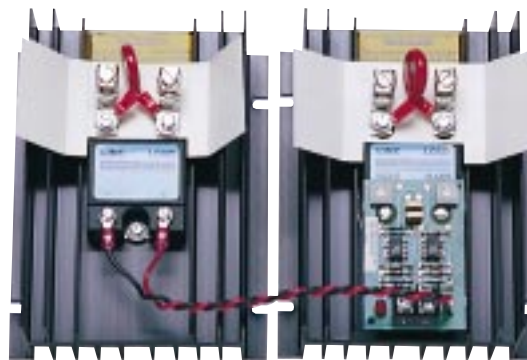


# The SSR Z Series

## Zero-Fired SCR Power Controllers

15-70 AMPS  
80-600 VAC



Zero-Fired SCR Power Controllers  
for proportional voltage control.

# Applications

The 50 Z, 100 Z, 200 Z and 300 Z models are economical solutions to temperature control problems in ovens, furnaces, extruders, environmental chambers, HVAC commercial heating, boilers, band heaters and many other resistive heating applications which in the past have used electro-mechanical or mercury switching devices.



50 SSR Z



53 SSR Z

## The 50 Series

These compact controllers provide space savings in addition to the convenience of DIN rail mounting. These units are rated for 15, 25 and 40 amps, single-phase, three-phase two leg control and three-phase three leg control. The control signal can be 4-20 mA, 0-10 VDC or manual potentiometer.

## The 100 and 200 Series

These units are rated for 15, 25, 40 and 70 amps, single-phase and three-phase two leg control. The control signal can be 4-20 mA, 0-10 VDC or manual potentiometer.



100 SSR Z



170 SSR Z

## The 300 Series

These units are rated for 15, 25, 40 and 70 amps, three-phase, three leg control. The control signal can be 4-20 mA, 0-10 VDC or manual potentiometer. The three-phase units will control delta and three-wire wye or four-wire wye connected loads.



200 SSR Z



270 SSR Z

## The SC Series (Solid State Contactors)

SC units are rated for 15, 25, 40 and 70 amps, single-phase. The control input can be 3-32 VDC or 120 VAC. The primary application for the SC unit is to replace electro-mechanical devices that operate as on/off controls. Three-phase control can be accomplished by paralleling the input signal to two or three single-phase units.

# Features

The SSR Z series power controls are reliable and economical alternatives to other methods of proportional voltage control. They are solid state, noise-free devices with no mechanical or moving parts to fail. And, because the semiconductors are turned on at zero voltage, they eliminate RFI.



200 SSR Z



270 SSR Z

The SSR Z series units are controlled by either a variety of process control signals (i.e., 4-20 mA, 0-10 VDC, etc.) or optional manual potentiometer. Input signal isolation is 2500 VAC. For all units but the 50 Series, transient voltage protection is provided by an external metal oxide varistor (MOV) across the semiconductors, which also have dv/dt protection.

The SSR Z series models feature a variable-time-base (VTB) firing circuit that diminishes temperature variations in the load. By minimizing "off-time" consistent with power demand, VTB reduces average output voltage fluctuation. Units operate at 80 to 480 VAC (600 VAC optional) at 50/60 Hz. The conservative design ensures continuous operation at full rated current in a 50°C ambient temperature (inside the enclosure).

#### Features include:

- Conservative thermal design increases service life and minimizes maintenance.
- Current or voltage control signals.
- Zero-voltage firing eliminates RFI.
- Isolated heat sinks.
- Variable-time-base reduces thermal shock to load.
- Average voltage linear.
- Transient voltage protection (all but 50 Series).
- CSA Certified and UL Listed (50 Series pending).

## Options

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### Fuse Kits

May be ordered with optional (UL/CSA) I<sup>2</sup>t (FK2) fuse kits.

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### Manual Potentiometer

Z-V models may be ordered with an optional 1-turn (-MP1) or 10-turn (-MP2) potentiometer.

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### 24 VAC Control Transformer

Class 2 transformers are available for the Z-V models. These transformers can supply power to up to eight SSR Z units.

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## Technical Specifications

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INPUT LINE VOLTAGE:	80-480 volt (600 VAC optional), 50/60 Hz.
CURRENT RATING:	15, 25, 40, 70 amperes resistive.
CONTROL METHODS:	(-C models) 4-20 mA process control (500 ohm). (-V models)* 4-20 mA process control (500 ohm), or 0-10 VDC process control or optional manual control.
VOLTAGE SOURCE:	The units require 24 VAC @ 3 VA.
CONTROL SIGNAL ISOLATION:	2500 VAC.
TRANSIENT VOLTAGE PROTECTION:	Metal Oxide Varistor (MOV) across semiconductors (all units but the 50 Series).
ZERO-FIRING TIME BASE:	Variable. On-time 4 cycle min.; off-time 150 cycle max.
CONTROLS:	BIAS and GAIN potentiometers (1 turn).
STATUS INDICATOR:	Red flashing LED when unit is on.
AMBIENT TEMPERATURE RANGE:	Operation — max. 122°F (50°C), Storage — 14°F to 158°F (-10°C to 70°C).
WARRANTY:	2 years.

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\*Voltage control models require a UL Listed/CSA Certified Class 2 voltage source for control power.

