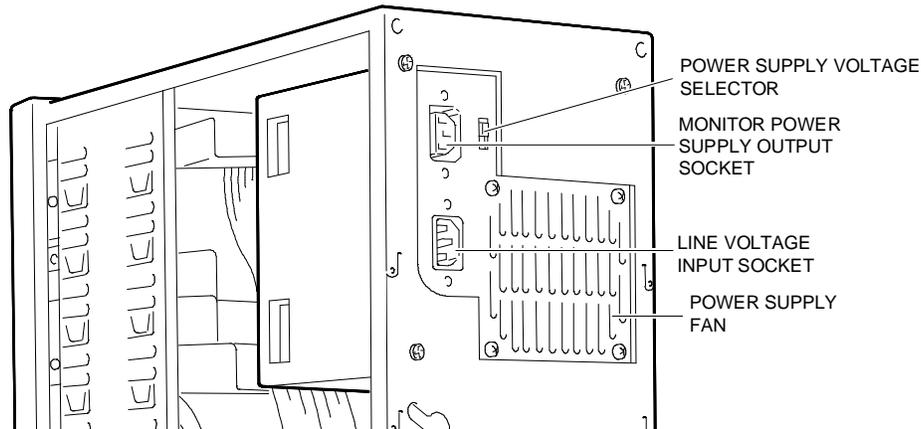


## POWER SUPPLIES

### POWER SUPPLY SP300T

A



**Note:** The only setting that can be made on the power supply is the selection of the input line voltage. The selection of the input line voltage rating is made using the power supply voltage selector on the rear of the basic module. This setting is made at the factory and, to prevent it from being accidentally changed, an adhesive label is applied on top of this switch to hide it.

#### INPUT CHARACTERISTICS

Input voltages that can be selected using the power supply voltage selector	200 - 240 VAC 100 - 120 VAC Max applicable voltage 270 VAC
Tolerances	+10 -10%
Temporary deviations	-25% for 500 msec -100% for 20 msec
Line voltage frequency	50-60 Hz +/- 5%

#### OUTPUT CHARACTERISTICS

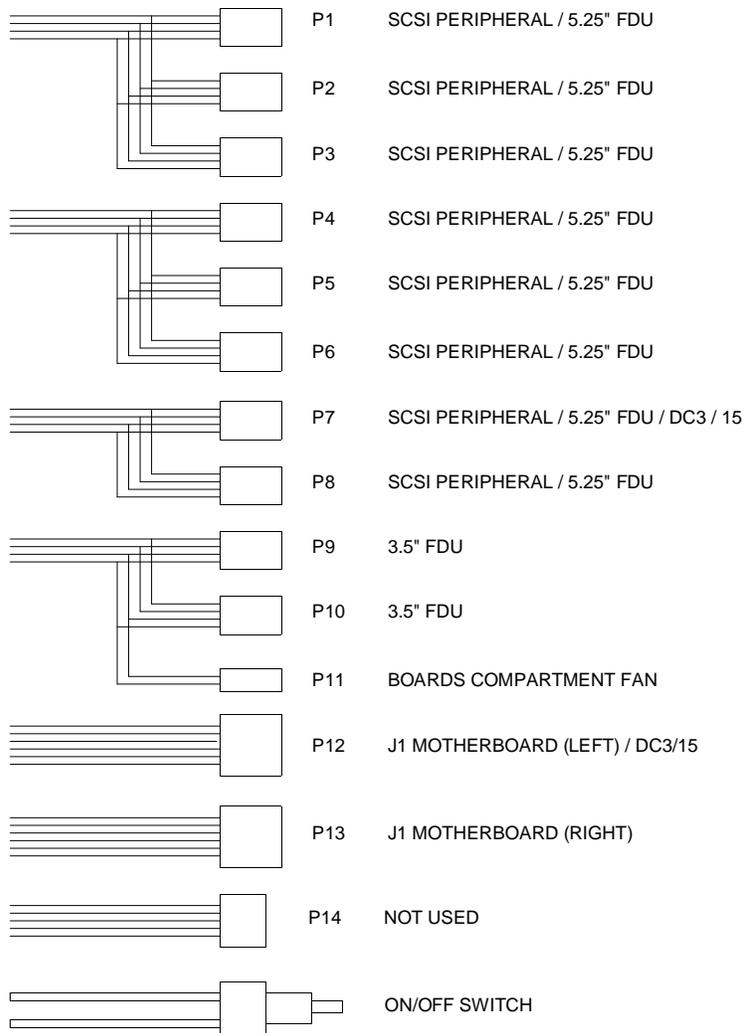
VOLTAGES	TOLERANCE	MINIMUM CURRENT	MAXIMUM CURRENT	RIPPLE
+5.1 VDC	+5% -4%	2.0 A	32.0 A	50 mVpp
+12 VDC	+5% -4%	0.0 A	10.0 A	100 mVpp
-12 VDC	+/-10%	0.0 A	1 A	100 mVpp
-5 VDC	+/-5%	0.0 A	1.0 A	100 mVpp
Output power	300 W continuous, 350 W peak			
Current peaks allowed on +12 VDC	15 A for 20 sec. max			

#### PROTECTIONS

Short circuit	Short circuit protection between the output terminals; in this case, all voltages go to zero until the short circuit is cleared.
Fan blocking	An internal thermal protection switches off the power supply if the cooling fan is damaged or for overtemperature. The permitted delay time is 10 minutes maximum.
Overvoltage	Crowbar circuit controlling the +5 V, acts when the voltage exceeds 5.8/6.5 V.
No load	The absence of a load does not damage the power supply.
Fuse	For the 110 - 120 VAC version: approved by UL/CSA For the 220 - 240 VAC version: High Breaking Capacity type.

