Introduction to Silicon Controlled Rectifier (SCR) Power Controllers

High reliability
Because the SCR power controller is a solid-state device, it provides virtually limitless, trouble-free operation with a minimum of maintenance.

Infinite resolution
Power, current or voltage can be controlled from zero to 100% with infinite resolution.

Extremely fast response
The SCR controller can toggle-load power on and off rapidly, providing the means to respond quickly to command, load and power supply changes.

 SCR Power Controllers

The SCR
The SCR has two states, On and Off, and allows current to flow in only one direction. An SCR unit is composed of two SCRs arranged to control AC power. SCRs can remain in the off state even though the applied potential may be several thousand volts; in the on state, they can pass several thousand amperes. When a small signal is applied the SCR will turn on in 10-100 microseconds. Once turned on it will remain on until the current through it is reduced below a very low value called the holding current.

Basically, an SCR power controller consists of the following:
- Semiconductor power devices (SCRs and diodes)
- A control circuit normally referred to as the firing circuit
- A means to dissipate the generated heat
- Protective circuits (fuses and transient suppressors)

True Power Regulation / Current Limit
It uses output voltage, current, conduction angle, phase shift, and power factor to monitor and regulate the output. It will provide output power that is constant, regulated and linear to the command signal. This option includes an RMS current limit (adjustable from 35 to 125% of the unit’s rating) and has a 0-5 VDC output that is proportional to the load power.

Over-Current Trip
Tempco’s over-current trip is peak current sensing. The circuit will shut down the SCR within a half-cycle of AC current. It includes an automatic or manual reset that allows the user to select the reset mode after an alarm. A relay output is available for alarming or shutdown. Adjustable from 100 to 300% of the unit’s rating.

RMS Current Regulation / Over-Current Trip
It will hold the output current constant regardless of the load resistance, based upon the command signal input. This option includes an RMS current trip adjustable from 35 to 125% of the unit’s rating.

RMS Current Limit / Over-Current Trip
The output current can be adjusted to automatically limit or clamp the maximum RMS current available from the SCR power control. It is settable from 35 to 125% of the unit’s rating. This option includes an RMS current trip adjustable from 35 to 125% of the unit’s rating.

Over-Temperature Thermostat
These are bi-metal snap action thermostats that open or close when the heat sink’s temperature exceeds its maximum operating temperature. Standard on all SCR power controls starting at 90 Amps. Specify NO or NC when ordering, or a NO thermostat will be included.

Load Unbalance Alarm
The unbalance alarm monitors and compares the current in each of the three phases. If the current deviates more than the setpoint allows, an alarm relay is actuated.

SCR Module Failure Alarm
This option monitors the voltage drop across each of the SCRs. Since most SCRs fail shorted (zero voltage drop) this is the most accurate method to detect a failed SCR module. A relay output is provided.

Distributive Zero-Cross Control
The term zero-cross or synchronous operation of SCRs is derived from the fact that the SCRs are turned on only when the instantaneous value of the AC sinusoidal waveform is zero. Zero-cross controllers can provide two rather distinctively different types of control: time proportioning control, and distributive control.

The Distributive Control Technique combines power pulses of short duration to obtain the exact power level proportional to the command signal or setpoint.

Phase-Angle Control
In phase-angle control the SCR unit is turned on at a certain phase angle of the AC power supply that provides the correct percentage of power. Power is regulated by advancing or delaying the point at which the SCR is turned on within each half cycle. Shown is an example of this for 50% power output.

Phase-angle control provides a very fine resolution of power and is used to control fast responding loads such as tungsten-filament lamps or loads in which the resistance changes as a function of temperature. Phase-angle control is required if the load is transformer-coupled or inductive.

Phase-angle controllers are typically more expensive than zero-cross controllers because the phase-angle circuit requires more sophistication than a zero-cross circuit. Phase-angle control of three-phase power requires SCRs in all three legs and is appreciably more expensive than zero-cross control, which only requires SCRs in two of the three legs.

Features and Benefits of SCRs
- High reliability
- Infinite resolution
- Extremely fast response

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The “A” Series SCR Power Controllers are a compact and economical power control solution for industrial applications that require high reliability and long life. The fast solid state switching provides superior performance over relays, contactors and other slower cycling controllers by reducing temperature variations associated with the longer on-off cycles of those devices. The result is a more precise control of the heating process and extended heater life.

