

# ZF1 SCR SERIES

## POWER CONTROLS

The ZF1 SCR Series are single-phase, zero-fired SCR Power Controls designed to deliver maximum power control with all of the features normally found in much larger units. Utilizing only four frame sizes, these units are conservatively engineered for years of trouble free service while providing the benefits of precise, reliable control of for your electronic process.

The ZF1 SCR Series accepts all standard voltage and current command signals or remote potentiometer input. The 4-20 mA command signal is optically isolated. Standard operating voltages are 120, 240, 400, 480 & 575 Vac, 1 Phase, 50/60Hz.

Multi-turn Zero and span adjustments are provided for matching the SCR power control to the command signal. Control power, command signal and blown fuse indicators are provided as means for trouble shooting. The control power indicator (red) indicates power has been applied to the unit. The command signal indicators' (green) brilliance is proportional to the output voltage. The blown fuse indicators (3-yellow) light if a fuse is cleared.

### Applications:

Primarily used to control static resistive or non-inductive loads.

- Small electric furnaces
- Electric ovens, kilns & heaters
- Extrusion or injection molding

**60-1200 Amperes  
Single-phase  
Zero-fired**



- 5 year "No Hassle" warranty
- Electrically Isolated Heatsink (60-225 A)
- Compact Size
- Conservative Thermal Design
- Voltage Squared Linearity
- Line voltage compensation
- Transient voltage Protection (RC & MOV)
- 1400 PIV SCRs
- Semiconductor (I<sup>2</sup>T) Fuse
- Diagnostic Indicators
- Optically Isolated input Command Signal (4-20 mA)
- Multi-Turn Zero & Span Adjustments
- UL, cUL Listed, CE Compliant
- Fan Cooled (90 A and higher)



