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RSR52

single-phase solid state relays, industrial



NEW

- Zero-crossing or random-on switching • AC or DC control input
- SCR output (thyristors) • Load current 10...80 A
- Load voltage 240, 480, 600 V AC (single-phase)
- Dielectric strength 4 000 Vrms (opto-isolation)
- MOV protection (built-in varistor) • LED indicator (red)
- Screw terminals • Mounting on panel or on heatsinks
- Applications: temperature chamber, food processing machinery, injection molding machine, incubator, oiling machines, HVAC, lighting, fountain controller
- Recognitions, certifications, directives: RoHS, REACH,

Input data

Control voltage range	RSR52-...A...	AC control	90...280 V AC (50/60 Hz)
	RSR52-...D...	DC control	4...32 V DC
Must turn-on voltage		AC control	90 V AC
		DC control	4 V DC
Must turn-off voltage		AC control	10 V AC
		DC control	1 V DC
Maximum input current		25 mA (@ 280 V AC, 50/60 Hz / 32 V DC)	

Output data

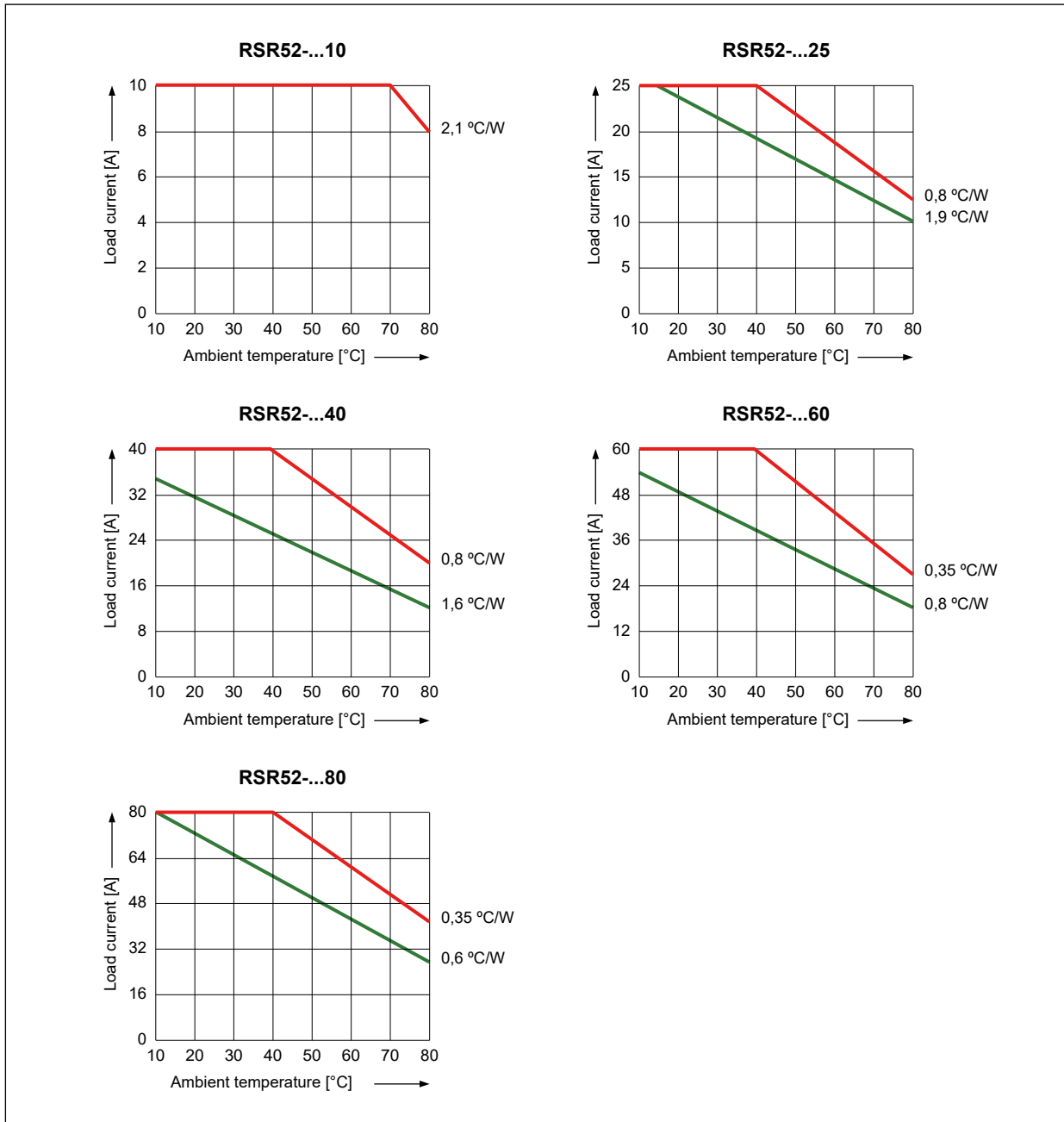
Operational voltage range	RSR52-24...	240 V AC	48...280 V AC
	RSR52-48...	480 V AC	48...530 V AC
	RSR52-60...	600 V AC	48...660 V AC
Blocking voltage		240 V AC	600 V _{pk}
		480 V AC	1 200 V _{pk}
		600 V AC	1 600 V _{pk}
Response time pick-up		AC control	≤ 40 ms
		DC control (zero-crossing)	≤ 1/2 cycle + 1 ms
		DC control (random-on)	≤ 1 ms
Response time drop-out		AC control	≤ 40 ms
		DC control	≤ 1/2 cycle + 1 ms
Maximum surge current (@ 10 ms)	RSR52-...10	10 A	120 A
	RSR52-...25	25 A	250 A
	RSR52-...40	40 A	500 A
	RSR52-...60	60 A	700 A
	RSR52-...80	80 A	1 000 A
Maximum I ² t for fusing (@ 10 ms)		10 A	72 A ² s
		25 A	312 A ² s
		40 A	1 250 A ² s
		60 A	2 450 A ² s
		80 A	5 000 A ² s
Maximum off-state leakage current (@ rated load voltage)		10 mA	
Maximum on-state voltage drop (@ rated current)		1,7 Vrms	
Minimum off-state dV/dt (@ maximum rated voltage)		500 V/μs	