- Fast Cycling Distributive Zero Cross or Phase Angle Firing Control Modes
- Line Voltage Compensation
- Compact Size; Diagnostic LED; Increased Heater Life

**Specifications**

**Command Signals:** 4-20mA; 0-5 VDC; 0-10 VDC; potentiometer

**Control Mode:** Distributive Zero Cross; Phase Angle Firing

**Load Current:** 15, 25, 40 or 70 Amps

**Line Voltage:** 120, 240, 480, or 575 VAC; +10% -20% 50/60 Hz

**Zero and Span:** Factory pre-set. User adjustable over a range of 20% of span.

**Transient Voltage and dv/dt:** 200 volts/microsecond minimum. Uses a dv/dt snubber and a metal oxide varistor. (MOV)

**Control Range**
- **Zero Cross:** 0 to 100% of line voltage
- **Phase Angle Firing:** RMS load voltage is linear within 2% of the command signal.

**Linearity**
- **Zero Cross:** Linear with respect to the command signal
- **Phase Angle Firing:** RMS load voltage is linear within 2% of the command signal.

**A” Series SCR Power Controllers** are offered with the options listed in the worksheet below. Fill in the boxes with the appropriate number and/or letter designation for your requirements and a part number will be assigned.

<table>
<thead>
<tr>
<th>Options</th>
<th>BOXES 5, 6</th>
<th>Notes: Fusing is not included. Class T fuses are recommended. All control input configurations require 24 VAC power supply except zero cross with 4-20mA input.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E:</td>
<td></td>
<td>Over-Temperature Thermostat – N.O. Contacts</td>
</tr>
<tr>
<td>F:</td>
<td></td>
<td>Over-Temperature Thermostat – N.C. Contacts</td>
</tr>
<tr>
<td>N:</td>
<td></td>
<td>None (for phase angle fire models only)</td>
</tr>
<tr>
<td>C:</td>
<td></td>
<td>RMS Current Limit</td>
</tr>
<tr>
<td>J:</td>
<td></td>
<td>Over-Current Trip</td>
</tr>
</tbody>
</table>

**Potentiometer Kit (ordered separately):** 5KΩ potentiometer and knob

**Multi-Tap Transformer**
- **Input:** 120/240V, 400V, 480V or 575V
- **Output:** 24VAC
- **Part number:** SRS99002

**Common Configurations — “A” Series**
- 240 VAC; 1-phase; 4-20 mA input

**Part Number**

<table>
<thead>
<tr>
<th>Load Current</th>
<th>Zero Cross</th>
<th>Phase Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Amp</td>
<td>SRS01101</td>
<td>SRS02101</td>
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<tr>
<td>25 Amp</td>
<td>SRS01102</td>
<td>SRS02102</td>
</tr>
<tr>
<td>40 Amp</td>
<td>SRS01103</td>
<td>SRS02103</td>
</tr>
<tr>
<td>70 Amp</td>
<td>SRS01104</td>
<td>SRS02104</td>
</tr>
</tbody>
</table>

**Design Features**

- Electrically Isolated Heat Sink
- Conservative Thermal Design
- Voltage Squared Linearity
- Transient Voltage Protection
- Multi-Turn Zero & Span Adjustments
- UL, cUL, CE Compliant

**Ordering Code:**

- **Control Input**
  - A: 4 to 20 mA
  - B: 0 to 5 VDC
  - C: 0 to 10 VDC
  - D: Potentiometer

- **Control Mode**
  - Z: Distributive Zero Cross
  - P: Phase Angle Fire

**Load Current**
- 15, 25, 40 or 70 Amps

**Line Voltage**
- 120 VAC
- 240 VAC
- 480 VAC
- 575 VAC

**Temperature**
- **Operating:** 32 to 122°F (0 to 50°C)
- **Storage:** 14 to 198°F (-10 to 70°C)

**Cooling:** Convection

**Mounting:** Panel mount with heat sink fins vertical

**Dimensions**
- 15-40 Amp units — Overall: 4.75"W × 6.0"H × 3.1"D
  - Mounting Centers: 4.35"W × 4.5"H
- 70 Amp units — Overall: 8.5"W × 10"H × 5"D
  - Mounting Centers: 8.0"W × 8.75"H

**Weight**
- 15-40 Amp units: 1.2 lb.
- 70 Amp units: 3 lb

**Notes:**
- Standard lead time is 2 to 3 weeks.
- [WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)
- **(800) 323-6859 • Email: sales@tempco.com**
The “B” Series SCR Power Controllers are a compact and economical power control solution for industrial applications that require high reliability and long life. The fast solid state switching provides superior performance over relays, contactors and other slower cycling controllers by reducing temperature variations associated with the longer on-off cycles of those devices. The result is a more precise control of the heating process and extended heater life.

