RSR89
single-phase solid state relays, miniature



- Zero-crossing or random-on switching • DC control input
- Triac output • Load current 5 A
- Max. load voltage 280, 660 V AC (single-phase)
- Dielectric strength 4 000 V_{rms} (photoelectric-isolation)
- RC protection (built-in resistor, capacitor)
- TVS protection (optional)
- LED indicator (red)
- Flat insert connectors - faston 187 (4,8 x 0,5 mm)
- For plug-in sockets: on 35 mm rail mount acc. to EN 60715; on panel mounting
- Recognitions, certifications, directives: RoHS, REACH,

Applications

Suitable for lighting control, motor control, vending machine control, medical device control, valve control and etc.



Basic technical data

Load voltage: 24...280 V AC, 24...660 V AC
Control input: DC
Load current: 5 A

Type		zero-crossing	random-on
Load voltage	Control voltage	Load current 5 A	
24...280 V AC	4...32 V DC	**RSR89-24D5**	**RSR89-24D5-R**
		RSR89-24D5-T	**RSR89-24D5-RT**
24...660 V AC	4...32 V DC	**RSR89-60D5**	**RSR89-60D5-R**
		RSR89-60D5-T	**RSR89-60D5-RT**

Load voltage

	RSR89-24...	**RSR89-60...**
Rated load voltage	240 V AC	600 V AC
Rated range of load voltage	24...280 V AC	24...660 V AC
Blocking voltage	600 V_{pk}	1 200 V_{pk}
Rated frequency	47...63 Hz	47...63 Hz
Power factor	0,5	0,5

Control input

	zero-crossing	random-on
	RSR89-..D...	**RSR89-..D..-R.**
Control voltage range	4...32 V DC	4...32 V DC
Must turn-on voltage	4 V DC	4 V DC
Must turn-off voltage	1 V DC	1 V DC
Zero voltage turn-on	≤ 20 V	≤ 20 V
Maximum input current	18 mA 32 V DC	18 mA 32 V DC
Response time pick-up	≤ 1/2 cycle + 1 ms	≤ 1 ms
Response time drop-out	≤ 1/2 cycle + 1 ms	≤ 1/2 cycle + 1 ms
Breakdown voltage of internal TVS	480 V	1 100 V

Output circuit ❶

	RSR89-...5...
Rated load current	5 A
Rated load range	0,1...5 A
Maximum surge current	250 A 10 ms
I^2t for fusing	312 A^2s 10 ms
Max. operational current AC-51 rating	5 A
Max. operational current AC-53 rating	1,5 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)	500 V/µs

General data ❶

	RSR89-...
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

Mechanical data

	RSR89-...	**RSR89-... with socket GZMA-71**
Dimensions (L x W x H)	32 x 13 x 43 mm	77 x 16 x 64 mm
Weight (typical)	20 g	50 g
Protection category EN 60529	IP 00	IP 20
Mounting on 35 mm rail mount	with socket GZMA-71	direct

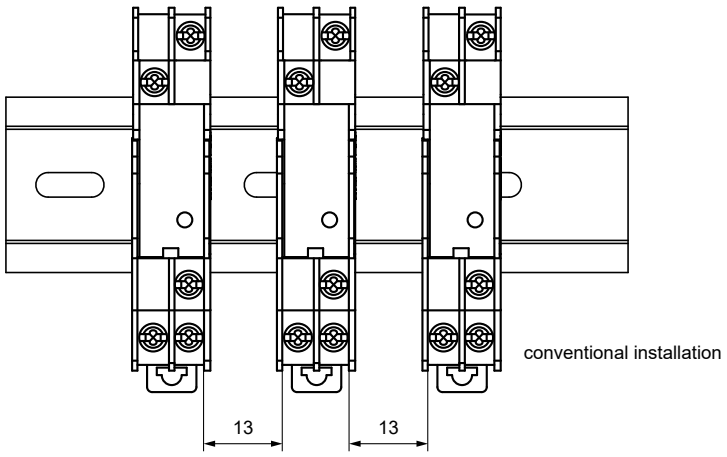
❶ Data given for ambient temperature ≤ 25 °C. Above 25 °C the maximum current decreases - see "Thermal derating curves", page 4.

