

SSR1P Solid State Relay with Heatsink 1 Phase Analog Switching

- AC Solid State Relay
- Analog switching (phase-angle control) for resistive and slightly inductive load applications
- 4 to 20 mA control current
- Rated operational current: 25, 35, 50 and 70 AACrms
- Rated operational voltage: Up to 600 VACrms
- Variable intensity LED-indication according to input current
- Integral snubber network



Order Table

MODEL

SSR1P Single-Phase, Phase Fired Solid State Relay with Heat Sink

The SSR1P series are industrial single-phase relays mounted on heat sinks for switching high current resistive and inductive loads. Chromalox SSR1P series offers the following standard features: 40°C Ambient Rating, Phase-Angle control, variable intensity LED-indication according to the input current, IP20 touch protection clip-on cover, self-lifting terminals, dv/dt protection, integral snubber network, DIN rail mount, CE mark, UL Recognized and CSA approvals.

CODE Current @ 40°C (104°F) Ambient

25	25 Amp
35	35 Amp
50	50 Amp
70	70 Amp

CODE Voltage

1	230Vac
2	600Vac

CODE Input Control Signal

1	4 - 20mA
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SSR1P 25 1 1 Typical Model Number

Specifications

Output Specifications

Switching Mode.....Phase Angle

Rated Operational Current

25 AACrms	SSR1P-25
35 AACrms	SSR1P-35
50 AACrms	SSR1P-50
70 AACrms	SSR1P-70

Operational Voltage Range

SSR1P-230 VAC	90 to 280 VAC
SSR1P-600 VAC	410 to 660 VAC

Non-Rep. Peak Voltage

SSR1P-230 VAC	600 Vp
SSR1P-600 VAC	1400 Vp

Operational Frequency Range

SSR1P-230 VAC	45 to 65 Hz
SSR1P-600 VAC	45 to 65 Hz

Power Factor

SSR1P-230 VAC.....	> 0.75
SSR1P-600 VAC.....	> 0.75

Approvals

UL Recognized, CSA

CE-MarkingYes **

** Heatsink must be connected to ground

Specifications (cont'd.)

Output Specifications

	SSR1P-25	SSR1P-35	SSR1P-50 & 70
Rated operational current @ 40°C	25 Amps	35 Amps	50 & 70 Amps
Min. Operational Current	150 mA	150 mA	150 mA
Rep. Overload Current t=1 s	< 55 A _o	< 125 A _o	< 150 A _o
Off-State Leakage Current	< 3 mA	< 3 mA	< 3 mA
I ² t for Fusing t=1-10 ms	< 310 A ² s	< 1800 A ² s	< 6600 A ² s
Critical di/dt @ 50hz	≥ 100 A/μs	≥ 100 A/μs	≥ 100 A/μs
Critical dV/dt Off-State Min.	1000 V/μs	1000 V/μs	1000 V/μs

Input Specifications

Control Current Range.....4-20 mA
 Pick Up Current.....5 mA
 Drop Out Current4 mA
 Response Time (input to output)10ms
 Input Voltage Drop.....<10 VDC @ 20 mA
 Dynamic Impedance.....≥ 150 Ω
 Allowable Input Current (Max.).....≤ 50 mA
 Reverse Polarity ProtectedYes

Isolation

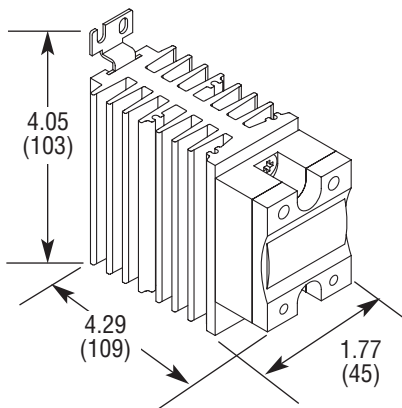
Rated Insulation Voltage
 Input to output≥ 4000 Vrms
 Output to case≥ 4000 Vrms

