




# RSR62

## three-phase solid state relays, industrial



- Zero-crossing or random-on switching • AC or DC control input
- SCR output (thyristors) • Load current 25...80 A
- Max. load voltage 530, 660 V AC (three-phase)
- Dielectric strength 4 000 Vrms (opto-isolation)
- RC/MOV protection (built-in resistor, capacitor, varistor)
- LED indicators (red) • Screw terminals
- Mounting on heatsinks
- Recognitions, certifications, directives: RoHS, REACH,   

### Applications

Three phase motor control, temperature control, large oven.



### Basic technical data

Load voltage: 24...530 V AC, 24...660 V AC

Control input: AC, DC

Max. load current: 25 A, 40 A, 60 A, 80 A

Type		zero-crossing	random-on	zero-crossing
Load voltage	Control voltage	Load current		
24...530 V AC	90...280 V AC	25 A	25 A	40 A
	4...32 V DC	<b>RSR62-48A25</b>		<b>RSR62-48A40</b>
		<b>RSR62-48D25</b>		<b>RSR62-48D40</b>
24...660 V AC	90...280 V AC	<b>RSR62-60A25</b>		<b>RSR62-60A40</b>
	4...32 V DC	<b>RSR62-60D25</b>	<b>RSR62-60D25-R</b>	<b>RSR62-60D40</b>
Type		random-on	zero-crossing	random-on
Load voltage	Control voltage	Load current		
24...530 V AC	90...280 V AC	40 A	60 A	60 A
	4...32 V DC		<b>RSR62-48A60</b>	
			<b>RSR62-48D60</b>	
24...660 V AC	90...280 V AC		<b>RSR62-60A60</b>	
	4...32 V DC	<b>RSR62-60D40-R</b>	<b>RSR62-60D60</b>	<b>RSR62-60D60-R</b>

Type		zero-crossing	random-on
Load voltage	Control voltage	Load current	
24...530 V AC	90...280 V AC	80 A	80 A
	4...32 V DC	<b>RSR62-48A80</b>	
		<b>RSR62-48D80</b>	
24...660 V AC	90...280 V AC	<b>RSR62-60A80</b>	
	4...32 V DC	<b>RSR62-60D80</b>	<b>RSR62-60D80-R</b>

### Load voltage

	<b>RSR62-48...</b>	<b>RSR62-60...</b>
Rated load voltage	480 V AC	600 V AC
Rated range of load voltage	24...530 V AC	24...660 V AC
Blocking voltage	1 200 V <sub>pk</sub>	1 600 V <sub>pk</sub>
Rated frequency	47...63 Hz	47...63 Hz
Power factor	0,5	0,5

### Control input

	zero-crossing	zero-crossing	random-on
	<b>RSR62-..A...</b>	<b>RSR62-..D...</b>	<b>RSR62-..D..-R</b>
Control voltage range	90...280 V AC 50 Hz	4...32 V DC	4...32 V DC
Must turn-on voltage	90 V AC	4 V DC	4 V DC
Must turn-off voltage	15 V AC	1 V DC	1 V DC
Maximum input current	30 mA 280 V AC	35 mA 32 V DC	35 mA 32 V DC
Response time pick-up	≤ 40 ms	≤ 1/2 cycle + 1 ms	≤ 1 ms
Response time drop-out	≤ 40 ms	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms

### Output circuit <sup>①</sup>

	<b>RSR62-...25...</b>	<b>RSR62-...40...</b>
Rated load current	25 A	40 A
Maximum surge current	300 A 10 ms	500 A 10 ms
I <sup>2</sup> t for fusing	450 A <sup>2</sup> s 10 ms	1 250 A <sup>2</sup> s 10 ms
Max. operational current AC-51 rating	25 A	40 A
Max. operational current AC-53 rating	5 A	8 A
Maximum off-state leakage current (at rated load voltage)	10 mA	10 mA
Maximum on-state voltage drop (at rated current)	1,6 V <sub>rms</sub>	1,6 V <sub>rms</sub>
Minimum off-state dV/dt (at max. rated voltage)	500 V/μs	500 V/μs

<sup>①</sup> Data given for ambient temperature ≤ 25 °C. Above 25 °C the maximum current decreases - see "Thermal derating curves", page 4.

