



USER'S MANUAL

MODEL 6500

POWER SUPPLY

SIGNALCRAFTERS TECH, INC.
57 Eagle Rock Avenue
East Hanover, NJ 07936-3144
(800) 523-5815
or
(973) 781-0880
www.signalcrafters.com

INSTRUCTION MANUAL

MODEL 6500

POWER SUPPLY POWER CONVERTER



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DISCLAIMER

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INTRODUCTION

The Model 6500 modules are a Series of Regulated Switching Power Supplies for use within a Wescom 400 or Type 10 chassis or module rack. The modules have an ABSJ plastic front panel with a lexan overlay. The 6500 is offered with a wide range of input and output voltages, as well as power output ratings (25, 50, 75 & 100 watts).

The input voltage connections are made to the Power Supply via a three terminal connector rated @ 10 amps, located directly on the module PC board. All other connections (output voltages, relay outputs, etc.) are made via a 56 pin card edge connector via a type 10 enclosure.

THEORY OF OPERATION

AC or DC is supplied to TB1 located directly on the PC Board; TB1-1 (+), TB1-2 (-) & TB1-3 (GND).

INPUT:

SW1 (ON-OFF switch on front panel) applies power to the input section of the supply. The Hot (+) passes through F1 (1A fuse) to provide protection from input and output current overloads, while D4 protects against over voltage.

FILTER:

C1, L1 & C2 form a low pass (EMI) filter. This filter reduces line noise on the power source from entering the supply as well as filtering switching noise generated within the supply from returning to the source.

RECTIFIER:

On AC units D2 rectifies the 60 Hz power, while C3 filters the rectified signal. On DC input supplies, D2 is not present and C3 becomes part of the EMI filter.

REVERSE POLARITY PROTECTION:

On DC units, D1 protects against reverse polarity of the input voltage.

DC to DC CONVERTER

U1 (DC to DC Converter) steps down the voltage to the desired output.

OUTPUT POWER:

C4 & C5 filters the output power to the other modules.

OUTPUT RELAY:

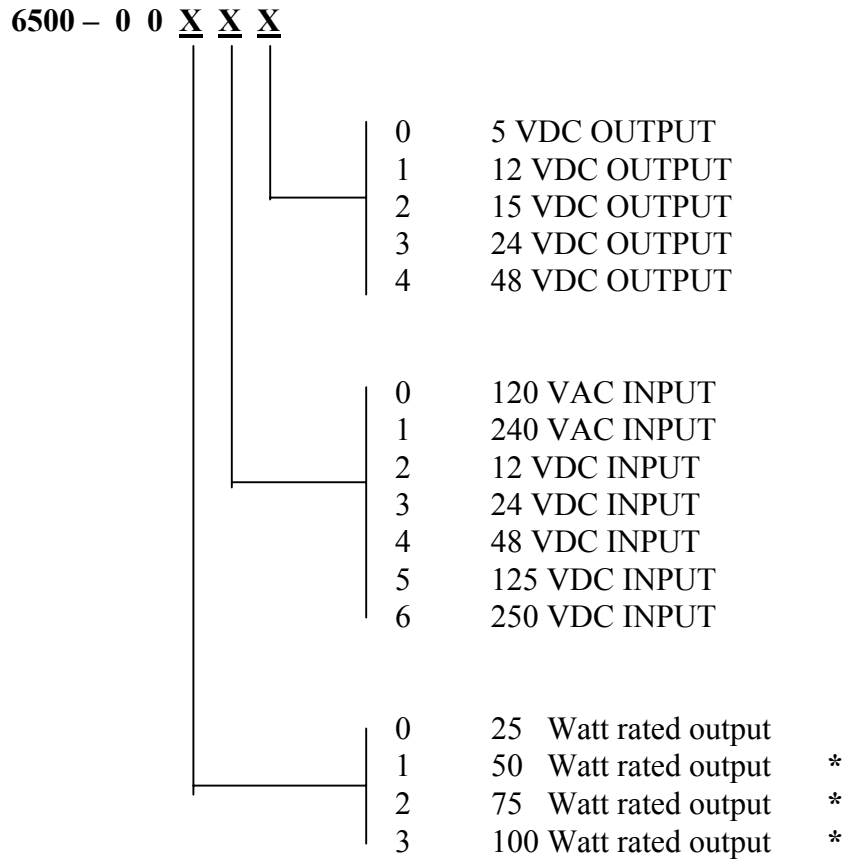
The output relay circuit consists of D3 & K1. D3 is clamping diode to prevent kickback voltages to the supply and the modules.