**Design Features**
- Conservative Thermal Design
- Compact Size
- Voltage Squared Linearity
- Line Voltage Protection
- Includes Semiconductor Fuses
- Diagnostic Indicators
- Multi-Turn Zero & Span Adjustments
- UL, cUL Compliant

**Specifications**

**Command Signals:** 4-20mA; 0-5 VDC; 0-10 VDC; potentiometer

**Control Mode:** Distributive Zero Cross; Phase Angle Firing

**Load Current:** Zero Cross or Phase Angle Fire Output

**Amperage Ratings:** 60, 90, 120, 180, 225, 350, 500, 650, 800, 1000, 1200

**Line Voltage:** 120, 240, 480, or 575 VAC; 10% to 20% 50/60 Hz

**Zero and Span:** Factory pre-set. User adjustable over a range of 20% of span.

**Transient Voltage and dv/dt:** 200 volts/microsecond minimum. Uses a dv/dt snubber and a metal oxide varistor (MOV).

**Control Range**
- **Zero Cross:** 0 to 99.5% of line voltage
- **Phase Angle Firing:** 0 to 97% of line voltage

**Linearity**
- **Zero Cross:** Linear with respect to the command signal
- **Phase Angle Firing:** RMS load voltage is linear within 2% of the command signal.

“B” Series SCR Power Controllers are offered with the options listed in the worksheet below. Fill in the boxes with the appropriate number and/or letter designation for your requirements and a part number will be assigned.

**Ordering Code:** SRSB

<table>
<thead>
<tr>
<th>Control Mode</th>
<th>BOX 1</th>
<th>LOAD CURRENT</th>
<th>BOX 2</th>
<th>LINE VOLTAGE</th>
<th>BOX 3</th>
<th>OPTIONS</th>
<th>BOX 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z: Distributive Zero Cross</td>
<td></td>
<td>xxxx: 60, 90, 120, 180, 225, 350, 500, 650, 800, 1000, 1200 Amps</td>
<td></td>
<td>1: 120 VAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: Phase Angle Fire</td>
<td></td>
<td></td>
<td></td>
<td>2: 240 VAC</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>3: 480 VAC</td>
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<td></td>
<td></td>
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<td></td>
<td>4: 575 VAC</td>
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</tr>
</tbody>
</table>

**Part Number**

<table>
<thead>
<tr>
<th>Load Current</th>
<th>Zero Cross</th>
<th>Phase Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 Amp</td>
<td>SRS03101</td>
<td>SRS04101</td>
</tr>
<tr>
<td>90 Amp</td>
<td>SRS03102</td>
<td>SRS04102</td>
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<tr>
<td>120 Amp</td>
<td>SRS03103</td>
<td>SRS04103</td>
</tr>
<tr>
<td>180 Amp</td>
<td>SRS03104</td>
<td>SRS04104</td>
</tr>
<tr>
<td>225 Amp</td>
<td>SRS03105</td>
<td>SRS04105</td>
</tr>
<tr>
<td>350 Amp</td>
<td>SRS03106</td>
<td>SRS04106</td>
</tr>
</tbody>
</table>

**Control Input**

<table>
<thead>
<tr>
<th>A: 4 to 20 mA</th>
<th>B: 0 to 5 VDC</th>
<th>C: 0 to 10 VDC</th>
<th>D: Potentiometer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Options (up to three)**

- E: Over Temperature Thermostat – Normally Open
- F: Over Temperature Thermostat – Normally Closed

(for zero cross models only)

- A: True Power Regulation / Current Limit
- B: Over-Current Trip
- C: RMS Current Regulation / Over-Current Trip
- D: RMS Current Limit / Over-Current Trip
- E: Over Temperature Thermostat – N.O. Contacts
- F: Over Temperature Thermostat – N.C. Contacts
- N: None

**Common Configurations – “B” Series**

- 240 VAC; 1 phase; 4-20 mA control input;
- Includes Over Temperature Thermostat – N.O. for controls 90 Amp and over.
- STANDARD LEAD TIME IS 3 TO 4 WEEKS.

