



CONTROL CONCEPTS

1027A

Single Phase Zero Cross
SCR Power Controller



Description

The model 1027A is a single phase, zero-cross SCR power controller. The 1027A linearly controls, with respect to a command signal, the electrical power applied to a single-phase resistive load. The controller can be configured to accept all standard industrial command signals as well as many non-standard commands.

The model 1027A is available with current ratings from 50 to 160 amperes, and nominal voltage ratings from 120 to 575 Vac. The controller will operate without adjustment or modification on 50 or 60 Hertz.

Applications

- Resistive Loads

Features

- Distributive Zero-Cross Control
- Sync-Guard
- Trans-Guard
- Line Voltage Compensation
- Operates at 50 or 60 Hz

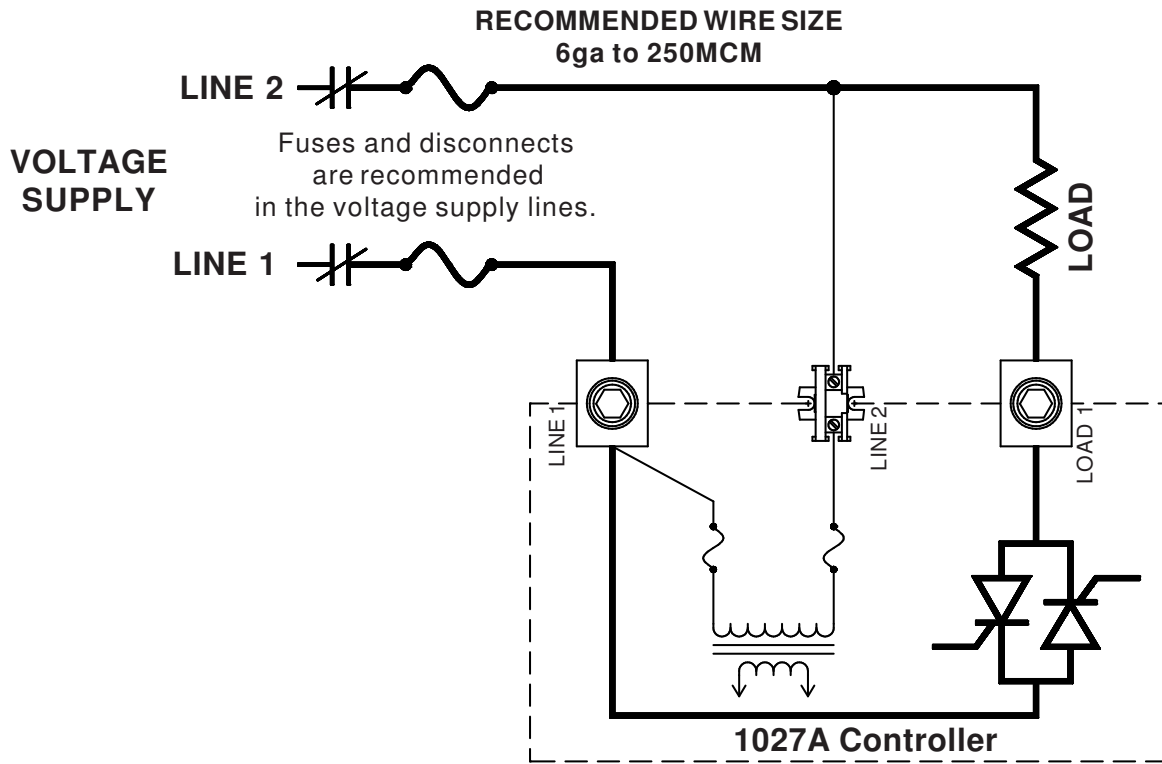


LISTED 3L32
INDUSTRIAL
CONTROL
EQUIPMENT

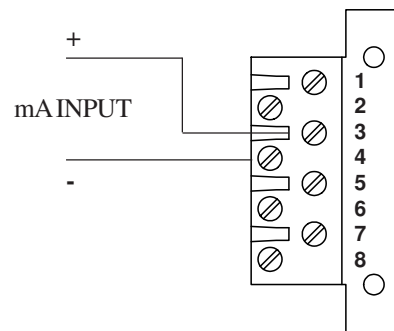
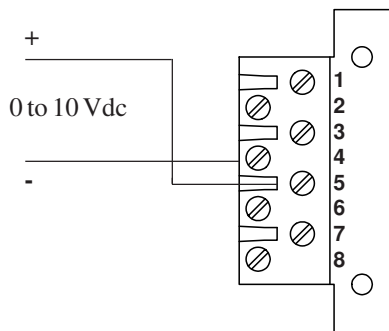
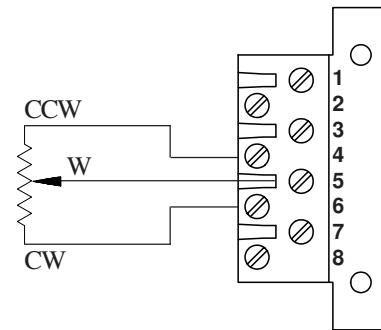
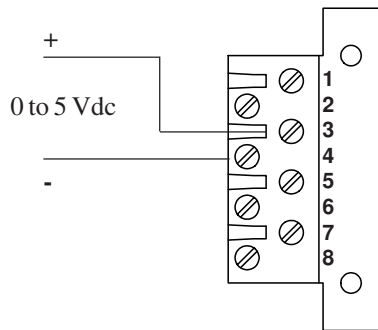


