RSR85
single-phase solid state relays, miniature

RSR85-24...



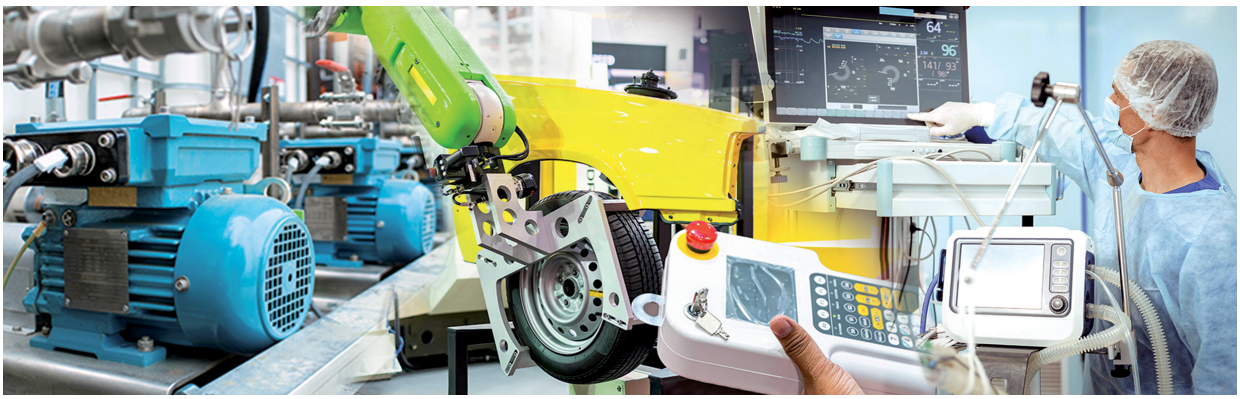
RSR85-38...



- Zero-crossing or random-on switching • DC control input
- Triac output • Load current 3 A
- Max. load voltage 280, 440 V AC (single-phase)
- Dielectric strength 4 000 V_{rms}
- RC protection (built-in resistor, capacitor)
- For PCB and plug-in sockets
- Recognitions, certifications, directives: RoHS, REACH,

Applications

Recommended for applications demanding fast switching speed, intelligent measuring instruments, PCB electronic systems.



Basic technical data

Load voltage: 24...280 V AC, 24...440 V AC
Control input: DC
Load current: 3 A

Type		zero-crossing	random-on
Load voltage	Control voltage	Load current 3 A	
24...280 V AC	5 V DC	**RSR85-24D3-5**	**RSR85-24D3R-5**
	12 V DC	**RSR85-24D3-12**	**RSR85-24D3R-12**
	24 V DC	**RSR85-24D3-24**	**RSR85-24D3R-24**
24...440 V AC	5 V DC	**RSR85-38D3-5**	
	12 V DC	**RSR85-38D3-12**	
	24 V DC	**RSR85-38D3-24**	

Load voltage

	RSR85-24...	**RSR85-38...**
Rated load voltage	240 V AC	380 V AC
Rated range of load voltage	24...280 V AC	24...440 V AC
Blocking voltage	600 V_{pk}	800 V_{pk}
Rated frequency	47...63 Hz	47...63 Hz
Power factor	0,5	0,5

Control input	zero-crossing	zero-crossing	zero-crossing
	RSR85-..D.-5	**RSR85-..D.-12**	**RSR85-..D.-24**
Control voltage range	4...6 V DC	9,6...14,4 V DC	19,2...28,8 V DC
Must turn-on voltage	4 V DC	9,6 V DC	19,2 V DC
Must turn-off voltage	1 V DC	1 V DC	1 V DC
Zero voltage turn-on	≤ 15 V	≤ 15 V	≤ 15 V
Maximum input current	25 mA 6 V DC	25 mA 14,4 V DC	25 mA 28,8 V DC
Response time pick-up	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms
Response time drop-out	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms