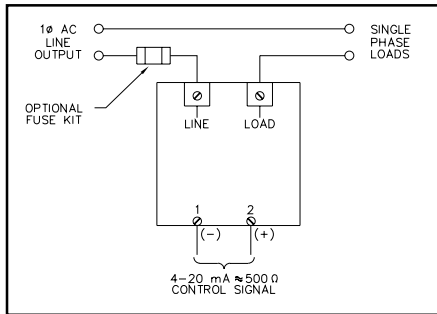
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# SSR Z SERIES DIMENSIONS (INCHES AND POUNDS)

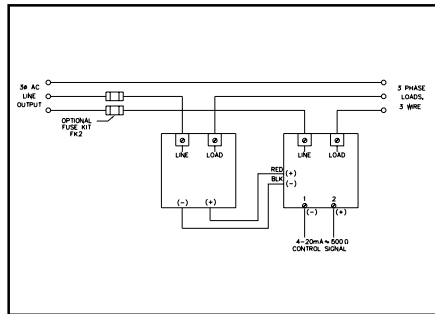
Unit	Amps	Height	Width	Depth	Weight
50 Z	15-25	4.13	2.13	3.25	0.56
50 Z	40	4.13	2.13	4.69	0.78
52 Z	15-40	4.18	4.50	3.84	1.80
53 Z	15-40	4.18	7.00	3.75	2.20
100 Z	15-40	6.00	4.75	3.25	1.10
100 Z	70	9.00	9.25	7.50	6.00
200 Z	15-40	6.00	9.63	3.25	2.13
200 Z	70	9.00	19.50	7.50	12.00
300 Z	15-40	6.00	14.50	3.25	3.13
300 Z	70	9.00	29.75	7.50	18.00

# SSR Z SERIES — CONTROL SIGNAL SELECTION AVAILABILITY

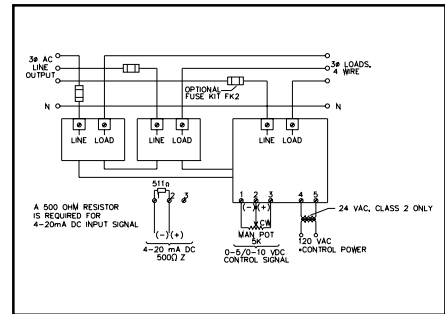
Unit	4-20mA	0-5 VDC	0-10 VDC	Manual Pot.	3-32 VDC	120 VAC
50 Z-C	*					
100 Z-C	*					
200 Z-C	*					
50 Z-V	*	*	*	*		
100 Z-V	*	*	*	*		
200 Z-V	*	*	*	*		
300 Z-V	*	*	*	*		
SC-D					*	
SC-A						*



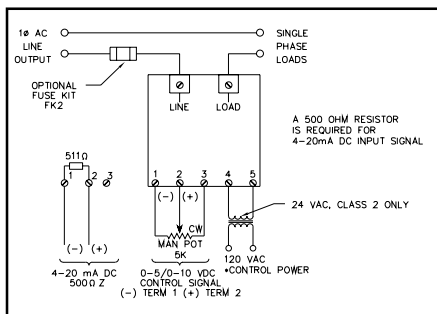
Typical Input/Output Connections for the 1Ø Z-C



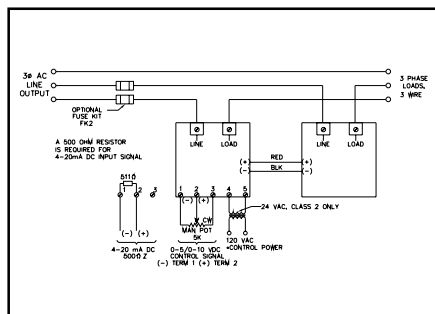
Typical Input/Output Connections for the 2Ø Z-C



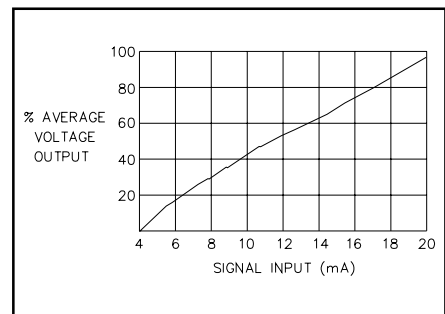
Typical Input/Output Connections for the 3Ø, 3- or 4-wire



Typical Input/Output Connections for the 1Ø Z-V



Typical Input/Output Connections for the 3Ø, 3-wire Z-V



Linearity

# ORDERING INFORMATION

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Configuration
Rating
Input
600 VAC Option
Fuse Kits
Potentiometer Kits

CONFIGURATION		INPUT		FUSE KITS
5	1Ø DIN Rail Mounted	Z-C	Zero-Fired, 4-20 mA	- FK2 1½ Fuse Kit
52	2Ø DIN Rail Mounted	Z-V	Zero-Fired, 4-20 mA, 0-10 VDC, Manual Potentiometer	
53	3Ø DIN Rail Mounted			
1	1Ø Panel Mounted	SC-A	Solid State Contactor 120 VAC	
2	2Ø Panel Mounted	SC-D	Solid State Contactor 3-32 VDC	
3	3Ø Panel Mounted			
RATING		600 VAC OPTION		POTENTIOMETER KITS
15	15 amps	-600V	600 VAC Line Voltage	<i>Z-V Units Only</i>
25	25 amps			
40	40 amps			
70*	70 amps			
<i>* 1, 2, 3 configurations only</i>				-MP1 1 Turn Potentiometer -MP2 10 Turn Potentiometer

All Z-V Models Require 24 VAC Control Voltage

24 VAC TRANSFORMERS	
H022805	120/240 VAC Primary
H022804	240/480 VAC Primary
H028689	208/277/600 VAC Primary

The equation and tables above will assist you in ordering from the SSR Z Series.

For example, for a three-phased, three-wire, 2-leg control, panel-mounted power controller that was 480 volts, 25 amps 4 to 20 mA input, with a fuse kit, the order number is:

2—25—Z-C—FK2