Specification Data Sheet

Chromalox®
PRECISION HEAT AND CONTROL

SSR3 Series
Solid State Relay with Heat Sink

- 3-phase Solid State Relay
- Zero switching
- Rated operational current: 15, 25, 30, 45, 65 Amps
- Rated operational voltage: up to 600 VAC
- Control voltage 4-32 VDC or 24-275 VAC / 24-50 Vdc
- Integral snubber networks
- IP 10 back-of-hand protection
- LED indication of control input

Order Table

SSR3 **Three-Phase 3-Leg Solid State Relay with Heat Sink**

The SSR3 series are industrial three-phase 3-leg relays mounted on heat sinks for switching resistive loads. Chromalox SSR3 series offers the following standard features: 40˚C Ambient Rating, Zero-voltage turn-on, LED status indicator, IP10 back-of-hand protection, 2 input ranges, operational rating up to 600 Vac, self-lifting terminals, dv/dt protection, DIN rail mount, CE mark, UL Recognized and CSA approvals.

CODE	Current @ 40˚C (104˚F) Ambient, 42 - 600Vac
15	15 Amp
25	25 Amp
30	30 Amp
45	45 Amp Fan Cooled
65	65 Amp Fan Cooled

CODE	Input Control Voltage
1	4 - 32Vdc
2	24 - 275Vac/24 - 50Vdc

SSR3	**25**	**1**	**Typical Model Number**

Specifications

Output Specifications

Switching Mode.....Zero Switching

Rated Operational Current

SSR3-15.....15 Amps

SSR3-25.....25 Amps

SSR3-30.....30 Amps

SSR3-45.....45 Amps

SSR3-65.....65 Amps

Operational Voltage Range .....42-600 VAC

Non-Rep. Peak Voltage.....1200 V_p

Operational Frequency Range.....45 to 65 Hz

Approvals

UL Recognized, CSA
CE-Marking .....Yes **

** Heatsink must be connected to ground

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Specifications (cont'd.)

Input Specifications

Control Voltage Range
- Code 1 .....4 - 32 VDC
- Code 2 .....24-275 VAC
  24 - 500 VDC

Pick-Up Voltage
- Code 1 .....3.8 VDC
- Code 2 .....18 VAC
  20 VDC

Drop-Out Voltage
- Code 1 .....1.2 VDC
- Code 2 .....9 VAC

Input Current
- Code 1 .....≤ 23 mA
- Code 2 .....≤ 15 mA

Response Time Pick-Up Power Output = 50 Hz
- Code 1 .....10 ms
- Code 2 .....20 ms

Response Time Drop-Out Power Output = 50 Hz
- Code 1 .....10 ms
- Code 2 .....30 ms

All data at 25°C

Output Specifications (See Rating Curves)

	SSR3-15, 25 Amp	SSR3-45 Amp	SSR3-30, 65 Amp
Rated Operational Current @ 40°C	25 Arms	55 Arms	75 Arms
Min. Operational Current	150 mArms	150 mArms	150 mArms
Rep. Overload Current t=1 s	37 Arms	< 125 Arms	< 150 Arms
Non-Rep. Surge Current t=10 ms	230 A_p	600 A_p	1000 A_p
Off-State Leakage Current	< 3 mArms	< 3 mArms	< 3 mArms
I^2t for Fusing t=1-10 ms	265 A^2s	1800 A^2s	6600 A^2s
Critical dI/dt @ 50 HZ	≥ 100 A/µs	≥ 100 A/µs	≥ 100 A/µs
On-State Voltage Drop	1.6 Vrms	≤ 1.6 Vrms	≤ 1.6 Vrms
Critical dV/dt Off-State	500 V/µs	≥ 500 V/µs	≥ 500 V/µs

Insulation

Rated Insulation Voltage
- Input to Output.....≥ 4000 VACrms
- Output to Case.....≥ 4000 VACrms

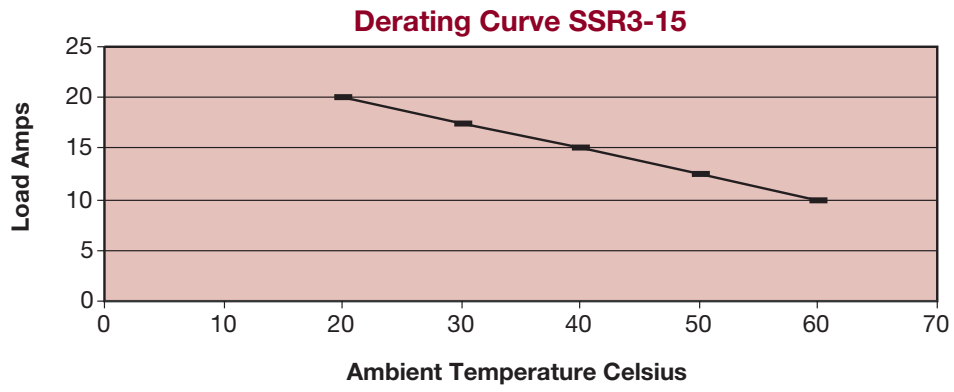
Thermal Specifications

Operating Temperature.....-30° to +80°C (-22° to +158°F)