**100kA  
SCCR**

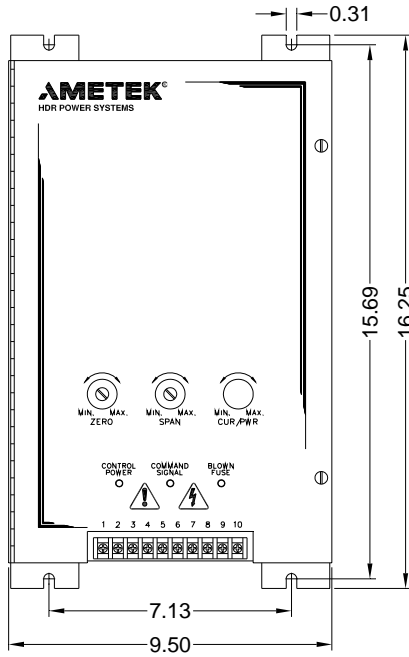


**ISO  
9001  
QUALITY  
ASSURANCE**

**AMETEK®**  
HDR POWER SYSTEMS

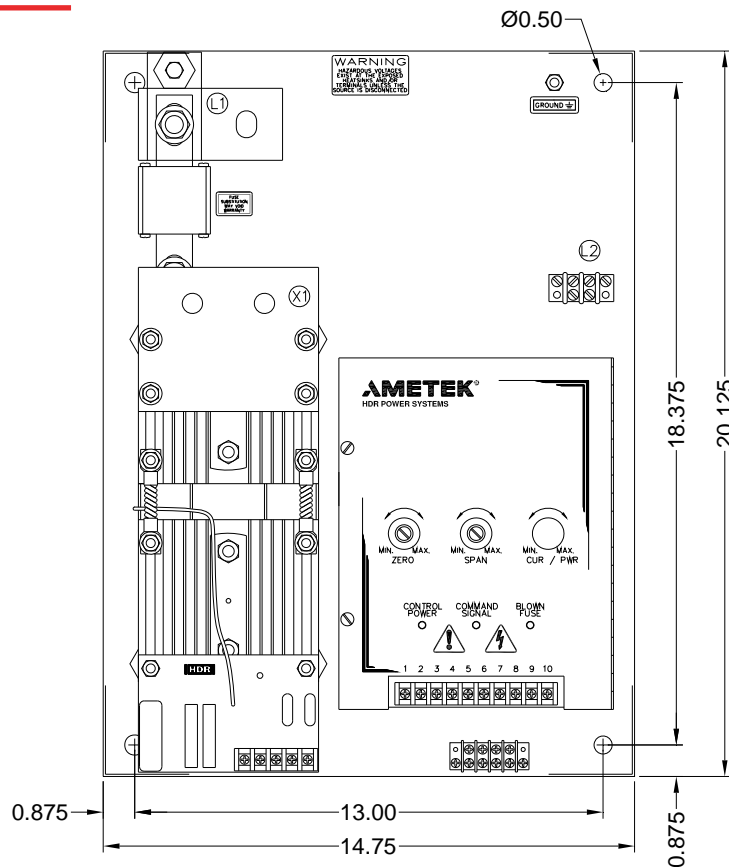
530 Lakeview Plaza Blvd Ste C  
Worthington, Ohio 43085  
Toll Free: 1-888-PWR-CNTR (797-2685)  
Phone: 614-308-5500  
Fax: 614-308-5506  
www.hdrpower.com