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### Output circuit ①

	RSR62-...60...	RSR62-...80...
Rated load current	60 A	80 A
Maximum surge current	600 A 10 ms	1 000 A 10 ms
I <sup>2</sup> t for fusing	1 800 A <sup>2</sup> s 10 ms	5 000 A <sup>2</sup> s 10 ms
Max. operational current AC-51 rating	60 A	80 A
Max. operational current AC-53 rating	12 A	16 A
Maximum off-state leakage current (at rated load voltage)	10 mA	10 mA
Maximum on-state voltage drop (at rated current)	1,6 Vrms	1,6 Vrms
Minimum off-state dV/dt (at max. rated voltage)	500 V/μs	500 V/μs

### General data ①

	RSR62-...
Dielectric strength	input - output: 4 000 Vrms 50/60 Hz input, output - base: 2 500 Vrms 50/60 Hz
Minimum insulation resistance	1 000 MΩ 500 V DC
Ambient temperature (non-condensation and/or icing)	storage: -30...+100 °C operating: -30...+80 °C

### Mechanical data

	RSR62-...25... RSR62-...40...	RSR62-...60... RSR62-...80...
Dimensions (L x W x H)	105 x 78 x 38 mm	105 x 78 x 38 mm
Weight (typical)	385 g	530 g
Protection category EN 60529	IP 20	IP 20
Connection mode	input: screws M3 (plugable connector) ② tightening moment: 0,58...0,98 N•m output: screws M4 ② tightening moment: 0,98...1,37 N•m	input: screws M3 (plugable connector) ② tightening moment: 0,58...0,98 N•m output: screws M4 ② tightening moment: 0,98...1,37 N•m
Mounting on panel or heatsink ③	screws M4 tightening moment: 0,98...1,37 N•m	screws M4 tightening moment: 0,98...1,37 N•m

① Data given for ambient temperature ≤ 25 °C. Above 25 °C the maximum current decreases - see "Thermal derating curves", page 4.

② When connection cables to relay: please ensure, screws are torqued down properly.

③ Relay must be mounted to proper sized heatsink, based on "Thermal derating curves". Between relay and heatsink must be used thermal pad.