General data

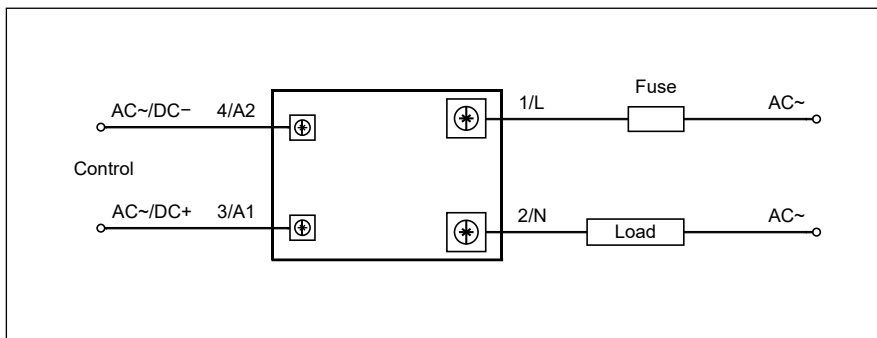
Dielectric strength (50/60 Hz)	input - output	4 000 Vrms
	input, output - base	2 500 Vrms
Minimum insulation resistance (@ 500 V DC)	1 000 MΩ	
Dimensions (L x W x H)	58,6 x 45,7 x 33,5 mm	
Weight (typical)	10 A, 25 A	113 g
	40 A, 60 A	119 g
	80 A	170 g
Ambient temperature (non-condensation and/or icing)	storage	-30...+100 °C
	operating	-30...+80 °C
Cover protection category	IP 20 (EN 60529)	

Data are given for ambient temperature +25 °C. When temperature is above +25 °C the maximum load current decreases - see "Thermal derating curves", page 2.

