



AC OUTPUT SINGLE PHASE SOLID STATE RELAYS

Type	Load Current	Load Voltage	Input Voltage	Zero Crossing	Operating temp. - C°
SSR10A	10A	250 VAC	5...32 VDC	Yes	0°...+55°
SSR20A	20A	250 VAC	5...32 VDC	Yes	0°...+55°
SSR40A	40A	250 VAC	5...32 VDC	Yes	0°...+55°
SSR10B	10A	250 VAC	220 VAC	Yes	0°...+55°
SSR20B	20A	250 VAC	220 VAC	Yes	0°...+55°
SSR40B	40A	250 VAC	220 VAC	Yes	0°...+55°
SSR10AN	10A	250 VAC	5...32 VDC	No	0°...+55°
SSR20AN	20A	250 VAC	5...32 VDC	No	0°...+55°
SSR40AN	40A	250 VAC	5...32 VDC	No	0°...+55°
SSR10BN	10A	250 VAC	220 VAC	No	0°...+55°
SSR20BN	20A	250 VAC	220 VAC	No	0°...+55°
SSR40BN	40A	250 VAC	220 VAC	No	0°...+55°



Usage

Solid-state relays SSR10/20/40 are electronic power a.c. switches. They are designed to commutate huge electric loads (up to 2,2/4,4/8,8 kW), supplied by mains voltage 220V/50HZ.

The switches are single phase and the input and output circuits are galvanically separated, thus ensuring electric safety both of maintenance personnel and of control devices.

Output load switching for types SSRXXA/B occurs at zero crossing of mains voltage, i.e. EMI is reduced to minimum. Non-zero cross types SSRXXAN/BN are suited for phase angle control.

SSR can be used together with suitable controllers for precision control of electrical loads.

Low (safe) d.c. voltage control of types SSRXXA/AN allows direct connection to controllers or other devices without the need of additional relays and contactors. AC switching types SSRXXB/BN are suitable for direct replacement of 220Vac driven contactors.

If the electric load is greater, solid-state relays can be used to drive power thyristors and triacs. Thus big furnaces or other high-power consumers can be controlled contact-free and without galvanic connection.

Operating indicator (red LED) on the front side shows if input voltage is applied.

The solid state relays are filled in with epoxy resin to protect them from harsh environment

Specifications

Output circuit

- Load voltage - alternating, sinusoidal, having a frequency from 40 to 100Hz and an instantaneous value:
 - 380V nominal
 - 450V max
 - 24V min
- Instantaneous load voltage at switch on i_{10V}
- Load current rating
 - with an additional heatsink - 10/20/40A for SSR10A,B/SSR20A,B/SSR40A,B
 - without a heatsink - 5A
- Frequency of commutated voltage - from 40Hz to 100Hz
- $\cos\varphi \geq 0,8$
- Critical rate of rise of off-state voltage -
- $dU/dt \leq 250V/mS$
- Critical rate of removal of the current -
- $dI/dt \leq 10A/mS$

Input circuit

- Control voltage for type XXA - continuous, filtered
 - minimal value - 4,5 Vdc
 - maximum value - 32 Vdc
- Control voltage for type XXB - 220 Vac
- Input current (typ.):
 - 6 mA @ $U_y = 4,5 V$
 - 20 mA @ $U_y = 32 V$

Isolation

- Input to metal case - 2500V
- Output to metal case - 2500V
- Input to output - 2500V.

Recommended heatsink surface

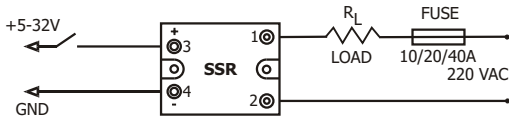
- > 5 dm² for SSR10
- > 7,5 dm² for SSR20
- > 12 dm² for SSR40

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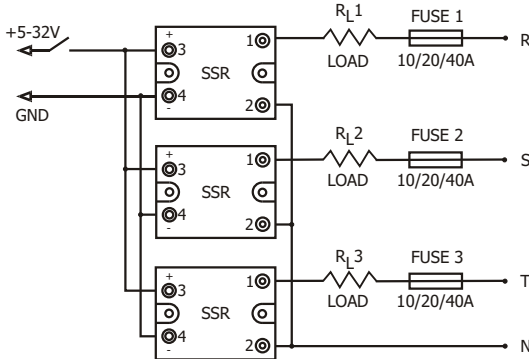
Operation guide