CERTIFIED
BY UL TO
CANADIAN
NATIONAL
STANDARDS

Wiring



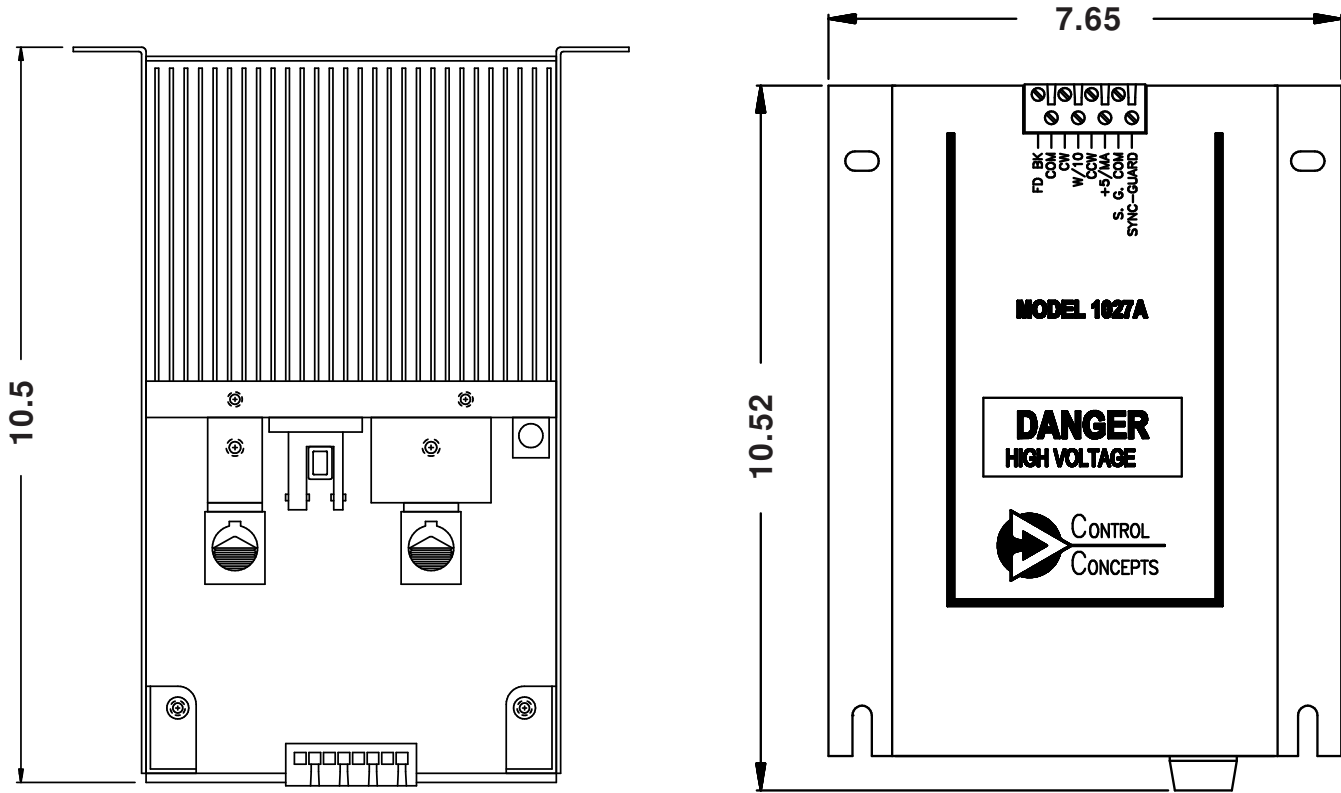
Command Signal Connections



Specifications

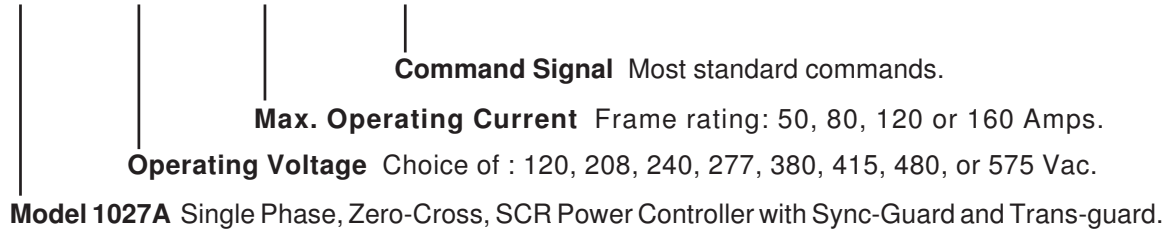
CONTROL MODE:	Single-phase, distributive zero-cross control.														
CURRENT RATING:	The “[xxx]A” term within the model number specifies the maximum continuous RMS current rating at the maximum operating ambient temperature of 55°C.														
COMMAND SIGNAL:	<table> <tr> <td>Command signal</td> <td>Input Resistance</td> </tr> <tr> <td>1/5 mA</td> <td>1200 ohms</td> </tr> <tr> <td>4/20 mA</td> <td>300 ohms</td> </tr> <tr> <td>0-10 Vdc</td> <td>240K ohms</td> </tr> <tr> <td>0-5 Vdc</td> <td>120K ohms</td> </tr> <tr> <td>Potentiometer</td> <td>240K ohms</td> </tr> </table> <p>(1K recommended; 20K permissible 1/2 watt) (Other standard commands may be available.)</p>	Command signal	Input Resistance	1/5 mA	1200 ohms	4/20 mA	300 ohms	0-10 Vdc	240K ohms	0-5 Vdc	120K ohms	Potentiometer	240K ohms		
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1/5 mA	1200 ohms														
4/20 mA	300 ohms														
0-10 Vdc	240K ohms														
0-5 Vdc	120K ohms														
Potentiometer	240K ohms														
POWER CIRCUIT:	Inverse parallel silicon controlled rectifiers (SCRs)														
LINE OPERATING VOLTAGE:	120, 208, 240, 277, 380, 415, 480, or 575 Vac. +10 -15%, 50/60 Hertz.														
AMBIENT TEMPERATURE:	<table> <tr> <td>Operating</td> <td>0 to 55 °C</td> </tr> <tr> <td>Storage</td> <td>-40 to 80 °C</td> </tr> </table>	Operating	0 to 55 °C	Storage	-40 to 80 °C										
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Storage	-40 to 80 °C														
HUMIDITY:	0 TO 95% Non Condensing														
ISOLATION:	Isolation between power circuit, command signal and ground is greater than 2500 Vrms.														
LINEARITY:	The load power is linear within 2% of span with respect to the command signal.														
VOLTAGE COMPENSATION:	The load power remains constant within 2% of span for line voltage variations of +10% and -15%.														
