



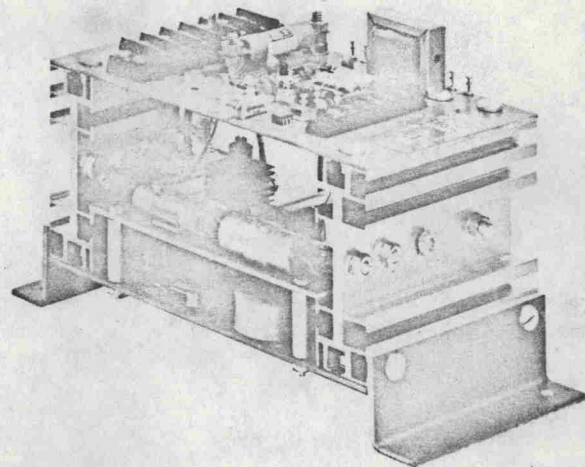
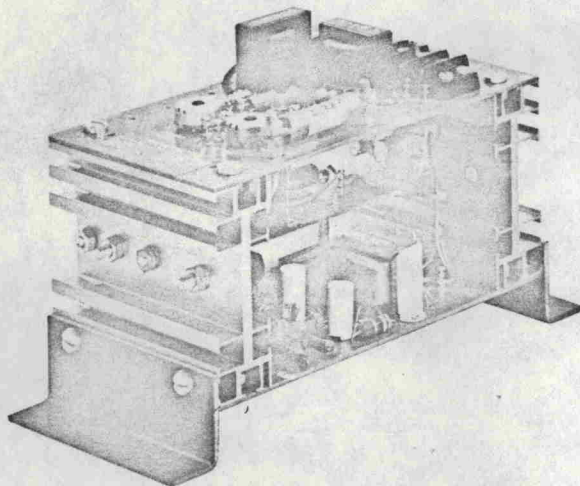
VECTROL INC.

VPAC 500

SCR POWER CONTROLLER SINGLE PHASE, PHASE PROPORTIONING

This unique design was created to provide a low cost, small size, high performance SCR Power Controller. The VPAC 500 Series is the single-phase control version suitable for all loads up to 83 amperes continuous from 120 to 480 volts. This unique packaging design permits the combination of a standard milliamp controller with manual operation, amplifiers for closed loop systems, and current limit in the same compact unit. Figures 1, 2, 3 and 4 illustrates the various functional combinations.

The VPAC 500 Series incorporates a complete range of protection features which are generally only available as optional features on other power controllers. They include: high P.I.V. rated SCR's; hard firing gate pulses; fast blow fuses and transient voltage networks. A 1/2 second soft start circuit permits operation into all types of loads including transformers.



DESIGN FEATURES

PROTECTION

- dv/dt network
- di/dt protection
- Subcycle I²t fuse
- Voltage clipping network
- Hard firing gate pulse

ISOLATION

Transformer isolation between signal, load and ground high potential tested at 2000 volts RMS.

BACK TO BACK SCR'S

SOFT START AND AUTOMATIC RESTART

ALL SOLID STATE

SMALL SIZE

TWO PLANE MOUNTING

TYPICAL APPLICATIONS

VARIABLE AUTOTRANSFORMER

Potentiometer Control

TEMPERATURE CONTROL

Milliamp input from your Controller
Manual Control

TEMPERATURE CONTROL

Thermistor or Platinum Probe input

POWER SUPPLY

DC voltage regulation
Closed loop with DC feedback

POWER SUPPLY

DC voltage and current regulation. Closed loop with DC feedback from 50 millivolt shunt.

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BULLETIN 3105

FUNCTIONAL VARIATIONS OF VPAC 500 SERIES

The following block diagrams provide functional details of the four basic types of VPAC 500 Units. For additional details write or telephone and request VAN 3105 Application Notes.