Control input	random-on	random-on	random-on
	RSR85-..D.R-5	**RSR85-..D.R-12**	**RSR85-..D.R-24**
Control voltage range	4...6 V DC	9,6...14,4 V DC	19,2...28,8 V DC
Must turn-on voltage	4 V DC	9,6 V DC	19,2 V DC
Must turn-off voltage	1 V DC	1 V DC	1 V DC
Zero voltage turn-on	≤ 15 V	≤ 15 V	≤ 15 V
Maximum input current	25 mA 6 V DC	25 mA 14,4 V DC	25 mA 28,8 V DC
Response time pick-up	≤ 1 ms	≤ 1 ms	≤ 1 ms
Response time drop-out	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms

Output circuit ❶	
	RSR85-...3...
Rated load current	3 A
Rated load range	0,1...3 A
Maximum surge current	120 A 10 ms
I^2t for fusing	72 A^2s 10 ms
Max. operational current AC-51 rating	3 A
Max. operational current AC-53 rating	0,6 A
Min. operational current	100 mA
Maximum off-state leakage current (at rated load voltage)	5 mA
Maximum on-state voltage drop (at rated current)	1,5 Vrms
Minimum off-state dV/dt (at max. rated voltage)	200 V/µs

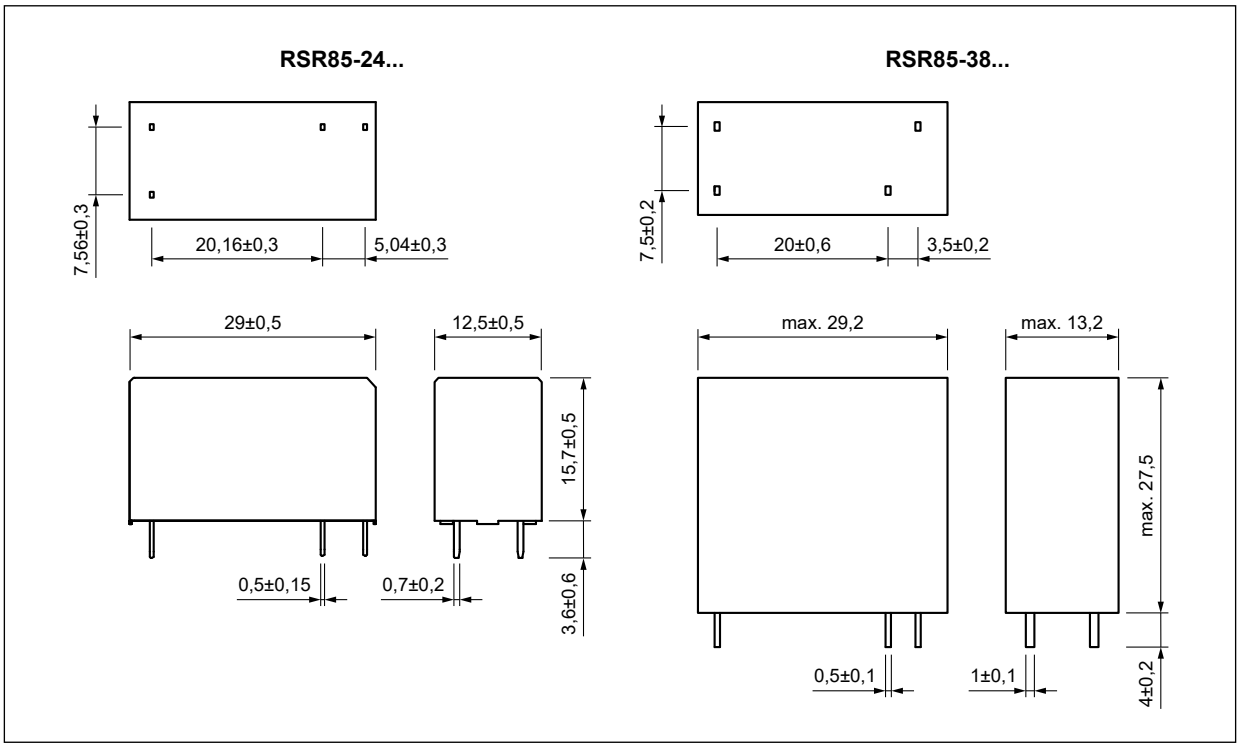
General data ❶	
	RSR85-...
Dielectric strength	input - output: 4 000 Vrms 50/60 Hz
Minimum insulation resistance	input - output: 1 000 MΩ 500 V DC
Ambient temperature (non-condensation and/or icing)	storage: -30...+100 °C operating: -30...+80 °C