**Dimensions**

- **60-225 Amp units—Overall:** 9.5”W x 16.25”H x 9.25”D
  - **Mounting Centers:** 7.0”W x 15.69”H
- **350 and 500 Amp units—Overall:** 14.75”W x 20.125”H x 8.5”D
  - **Mounting Centers:** 13.0”W x 18.375”H
- **650 Amp units—Overall:** 16.75”W x 23.0”H x 11.5”D
  - **Mounting Centers:** 15.75”W x 22.0”H
- **800-1200 Amp units—Overall:** 16.75”W x 29.0”H x 12.0”D
  - **Mounting Centers:** 13.0”Top/15.0”Bottom

**Weight**

- **60-225 Amp units:** 22 lbs
- **600 Amp units:** 47 lbs
- **350-500 Amp units:** 24 lbs
- **800-1200 Amp units:** 71 lbs

**Diagnostic Indicators**

- Over-Current Trip
- Over Temperature Thermostat – N.O. Contacts
- Over Temperature Thermostat – N.C. Contacts
- None

**Potentiometer Kit (ordered separately):** 5KΩ potentiometer and knob – Part Number: SRS99001

**WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
**Design Features**

- Electrically Isolated Heat Sink
- Conservative Thermal Design
- Voltage Squared Linearity
- Transient Voltage Protection
- Multi-Turn Zero & Span Adjustments
- UL, cUL, CE Compliant
- Ideal for: Electric Ovens, Furnaces and Kilns, Environmental Chambers and Extruders

The “C” Series SCR Power Controllers are two-leg zero cross SCR power controllers that linearly control, proportional to the command signal, the power applied to a 3-phase electrical load. The controller consists of a master and slave assembly. Each assembly consists of a heat sink and an SCR module. The master assembly contains the control circuit card which controls the on-off cycles for both assemblies.

**Specifications**

- **Command Signals:** 4-20mA; 0-5 VDC; 0-10 VDC; potentiometer
- **Control Mode:** Distributive Zero Cross
- **Load Current:** 15, 25, 40 or 70 Amps
- **Line Voltage:** 208, 240, 277, 480 or 575 VAC; 10% to 20% 50/60 Hz
- **Zero and Span:** Factory pre-set. User adjustable over a range of 20% of span.
- **Transient Voltage and dv/dt:** 500 volts/microsecond minimum. Uses a dv/dt snubber and a metal oxide varistor (MOV).
- **Control Range:** 0 to 100% of line voltage
- **Linearity:** Average load voltage is linear within 1% of the command signal.

**Common Configurations – “C” Series**

- 240 VAC; 3-phase; 2-leg; Zero cross firing; 4-20 mA input

<table>
<thead>
<tr>
<th>Load Current</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Amp</td>
<td>SRT01101</td>
</tr>
<tr>
<td>25 Amp</td>
<td>SRT01102</td>
</tr>
<tr>
<td>40 Amp</td>
<td>SRT01103</td>
</tr>
<tr>
<td>70 Amp</td>
<td>SRT01104</td>
</tr>
</tbody>
</table>

**Potentiometer Kit** *(ordered separately)*: 5KΩ potentiometer and knob

- Part number: SRS99001

**Multi-Tap Transformer**

- **Input:** 120/240V, 400V, 480V or 575V
- **Output:** 24V

**Ordering Code: SRTC**

- **Control Input**
  - A: 4 to 20 mA
  - B: 0 to 5 VDC
  - C: 0 to 10 VDC
  - D: Potentiometer

- **Load Current**
  - xx: 15, 25, 40 or 70 Amps

- **Line Voltage**
  - 1: 120 VAC
  - 2: 240 VAC
  - 3: 480 VAC
  - 4: 575 VAC

**Options (up to two)**

- E: Over Temperature Thermostat – N.O. Contacts
- F: Over Temperature Thermostat – N.C. Contacts
- G: Load Unbalance Alarm
- H: SCR Failure Alarm
- N: None

**Notes:** Fusing is not included. Class T fuses are recommended. All control input configurations require 24 VAC power supply except zero cross with 4-20mA input.