## POWER SUPPLY OUTPUT CONNECTORS

The SP300T power supply is equipped with a monitor power output socket, located on the rear of the system, and a number of internal connectors to power all of the system's internal peripherals.



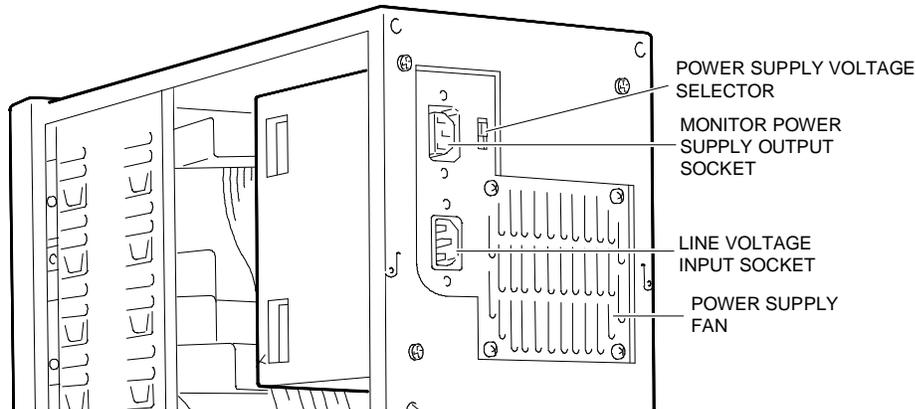
CONNECTOR SERIGRAPH	TYPE	PIN No.	SIGNAL	CABLE COLOR
P1 / P8	AMP 1-480424-0 MOLEX 8981-4P	1 2 3 4	+12 V GND GND +5 V	Orange Black Black Red
P9, P10	AMP 171822-4	1 2 3 4	+5 V GND GND +12 V	Red Black Black Orange
P11	AMP 171822-2	1 2	+12 V GND	Orange Black
P12	BURNDY GTC 6P-1 MOLEX #90331-0003	1 2 3 4 5 6	Power Good +5 V +12 V -12 V (polarization key) GND GND	White Red Orange Yellow Black Black
P13	BURNDY GTC 6P-1 MOLEX #90331-0002	1 2 3 4 5 6	GND (polarization key) GND -5 V +5 V +5 V +5 V	Black Black Grey Red Red Red
P14	MOLEX #39-01-2100 (not used)	1 2 3 4 5 6 7 8 9 10	Not connected +5 V +5 V +5 V +12 V Not connected GND GND GND GND	Red Red Red Red Orange  Black Black Black Black

A

**POWER SUPPLY SP300T (110/220 Vac) EVOLUTION - VIMO Code 558191 Z**

DATE	LEV.	REASON FOR CHANGE	APPLIC.
04/94	Nasc	Introduction of the ASTEC SA300-3400 power supply code 558188 E.	Factory

## POWER SUPPLY SP300T-3



**Note:** The only setting that can be made on the power supply is the selection of the input line voltage. The selection of the input line voltage rating is made using the power supply voltage selector on the rear of the basic module. This setting is made at the factory and, to prevent it from being accidentally changed, an adhesive label is applied on top of this selector to hide it.

### INPUT CHARACTERISTICS

Input voltages that can be selected using the power supply voltage selector	220 - 240 VAC 100 -120 VAC Max applicable voltage 270 VAC
Tolerances	+10 -10%
Temporary deviations	-25% for 500 msec -100% for 20 msec
Line voltage frequency	50-60 Hz +/- 5%

