Features

- Fast Cycling Distributive Zero-Cross Control
- Line Voltage Compensation
- Increased Heater Life
- Compact Size
- Diagnostic LED
- Isolated Heatsink and Command Signal

Description

The model 1031 is a single-phase, zero-cross SCR power controller that controls the electrical power applied to a single phase load by a distributive control technique in which the time frame varies as a function of on and off cycles. The power applied to the load is linear with respect to the command signal. The model 1031 uses potentiometer or a 1/5V command control. The model 1031 is available with current ratings from 10 to 70 amps and voltage ratings from 120 to 575Vac.

The model 1031 is a compact and economical power control solution for industrial applications that require high reliability and long life. The fast solid state switching of the model 1031 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. Zero-cross control generates minimal RFI noise, virtually eliminating the possibility of interference with other electronic equipment. Line voltage compensation greatly reduces load power variations that result from line voltage changes. This feature provides a more constant load power independent of line voltage variations.

Applications

- Electric Ovens, Furnaces, and Kilns
- Environmental Chambers
- Contactor Replacement
- Resistance Heating
- Platen Heaters
- Extruders

Approvals

- UL Listed IEC/EN 60947-4-2 Industrial Control Equipment
- UL Certified to CAN/CSA C22.2 No. 144-12 Industrial Control Equipment
### Wiring

![Diagram of Wiring](image)

### Specifications

<table>
<thead>
<tr>
<th>Control Mode</th>
<th>Single-phase, zero-cross distributive control of the load power.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command Signal</td>
<td>0/5 Vdc 100K input impedance  1-20K Pot. 100K input impedance</td>
</tr>
<tr>
<td>Control Range</td>
<td>0 to 99% of line voltage.</td>
</tr>
<tr>
<td>Linearity</td>
<td>Load power is linear with respect to the command signal.</td>
</tr>
<tr>
<td>Zero and Span</td>
<td>User adjustable, multi-turn pots, over a range of +/- 20% of span. Factory preset.</td>
</tr>
<tr>
<td>Isolation</td>
<td>Dielectric strength, input/output and load voltage/heat sink: 2500V (RMS)</td>
</tr>
<tr>
<td>Mounting</td>
<td>Panel mount. Heatsink fins vertical.</td>
</tr>
<tr>
<td>Line Voltage</td>
<td>120, 240, 480, and 575 Vac +10%, -15%, 50/60 Hz. Other voltages available.</td>
</tr>
<tr>
<td>Line/Load Connections</td>
<td>Compression lugs accept #2 to #14 Copper or #2 to #8 Aluminum.</td>
</tr>
<tr>
<td>Load Current</td>
<td>Models available with current ratings of 10, 20, 30, 40 or 70 Amps.</td>
</tr>
<tr>
<td>dv/dt and Transient Voltage</td>
<td>200 volts/microsecond minimum. Uses a dv/dt snubber and a metal oxide varistor (MOV).</td>
</tr>
<tr>
<td>Cooling</td>
<td>Convection.</td>
</tr>
<tr>
<td>Weight</td>
<td>10A thru 40A, 2 pounds; 70A, 6 pounds.</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating: 0 to +55°C (+32 to +131°F) Storage: -40 to +80°C (-40 to +176°F)</td>
</tr>
<tr>
<td>Heat Dissipation</td>
<td>1.5 Watts per amp of controlled current.</td>
</tr>
<tr>
<td>Fusing</td>
<td>Special semiconductor fuses are not required. Class T fuses are recommended to protect controller and load.</td>
</tr>
</tbody>
</table>

### Dimensions

![Dimensions Diagram](image)

### Ordering Information

**1031 - (XX) - (xx) - (XXXX)**

(XX) = Voltage:  
12 = 120 Vac  
24 = 240 Vac  
48 = 480 Vac  
57 = 575 Vac  
Substitute the two digit number for the (XX)

(xx) = Current:  
10 or 20 or 30  
or 40 or 70 Amps  
Substitute the two digit number for the (xx)

(XXXX) = Command Signal:  
Pot (potentiometer)  
or 1/5 Vdc  
Substitute Pot or 1/5 Vdc for the (XXXX)

### Complementary Products

Control Concepts, Inc., with a full range of standard and custom SCR power controllers and signal conditioners, has the expertise to meet your specific industrial power control needs. Model 1600-PM6-01 "66PAK™ delivers up to six 70 Amp single phase controllers in 14.5 x 7.5 inches of panel space. All of Control Concepts products are covered by a full two year warranty. Call us for answers, and delivery schedules that work.

**CONTROL CONCEPTS**  
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