LED "POWER ON":

R1 and DS1 combine to form the LED circuit. When SW1 is "on" and voltage is applied to the input (TB1), current flows through DS1, illuminating the LED to indicate that the supply is "ON".

Listed Below are the wide range of inputs, outputs and power ratings available:

MODEL 6500
POWER SUPPLY/CONVERTER MODULE



* Note: Unit will take up more than one slot.

SAFETY

Standard safety precautions must be followed at all times when installing, operating, servicing, and repairing this equipment. Signalcrafters Tech, Inc. assumes no liability for failure to observe standard or specifically noted safety requirements or to use this equipment for purposes other than intended.

GROUNDING:

A suitable ground is required to reduce the hazard of shock. Refer to the enclosed module, chassis, and/or cabinet wiring diagram for ground connection locations.

ENVIRONMENT:

Operation of any electrical equipment in any area containing gases, fumes, wet, or damp is a potential safety hazard. Necessary precautions should be taken.

MANUAL:

Operators and maintenance personnel should read this manual before installing the equipment and placing it in service. Only properly trained personnel with proper tools and equipment should operate, maintain, repair, or service this equipment.

SHOCK:

Potentially dangerous electrical shock can occur whenever working on this product. Protective measures and safety procedures should be observed at all times.

NOTE:

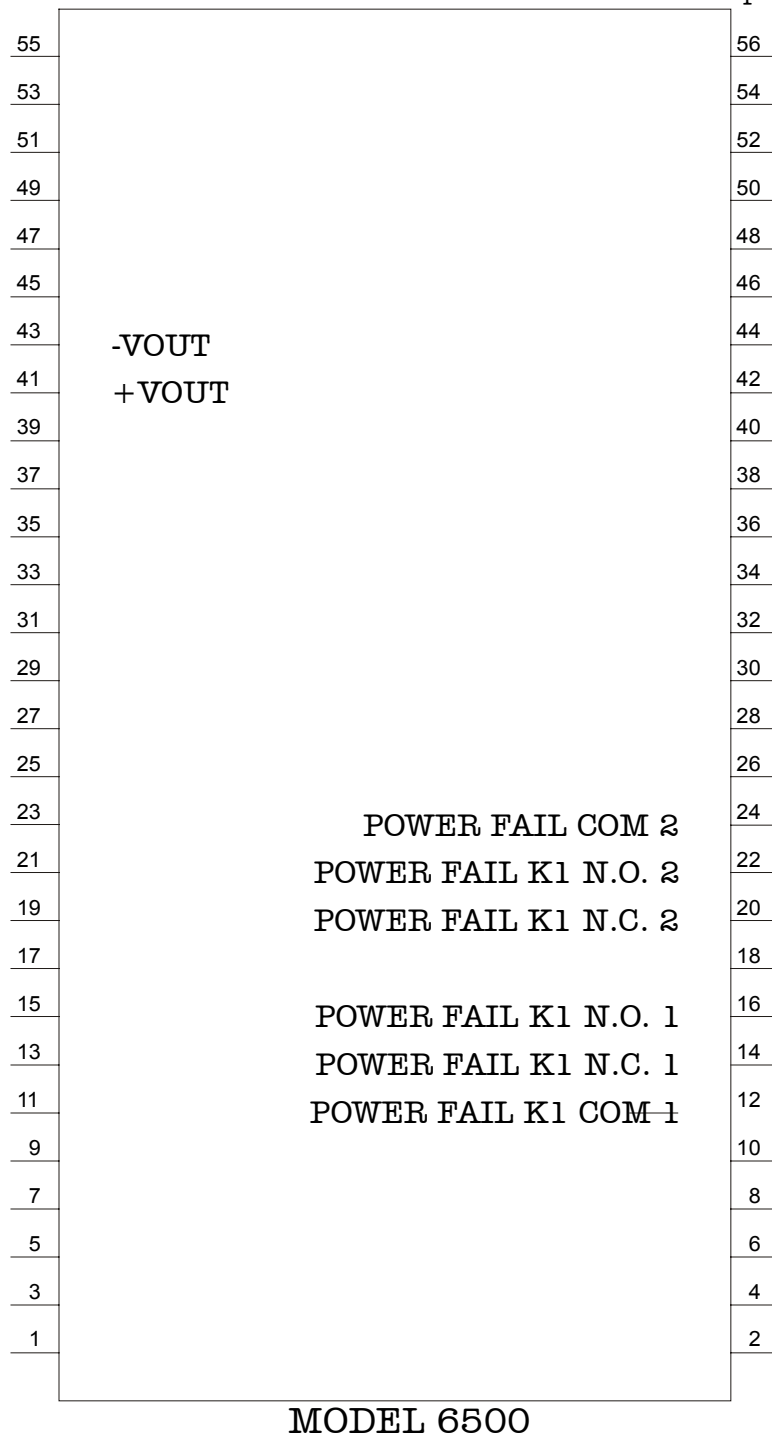
The 6500 Series of Power Supplies Contain High Voltages. Do Not Handle Components With Power Applied to the Unit.