### OUTPUT CHARACTERISTICS

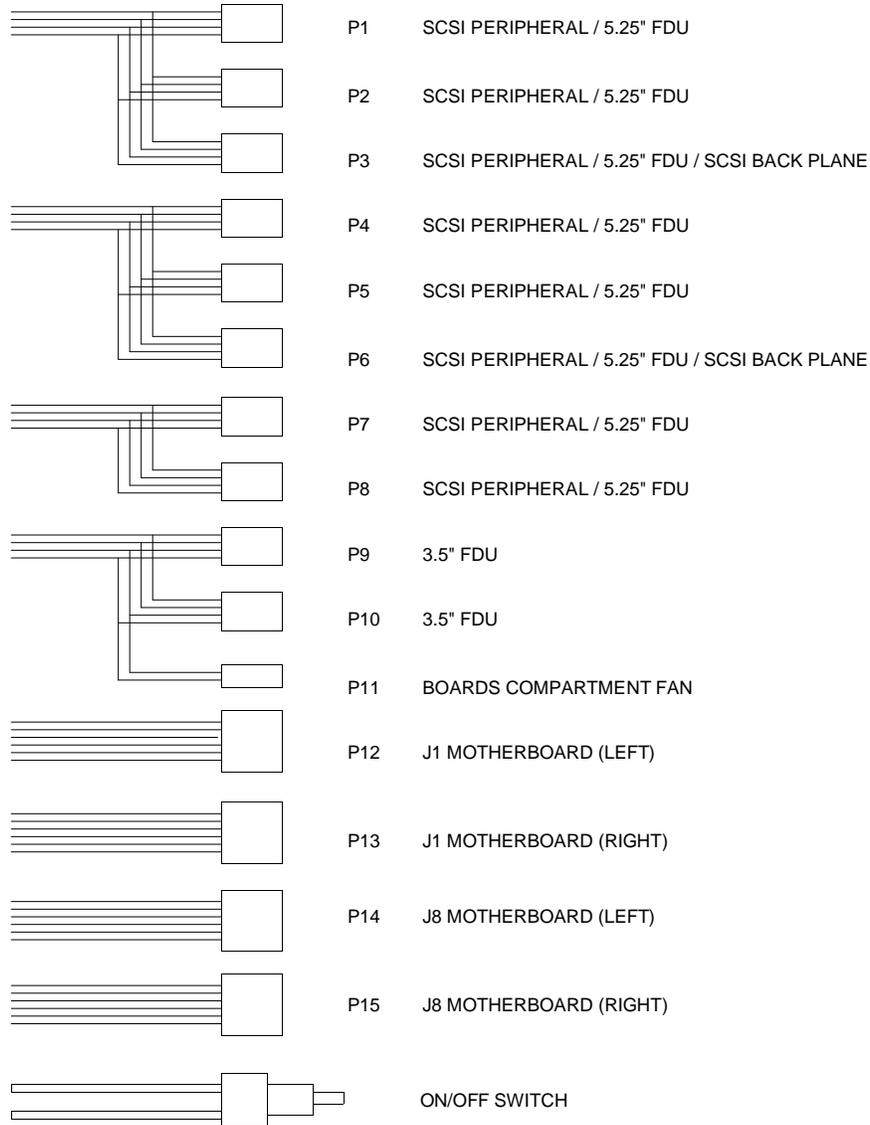
VOLTAGES	TOLERANCE	MINIMUM CURRENT	MAXIMUM CURRENT	RIPPLE
+3.3 VDC	+5% -4%	0.0 A	15.0 A	50 mVpp
+5.1 VDC	+5% -4%	2.0 A	32.0 A	50 mVpp
+12 VDC	+5% -4%	0.0 A	10.0 A	100 mVpp
-12 VDC	+/-10%	0.0 A	1.0 A	100 mVpp
-5 VDC	+/-5%	0.0 A	1.0 A	100 mVpp
Output power	300 W continuous 350 W peak			
Total power on +5 VDC and +3.3 VDC	Less than 150 W			
Current peaks allowed on +12 VDC	15 A for 20 sec. max			

### PROTECTIONS

Short circuit	Short circuit protection between the output terminals; in this case, all voltages go to zero until the short circuit is cleared.
Fan blocking	An internal thermal protection switches off the power supply if the cooling fan is damaged or for overtemperature. The permitted delay time is 10 minutes maximum.
Overvoltage	Crowbar circuit controlling the +5 V and +3.3 V, acts when the voltage exceeds 5.8/7.0 V (for the +5 V) and 3.8/4.6 V (for the 3.3 V).
No load	The absence of a load does not damage the power supply.
Fuse	For the 110 - 120 VAC version: approved by UL/CSA For the 220 - 240 VAC version: High Breaking Capacity type.

## POWER SUPPLY OUTPUT CONNECTORS

The SP300T-3 power supply is equipped with monitor power supply output connector, located on the rear of the system, and a number of internal connectors to provide power to all of the system's internal peripherals.



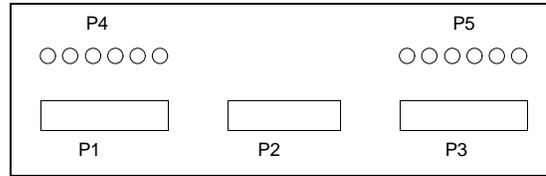
CONNECTOR SERIGRAPH	TYPE	PIN No.	SIGNAL	CABLE COLOR
P1 / P8	AMP 1-480424-0 MOLEX 8981-4P	1 2 3 4	+12 V GND GND +5 V	Orange Black Black Red
P9, P10	AMP 171822-4	1 2 3 4	+5 V GND GND +12 V	Red Black Black Orange
P11	AMP MOUD-II #280358	1 2	+12 V GND	Orange Black
P12	BURNDY GTC 6P-1 MOLEX #90331-0003	1 2 3 4 5 6	Power Good +5 V +12 V -12 V (polarization key) GND GND	White Red Orange Yellow Black Black
P13	BURNDY GTC 6P-1 MOLEX #90331-0002	1 2 3 4 5 6	GND (polarization key) GND -5 V +5 V +5 V +5 V	Black Black Grey Red Red Red
P14	MOLEX #90331-0009	1 2 3 4 5 6	+3.3 V +3.3 V +3.3 V GND GND (polarization key) GND	Red Red Red Black Black Black
P15	MOLEX #90331-0010	1 2 3 4 5 6	GND GND GND +3.3 V +3.3 V +3.3 V (polarization key)	Black Black Black Red Red Red

**POWER SUPPLY SP300T-3 (110/220 Vac) EVOLUTION - VIMO Code 558214 F**

DATE	LEV.	REASON FOR CHANGE	APPLIC.
10/94	Nasc	Introduction of the 3Y power supply model RA5301 B, code 558215 G, with an additional +3.3 V output, in replacement of the SP300T and DC/DC converter. Following are the introduction dates: - On the SNX 160 Systema: from November 1994 - On the SNX SNX 140 and 140/R Systema: from January 1995 - On the SNX 160/R Systema: from March 1995. Cable code 589346 B is no longer required when using this power supply model.	Factory
01/95	01	Noise level reduction: fan grid modified and moved externally; the 3.3 V board is moved away from the fan. Production cycle optimization: fan lock and autorestart circuits are integrated on the main board.	Factory

## DC3/15 (PSM-DC 3.3) POWER SUPPLY FOR THE SP300T

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This DC/DC converter is only installed on SNX 140 Systema models equipped with the SP300T power supply and with PCI boards requiring a 3.3 V power supply, or whenever CPU board GO893/896 is replaced by the CPU board GO898 to obtain an SNX 160 Systema model.

