

SPECIFICATION

350W ATX
1U
Industrial Grade Power Supply
(With Active PFC)

Model: P6350H 1F

Specification subject to change without prior notice.



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MODEL NO. P6350H 1F (Active PFC)

This specification describes the requirements of 350 watts switching power supply with an 1U IPC form-factor, +5V standby voltage, remote on/off control, and forced air cooling characteristics.

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)	103	115 - 240	264	VACrms
Vin Frequency	47		63	Hz
Iin(Current)		6 3		Arms

Power Factor Correction (PFC) > 0.95 at full load and normal input voltage.

1.2 Inrush current regulation

50 A @ 115Vrms

100 A @ 230Vrms (at 25°C ambient cold start).

2. DC OUTPUT

2.1 DC voltage regulation

Parameter	Range	Min	Nom.	Max	Unit
+3.3V	+/-5%	+3.14	+3.3	+3.47	Volts
+5V	+/-5%	+4.75	+5	+5.25	Volts
+12V1	+/-5%	+11.4	+12	+12.6	Volts
+12V2	+/-5%	+11.4	+12	+12.6	Volts
-5V	+/-10%	-4.5	-5	-5.5	Volts
-12V	+/-10%	-10.8	-12	-13.2	Volts
+5VSB	+/-5%	+4.75	+5	+5.25	Volts

2.2 Load ranges

Parameter	Min	Nom.	Max	Peak	Unit
+3.3V	1.5	-	20.0		Amps
+5V	1.0	-	20.0		Amps
+12V1	1.5	-	16.0		Amps
+12V2	1.5	-	12.0		Amps
-5V	0.0	-	0.5		Amps
-12V	0.0	-	1.0		Amps
+5VSB	0.1	-	2.0		Amps

Notes:

- (1) The maximum continuous average DC output power shall not exceed 350W.
- (2) The maximum continuous combined load on +3.3VDC and +5VDC output shall not exceed 150W.
- (3) The maximum continuous average load on +12V1 & +12V2 outputs shall not exceed 20A.
- (4) The +5V standby output shall remain on with the AC input power connected, whether the powersupply DC outputs are disabled (Off) or enabled (On) by the remote on control signal.

2.3 Output Ripple

2.3.1 Ripple regulation

Parameter	Ripple&Noise	Unit
+3.3V	150	mVp-p
+5V	100	mVp-p
+12V1	120	mVp-p
+12V2	120	mVp-p
-5V	100	mVp-p
-12V	120	mVp-p
+5VSB	120	mVp-p

2.3.2 Definition

The ripple voltage of the output 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

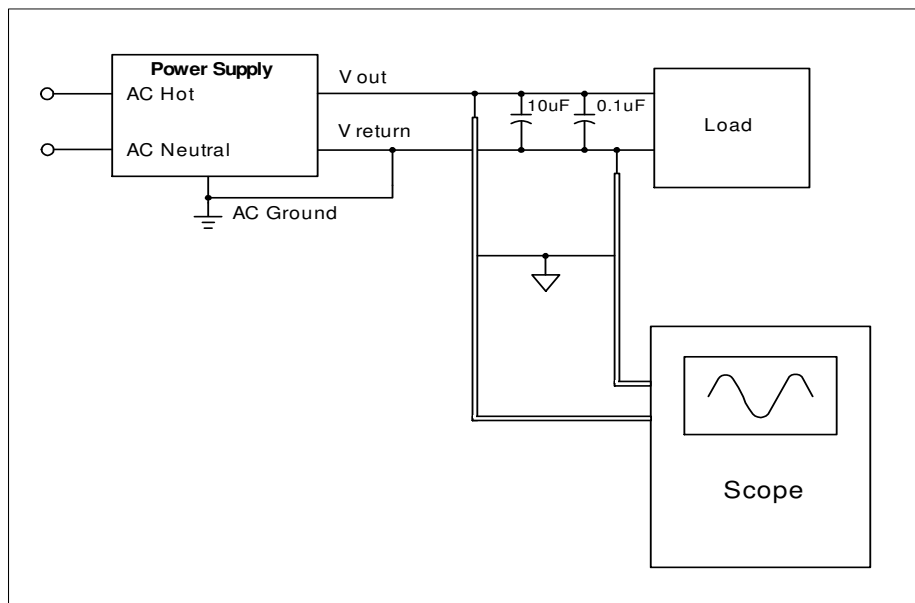


Figure 1. Ripple voltage test circuit

2.4 Overshoot

Any overshoot at turn on or turn off shall be less 10% of the nominal 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 65% 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.