Thermal derating curves



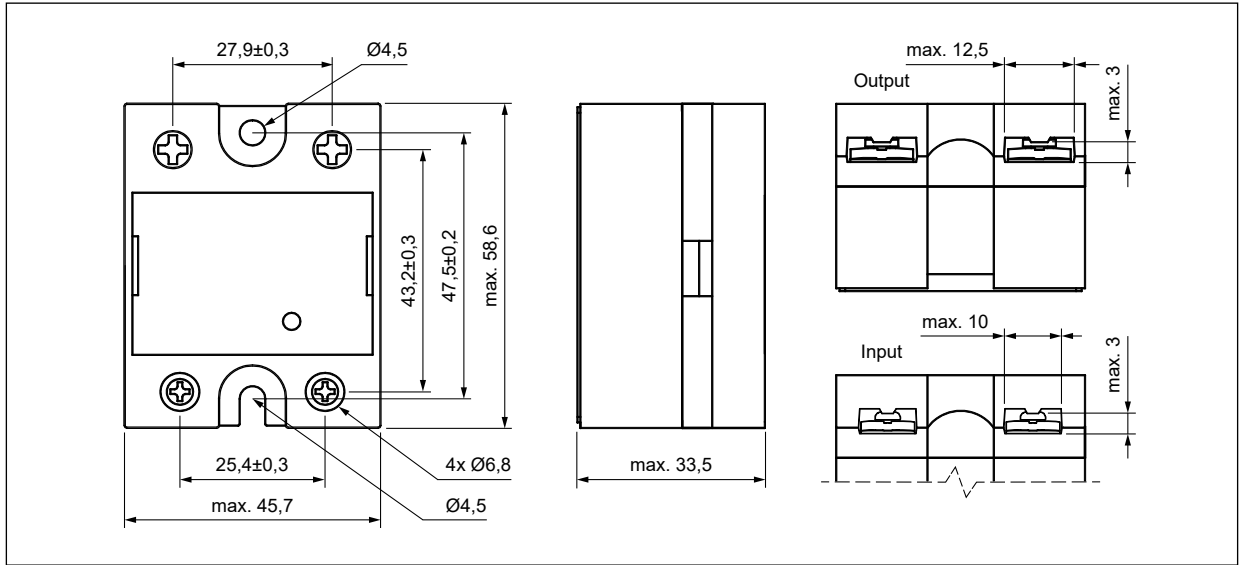
Connection diagram



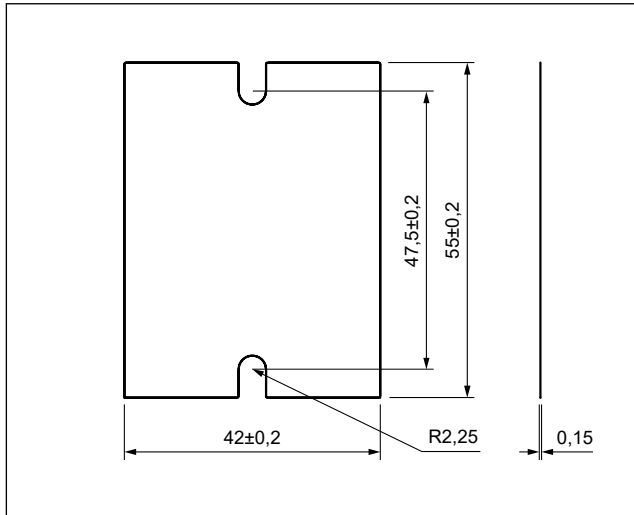
RSR52

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Dimensions



Solid state relay **RSR52**



Thermal pad **RTP-10**

RH

Heatsinks
for RSR52, RSR62
- see www.relpol.com.pl

NEW











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Mounting, accessories for relays

Relays **RSR52** are designed for: • direct mounting on panel • mounting on heatsinks **RH** (see www.relpol.com.pl). For **RSR52** relays we offer thermal pads **RTP-10**.

Mounting on panel or heatsink ②		Input	Output
Screws		M4	
Tightening moment		0,98...1,37 N•m	
Screw length		7,5 mm	12 mm
Switching terminals ③		Input	Output
Screws		M3	M4
Tightening moment		0,58...0,98 N•m	0,98...1,37 N•m
Stripping length		8 mm	12 mm
Aperture for termination lug		7,5 mm	12 mm
Cross section of the cables		Input	Output
Rigid (solid & stranded)		1 x 0,5...2,5 mm ² (1 x 18...12 AWG) 2 x 0,5...2,5 mm ² (2 x 18...12 AWG)	1 x 2,5...6 mm ² (1 x 14...10 AWG) 2 x 2,5...6 mm ² (2 x 14...10 AWG)
Flexible with end sleeve		1 x 0,5...2,5 mm ² (1 x 18...12 AWG) 2 x 0,5...2,5 mm ² (2 x 18...12 AWG)	1 x 1...4 mm ² (1 x 18...12 AWG) 2 x 1...2,5 mm ² (2 x 18...14 AWG) 2 x 2,5...4 mm ² (2 x 14...12 AWG)
Flexible without end sleeve		–	1 x 1...6 mm ² (1 x 18...10 AWG) 2 x 1...2,5 mm ² (2 x 18...14 AWG) 2 x 2,5...6 mm ² (2 x 14...10 AWG)

② Relay must be mounted to proper sized heatsink, based on "Thermal derating curves". Between relay and heatsink must be used thermal pad.
③ When connection cables to relay: please ensure, screws are torqued down properly.