This power supply does not require fans since the normal air flow provides the necessary cooling effect.

There are no jumper settings to be made on this power supply.

### INPUT CHARACTERISTICS

Input voltages from SP300T power supply	+5 VDC +12 VDC
Tolerances	+/- 5%

### OUTPUT CHARACTERISTICS

VOLTAGES	TOLERANCES	MINIMUM CURRENT	MAXIMUM CURRENT	RIPPLE
+3.3 VDC	+5% -4%	0.0 A	15.0 A	50 mVpp
Output power	49.5 W continuous			

### PROTECTIONS

Short circuit	Protection from short circuit between output terminals; in this case all the voltages drop to zero and remain in this state until the cause of the short circuit has been cleared.
No load	Absence of load on the outputs does not damage the power supply.

## INPUT AND OUTPUT CONNECTORS

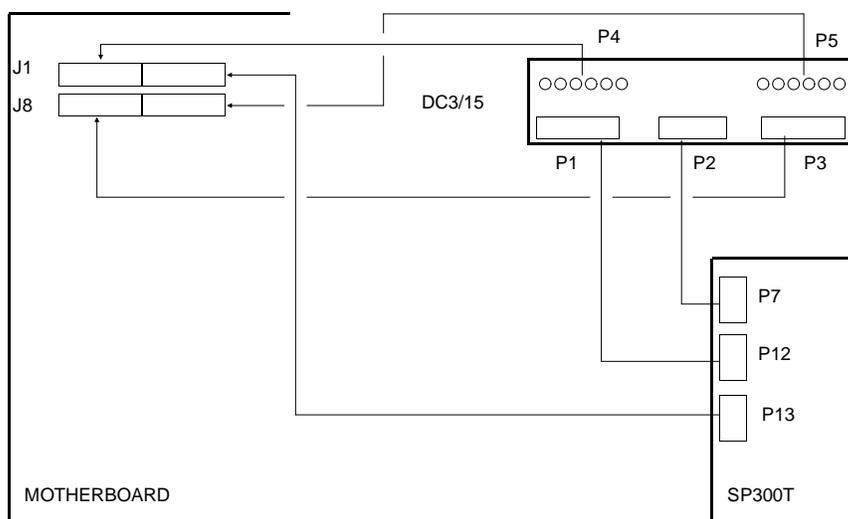
### INPUT CONNECTORS

CONNECT. SERIGRAPH	TYPE	PIN No.	SIGNAL	COMING FROM
P2	AMP 1-480424-0 MOLEX 8981-4P	1 2 3 4	+12 V GND GND +5 V	P7 on the SP300T
P1	MOLEX #87218-0602	1 2 3 4 5 6	Power Good +5 V +12 V -12 V (polarization key) GND GND	P12 on the SP300T

**OUTPUT CONNECTORS**

CONNECT. SERIGRAPH	TYPE	PIN No.	SIGNAL	DESTINATION
P4	MOLEX #87212-0603	1 2 3 4 5 6	3.3 V 3.3 V 3.3 V GND GND (polarization key) GND	J8 (left) on motherboard
P3	MOLEX #90331-0003	1 2 3 4 5 6	Power Good +5 V +12 V -12 V (polarization key) GND GND	J1 (left) on motherboard
P5	MOLEX #90331-0010	1 2 3 4 5 6	GND GND GND 3.3 V 3.3 V 3.3 V (polarization key)	J8 (right) on motherboard

**MOTHERBOARD - SP300T - DC3/15 CONNECTION DIAGRAM**

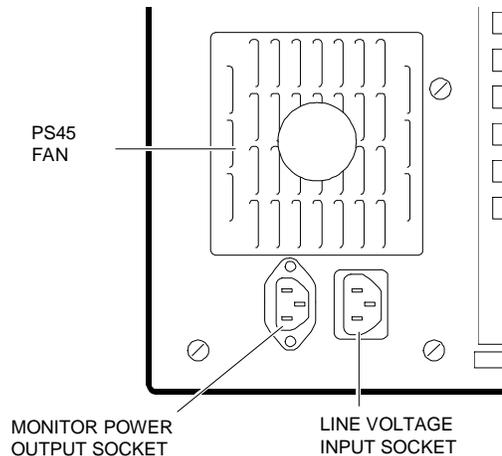


**POWER SUPPLY DC3/15 EVOLUTION - VIMO Code 558204 N**

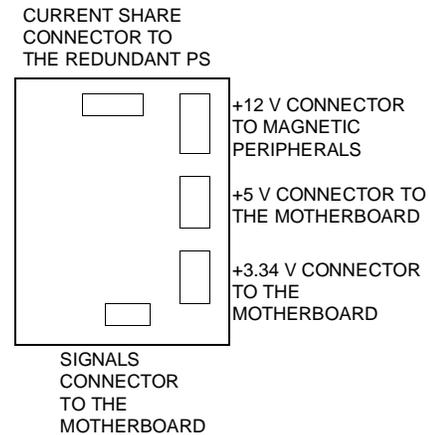
DATA	LEV.	REASON FOR CHANGE	APPLIC.
05/94	Nasc	Introduction of the Promec DC/DC converter to combine with the SP300T power supply in order to provide the additional 3.3 V required.	Factory

## POWER SUPPLY PS45

### LOCATING THE EXTERNAL CONNECTORS



### LOCATING THE INTERNAL CONNECTORS



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This power supply offers the particular feature of being able to be used in redundant configurations where it is connected to another PS45 power supply. In redundant configurations, if one of the two power supplies no longer works the output power supply voltages are provided by the second power supply, thus guaranteeing the continuity of system operations.