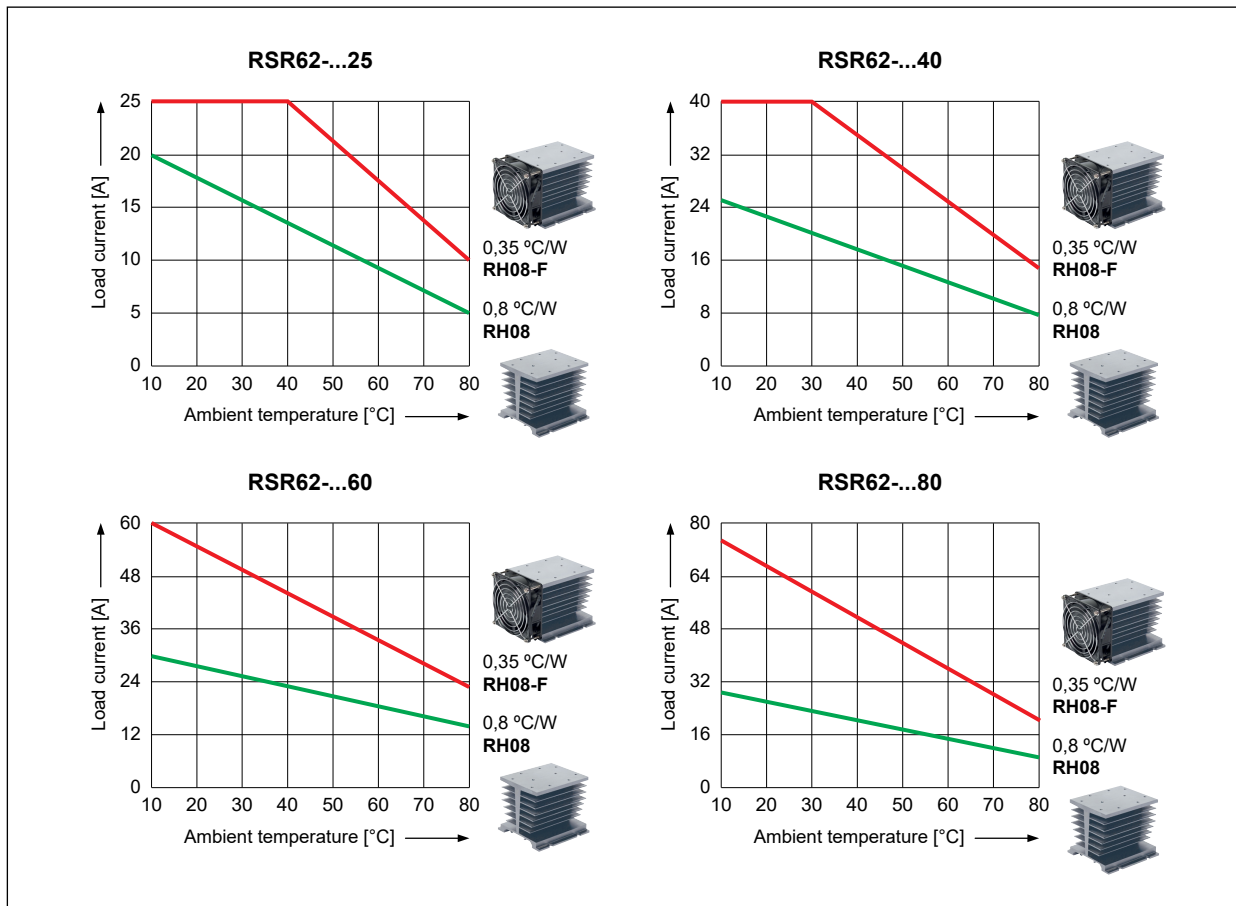
### Mounting, accessories for relays

Relays **RSR62** are designed for mounting on heatsinks **RH**.  
For **RSR62** relays we offer thermal pads **RTP-30**.



Thermal pad **RTP-30**

### Thermal derating curves

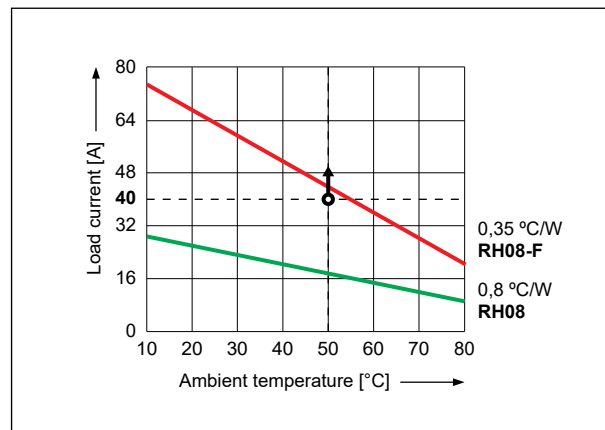


#### To select the proper sized heatsink:

- determine the load current and the maximum ambient temperature the relay will be exposed to,
- use the "Thermal derating curves" (see above).

Example: for a three-phase **RSR62** 80 A, at 40 A load current and ambient temperature at 50 °C:

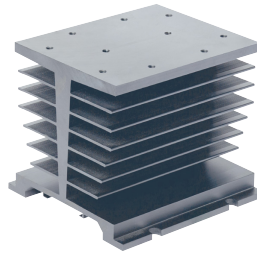
- on the Y axis we find the current value for which we draw a line perpendicular to Y,
- on the X axis we find the ambient temperature for which we draw a line perpendicular to X,
- we determine the intersection of both lines,
- read the heatsink rating – **always choose the rating above your point**: we need a 0,35 °C/W sized heatsink, since the 0,8 °C/W heatsink will not ensure sufficient cooling of the solid state relay.