## ZF1 60 - 225 A



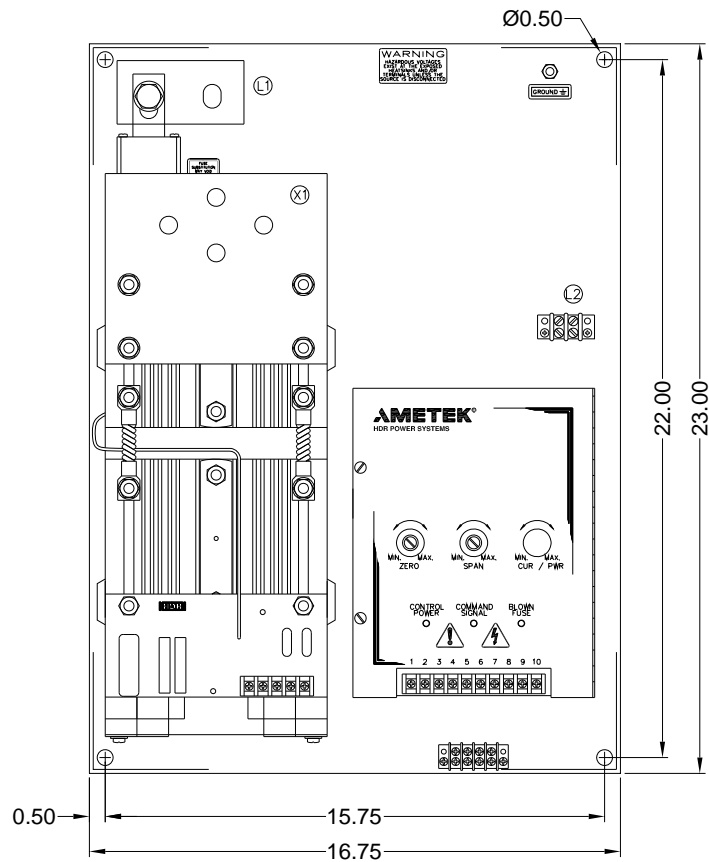
Depth: 9.25 in  
Weight: 22 lbs

## ZF1 350 - 500 A



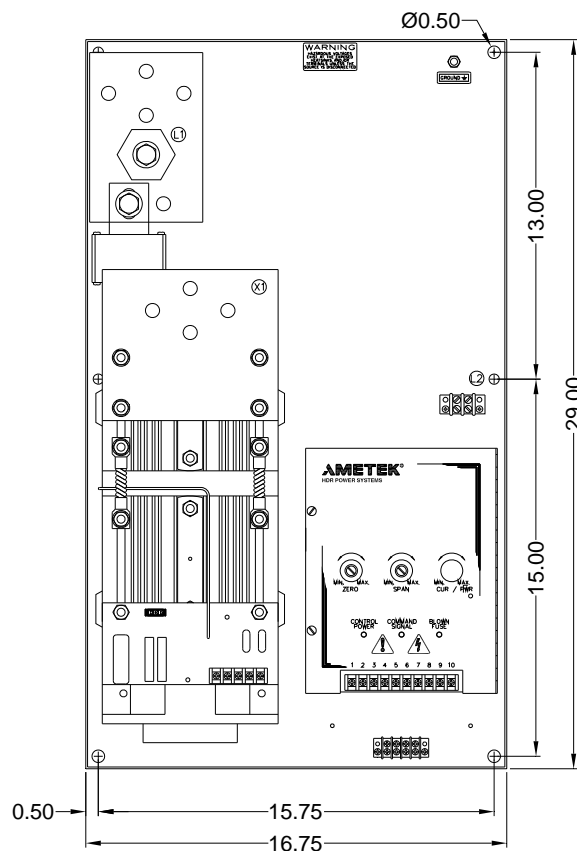
Depth: 8.5 in  
Weight: 24 lbs

## ZF1 500 - 650 A



Depth: 11.2 in  
Weight: 47 lbs

## ZF1 800 - 1200 A



Depth: 11.2 in  
Weight: 71 lbs

# SPECIFICATIONS:

**Control Method:** Zero-firing of back-to-back SCRs

**Voltage Rating:** 120, 240, 400, 480, 575 Vac

**Line Frequency:** 50 / 60 Hz

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

**Command Signal:** Most standard process signals

**Linearity:** Output is linear within 2% of span over entire range of control

**Adjustments:** Zero and Span, multi-turn

**Isolation:** 2500 volts rms from power circuit to command signal and to ground

**Overtemp Protection:** Heatsink thermostat provided on 90 A and higher models

**Ambient Temperature:** Operating: 0 °C to 50 °C

**Relative humidity:** 0 to 95% (non-condensing)


# HOW TO ORDER:

Make a selection from each of the tables below. Place the selection in the corresponding boxes to build your model.

**ZF1** -  -  -  -

CONFIG	VOLTAGE*	CURRENT	OPTIONS	COMMAND
Air Cooling <input type="text" value="blank"/>	120 Vac <input type="text" value="120"/>	60 A <input type="text" value="60"/>	N.O. Thermostat <input type="text" value="NO"/>	4-20 mA <input type="text" value="01"/>
Water Cooling# <input type="text" value="W"/>	240 Vac <input type="text" value="240"/>	90 A <input type="text" value="90"/>	N.C. Thermostat <input type="text" value="NC"/>	0-10 Vdc <input type="text" value="02"/>
	400 Vac <input type="text" value="400"/>	120 A <input type="text" value="120"/>	Load Unbalance Alarm <input type="text" value="UB"/>	0-5 Vdc <input type="text" value="03"/>
	480 Vac <input type="text" value="480"/>	180 A <input type="text" value="180"/>	SCR Failure Alarm <input type="text" value="SF"/>	Auto/Manual <input type="text" value="04"/>
# Not UL, cUL CE approved	575 Vac <input type="text" value="575"/>	225 A <input type="text" value="225"/>	Lug Kit (<225 A) <input type="text" value="LG"/>	Manual Pot Input^ <input type="text" value="05"/>
		350 A <input type="text" value="350"/>		Others <input type="text" value="06-99"/>
		500 A <input type="text" value="500"/>		
		650 A <input type="text" value="650"/>		
		800 A <input type="text" value="800"/>		
		1000 A <input type="text" value="1000"/>		
		1200 A <input type="text" value="1200"/>		

\* Other voltages available

Multiple options may be selected 

◇ Thermostat included above 60 A, specify N.O. or N.C.

^ Manual Pot requires external potentiometer (5 kΩ)