The ON/OFF switch on the system console controls the signals which supply the output voltages (+3.43 V, +5 V, +12 V, -12 V and -5 V). Even when this switch is in the OFF position line voltage is applied to the power supply, and power supply is therefore also provided to the monitor power supply socket.

There are no jumper settings to be made on this power supply model.

### INPUT CHARACTERISTICS

Input voltages (AUTORANGE)	200 - 240 VAC 100 - 120 VAC Max applicable voltage: 150 or 300 Vac for 1 sec.
Tolerances	+10 -10%
Temporary deviations	-100% for 20 msec
Line voltage frequency	47-63 Hz

### OUTPUT CHARACTERISTICS

NOMINAL VOLTAGE	MINIMUM VOLTAGE	MAXIMUM VOLTAGE	MINIMUM CURRENT	MAXIMUM CURRENT	PEAK CURRENT	RIPPLE	NOTES
+3.43 Vdc	+3.4 Vdc	+3.465 Vdc	0.0 A	36.4 A	36.4 A	50 mVpp	1-3-4
+5 Vdc	+4.9 Vdc	+5.25 Vdc	2.5 A	52 A	52 A	50 mVpp	1-3-4
+12 Vdc	+11.5 Vdc	+12.6 Vdc	0.0 A	11 A	17 A	100 mVpp	2-3
-12 Vdc	-10.9 Vdc	-13.2 Vdc	0.0 A	0.5 A	0.5 A	100 mVpp	-
-5 Vdc	-4.6 Vdc	-5.5 Vdc	0.0 A	0.2 A	0.2 A	50 mVpp	-
+ 5 AUX	+4.85 Vdc	+5.25 Vdc	0.0 A	0.6 A	0.6 A	50 mVpp	-
Fan Output	-6.4 Vdc	-13.5 Vdc	0.1 A	1.6 A	3.6 A	-	5
Output Power			450 W				

**Note 1:** The maximum power on the +3.43 and +5 V must not exceed 335 W.

**Note 2:** The +12 V supply accepts 17 A current peaks for 10 sec. at power on. It can support an additional 0 A for 9 sec., 0.8 A for 8 sec., 1.6 A for 7 sec., 2.4 A for 6 sec., 3.2 A for 5 sec., 4 A for 4 sec.

**Note 3:** The current must be equally distributed (with a 10% tolerance) when this power supply is used with a second model.

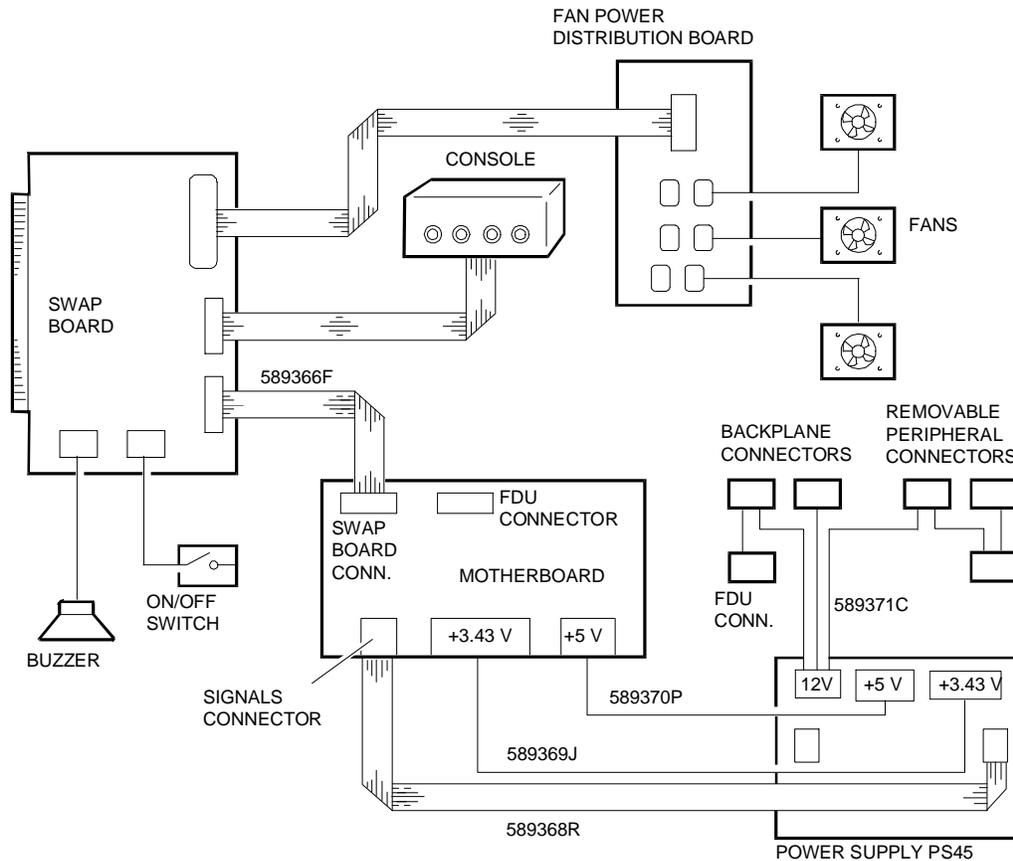
**Note 4:** The remote voltage sensor is capable of compensating for 250 mV losses.

