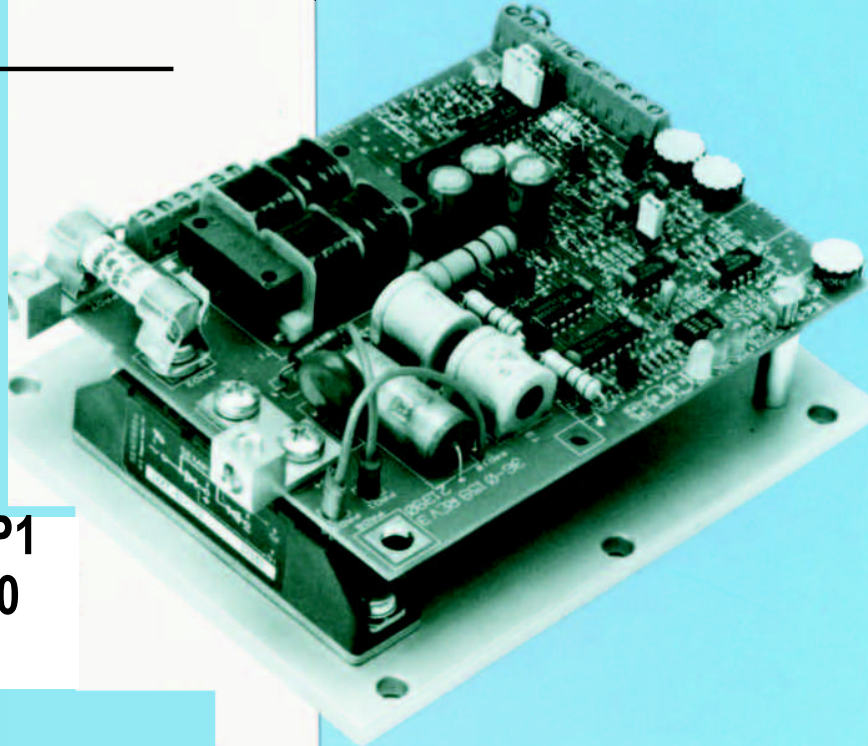


**SINGLE-PHASE
SCR POWER CONTROL
PHASE ANGLE CONTROL**



PHASETRONICS



**SERIES EP1
10 to 1000
AMPS**

DESIGN FEATURES

- MULTIPLE CONTROL INPUTS
- COMPACT PACKAGE
- LOW COST
- LED INDICATORS
- ADJUSTABLE SOFT START

OPTIONAL FEATURES

- I^2T FUSE
- CURRENT LIMIT
- CURRENT TRIP
- LINE VOLTAGE REGULATION
- SOFT START ON SIGNAL OR LOCKOUT CHANGES

TYPICAL APPLICATIONS

- HEATER CONTROL
- POWER SUPPLIES
- QUARTZ LAMPS
- WIRE ANNEALING
- OVEN & FURNACE CONTROL
- SOLID STATE AUTOTRANSFORMER

Description

Phasetronics EP1 series of single-phase SCR power control features phase angle control to provide smooth proportional output power from 0 to 100%. The model EP1 was designed to make available low cost high quality SCR phase control. This series offers variable voltage outputs for many applications where solid state control was not previously economical.

The EP1 series is available in load currents from 10 to 1000 amperes at line voltages from 120 through 575 volts AC. These units are ideally suited for all resistive, inductive and capacitive loads. A soft start feature assures a slow rising output voltage to prevent saturation of inductive loads. The standard soft start is active on power up and is reset after a power loss. Option S is available to provide soft start on input control signal change or lockout release. Lockout (external shutdown) can be activated by an external contact closure.

The control input is adjustable to match all standard temperature and process controllers. The control signal sensitivity is adjustable by gain and offset potentiometers or can be controlled from an external potentiometer. MOVs protect the SCRs from current surges or transient voltages. False firing (dv/dt) protection is also included. I²T fuses are available as an option.

NEMA enclosures, circuit breakers, contactors and disconnect switches are available. Contact the factory for additional information.

SPECIFICATIONS

AC SUPPLY VOLTAGE Operates within +10 % to -10 % of 120, 208, 240, 277, 380, 415, 480 and 575 Vac, 50/60Hz line voltages, single phase. Specify 50 Hz when required.

CONTROL INPUT

Manual - 10K potentiometer
DC voltage - 0 to 10 volts
Milliamp - selectable ranges

INPUT IMPEDANCE

4-20 ma	510 ohms
10-50 ma	220 ohms
0-5 ma	2 K ohms
0-10 Vdc	10 K ohms

OUTPUT VOLTAGE Approximately 2 volts below input voltage

OUTPUT STAGE Back-to-back SCRs

LOAD TYPE Resistive, inductive, capacitive

ADJUSTMENTS

Soft Start (power on) - 0 to 60 seconds
Soft Start (optional)
 0 to 60 sec on signal change or on lockout.
 0 to 100 % threshold adjustment on signal change
Gain & Offset - all standard ma ranges
Current Limit (optional) - 0 to 125 %
Current Trip (optional) - 75 to 200 %

Line Voltage Regulation (optional)
2 % with a +/- 10 % line variation

Ambient Temperature 0 to 50 °C at rated current

Protective Features

MOV transient suppressors
dv/dt network
PIV rating of SCRs is 2.5 times line voltage
I²T fuse (optional)

CONTROL FEATURES

Milliamp Input

Accepts conventional milliamp input signals from a process controlled instrument for automatic operation. A shorting plug is provided for user selection of 10 to 50 ma, 0 to 5 ma or 4 to 20 ma inputs. (Factory set for 4 to 20 ma input.) Gain and offset potentiometers are provided to adjust for maximum and minimum output levels desired. If both manual and milliamp inputs are used, the manual control will override the milliamp input unless a customer supplied Auto/Manual switch is placed in the automatic position.