Housing Specifications

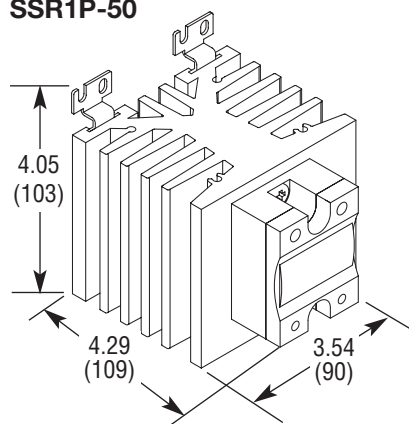
Housing MaterialNoryl, black
 Control Terminal
 Mounting ScrewsM3 x 9mm
 Mounting torque0.5 Nm
 Power Terminal
 Mounting ScrewsM5 x 9mm
 Mounting Torque.....2.4 Nm

Dimensions

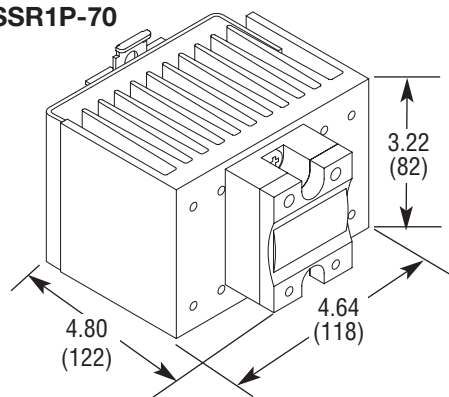
SSR1P-25



**SSR1P-35
SSR1P-50**



SSR1P-70

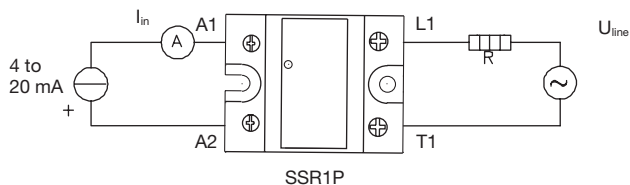


Note: Dimensions in In. (mm).

Applications

This SCR is suitable for control of heaters, lighting and slightly inductive loads such as small fans.

This SCR can also be used for soft turn-on of high-power incandescent lamps.

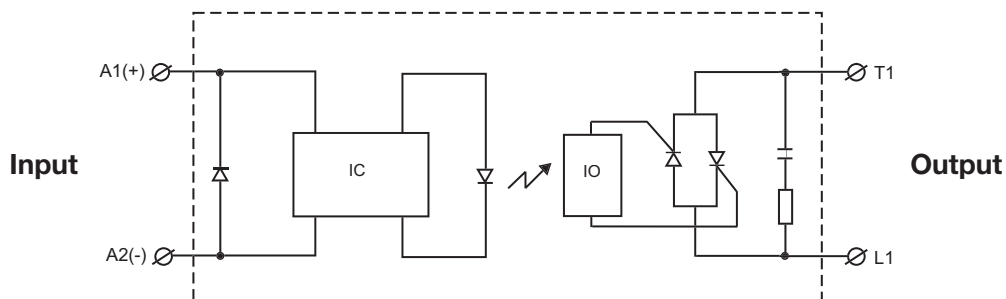


Transfer Characteristics

Output power as a function of control input (4 to 20 mA)