**Note 5:** The fan output voltage to the power supply's internal fan is controlled by a sensor which also controls the air temperature inside the power supply box: at 45° C -13.5 V, at 23° C -7 V.

**PROTECTIONS**

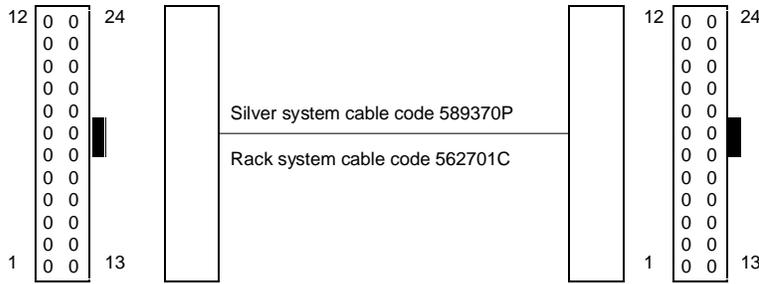
Short circuits	All output voltages are protected between the output terminals against short circuits which otherwise could cause the power supply to fail. If a short circuit occurs between the -5.0 V and -12.0 V voltages, these voltages will be limited by the power supply will continue to work correctly.
Fan locks	A internal thermal protection switches off the power supply if the cooling fan is damaged or in case of overtemperature.
Overvoltages	The power supply stores the overvoltages on the +3.43 V and +5.0 V. Maximum voltage must not exceed 20% the nominal value on each protected output. The power supply is reset by clearing the power supply voltage at line voltage frequency or by disabling and then re-enabling the DC_ENABLE_L signal.
No load	The absence of load on the outputs does not damage the the power supply.

**SNX 200/400/RS CONNECTIONS**



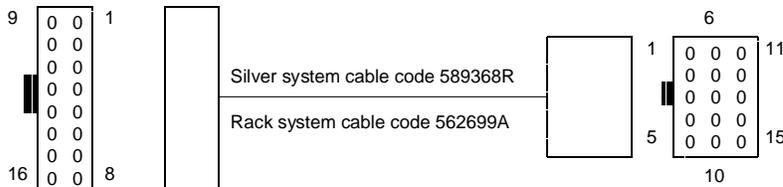


**+5 V POWER SUPPLY CABLE**



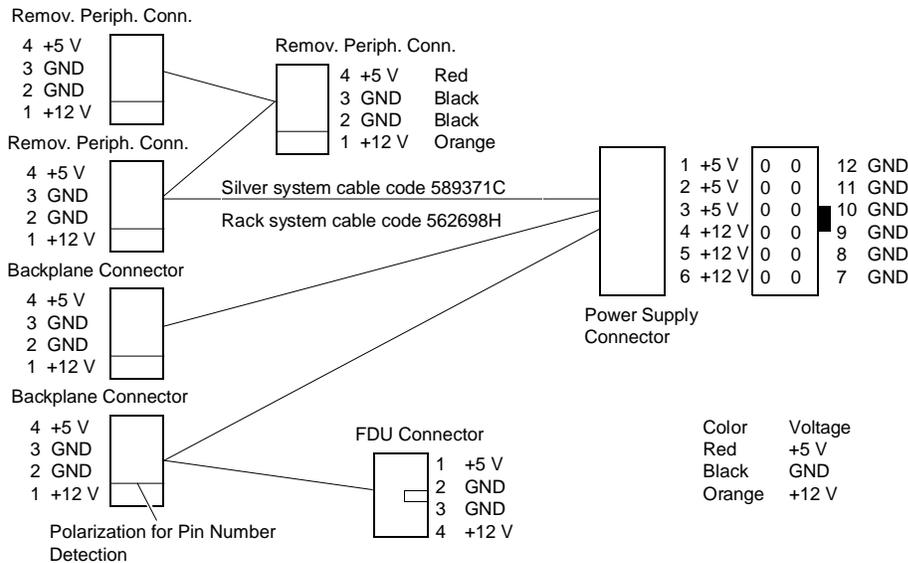
CONNECTOR SIGNALS		
Pins 1-2-3-4-5-6-7-8-9-10-11-12	GND	Black
Pins 13-14-15-16-17-18-19-20-21-22-23-24	+5 V	Red

**POWER SUPPLY/MOTHERBOARD SIGNALS CABLE (MISCELLANEOUS)**



CONNECTOR SIGNALS							
Pin 1	N.C.	Pin 5	+5 V	Pin 9	FAN/VOLT	Pin 13	+3.43 V
Pin 2	GND	Pin 6	+5 V	Pin 10	GND	Pin 14	+3.43 V
Pin 3	+12 V	Pin 7	FAULT-H	Pin 11	+5 V AUX	Pin 15	DC-ENABLE
Pin 4	-12 V	Pin 8	PONK-H	Pin 12	-5 V	Pin 16	N.C.

