Vari-Watt Power Controller

General
The Chromalox Vari-Watt Controller accepts an analog control signal input and produces a proportional output signal to drive Solid State Relays such as the Chromalox SSR series. Demand Oriented Transfer (DOT) firing for each SSR provides precise control with resolution to 3 cycles (select 50 or 60 Hz operation).

In a typical application the Vari-watt is used to convert temperature/process control signal (4-20 mA) to a Zero Crossing SSR power control.

When using multiple SSR’s the Load Management feature automatically offsets the turn-on signal for each SSR output to limit inrush current.

Manual control provides open loop control of the output from 0 to 100% with input from a 10K Potentiometer.

Auto/Manual Control allows a single pole switch to select between Manual Control or Automatic Control from any of the analog signal inputs.

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<table>
<thead>
<tr>
<th>Features</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Allows Automatic or Manual Control of Heater Loads Using Chromalox SSR Series Solid State Relays</td>
<td>Instrument power:</td>
</tr>
<tr>
<td>• Demand Oriented Transfer (DOT) Firing for Analog Inputs</td>
<td>• 95 to 250 Vac power, less than 15VA</td>
</tr>
<tr>
<td>• 50 or 60 Hz (Jumper Selectable)</td>
<td>Operating Environment:</td>
</tr>
<tr>
<td>• Load Management Feature for Multiple SSR’s</td>
<td>• 32-150°F ambient temperature</td>
</tr>
<tr>
<td>• Analog Inputs</td>
<td>• Relative humidity less than 95% non-condensing.</td>
</tr>
<tr>
<td>• 4-20 mAdc</td>
<td>Analog Input types:</td>
</tr>
<tr>
<td>• 0-5 Vdc</td>
<td>• 4-20 mAdc into 250 Ohm</td>
</tr>
<tr>
<td>• 0-10 Vdc</td>
<td>• 0-5 Vdc into 10K Ohm</td>
</tr>
<tr>
<td>• 50 or 60 Hz Operation, (Jumper Selectable)</td>
<td>• 0-10 Vdc into 20K Ohm</td>
</tr>
<tr>
<td>• Open Board Design</td>
<td>• 10K potentiometer</td>
</tr>
<tr>
<td>• DIN Rail Mounting</td>
<td>Outputs (Up to 4 total):</td>
</tr>
</tbody>
</table>

DOT timing:
• 3 cycle, 50 or 60 Hz (jumper selectable)
Application Diagrams (Typical)

Single Phase Application

3-Phase Application

Multiple Output Applications Load Management
Board Dimensions

- 3.5x5.1" (90x130) Overall Dimensions
- Allow 2" (51) for circuit Board Height Above DIN Rail Enclosure

End View of DIN Rail Enclosure

Ordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
<th>PCN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vari-Watt Controller</td>
<td>0113-10237</td>
<td>339768</td>
</tr>
<tr>
<td>Potentiometer (10K)</td>
<td>0135-27000</td>
<td>313947</td>
</tr>
</tbody>
</table>

Input Connections

4-20 mAdc Input

- Variwatt (J1)
- (-) (+) 4-20 mA

0-5 Vdc, 0-10Vdc Inputs

- Variwatt (J1)
- (-) (+) 0-5 Vdc 0-10Vdc

Manual Input

10K Potentiometer

- Variwatt (J1)
- Jumper (4-5) 10K Potentiometer

Auto/Manual Selection

- Variwatt (J1)
- Open = Auto
- Closed = Manual
### Jumper Selection Table

(0 = Remove Jumper, X = Jumper Installed)

<table>
<thead>
<tr>
<th>Input Type</th>
<th>J10</th>
<th>J11</th>
<th>J12</th>
<th>J13</th>
<th>J7</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 20 mA DC</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>0 - 5 Vdc</td>
<td>0</td>
<td>0</td>
<td>X</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>0 - 10 Vdc</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>50 Hz</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0</td>
</tr>
<tr>
<td>60 Hz</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>X</td>
</tr>
</tbody>
</table>

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### CUSTOMER OUTPUTS

- SSR1 (120VDC)
- SSR1 (24VDC)
- SSR2 (120VDC)
- SSR2 (24VDC)
- SSR3 (120VDC)
- SSR3 (24VDC)
- SSR4 (120VDC)
- SSR4 (24VDC)
- AUX OUT
- AUX OUT

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### CUSTOMER INPUTS

- [POT WIPER INPUT]
- AUTO/ANALOG INPUT +
- AUTO/ANALOG INPUT -
- 4-20mA OUT TO POT

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### AC POWER

(90-250Vac, 50 or 60 Hz Selectable)
Limited Warranty:
Please refer to the Chromalox limited warranty applicable to this product at http://www.chromalox.com/customer-service/policies/termsofsale.aspx.

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