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

Mechanical data

	RSR85-24D3-.. RSR85-24D3R-..	RSR85-38D3-..
Dimensions (L x W x H)	29 x 12,5 x 15,7 mm	29,2 x 13,2 x 27,5 mm
Weight (typical)	15 g	18 g
Protection category EN 60529	IP 00	IP 00
Application	PCB	PCB

Dimensions



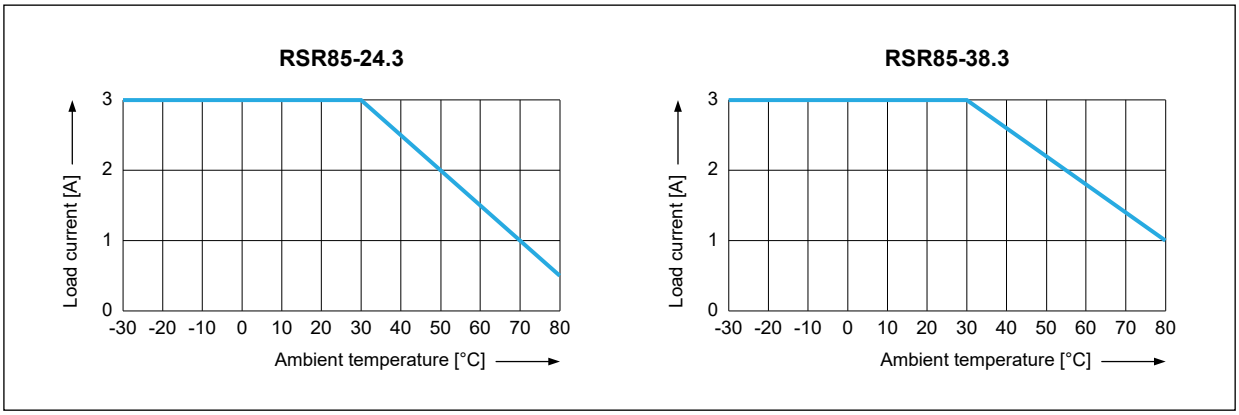
Mounting, sockets and accessories for relays

Relays **RSR85** are designed for: • direct PCB mounting • plug-in sockets.