I_{in} [mA]	P_{out} [%]
4	4
6	13
8	25
10	38
12	50
14	62
16	75
18	87
20	100

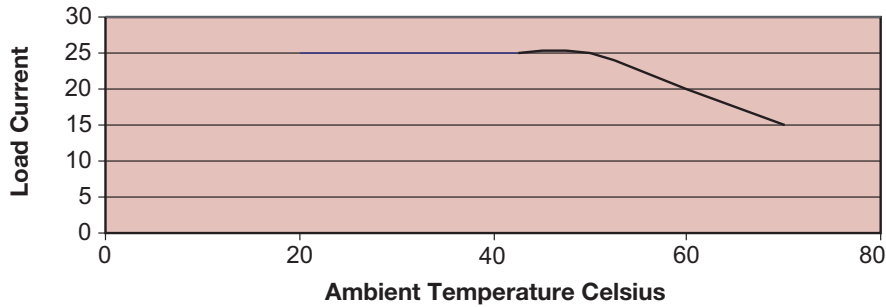
Functional Diagram



Specification Data Sheet

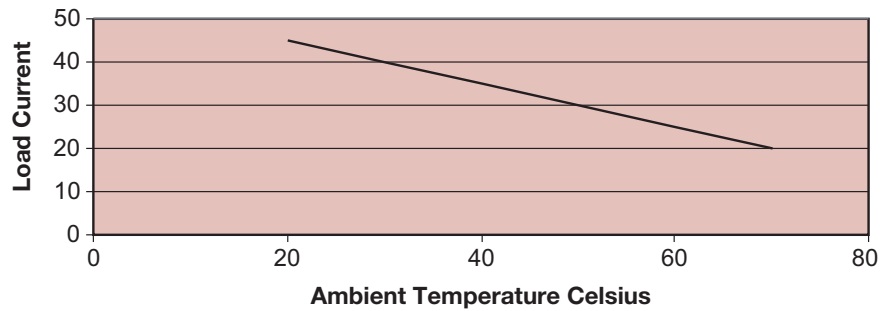
Heatsink (Load Current Versus Ambient Temperature)

With the output fully ON 360° conduction angle)



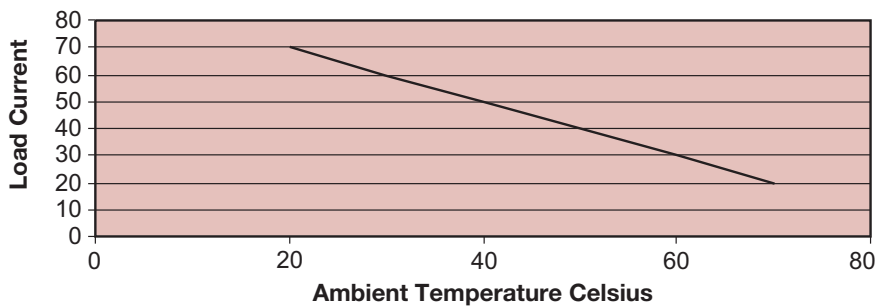
Ambient Temp. °C	Amps
20	25
30	25
40	25
50	25
60	20
70	15

Derating Curve SSR1P-25



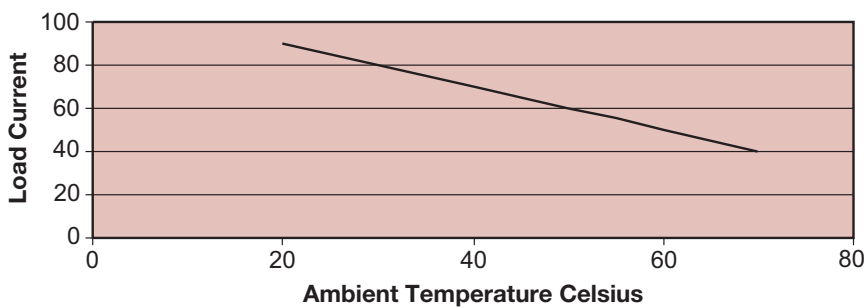
Ambient Temp. °C	Amps
20	45
30	40
40	35
50	30
60	25
70	20

Derating Curve SSR1P-35



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

Derating Curve SSR1P-50



Ambient Temp. °C	Amps
20	90
30	80
40	70
50	60
60	50
70	40

Derating Curve SSR1P-70