MILLIAMP OR MANUAL CONTROL

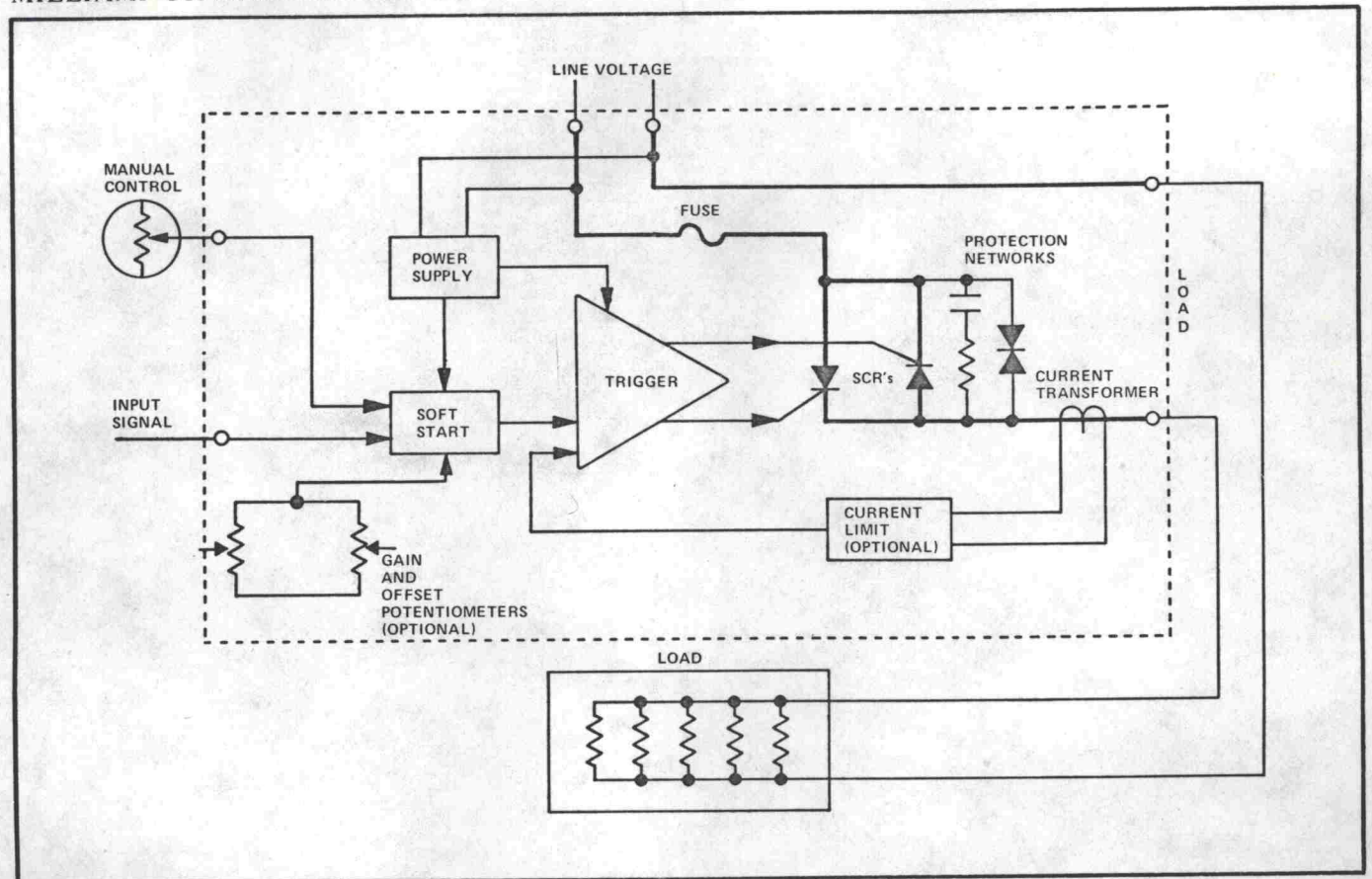


Figure 1. VPAC 500 with "LE" Option

TEMPERATURE PROBE

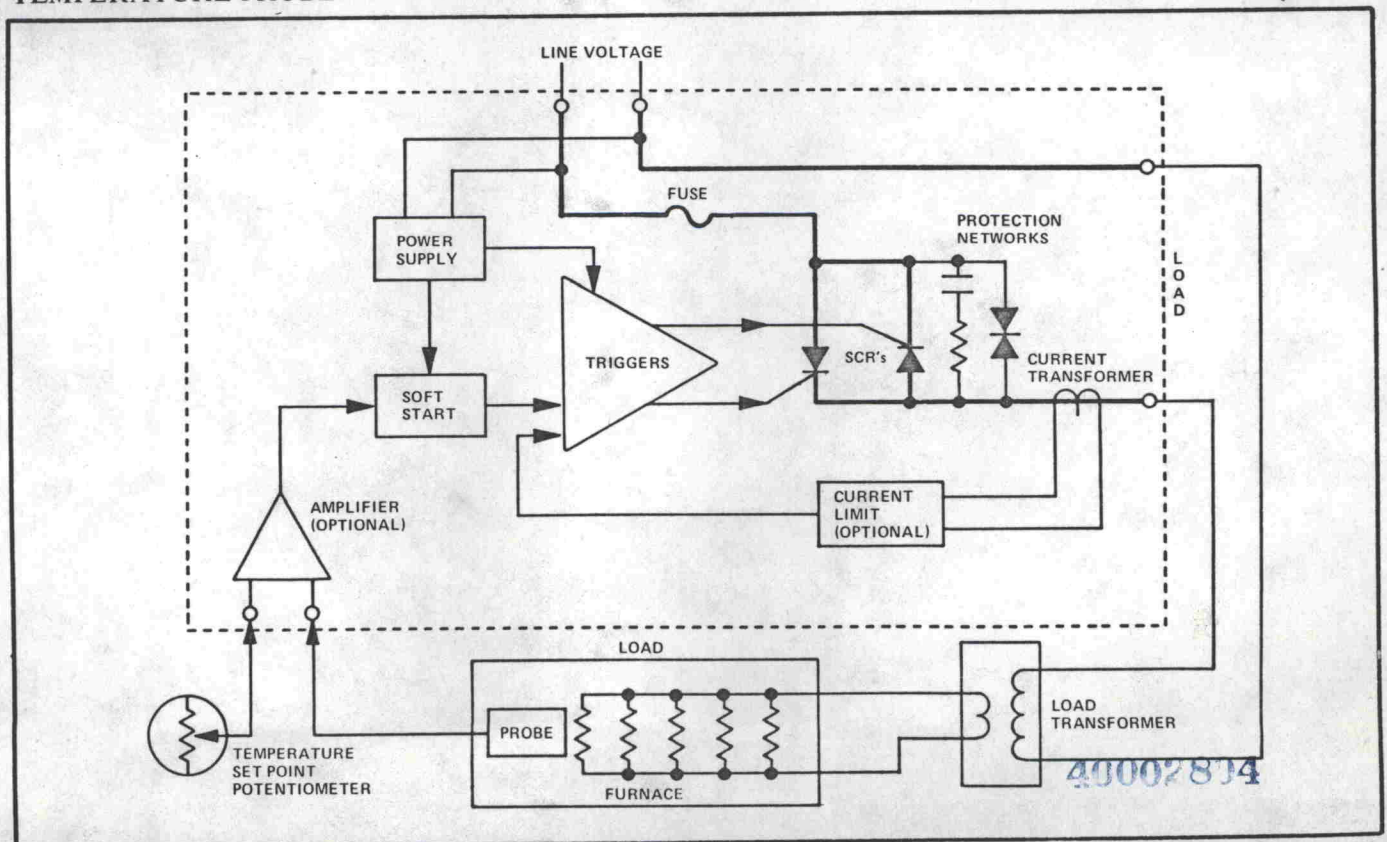


Figure 2. VPAC 500 with "LA" Option

SPECIFICATIONS

POWER SECTION

Current Rating:

CURRENT RATINGS (AMPERES)	
MAXIMUM CONTINUOUS CURRENT	FUSE RATING
30	30
42	50
63	70
83	100

AC Supply Voltage: Operates over a range of from +10% to -15% of rated line voltages of 120, 208, 240, 277, 380, 480 at 50 or 60 Hz.

Soft Start: 1/2 second soft-start circuit gradually applies control so that output goes from zero to full output in this period.

Type of Load: All loads - resistive, inductive, transformer, lamp and capacitive.

Ambient Temperature: 45° C at rated current

Protective Networks: Fast-blow subcycle fuse, dv/dt network and transient voltage clipping network.

Output Voltage: 0 to 100% adjustable

AC Load Current Surge:

1 second - non repetitive

30 amp Models	80 amps
42 amp Models	200 amps
63 amp Models	250 amps
83 amp Models	400 amps

One cycle - non repetitive maximum

30 amp Models	200 amps
42 amp Models	500 amps
63 amp Models	600 amps
83 amp Models	1000 amps

CONTROL SECTION-OPTIONS

Manual Control: The version without options provides manual control thru an external 2500 ohm, 1 watt potentiometer. This provision is also included in the "E", "L" and "LE" options.