VENTILATION:

Proper ventilation is required for most electronic equipment. Enclosed cabinets or rooms where this equipment is mounted should be kept at temperatures within the limits of the equipment and to assure full range of specifications. Operation above these limits may affect reliability.

6500 PIN DIAGRAM

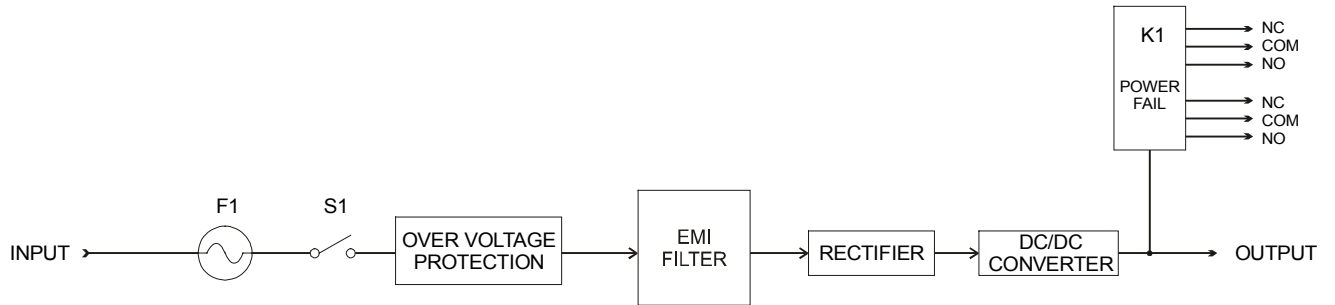
Note:
Input power connected
through back to Tbl
printed circuit board.



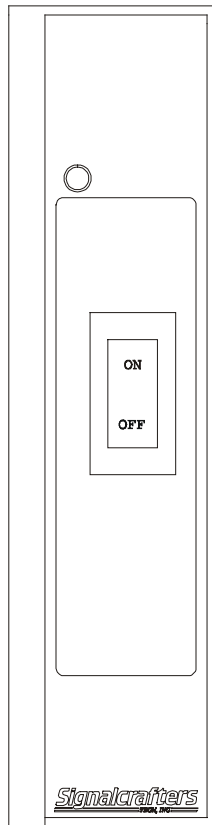
MODEL 6500 CONNECTOR PINOUT

BLOCK DIAGRAM

6500 POWER SUPPLY
BLOCK DIAGRAM



FACE PLATE



Bill of Material (B.O.M.) for Model 6500-00001

See specific model inserts for part # variations.