**Weight**

- 15-40 Amp units: 2.5 lbs
- 70 Amp units: 5.7 lbs

**Dimensions**

- 15-40 Amp units—Overall: 9.61”W × 6.0”H × 3.1”D (each heat sink)
- 70 Amp units—Overall: 17.25”W × 10”H × 5”D (each heat sink)

**Temperature**

- **Operating:** 32 to 122°F (0 to 50°C)
- **Storage:** 14 to 158°F (-10 to 70°C)

**Cooling:** Convection

**Mounting:** Panel mount with heat sink fins vertical

**Standard lead time is 2 to 3 weeks.**

**WARNING:** Cancer and Reproductive Harm • [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**Contact Information:**

- (800) 323-6859 • Email: sales@tempco.com
The “D” Series SCR Power Controllers are two-leg zero cross SCR power controls that linearly control, proportional to the command signal, the power applied to a 3-phase electrical load. The Series “D” controller features a compact design, a single plug-in circuit card for ease of operation and an electrically isolated heat sink. All three leads are fused.

**Design Features**
- Back to Back SCRs
- Includes 3 Semiconductor I2T fuses
- Line Voltage Compensation
- Diagnostic Indicators (Control Power, Command Signal, Blown Fuse)
- Fan Cooled on 90 Amp and higher units

**Specifications**
- **Command Signals:** 4-20 mA; 0-5 VDC; 0-10 VDC; potentiometer
- **Control Mode:** Distributive Zero Cross
- **Load Current per Leg:** 60, 90, 120, 180, 225, 350, 500, 650, 800, 1000, 1200 Amps
- **Line Voltage:** 208, 240, 480 or 575 V AC; 10% to 20% 50/60 Hz
- **Zero and Span:** Factory pre-set. User adjustable over a range of 20% of span.
- **Transient Voltage and dv/dt:** 200 volts/microsecond minimum. Uses a dv/dt snubber and a metal oxide varistor (MOV).
- **Control Range:** 0 to 99.5% of line voltage
- **Linearity:** Average load voltage is linear within 2% of the command signal.
- **Temperature Operating:** 32 to 122°F (0 to 50°C)
- **Storage:** 14 to 158°F (-10 to 70°C)
- **Cooling:** 60A convection; all others fan cooled

**Ordering Code:**

- **Control Input BOX 1**
  - A: 4-20 mA
  - B: 0-5 VDC
  - C: 0-10 VDC
  - D: Potentiometer

- **Line Voltage BOX 3**
  - 8: 208 VAC
  - 2: 240 VAC
  - 3: 480 VAC
  - 4: 575 VAC

- **Load Current BOX 2**
  - xxx: 60, 90, 120, 180, 225, 350, 500, 650, 800, 1000, 1200 Amps

- **Options (up to two) BOX 4, 5**
  - E: Over-Temperature Thermostat – N.O. Contacts
  - F: Over-Temperature Thermostat – N.C. Contacts
  - G: Load Unbalance Alarm
  - H: SCR Failure Alarm
  - N: None

- **Potentiometer Kit (ordered separately):**
  - 5KΩ potentiometer and knob
  - Part number: SRS99001

**Partial case shown for 60 to 225 Amp units. 350 Amp and up use a caseless, open panel mount design.**

**Common Configurations — “D” Series**

<table>
<thead>
<tr>
<th>Command Signals</th>
<th>Line Voltage</th>
<th>Load Current</th>
<th>Options</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-20 mA</td>
<td>208 VAC</td>
<td>60 Amp</td>
<td>5</td>
<td>31 lbs</td>
</tr>
<tr>
<td>0-5 VDC</td>
<td>240 VAC</td>
<td>90 Amp</td>
<td>5</td>
<td>41 lbs</td>
</tr>
<tr>
<td>0-10 VDC</td>
<td>480 VAC</td>
<td>120 Amp</td>
<td>5</td>
<td>31 lbs</td>
</tr>
<tr>
<td>Potentiometer</td>
<td>575 VAC</td>
<td>180 Amp</td>
<td>5</td>
<td>41 lbs</td>
</tr>
</tbody>
</table>

**Warning:** Over-temperature thermostat is standard on 90 Amp controls and over — Specify N.O. or N.C. when ordering.

**Note:** Over-temperature thermostat is standard on 90 Amp controls and over — Specify N.O. or N.C. when ordering.

**View Product Inventory @ www.tempco.com**

**Temperature Controllers**

Three Phase SCR Power Controllers

Rev 2 (8-18)
The “E” Series SCR Power Controllers are three-phase, six SCR, phase angle power controls. 5 LEDs monitor line, command signal, 3-line current. They are ideal for electric ovens, furnaces and kilns, silicone carbide, transformer coupled loads.