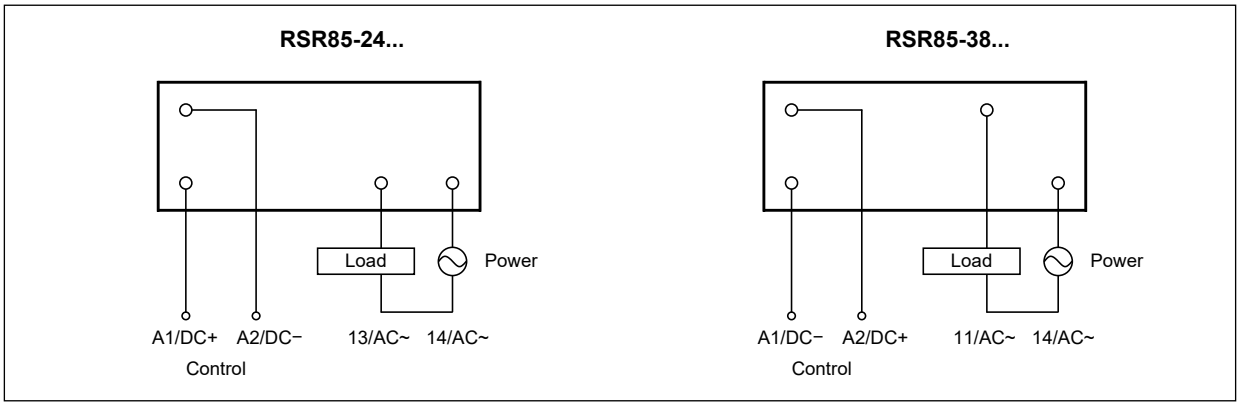
Sockets for RSR85-24...	Sockets for RSR85-38...	Accessories ❷		Additional equipment ❷
		Spring wire clips	Description plates	
Screw terminals sockets, 35 mm rail mount (acc. to EN 60715) or on panel mounting (one M3 screw)				
GZT80	–	GZM80-0041	GZT80-0035	ZGGZ80 ❸
–	GZT92	GZ80-1001	GZT80-0035	ZGGZ80 ❸
GZM80	–	GZM80-0041	GZT80-0035	ZGGZ80 ❸
–	GZM92	GZ80-1001	GZT80-0035	ZGGZ80 ❸
Push-in terminals sockets, 35 mm rail mount (acc. to EN 60715) or on panel mounting (one M3 screw)				
GZP80	–	GZM80-0041	MP15	ZGZP80-8, ZGZP80-2, ZGZP-2 ❸
Sockets for PCB				
PW80	–	MH16-2	–	–
EC 50	–	MH16-2	–	–
–	GD35	MH25-2	–	–

❷ Accessories and additional equipment must be ordered separately. ❸ Interconnection strips ZGGZ80, ZGZP... - see www.relpol.com.pl

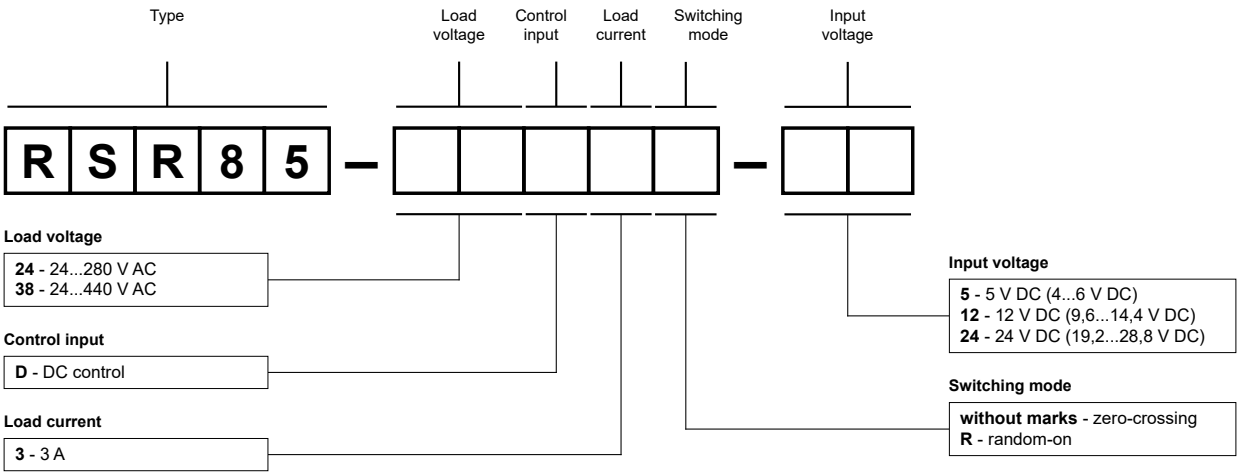
Thermal derating curves



Connection diagrams



Ordering codes



Examples of ordering codes ❹:

RSR85-24D3R-12 relay **RSR85**, miniature for PCB and sockets, random-on switching, DC control, input voltage 12 V DC, load voltage 24...280 V AC (single-phase), load current 3 A

RSR85-38D3-24 relay **RSR85**, miniature for PCB and sockets, zero-crossing switching, DC control, input voltage 24 V DC, load voltage 24...440 V AC (single-phase), load current 3 A

❹ Ordering codes **RSR85** are specified in table "Type" on page 1.

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