Circuit Diagrams

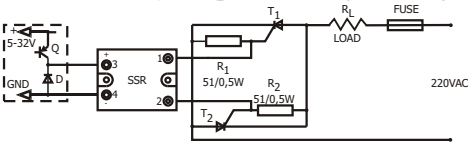
- Direct switching of a single-phase load, not more than 10/20/40A



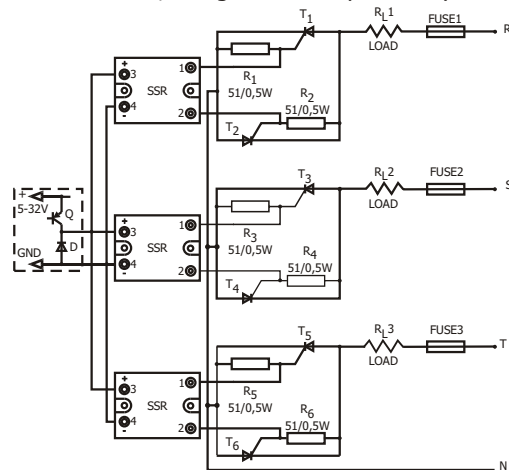
- Direct switching of a three-phase load, not more than 10/20/40A for each phase



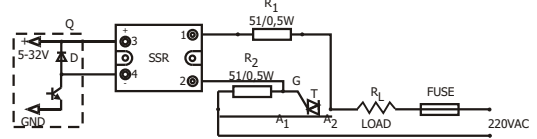
- Indirect switching of a single-phase load of more than 10/20/40A, using additional power thyristors



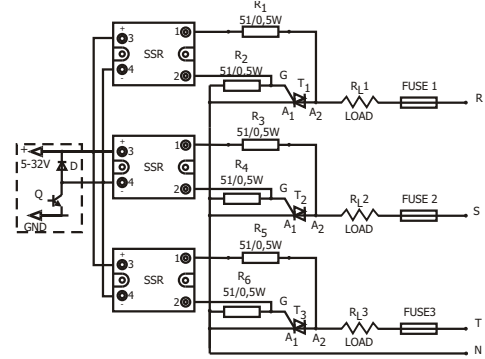
- Indirect switching of a three-phase load of more than 10/20/40A, using additional power thyristors



- Indirect switching of a single-phase load of more than 10/20/40A, using additional power triac



- Indirect switching of a three-phase load of more than 10/20/40A, using additional power triac.



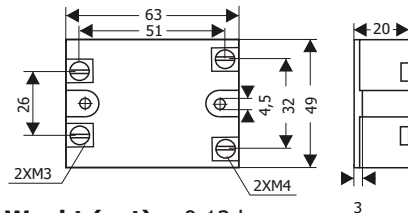
• Operating conditions:

Ambient temperature - from 0 °C to 55 °C
Relative humidity - from 40 to 80%

• Storage:

Ambient temperature - from -40 °C to 70 °C
Relative humidity - not more than 85%

• Overall and mounting dimensions



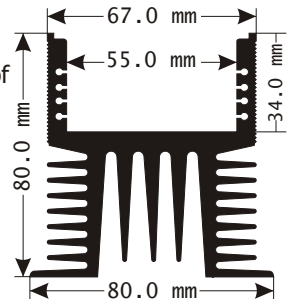
• Weight (net) < 0,12 kg

• Mounting instructions

The SSR is mounted by two M4x6 screws at a distance of 50mm

The manufacturer offers heatsinks from shaped aluminium, type 500-2182

- for SSR10 - 65 mm long
- for SSR20 - 80 mm long
- for SSR40 - 130 mm long



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ISOMATIC COMPLECT manufactures also: an eight-channel regulator Mc3, a universal programmable microcontroller with build-in regulators, and various digital periphery, temperature transmitters, passive galvanic separators 4-20/4-20mA, etc.