3.0 PROTECTION

3.1 Over-power protection

The power supply will be shutdown and latch off when output power at 420W~490W.

3.2 Over current protection

If an over current fault occurs, the supply will latch all DC outputs into a shutdown state before +3.3V or +5V or +12V1 or +12V2 output current exceed 240VA.

3.3 Over voltage protection

If an over voltage fault occurs, the supply will latch all DC outputs into a shutdown state. The supply shall provide latch mode over voltage protection as defined right.

3.4 Short circuit

The power supply shall shutdown and latch off for shorting +3.3V, +5V, -5V, +12V1, +12V2, -12V rails. The main output short circuit of any impedance shall less than 0.1 ohms. The maximum short circuit current in any outputs shall not exceed 240VA.

NOTES: 5Vsb will be auto-recovery when the fault removed.

3.5 No load operation

No damage or hazardous will occur with any output disconnected from load.

4. TIMING

4.1 Signal timing drawing

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

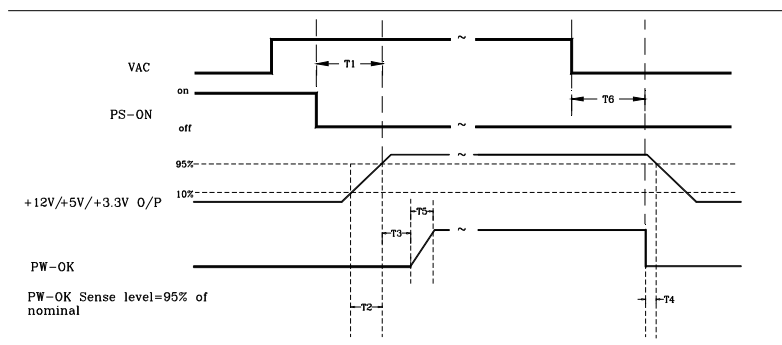


Figure 2. PS-OK Timing Sequence

- (1) Rise time ($0.1\text{ms} \leq T2 \leq 20\text{ms}$)
- (2) Power good signal turn on delay time ($100\text{ms} < T3 < 500\text{ms}$)
- (3) Power good signal turn off delay time ($T4 \geq 1\text{ms}$)
- (4) Rise time ($T5 \leq 10\text{ms}$)

4.2 Hold up time (T6 of figure 2.)

When the power loss its input power, it shall maintain 16ms in regulation limit at normal input voltage. (AC:115/60Hz or 230V/50Hz)

5. ENVIRONMENT

5.1 Operation

Temperature	0 to 50°C
Relative Humidity	10 to 85%, non-condensing

Note: when the temperature is 40~50°C , the full load test used 80%.

5.2 Shipping and Storage

Temperature	-20 TO 70°C
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 Canadian Standards Association(CSA) approval.

The power supply designed to meet CSA C22.2 NO. 950.

6.3 The power supply must be certified to EN60 950, A1 and A2.

6.4 CB test report to meet the IEC 950 2ND.

6.5 SEMKO,NEMKO,DEMKO,or SETI certified by any NORDIC CENELEC.

6.6 The power supply must bear the German Bauart Mark from TUV or VDE.

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 EN 61000-3-2 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

> 100,000 hours at 75% of maximum continuous output loading at 25°C ambient conditions.
The DC FAN is not included.

9. MECHANICAL REQUIREMENTS

9.1 Physical dimension