Storage Temperature.....-40° to +100°C (-40° to + 212°F)

Junction Temperature.....≤ +125°C (+ 257°F)

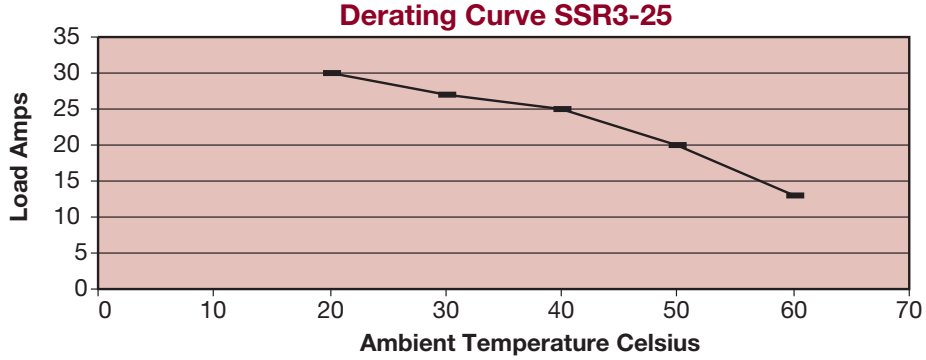
Heatsink (Load Current Versus Ambient Temperature)



Ambient Temp. °C	Amps
20	20
30	17.5
40	15
50	12.5
60	10

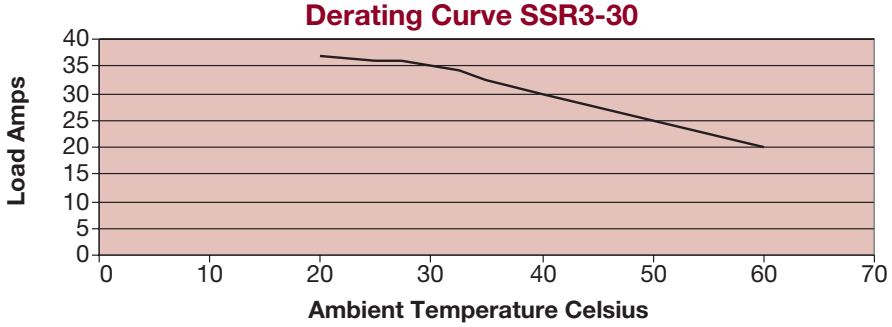
Heatsink (Load Current Versus Ambient Temperature) cont'd.

Derating Curve SSR3-25



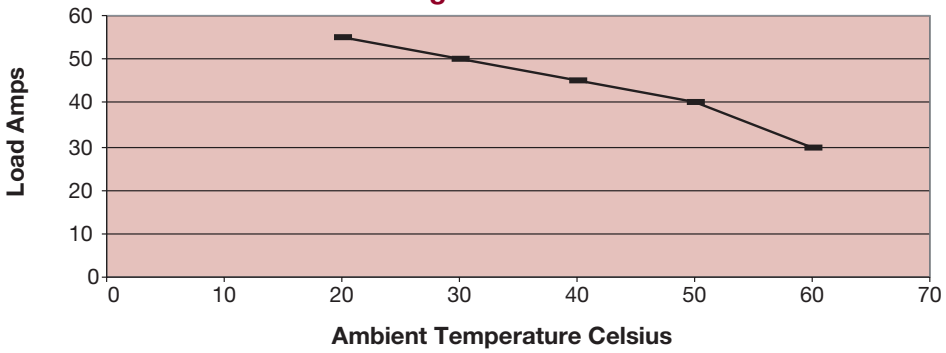
Ambient Temp. °C	Amps
20	30
30	27
40	25
50	20
60	13

Derating Curve SSR3-30



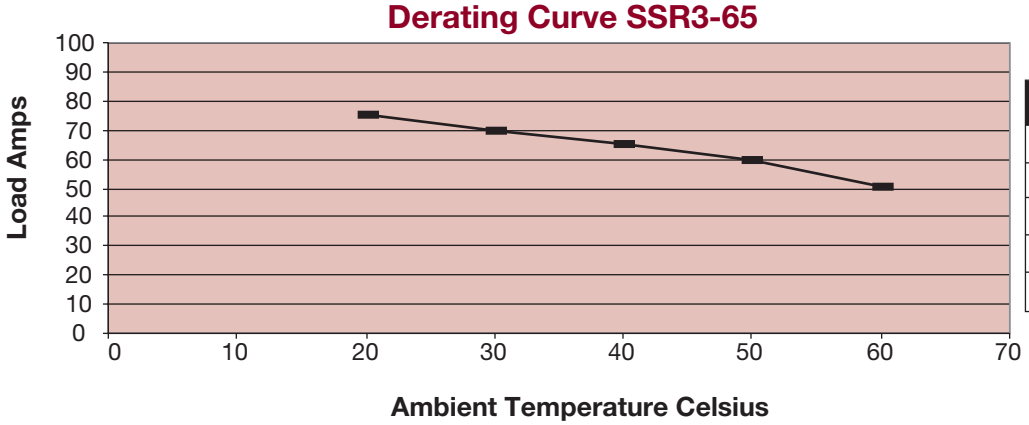
Ambient Temp. °C	Amps
20	37
30	35
40	30
50	25
60	20

