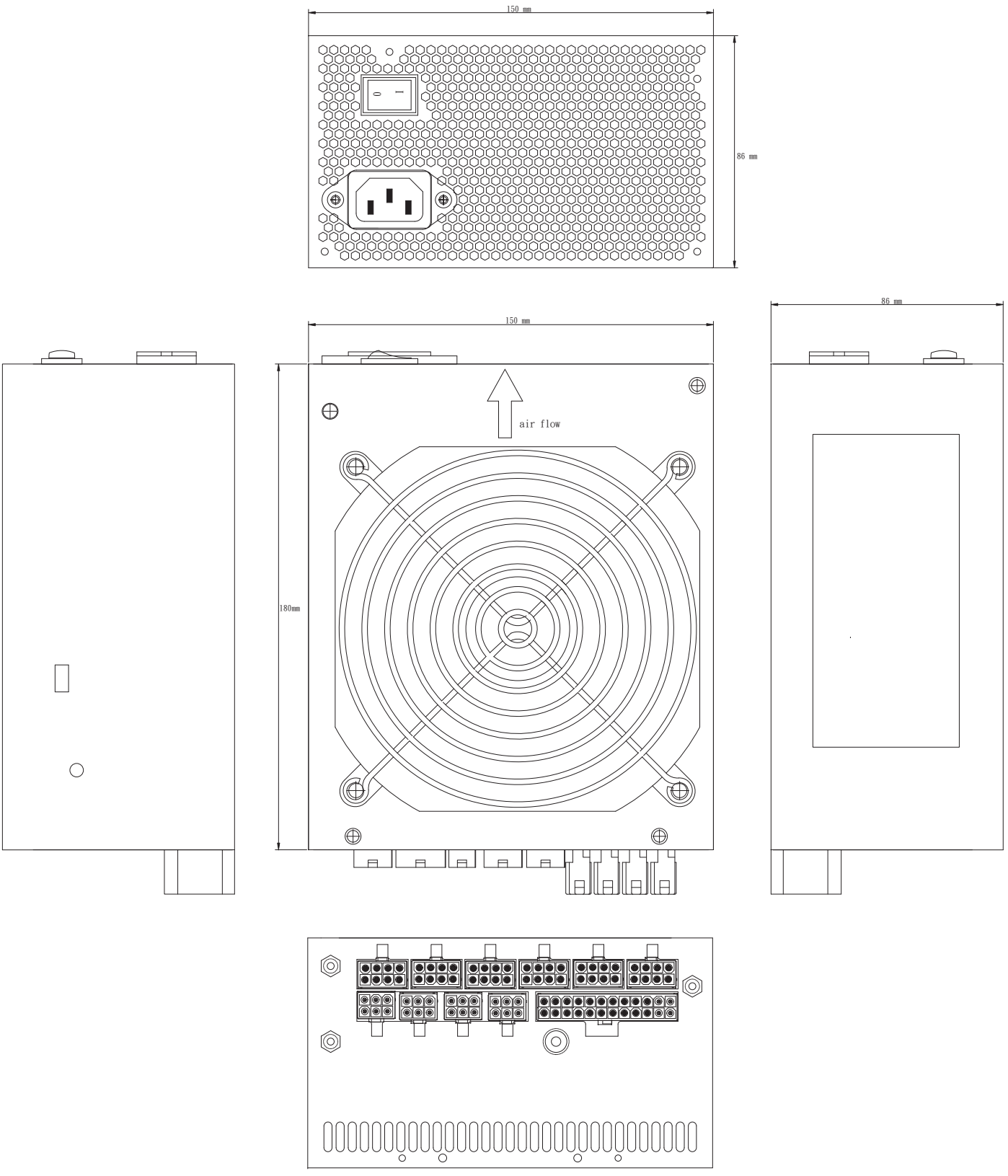
7-7. FCC part 15, subpart J class B 115VAC operation.

8. MTBF

8-1. MTBF (mean time between failures) calculation
The demonstrated MTBF shall be 100,000 hours of continuous operation at 25℃,full load, and nominal line. The MTBF of the power supply be calculated in accordance with MIL-HDBK-217F. The DC FAN is not included.

9. MECHANICAL REQUIREMENTS

9-1. Physical dimension



9-2. Pin definition

M/B 24PIN connector

16AWG wire	Signal	Pin	Pin	Signal	16AWG wire
Orange	+3.3V	13	1	+3.3V	Orange
Orange(22AWG)	+3.3Vsense	13			
Blue	-12VDC	14	2	+3.3V	Orange
Black	COM	15	3	COM	Black
Green	PS-ON	16	4	+5VDC	Red
Black	COM	17	5	COM	Black
Black	COM	18	6	+5VDC	Red
Black	COM	19	7	COM	Black
N/C	N/C	20	8	PWRGOOD	Grey (20AWG)
Red	+5VDC	21	9	+5Vsb	Purple(18AWG)
Red	+5VDC	22	10	+12V1	Yellow
Red	+5VDC	23	11	+12V1	Yellow
Black	COM	24	12	+3.3V	Orange

4PIN peripheral connector (HDD) 4PIN floppy connector (FDD)

18 AWG wire	Signal	Pin	Pin	Signal	22AWG wire
Yellow	+12V1	1	1	+5VDC	Red
Black	COM	2	2	COM	Black
Black	COM	3	3	COM	Black
Red	+5VDC	4	4	+12V1	Yellow

SATA connector

18AWG wire	Signal	Pin
Orange	+3.3V	5
Black	GND	4
Red	+5V	3
Black	GND	2
Yellow	+12V1	1

EPS 12V 8PIN Connector

18AWG wire	Signal	Pin	Pin	Signal	18AWG wire
Yellow	+12V1	5	1	COM	Black
Yellow	+12V1	6	2	COM	Black
Yellow	+12V1	7	3	COM	Black
Yellow	+12V1	8	4	COM	Black

8PIN PCI Express Connector

18AWG wire	Signal	Pin	Pin	Signal	18AWG wire
Yellow/Black	+12V2	1	5	GND	Black
Yellow/Black	+12V2	2	6	GND	Black
Yellow/Black	+12V2	3	7	GND	Black
Black	GND sense	4	8	GND	Black

6PIN PCI Express Connector

18AWG wire	Signal	Pin	Pin	Signal	18AWG wire
Yellow/Black	+12V2	1	4	GND	Black
Yellow/Black	+12V2	2	5	GND sense	Black
Yellow/Black	+12V2	3	6	GND	Black

10.FAN SPEED CONTROL

Fan voltage varies with the ambient temperature or output power

To be valid, this sheet must be filled out by
your salesperson at the time of purchase.

Store :
Purchaser :
Purchase date :
Model No. :
Serial No. :

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