Manual & 0-10 Vdc Input

Accepts a 10k ohm potentiometer for manual control or a 0-10 Vdc input control signal. If both the manual and dc inputs are used the manual control will override unless a customer supplied Auto/Manual switch is placed in the automatic position. The 0 to 10 Vdc input has a high impedance to minimize the drive current so that it is compatible with most logic signals.

Soft Start

When initial power is applied, unit output voltage is ramped to desired output level over an adjustable interval. The interval can be field adjusted for up to 60 seconds.

CONTROL OPTIONS

Soft Start (optional) Option S

Provides soft start on a signal change or when lockout is released. The unit is set up so that either of these two soft start modes can be disabled if desired. The unit will ramp up on a signal change if this signal is set below a threshold level. The threshold is adjustable from 0 to 100 % of control signal range.

Current Limit (optional) Option C

Adjustable from 10-125% of unit rating. Current limit will override control input signal to limit the output current. Current transformer included.

Current Trip (optional) Option T

Adjustable from 75-200% for instantaneous trip if current exceeds set level. Unit can be connected for manual or automatic reset. Current transformer included.

Line Voltage Regulation (optional) Option R

Will maintain output within 2% with a +/- 10% line variation.

MODEL NUMBER SELECTOR

VOLTAGE	
12	= 120
20	= 208
24	= 240
27	= 277
38	= 380
41	= 415
48	= 480
57	= 575

AMPERES	
10	
25	
50	
85	
100	
150	
225	
350	
500	
650	
800	
1000	

1 = SINGLE PHASE I

OPTIONS	
F	FUSE
C	CURRENT LIMIT
R	VOLTAGE REGULATION
S	SOFT START ON MA SIGNAL OR LOCKOUT
T	CURRENT TRIP
5	50 Hz



EP1 - 48 25 - F

HOW TO SELECT A MODEL NUMBER

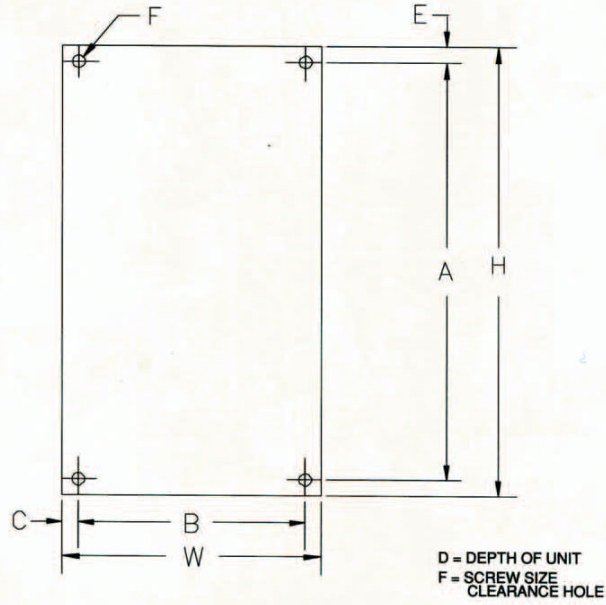
1. Select the operating voltage.
2. Select the amp rating to match the kva (kw)
3. Decide if a fuse is desired.
4. Select the options required.
5. Example:

Voltage = 240 Vac
 KVA = 33 select current of 150 amps
 Options
 Fuse = yes
 Current limit = yes
 Soft start on lockout = yes
 50 Hz = yes

Model number = **EP1- 24150 - CFS5**

AMPS	KVA SELECTOR				
	KVA				
	120V	240 V	380 V	480v	575 V
10	1	2	3	4	5
25	3	6	9	12	14
50	6	12	19	24	28
85	10	20	32	40	48
100	12	24	38	48	57
150	18	36	57	72	86
225	27	54	85	108	129
350	42	84	133	168	201
500	60	120	190	240	287
650	78	156	247	312	373
800	96	192	304	384	460
1000	120	240	380	480	575

DIMENSIONS



AMPS	H	W	D	A	B	C	E	F
10	6.00	5.75	4.75	5.24	5.24	0.23	0.23	1/4-20
25	6.00	5.75	4.75	5.24	5.24	0.23	0.23	1/4-20
50	9.00	6.78	5.50	5.88	5.88	0.44	1.75	1/4-20
85	9.00	6.78	5.50	5.88	5.88	0.44	1.75	1/4-20
100	12.00	10.00	5.13	9.00	9.00	0.44	0.50	1/4-20
150	10.50	9.50	7.50	5.31	5.31	0.31	0.63	1/4-20
225	11.50	9.50	7.50	5.38	5.38	0.31	0.63	1/4-20
350	12.00	10.00	7.38	5.30	5.30	0.31	0.63	1/4-20
500	21.00	11.00	9.50	9.50	9.50	0.75	0.75	3/8-16
650	21.00	11.00	9.50	9.50	9.50	0.75	0.75	3/8-16
850	25.63	15.63	11.30	13.88	13.88	0.88	0.88	3/8-16
1000	25.63	15.63	11.30	13.88	13.88	0.88	0.88	3/8-16