Derating Curve SSR3-45



Ambient Temp. °C	Amps
20	55
30	50
40	45
50	40
60	30

Derating Curve SSR3-65



Ambient Temp. °C	Amps
20	75
30	70
40	65
50	60
60	50

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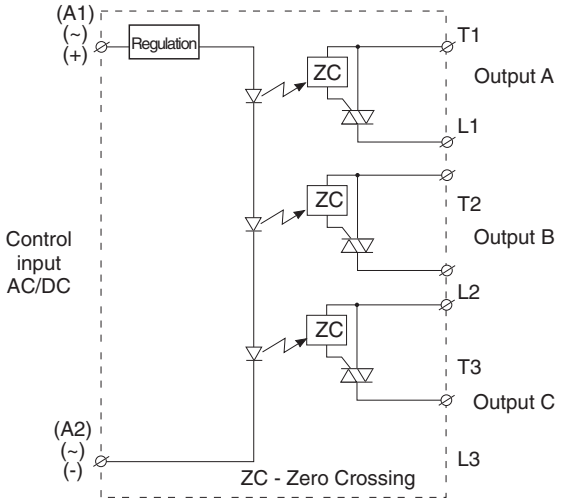
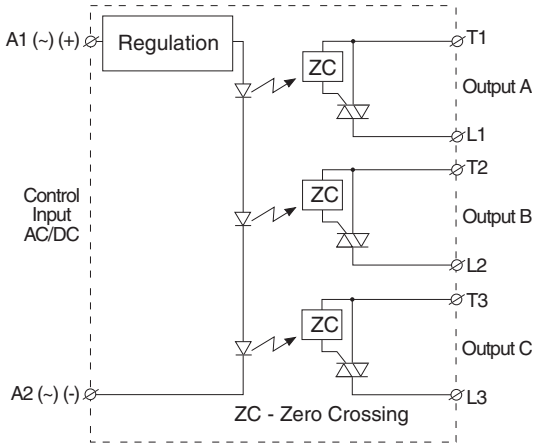
Functional Diagram





Housing Specifications

Material.....Noryl

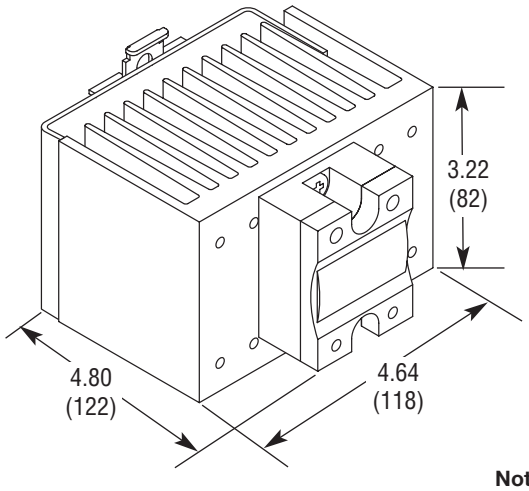
Base plate
- 25 & 55A.....Aluminum, nickel-plated
- 75A.....Copper, nickel-plated

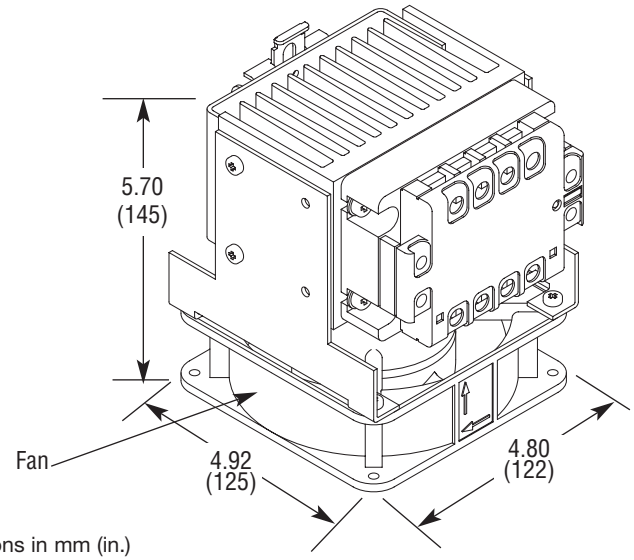
Relay
- Mounting Screws M5
- Mounting Torque.....≤ 1.5 Nm

Control Terminal
- Mounting Screws M3
- Mounting Torque.....≤ 0.5 Nm
- Wire Size .....Max.....2 x 2.5 mm²
  Min.....2 x 1.0 mm²

Power Terminal
- Mounting Screws M5
- Mounting Torque.....≤ 2.5 Nm
  2 x 6 mm² (AWG8)
- Wire Size .....Max.....2 x 6 mm²
  Min.....2 x 1 mm²

Dimensions





Note: Dimensions in mm (in.)