

Power Drive Controls

1846 Santo Domingo
Camarillo, CA 93012
U. S. A.

www.pdcontrol.com

Single Phase SCR Controller Model FC4 Rev. D

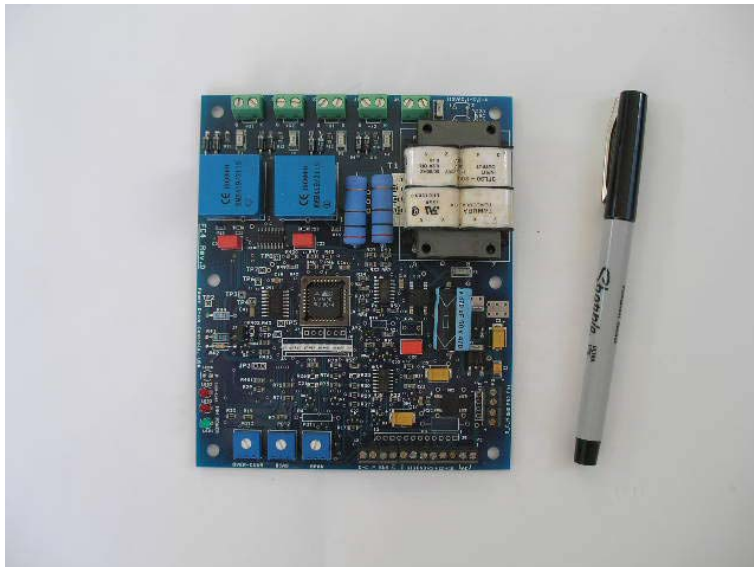
Features

Small size
Low cost, ease of use
2 or 4 pulse gating
Over current adjustment and inhibit
Span and bias adjustment
Soft and instant inhibit
PLL pulse logic circuits

Applications

Power supplies
Motor controls
Electrical heaters
DC Converters
Electroplating
Battery chargers
Electrical magnetic controls
Generator controls

Dimension 137 x 115 x 38 (mm)



Maximum Ratings

Characteristics	Value	Unit
AC Mains Voltage	550	Vac
Control Signal Voltage, SIG	12	Vdc
Power Supply Voltage	24	Vac
+20Vdc Available Current	200	mA _{dc}
+12Vdc Available Current	30	mA _{dc}
+5V Available Current	5	mA _{dc}
Operating Temperature	-5 to +85	C
Storage Temperature	-65 to +85	C

Electrical Characteristics

Characteristics	Value	Unit and Note
Control Signal Voltage, SIG	0 - 5	Vdc
Feedback Current	Adjust R3 to 1.0 Vdc	Vdc
Soft Start Time	1.0	S, (or 0.05 to 20 S)
Soft Inhibit Time	0.5	S, (or 0.05 to 10 S)
Control Angle Range	6 - 174	Degree
First Gate Pulse:		
Initial Rate of Rise	1.0	A/uS
Short Circuit Current	1.4	A
Open Circuit Voltage	10	V
Sustaining Gate Pulse:		
Short Circuit Current	0.5	A
Open Circuit Voltage	5	V
Gate Pulse Width:		
50 Hz	38	uS
60 Hz	32	uS

Connectors Notes:

P1: Connect to SCR gates, cathodes and power supply.

P3: Connect to control input and output signals.

Potentiometers Notes:

POT1: Adjust the gain of control input signal.

POT2: Bias adjustment.

POT3: Current limit adjustment.

LED Display Notes:

LED1- Green, output enabled.

LED2- Red, output inhibited.

LED2- Red, over current.

Pin Functions

	Pin	Name	Descriptions	I/O
P1	1	+X1 Gate	See connection diagram	O
	2	+X1 Cathode		O
	3	+X2 Gate		O
	4	+X2 Cathode		O
	5	-X1 Gate		O
	6	-X1 Cathode		O
	7	-X2 gate		O
	8	-X2 Cathode		O
	9	Power	Jumper J1 and J3, J2 and J4 for 110 Vac Power line. Jumper J2 and J3 for 220 Vac Power line	I
	10			

P2	1	FB1	Current feedback signal input	I
	2	FB2		
	3	GND	ground	
	4	OVER-C	Open collector output for over current	

P3	1	15 Vac	For test or user.	O
	2			
	3	+20 Vdc	For user, or external DC power supply for board	O
	4	+12V	For user, 200 mA	O
	5	+5V	Fro user, 50 mA	O
	6	GND	Signal ground	
	7	SIG	Signal command input, 0 - 5 V	I
	8	F1	Fast inhibit when connected to ground	I
	9	S1	Soft inhibit when connected to ground	I
	10	ENA	Enabled when connected to +12V	I

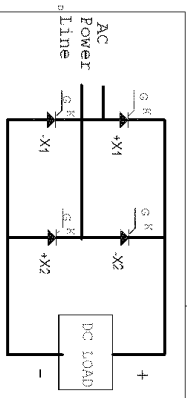


Fig. 1. 4 SCR DC Converter

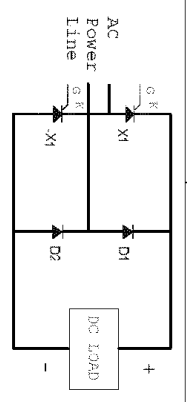


Fig. 2. 2 SCR--2 Diode DC Converter

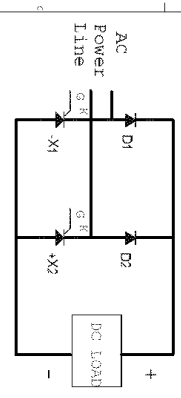


Fig. 3. 2 SCR--2 Diode DC Converter

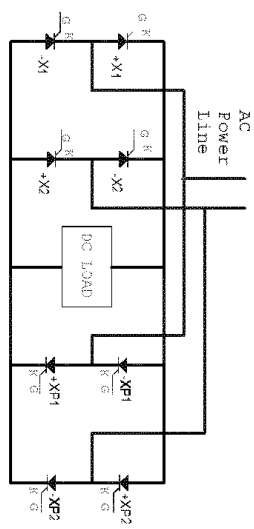


Fig. 6. 8 SCR 4 Quadrant Bridge Converter

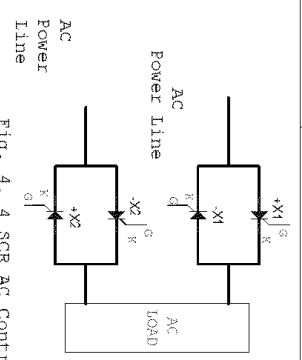


Fig. 4. 4 SCR AC Controller

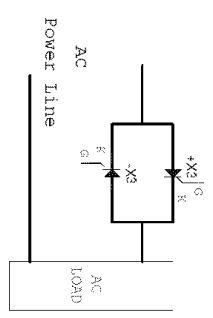


Fig. 5. 2 SCR AC Controller