**BASIC MODULE POWER CABLE FOR MAGNETIC PERIPHERALS**

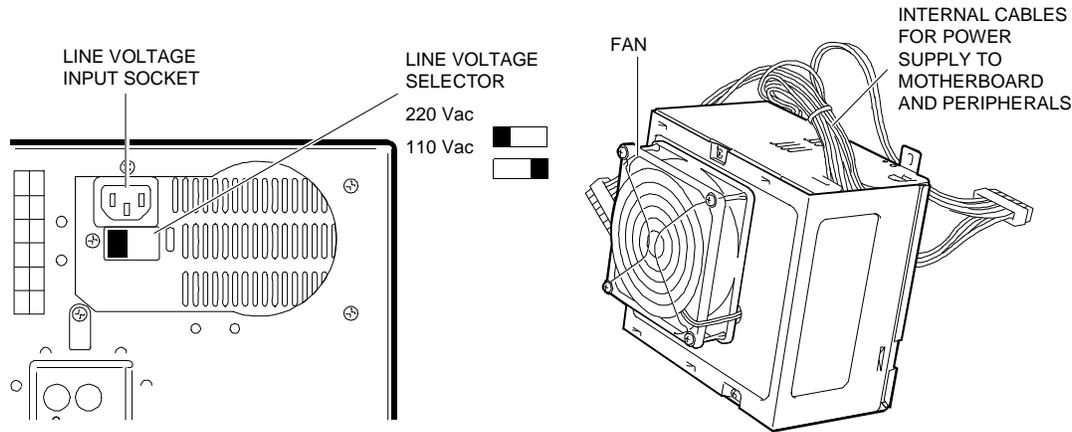


**POWER SUPPLY PS45 EVOLUTION - VIMO Code 935714 N**

DATE	LEV.	REV.	REASON FOR CHANGE	APPLIC.
3/95	Nasc	A0	Manufactured by SUN MOON STAR - API DIVISION, model API-4100. Introduction of a non-restarting power supply (in case of medium range voltage drops the power supply goes off in which case the user will have to power it back on again).	Factory
3/95	01	A1	Improvements made to the production cycle: optimization of p.c.b. 1-2-3-4. Improved +5 V AUX during the power on phase: 1 capacitor and 1 resistor have been added.	Factory
5/95	02	A2	- Improvements made to the production cycle: 1 resistor has been replaced. - Ripple on the +12 V at zero load: 1 resistor has been added. - Protection against voltage drops with limit quality standards: 2 capacitors have been replaced. - +3 V and +5 V sequences not to specifications: 1 diode has been replaced.	Factory
6/95	03	A3	Improved performance with the addition of the autostart feature. Level = or > than 03 power supplies must be installed on systems that require this feature. On systems connecting a UPS, this feature can be obtained using any combination of levels.	Factory

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## POWER SUPPLY ASTEC ATX 200-3505-200A



**Note:** The power supply can be used with two voltage ranges (European/American); the voltage range is selected differently depending on the power supply version:

- First versions: selection is made by means of a jumper located inside the power supply. This selection is made at the factory and must not be changed.
- Current version: a voltage selection switch is located under the line voltage input socket (see the figure).

**Note:** This power supply is not equipped with a monitor power output socket.

### INPUT CHARACTERISTICS

CHARACTERISTICS	VALUES	NOTES
Range A input voltages Range B input voltages	100 -120 VAC 200 - 240 VAC	Selection between the two voltage ranges is made by means of an internal jumper or external switch
Tolerances Temporary deviations	Permanent +10 -10% -25% for 500 msec -100% for 20 msec	
Line frequency	50-60 Hz +/- 5%	
Maximum input voltage supported	270 VAC	Max. 2 seconds