PART NUMBER	QY	MANUFACTURE	MANUFACTURE PART #	REFERENCE	DESCRIPTION
50E5013	1	SIGNALCRAFTERS	SC-PCB-0003-00		Printed circuit board
54D0013	1	Littelfuse	312-001	F1	Fuse
54B0046	2	Littelfuse	102-071	F1	Fuse clip
58K0003	1	KEYSTONE	7624		Nylon cable clamps
56K2080	5	Richeo	DF-137-010		Nylon rivet
52B5026	1	Thomas & Betts	B03W4V03T	TB1	5MM High Profile Connector
46C5043	1	NAIS (Aromat)	DS2E-M-DC12V	K1	2 Form C Relay
40E0012	1	IDI	5600F1	DS1	Miniature circuit board indicator
62B5058	1	Vicor	VI-J51CZ	U1	DC/DC converter
30D5020	1	GI	2KBP04M	D2	Bridge rectifier
30K0052	2	Motorola	1N4004	D1,D3	Standard diode
16F5014	1	United Chemi-Con	SMH400VN221M35X25T2	C3	Snap Mount Capacitor
16B0146	1	AVX	SR215E104MA	C4	Capacitor
24E5045	1	Coilcraft	E3495A	l1	Common Mode Line Choke
44C5027	1	Augat	XR110A-00	SW1	Snap – Mount Rocker
16F5030	2	EFC	1306TC-3-.1-4-5	C1,C2	Polyester (Mylar) Capacitor
10D1621	1			R1	1K Carbon Film Resistor
93B5050	1				Face Plate
30F5022	1	Harris	V130LA20A	D4	Metal-Oxide Varistors
16D0285	1	Sprague	199D106X0035D	C5	Capacitor-tantalum
68G0004	1				AC line cord
66A0001		Alpha			Wire, 18 awg, black
52G0762	2	Thomas & Betts			Terminal, insulated-solderless
56G1105	1				Machine screw, 6-32 x 3/8"
56G1301	1				Hex nut, 6-32 x 1/4"
56E1340	1				lockwasher, #6

MODEL 6500-00001 (120 VAC IN, 12 VDC OUT)

SPECIFICATIONS

GENERAL

The Model 6500-00001 power supply is packaged on a type 10 plug in module. This has a 120 VAC input voltage with a 12.0 VDC output. K1 is the power supplies output relay. When power is applied, the relay is energized. This relay is used to provide a contact closure upon power failure.

SPECIFICATIONS:

Input Voltage:

115 VAC 70 Vac to 140 Vac

Output Voltage:

12 Vdc +/- 1%

Total Output Power:

25, 50, 75 or 100 watts

Output Ripple:

12 Vdc 18 mV peak maximum

Environmental Requirements:

Temperature Range: -25 to +70° C (-13 to 158° F).

Efficiency:

80-90%

Physical

Weight: 0.55 lbs. (.25 Kg)

Dimensions: 1.5" (38.1mm) Wide by 5.6" (142mm) High by 6.0" (152mm) Deep.

MODEL 6500-00003 (115 VAC IN, 24 VDC OUT)

SPECIFICATIONS

GENERAL

The Model 6500-00003 power supply is packaged on a type 10 plug in module. This has a 115 VAC input voltage with a 24.0 VDC output. K1 is the power supplies output relay. When power is applied, the relay is energized. This relay is used to provide a contact closure upon power failure.

SPECIFICATIONS:

Input Voltage:

115 VAC 70 Vac to 140 Vac

Output Voltage:

24 Vdc +/- 1%

Total Output Power:

25, 50, 75 or 100 watts

Output Ripple:

1.5% peak to peak maximum

Environmental Requirements:

Temperature Range: -25 to +70° C (-13 to 158° F).

Efficiency:

80-90%

Physical

Weight: 0.55 lbs. (.25 Kg)

Dimensions: 1.5" (38.1mm) Wide by 5.6" (142mm) High by 6.0" (152mm) Deep.