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**RH08**

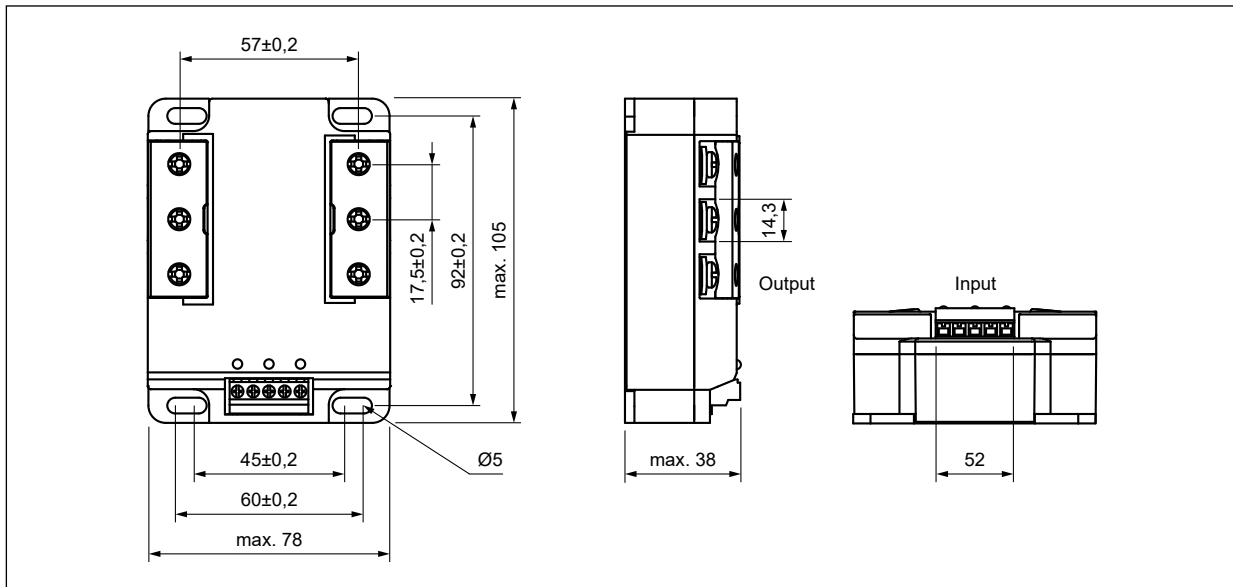


**RH08-F**

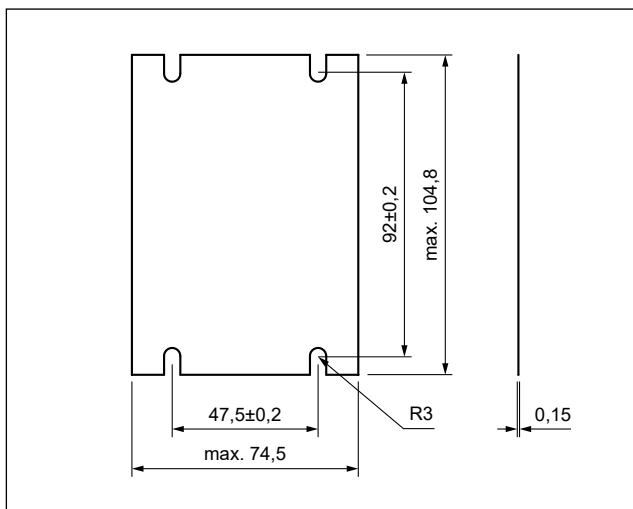


Material	aluminum	aluminum
Dimensions (L x W x H)	106 x 110 x 96 mm	106 x 140 x 96 mm
Weight (typical)	825 g	1 095 g
Thermal resistance	0,8 °C/W	0,35 °C/W
Additional equipment	–	built-in fan
Mounting	on panel, on 35 mm rail mount	on panel, on 35 mm rail mount