Mounting

Relays **RSR89** are designed for mounting in plug-in sockets **GZMA-71**.
For conventional installation, the recommended minimum distance is 13 mm.

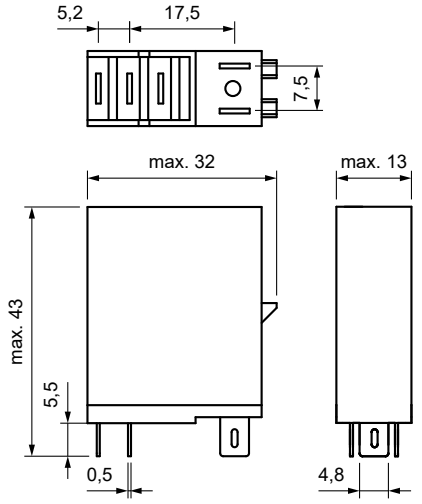
Sockets for RSR88	Accessories Retainer / retractor clips	Additional equipment
Screw terminals sockets, 35 mm rail mount (acc. to EN 60715) or on panel mounting (one M3 screw)		
GZMA-71 ❷	GZ7-0040 black	ZGGZ80 ❸

❷ Socket is sold complete with retainer / retractor clip. ❸ Interconnection strips ZGGZ80 - see "Connecting accessories", page 5.

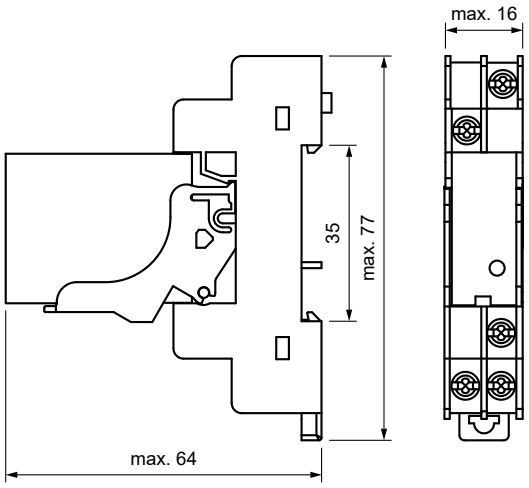


Dimensions

RSR89



RSR89 (with socket GZMA-71)

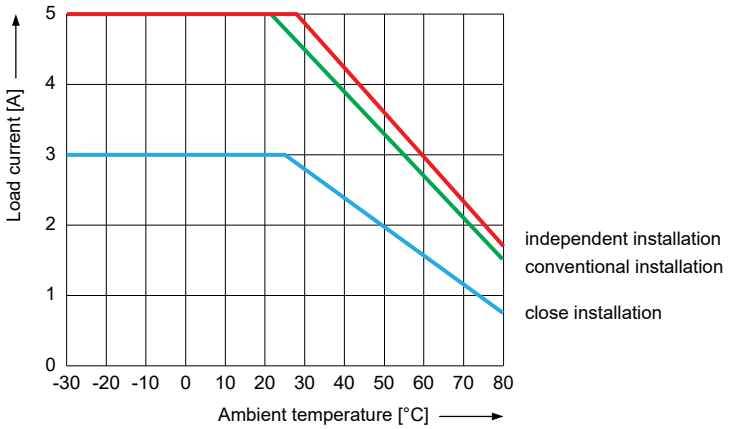


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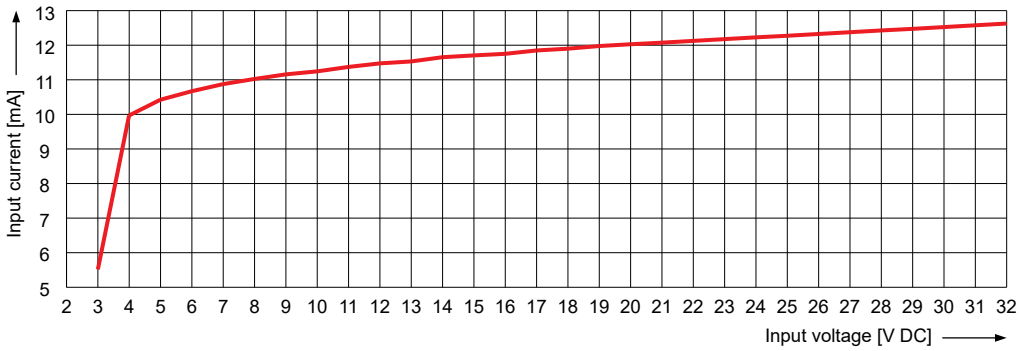
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Thermal derating curves