RH

Thermal resistance	RH21	2,1 °C/W
	RH19A	1,9 °C/W
	RH19B	1,9 °C/W
	RH17A	1,7 °C/W
	RH17B	1,7 °C/W
	RH06B	1,5 °C/W
	RH16	1,6 °C/W
	RH16-F	0,6 °C/W
	RH11	1,1 °C/W
	RH09	0,9 °C/W
	RH04A-F	0,4 °C/W
	RH08	0,8 °C/W
	RH08-F	0,35 °C/W
	RH04B	0,4 °C/W
	RH04B-F	0,15 °C/W

RTP-10

Material	graphite	
Color	black	
Dimensions (L x W x H)	55 x 42 x 0,15 mm	
Weight (typical)	0,4 g	
Thermal resistance	0,1 °C/W ④	
Flammability class	V-0 (UL 94)	
Temperature range	continuous	-60...+180 °C
Storage conditions	temperature	+23...+27 °C
	humidity	65±20 %HR

④ This value is provided for reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied.



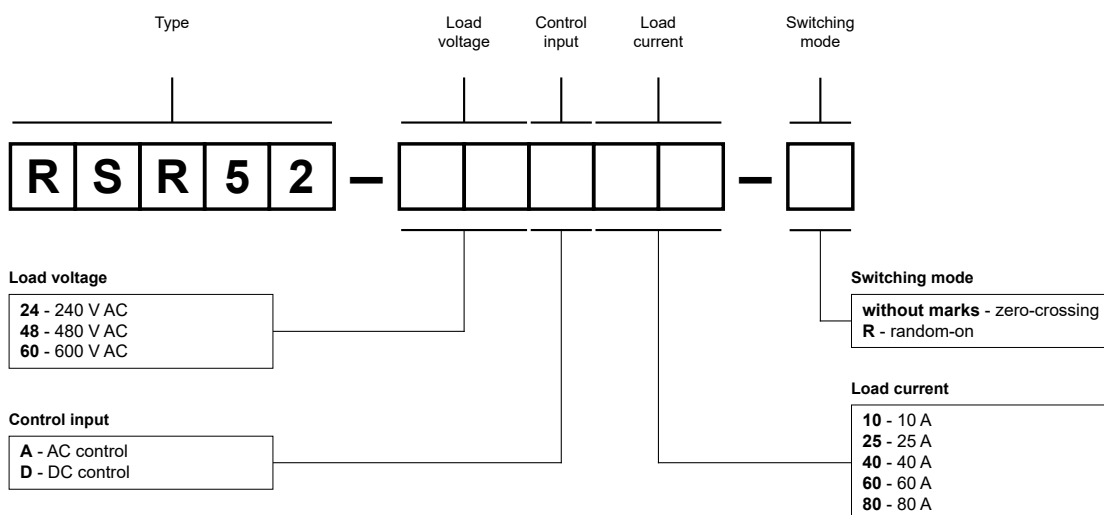
RTP-10

Table of codes

Table 1

zero-crossing switching, AC control	zero-crossing switching, DC control	random-on switching, DC control
RSR52-24A10	RSR52-24D10	–
RSR52-24A25	RSR52-24D25	RSR52-24D25-R
RSR52-24A40	RSR52-24D40	–
RSR52-24A60	RSR52-24D60	RSR52-24D60-R
RSR52-24A80	RSR52-24D80	RSR52-24D80-R
RSR52-48A10	RSR52-48D10	–
RSR52-48A25	RSR52-48D25	RSR52-48D25-R
RSR52-48A40	RSR52-48D40	–
RSR52-48A60	RSR52-48D60	RSR52-48D60-R
RSR52-48A80	RSR52-48D80	RSR52-48D80-R
RSR52-60A25	RSR52-60D25	RSR52-60D25-R
RSR52-60A40	RSR52-60D40	–
RSR52-60A60	RSR52-60D60	RSR52-60D60-R

Ordering codes



Examples of ordering codes ⑥:

- RSR52-24A10** relay **RSR52**, zero-crossing switching, AC control, load voltage 240 V AC (single-phase), load current 10 A
- RSR52-48D40** relay **RSR52**, zero-crossing switching, DC control, load voltage 480 V AC (single-phase), load current 40 A
- RSR52-60D60-R** relay **RSR52**, random-on switching, DC control, load voltage 600 V AC (single-phase), load current 60 A

⑥ Ordering codes **RSR52** are specified in Table 1.