CONTROL RANGE:	0 to 99.5% of supply voltage.														
SCR VOLTAGE RATING:	1400 volts peak														
DV/DT & TRANSIENT VOLTAGE PROTECTION:	<p>Dv/dt rating exceeds 200 volts per microsecond. A snubber circuit is provided to protect against high frequency transients (dv/dt). An M.O.V. is provided to protect against high voltage transients.</p>														
ZERO AND SPAN:	Adjustment range is ±20% of span.														
COMMAND INDICATOR:	An LED glows when the SCRs are turned on.														
HEAT DISSIPATION:	1.5 watts per amp of SCR current.														
SCR SURGE CURRENT AND I²t RATING:	<table> <thead> <tr> <th rowspan="2">Controller rating</th> <th colspan="2">peak 1 cycle non-repetitive</th> </tr> <tr> <th>I_{tsm} @ 125 °C</th> <th>I²t rating @ 125 °C</th> </tr> </thead> <tbody> <tr> <td>50 & 80 Amps</td> <td>1750 Amps peak</td> <td>15,000 A²s</td> </tr> <tr> <td>120 Amps</td> <td>1900 Amps peak</td> <td>18,000 A²s</td> </tr> <tr> <td>160 Amps</td> <td>4000 Amps peak</td> <td>80,000 A²s</td> </tr> </tbody> </table>	Controller rating	peak 1 cycle non-repetitive		I _{tsm} @ 125 °C	I ² t rating @ 125 °C	50 & 80 Amps	1750 Amps peak	15,000 A ² s	120 Amps	1900 Amps peak	18,000 A ² s	160 Amps	4000 Amps peak	80,000 A ² s
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50 & 80 Amps	1750 Amps peak	15,000 A ² s													
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160 Amps	4000 Amps peak	80,000 A ² s													

Dimensions



Ordering Information

1027A - (xxx)V - (xxx)A - XXX



Command Signal Most standard commands.

Max. Operating Current Frame rating: 50, 80, 120 or 160 Amps.

Operating Voltage Choice of : 120, 208, 240, 277, 380, 415, 480, or 575 Vac.

Model 1027A Single Phase, Zero-Cross, SCR Power Controller with Sync-Guard and Trans-guard.

Complementary Products — Manufactured by

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.

All of Control Concepts products are covered by a limited two year warranty.

Call or fax Control Concepts, Inc. for answers and delivery schedules.



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