MODIFICATIONS FOR THIS VOLTAGE OPTION:

SC P/N	Reference	Manufacture P/N	Description
46D5044	K1	DS2E-M-DC24V	2 Form C Relay
62G5047	U1	Vicor VI-J53-CZ	DC/DC converter
	R1	½ Watt	2K Carbon Film Resistor
30D5060	D4	VE09M00480K	Metal Oxide Varistor

MODEL 6500-00041 (48 VDC IN, 12 VDC OUT)

SPECIFICATIONS

GENERAL

The Model 6500-00041 power supply is packaged on a type 10 plug in module. This has a 48 VDC input voltage with a 12 VDC output. K1 is the power supplies output relay. When power is applied, the relay is energized. This relay is used to provide a contact closure upon power failure.

Customer DC input connections are to be made to TB1 located directly on the PC board. A cable/wire clamp is provided to minimize stress to the connections of TB1. Additional insulation may need to be added to assure a snug fit.

SPECIFICATIONS:

Input Voltage:

48 VDC 42 VDC to 60 VDC

Output Voltage:

12 Vdc +/- 1%

Total Output Power:

25, 50, 75 or 100 watts

Output Ripple:

12 Vdc 36 mV peak maximum

Environmental Requirements:

Temperature Range: -25 to +70° C (-13 to 158° F).

Efficiency:

80-90%

Physical

Weight: 0.55 lbs. (.25 Kg)

Dimensions: 1.5" (38.1mm) Wide by 5.6" (142mm) High by 6.0" (152mm) Deep.

MODIFICATIONS FOR THIS VOLTAGE OPTION:

SC P/N	Reference	Manufacture P/N	Description
46C5043	K1	DS2E-M-DC12V	2 Form C Relay
62D5076	U1	Vicor VI-J31-CZ	DC/DC converter
	D2	Removed (see schematic note)	
10F1628	R1		2K Carbon Film Resistor
30D5060	D4	VE09M00480K	Metal Oxide Varistor
68G0004		Not used on DC	

MODEL 6500-00043 (48 VDC IN, 24 VDC OUT)

SPECIFICATIONS

GENERAL

The Model 6500-00043 power supply is packaged on a type 10 plug in module. This has a 48 VDC input voltage with a 24 VDC output. K1 is the power supplies output relay. When power is applied, the relay is energized. This relay is used to provide a contact closure upon power failure.

Customer DC input connections are to be made to TB1 located directly on the PC board. A cable/wire clamp is provided to minimize stress to the connections of TB1. Additional insulation may need to be added to assure a snug fit.

SPECIFICATIONS:

Input Voltage:

48 VDC 42 VDC to 60 VDC

Output Voltage:

24 Vdc +/- 1%

Total Output Power:

25, 50, 75 or 100 watts

Output Ripple:

24 Vdc 36 mV peak maximum

Environmental Requirements:

Temperature Range: -25 to +70° C (-13 to 158° F).

Efficiency:

80-90%

Physical

Weight: 0.55 lbs. (.25 Kg)

Dimensions: 1.5" (38.1mm) Wide by 5.6" (142mm) High by 6.0" (152mm) Deep.

MODIFICATIONS FOR THIS VOLTAGE OPTION:

SC P/N	Reference	Manufacture P/N	Description
46D5044	K1	DS2E-M-DC24V	2 Form C Relay
62F5046	U1	Vicor VI-J33-CZ	DC/DC converter
	D2	Removed (see schematic note)	
10F1628	R1		2K Carbon Film Resistor
30D5060	D4	V68ZA20	Metal Oxide Varistor
68G0004		Not Used on DC	

MODEL 6500-00053 (125 VDC IN, 24 VDC OUT)

SPECIFICATIONS

GENERAL

The Model 6500-00053 power supply is packaged on a type 10 plug in module. This has a 125 VDC input voltage with a 24 VDC output. K1 is the power supplies output relay. When power is applied, the relay is energized. This relay is used to provide a contact closure upon power failure.

Customer DC input connections are to be made to TB1 located directly on the PC board. A cable/wire clamp is provided to minimize stress to the connections of TB1. Additional insulation may need to be added to assure a snug fit.

SPECIFICATIONS:

Input Voltage:

125 VDC 100 VDC to 150 VDC

Output Voltage:

24 Vdc +/- 1%

Total Output Power:

25, 50, 75 or 100 watts

Output Ripple:

24 Vdc 36 mV peak maximum

Environmental Requirements:

Temperature Range: -25 to +70° C (-13 to 158° F).