## Dimensions



Solid state relay **RSR62**

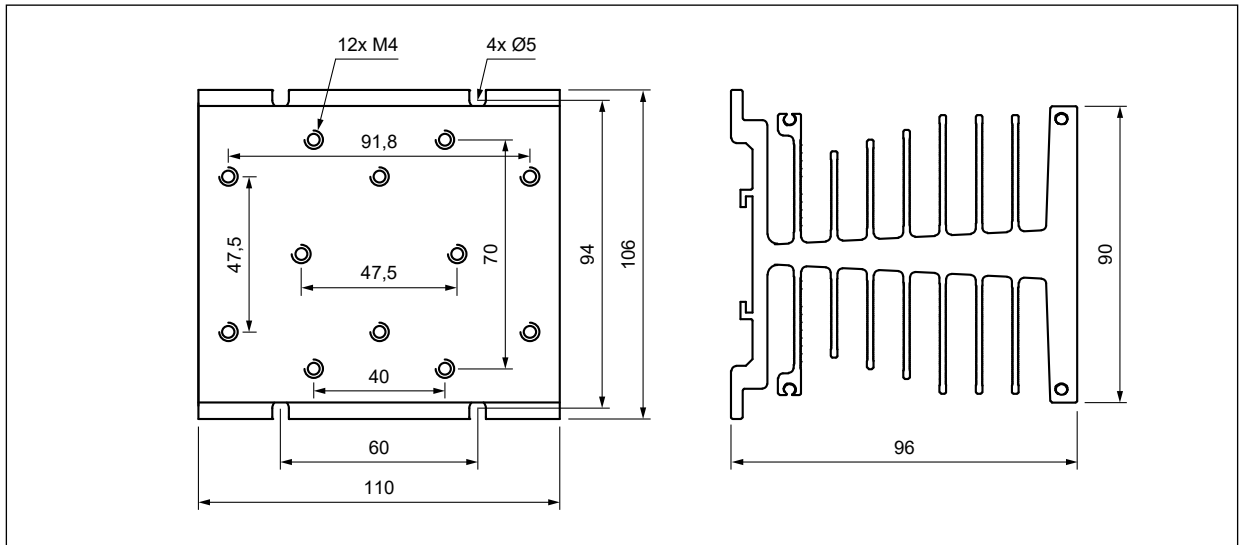


Thermal pad **RTP-30**

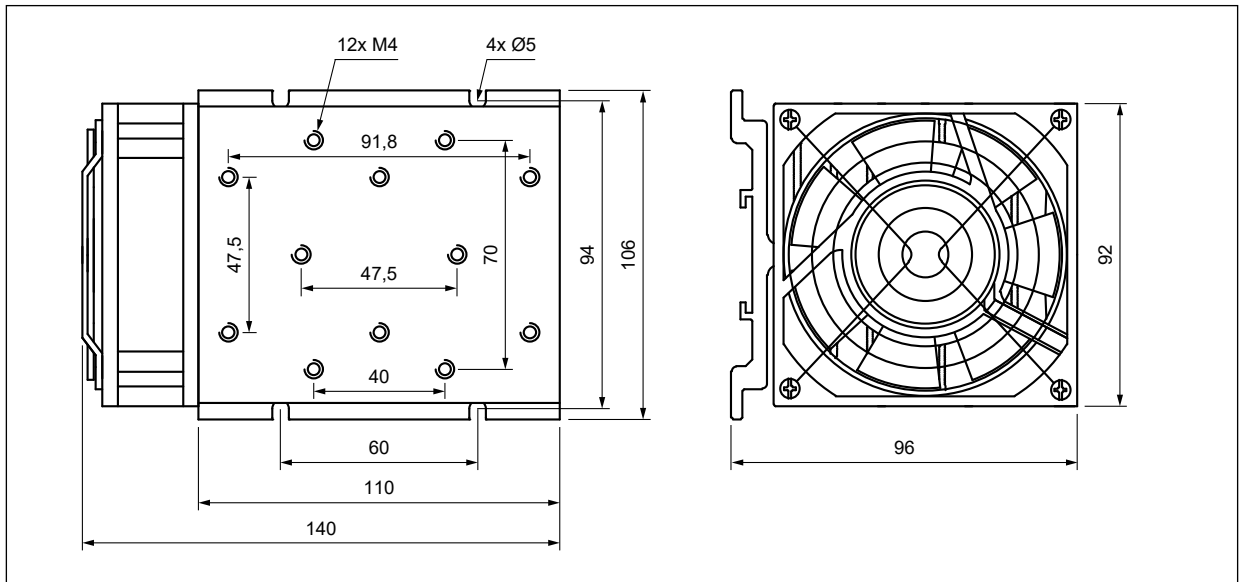
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## Dimensions

