Low-cost 1-phase AC Relay SSRP

- **Zero-cross output switching**
- **Up to 275 VAC operating voltage**
- **10 A, 16 A, 25 A, or 40 A switching RMS current**
- **4 input ranges**
- **4000 V input / output insulation**
- **Heatsinks available**

The SSRP solid state relay is a zero-cross operating electronic module designed to switch single-phase AC power loads. Thanks to its higher switching frequency and practically complete absence of electromagnetic interference, the SSR module is a non-contact and convenient substitute of power contact relays. The life and reliability of the SSR module, compared to these of the contact relays, are much higher because there are no moving parts, noise, shocks, and vibration during the operation. SSRP can switch active or small inductive loads from 10 to 40 A at power voltage up to 275 VAC. The control input is optically isolated from the output and accepts AC or DC voltage signals. An operating LED indicates ON/OFF device status. Heatsinks are available as accessory.

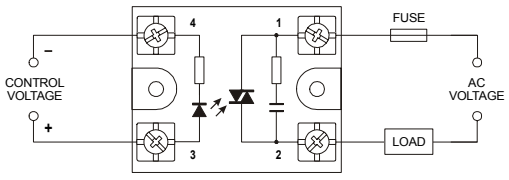
Technical specifications

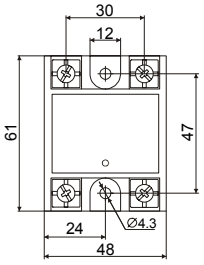
Input				
Control voltage	4...36 VDC	6...26 VAC/DC	115 VAC	230 VAC
Input current	5...12 mA	6...12 mA	6 mA	12 mA
Turn-on / off voltage	3 VDC	4 VAC / 5 VDC	90 VAC	180 VAC
Reverse voltage protection	-32 VDC	-32 VDC	-	-

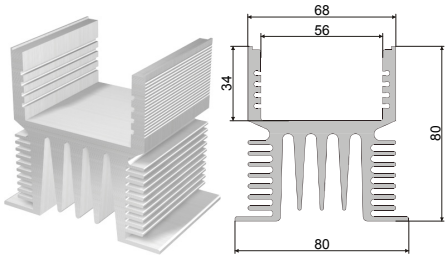
Output	*(no connection with the input types!)*			
On-state current at proper heatsink [1]	≤ 10 A_{rms}	≤ 16 A_{rms}	≤ 25 A_{rms}	≤ 40 A_{rms}
Minimum holding current	50 mA	50 mA	80 mA	80 mA
Non-rep. surge current at t = 20 ms	100 A	160 A	250 A	400 A
Maximum leakage current	1 mA	2 mA	3 mA	5 mA
Critical rate of current rise dI/dt	50 A/µs	50 A/µs	50 A/µs	50 A/µs
I^2t value for fusing at t = 10 ms	78 A^2s	78 A^2s	78 A^2s	78 A^2s
On-state voltage at rated current	1.6 V_{rms}	1.6 V_{rms}	1.6 V_{rms}	1.6 V_{rms}
Critical off-state voltage rise dV/dt	400 V/µs	400 V/µs	500 V/µs	500 V/µs
Operational frequency	45...65 Hz	45...65 Hz	45...65 Hz	45...65 Hz
Thermal resistance (junction-case)	2.3 °C/W	2.1 °C/W	1.1 °C/W	1.2 °C/W

General specifications	
Operating AC voltage	min. 24...max. 275 VAC_{rms}
Rep. off-state peak voltage	600 V_p
Non-rep. off-state peak voltage	700 V_p
Power factor	> 0.6
Operating temperature	-20...65 °C
Storage temperature	-40...85 °C
Case material	glass-filled plastic
Base plate (heatsink) material	aluminum
Input / output insulation	4000 VAC_{rms}
Output / case insulation	2500 VAC_{rms}
Protection class	IP00
Wiring	4 x M4 screws
Mounting	2 x M4 screws
Rail mounting	MAC2 rail clamp [2]
ON-indicating LED	ø3, red
Weight	≈ 100 g

[1] We highly recommend using SSR at no more than 80% of maximum on-state current!
[2] Ordered separately (see 'Accessories')







Heatsink specifications

Heatsink surface [cm^2] / length [mm] (at 85 °C heatsink temperature)

SSRP variant	10	16		25			40		
Current → / Ambient temperature ↓	10 A	10 A	16 A	15 A	20 A	25 A	20 A	30 A	40 A
20 °C	72 / 62	60 / 62	214 / 62	134 / 62	287 / 62	499 / 62	237 / 62	607 / 62	1280 / 120
40 °C	150 / 62	124 / 62	445 / 62	278 / 62	601 / 62	1041 / 100	494 / 62	1275 / 120	2668 / 250
60 °C	485 / 62	400 / 62	1435 / 135	907 / 85	1924 / 180		1600 / 150		

Ordering code

SSRP✱ - G1

Code	Feature or option	Code values
✱	Variant	**10**, **16**, **25**, **40**
G1	Input	**A** - 230 VAC, **B** - 115 VAC, **D** - 4…36 VDC, **E** - 6…26 VAC/DC

Applicable accessories

Code	Description
HS__	Heatsink (specify the length [mm] using the table above) w/ or w/o rail-mounting clamp [2]