Efficiency:

80-90%

Physical

Weight: 0.55 lbs. (.25 Kg)

Dimensions: 1.5" (38.1mm) Wide by 5.6" (142mm) High by 6.0" (152mm) Deep.

MODIFICATIONS FOR THIS VOLTAGE OPTION:

SC P/N	REFERENCE	Manufacture P/N	Description
46D5044	K1	DS2E-M-DC24V	2 Form C Relay
62G5047	U1	Vicor VI-J53-CZ	DC/DC converter
	D2	Removed (see schematic note)	
10F1628	R1		2K Carbon Film Resistor
30F5022	D4	V130LA20A	Metal Oxide Varistor
68G0004		Not Used on DC	

MODEL 6500-00054 (125 VDC IN, 48 VDC OUT)

SPECIFICATIONS

GENERAL

The Model 6500-00054 power supply is packaged on a type 10 plug in module. This has a 125 VDC input voltage with a 48 VDC output. K1 is the power supplies output relay. When power is applied, the relay is energized. This relay is used to provide a contact closure upon power failure.

Customer DC input connections are to be made to TB1 located directly on the PC board. A cable/wire clamp is provided to minimize stress to the connections of TB1. Additional insulation may need to be added to assure a snug fit.

SPECIFICATIONS:

Input Voltage:

125 VDC 100 VDC to 150 VDC

Output Voltage:

48 Vdc +/- 1%

Total Output Power:

25, 50, 75 or 100 watts

Output Ripple:

48 Vdc 36 mV peak maximum

Environmental Requirements:

Temperature Range: -25 to +70° C (-13 to 158° F).

Efficiency:

80-90%

Physical

Weight: 0.55 lbs. (.25 Kg)

Dimensions: 1.5" (38.1mm) Wide by 5.6" (142mm) High by 6.0" (152mm) Deep.

MODIFICATIONS FOR THIS VOLTAGE OPTION:

SC P/N	REFERENCE	Manufacture P/N	Description
46G5215	K1	AZ830-2C-48DE	2 Form C Relay
62D5212	U1	Vicor VI-J54-CZ	DC/DC converter
	D2	Removed (see schematic note)	
10A5217	R1	Resistor 1W	4.3K Carbon Film Resistor
30F5022	D4	V130LA20A	Metal Oxide Varistor
16K5216	C5	10uF 63V	647-UVR1J100MDA
68G0004		Not Used on DC	

MODEL 6500-00064 (150 VDC IN, 48 VDC OUT)

SPECIFICATIONS

GENERAL

The Model 6500-00064 power supply is packaged on a type 10 plug in module. This has a 150 VDC input voltage with a 48 VDC output. K1 is the power supplies output relay. When power is applied, the relay is energized. This relay is used to provide a contact closure upon power failure.

Customer DC input connections are to be made to TB1 located directly on the PC board. A cable/wire clamp is provided to minimize stress to the connections of TB1. Additional insulation may need to be added to assure a snug fit.

SPECIFICATIONS:

Input Voltage:

48 VDC 150 VDC to 48 VDC

Output Voltage:

24 Vdc +/- 1%

Total Output Power:

25, 50, 75 or 100 watts

Output Ripple:

24 Vdc 36 mV peak maximum

Environmental Requirements:

Temperature Range: -25 to +70° C (-13 to 158° F).

Efficiency:

80-90%

Physical

Weight: 0.55 lbs. (.25 Kg)

Dimensions: 1.5" (38.1mm) Wide by 5.6" (142mm) High by 6.0" (152mm) Deep.

MODIFICATIONS FOR THIS VOLTAGE OPTION:

SC P/N	Reference	Manufacture P/N	Description
46G5087	K1	DS2E-M-DC48V	2 Form C Relay
62F5046	U1	Vicor VI-J54-CZ	DC/DC converter
	D2	Removed (see schematic note)	
10F1628	R1		2K Carbon Film Resistor
30F5022	D4	V130LA20A	Metal Oxide Varistor
68G0004		Not Used on DC	