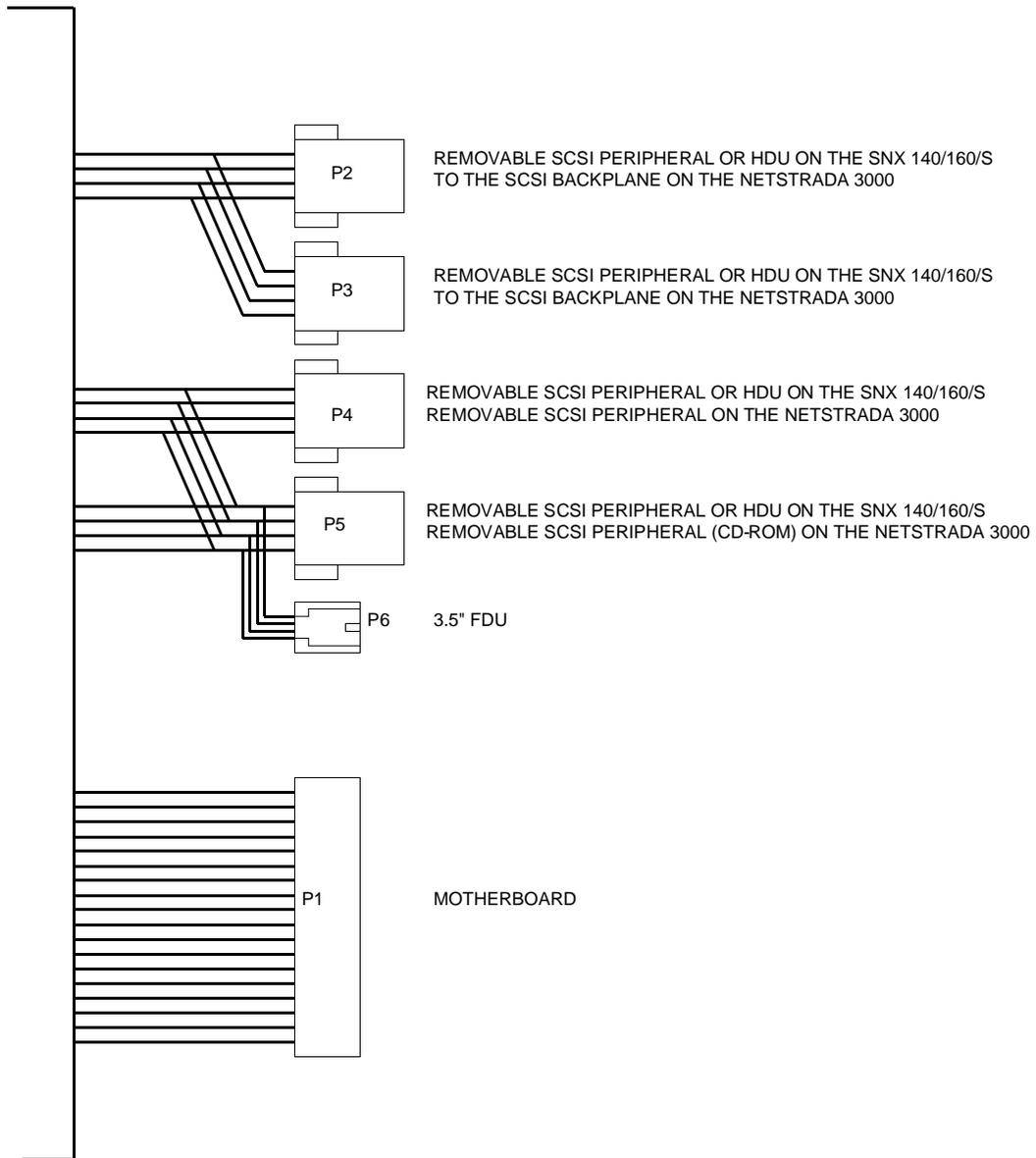
### OUTPUT CHARACTERISTICS

VOLTAGES	TOLERANCE	MINIMUM CURRENT	MAXIMUM CURRENT	RIPPLE
+3.3 VDC	+/-3%	0.3 A	12.0 A	50 mVpp
+5 VDC	+/-5%	2.5 A	20.0 A	50 mVpp
+12 VDC	+/-5%	0.5 A	6.0 A	120 mVpp
-12 VDC	+/-10%	0.0 A	0.8 A	150 mVpp
-5 VDC	+/-10%	0.0 A	0.5 A	50 mVpp
+5 AUX	+/-10%	0.0 A	0.1 A	100 mVpp
Output power		Nominal: 180 W	Max 205 W	
Tot. power on the +5 VDC and +3.3 VDC		Not greater than 125 W		
Tot. current on the -12 VDC and -5 VDC		Not greater than 0.8 A		
Allows current peaks on the +12 VDC		10 A for 12 sec. max		

**PROTECTIONS**

No load	The absence of load on the outputs does not damage the power supply.
Short circuits	All output voltages are protected against short circuits. When a short circuit occurs, all the voltages with the exception of the +5 Vaux are reset and remain in this condition until the short circuit is cleared. All the outputs go to zero if a short circuit occurs on the +5 Vaux. The negative voltages are autoprotected; in case of short circuits only these outputs go to OFF. The power supply will not be damaged if powered on with one or more shorted outputs.
Overt Voltages	This protection is present on the +5 V and +3.3 V outputs and is activated when the voltages exceed the following values even for a short period of time: + 5 V: when 7.0 V are exceeded + 3,3: when 4.5 V are exceeded
Fuse	250 V 5 A Fast High Breaking Capacity (5x20 mm)

**A**



**OUTPUT CONNECTORS**

CONNECTOR SERIGRAPH	TYPE	PIN No.	SIGNAL
P2, P3, P4, P5	AMP 1-480424-0 MOLEX 8981-4P CABLE AWG 18	1	+12 V
		2	GND
		3	GND
		4	+5 V
P6	AMP 171822-4 CABLE AWG 22	1	+5 V
		2	GND
		3	GND
		4	+12 V
P1	CVILUX CP-01120010 CABLE AWG 18	1	+3.3 V
		2	+3.3 V
		3	GND
		4	+5 V
		5	GND
		6	+5 V
		7	GND
		8	PWGD
		9	+5 AUX
		10	+12 V
		11	+3.3 V & REM SENSE
		12	-12 V
		13	GND
		14	PS-ON
		15	GND
		16	GND
		17	GND
		18	-5 V
		19	+5 V
		20	+5 V

**POWER SUPPLY ATX 200-3505-200 E EVOLUTION - Code 558248 Z**

DATE	LEV.	REASON FOR CHANGE	APPLIC.
12/95	Nasc	New ASTEC ATX 200-3505-200 E power supply with slow fan.	Factory
1/96	01	Fan Speed Control circuit (option 2) added.	Factory

**POWER SUPPLY ATX 200-3505-200 A EVOLUTION - Code 558253 N**

DATE	LEV.	REASON FOR CHANGE	APPLIC.
7/96	Nasc	New ASTEC ATX 200-3505-200 A power supply with a fast fan for improved thermal margin.	Factory