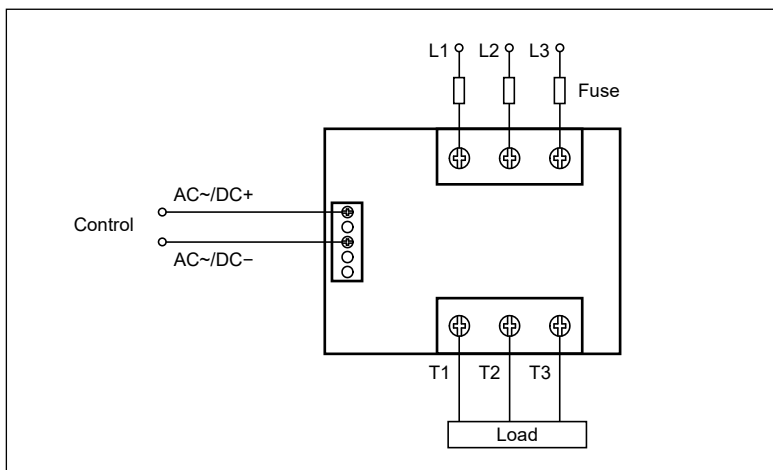


Heatsink RH08



Heatsink RH08-F

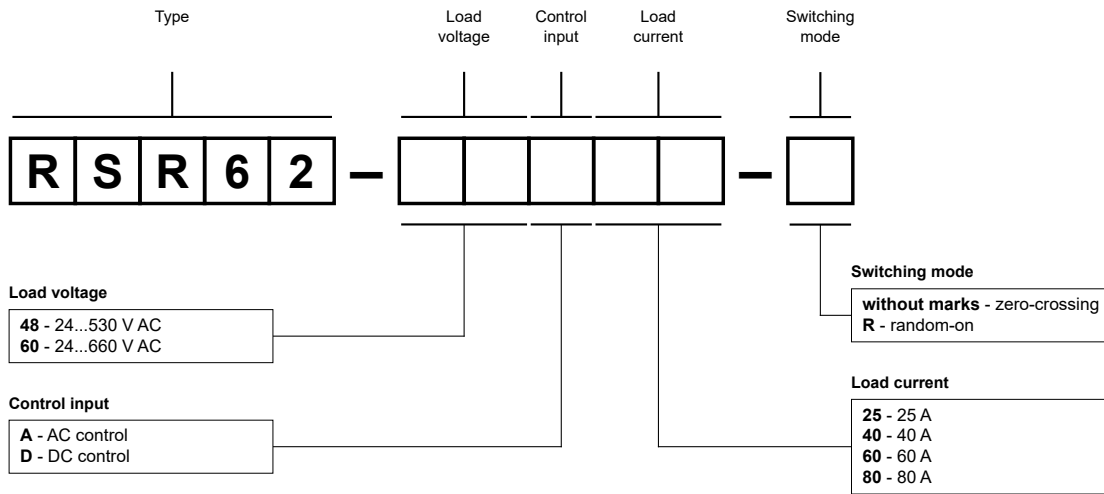
## Connection diagram



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### Ordering codes



Examples of ordering codes ④:

- RSR62-48A25** relay **RSR62**, zero-crossing switching, AC control, load voltage 24...530 V AC (three-phase), load current 25 A
- RSR62-48D80** relay **RSR62**, zero-crossing switching, DC control, load voltage 24...530 V AC (three-phase), load current 80 A
- RSR62-60D60-R** relay **RSR62**, random-on switching, DC control, load voltage 24...660 V AC (three-phase), load current 60 A

④ Ordering codes **RSR62** are specified in tables "Type" on pages 1, 2.