The manual and milliamp signals can be used to provide an automatic or manual mode thru the addition of an external switch. The manual control can also be used to establish a preheat setting level. On Models that include current limit, the current limit will override the manual control setting.

Milliamp Control Signal: On the adjustable input signal option, gain and offset potentiometers for adjustment to conventional milliamp signals such as 1-5 mA, 3-7 mA, 4-20 mA etc.

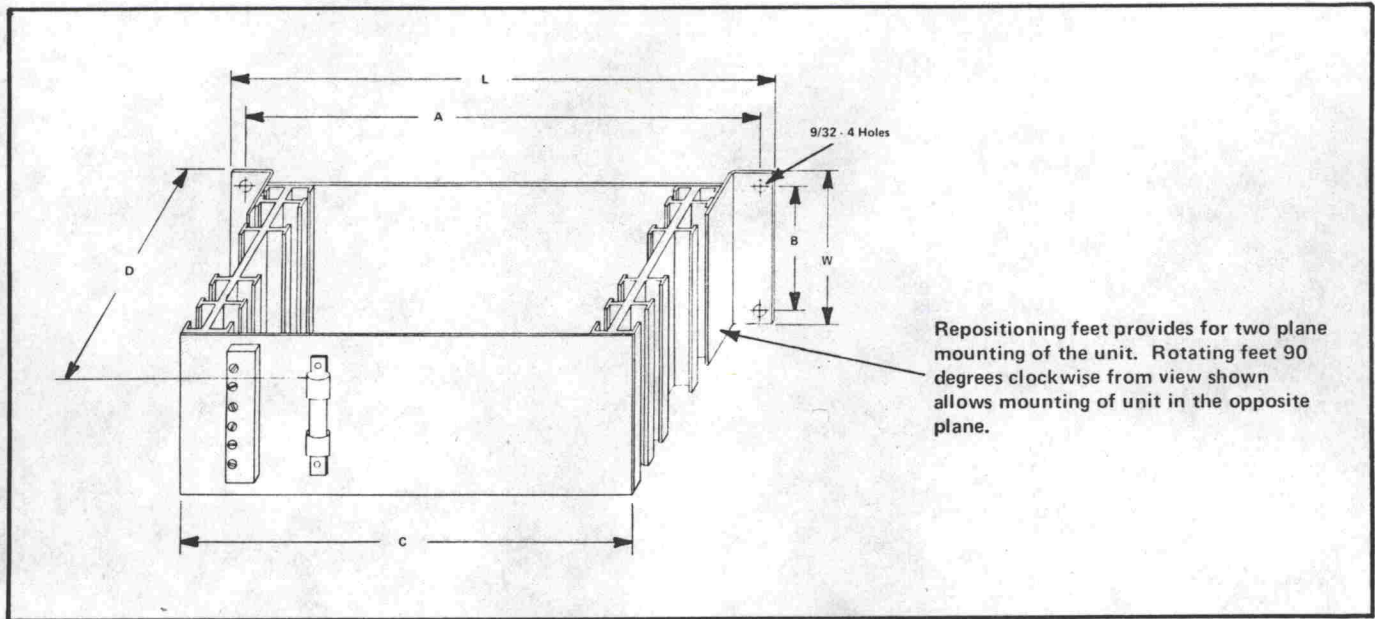
Current Limit (Current transformer included): Adjustable from approximately 50 to 100% of rated current.

Current Regulation: DC feedback from 50 mv shunt - ±1% regulation. Regulation range - 10% to 100%.

Voltage Regulation: DC feedback voltage - 0 to 6 VDC. Regulation range 0 to 100%, ±1/2% regulation.

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DIMENSION CONFIGURATION



DIMENSIONS

MODEL NUMBER	DIMENSIONS IN INCHES					
	W	L	D	A	B	C
VPAC 50-	5	11-3/8	6-3/4	10-5/16	3-3/8	9
VPAC 60-	6	16-1/2	7-1/4	15-3/4	3-3/8	14-3/4



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In the construction of the components described, the full intent of the specification will be met. Vectrol, Inc. however reserves the right to make, from time to time, such departures from the detail specifications as may be required to permit improvements in the design of its products.