**Design Features**
- Back to Back SCRs
- Includes 3 Semiconductor I²T Fuses
- Line Voltage Compensation
- Diagnostic Indicators (Control Power, Command Signal, Blown Fuse)
- Fan Cooled on 90 Amp and Higher Units
- Transient Voltage Protection
- Voltage Squared Linearity
- Electrically Isolated Heat Sink
- Multi-Turn Zero & Span Adjustments
- UL, cUL, CE Compliant

Partial case shown for 60 to 225 Amp units. 350 Amp and up use a caseless, open panel mount design.

**Specifications**

**Command Signals:** 4-20 mA; 0-5 VDC; 0-10 VDC; potentiometer

**Control Mode:** 3-Leg – Phase Angle Fire

**Load Current:**
- 60-225 Amp units — Overall: 17.5”W × 16.25”H × 9.25”D
- 350 and 500 Amp units — Overall: 19.0”W × 31.0”H × 8.5”D
- 650 Amp units — Overall: 24.0”W × 34.75”H × 11.25”D
- 800-1200 Amp units — Overall: 27.0”W × 38.75”H × 11.75”D

**Mounting:** Panel mount with heat sink fins vertical, or any position if fan cooled

**Dimensions**
- (60 to 225 Amp units use a partial case design. 350 Amp and up use a caseless, open panel mount design.)
- **60-225 Amp units** — Overall:
  - **Mounting Centers:** 15.0”W × 11.75”D × 31.0”H
- **350 and 500 Amp units** — Overall:
  - **Mounting Centers:** 16.25”T × 14.5”D × 231 lbs
- **650 Amp units** — Overall:
  - **Mounting Centers:** 17.5”T × 14.37”D × 231 lbs
- **800-1200 Amp units** — Overall:
  - **Mounting Centers:** 17.25”T × 18.37”D × 231 lbs

**Weight**
- 60-225 Amp units: 40 lbs
- 650 Amp units: 60 lbs
- 350-500 Amp units: 60 lbs
- 800-1200 Amp units: 231 lbs

**Options Available:**
- Over-Temperature Thermostat – N.O. Contacts
- Over-Temperature Thermostat – N.C. Contacts
- Load Unbalance Alarm
- RMS Current Limit/Over-Current Trip
- RMS Current Regulation/Over-Current Trip
- True Power Regulation/Current Limit
- SCR Failure Alarm
- SCR Failure Alarm – N.O. Contacts
- SCR Failure Alarm – N.C. Contacts
- Load Unbalance Alarm
- None

**Options (up to three) BOXES 4, 5, 6**
- A: True Power Regulation/Current Limit
- B: Over-Current Trip
- C: RMS Current Regulation/Over-Current Trip
- D: RMS Current Limit/Over-Current Trip
- E: Over-Temperature Thermostat – N.O. Contacts
- F: Over-Temperature Thermostat – N.C. Contacts
- G: Load Unbalance Alarm
- H: SCR Failure Alarm
- I: SCR Failure Alarm
- J: None

**Potentiometer Kit (ordered separately):**
- 5KΩ potentiometer and knob
- Part number: SRS99001

**Ordering Code:** SRTE

Series “E” SCR Power Controllers are offered with the options listed in the worksheet at right. Fill in the boxes with the appropriate number and/or letter designation for your requirements and a part number will be assigned.

**COMMON CONFIGURATIONS — “E” SERIES**
- 240 VAC; 3-phase; Phase Angle Firing; 4-20 mA control input; Includes Over-Temperature Thermostat – N.O. for controls 90 Amp and over.

<table>
<thead>
<tr>
<th>Load Current</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 Amp</td>
<td>SRTE03101</td>
</tr>
<tr>
<td>90 Amp</td>
<td>SRTE03102</td>
</tr>
<tr>
<td>120 Amp</td>
<td>SRTE03103</td>
</tr>
<tr>
<td>180 Amp</td>
<td>SRTE03104</td>
</tr>
<tr>
<td>225 Amp</td>
<td>SRTE03105</td>
</tr>
<tr>
<td>350 Amp</td>
<td>SRTE03106</td>
</tr>
</tbody>
</table>

**Control Input BOX 1**
- A: 4-20 mA
- B: 0-5 VDC
- C: 0-10 VDC
- D: Potentiometer

**Line Voltage BOX 3**
- 1: 120 VAC
- 2: 208 VAC
- 3: 240 VAC
- 4: 480 VAC
- 5: 575 VAC
- 6: 415 VAC

** WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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