RSR89-...5 (with socket GZMA-71)



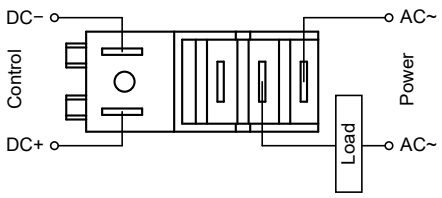
Input characteristic ❹



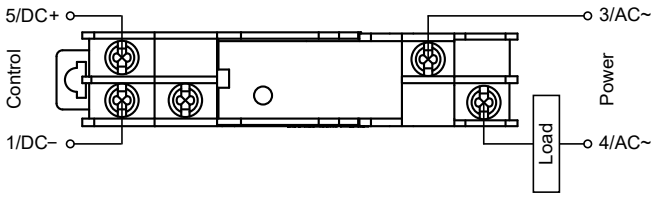
❹ The input curve is measured at ambient temperature 25 °C.

Connection diagrams

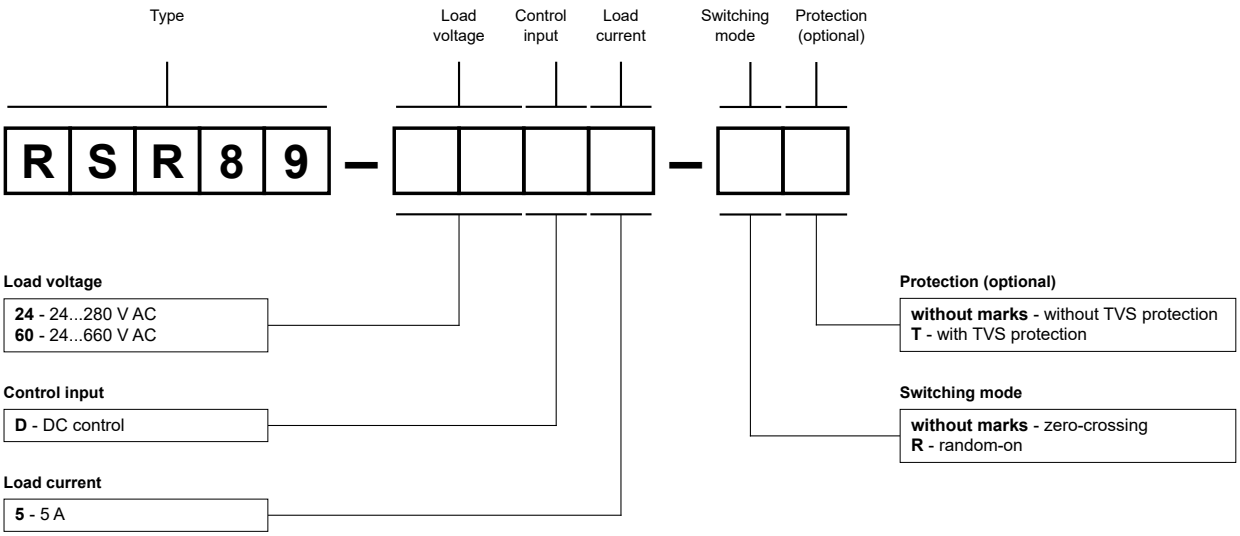
RSR89



RSR89 (with socket GZMA-71)



Ordering codes



Examples of ordering codes ❺:

RSR89-24D5 relay **RSR89**, miniature for plug-in sockets, zero-crossing switching, DC control, load voltage 24...280 V AC (single-phase), load current 5 A

RSR89-60D5-RT relay **RSR89**, miniature for plug-in sockets, random-on switching, with TVS protection, DC control, load voltage 24...660 V AC (single-phase), load current 5 A

❺ Ordering codes **RSR89** are specified in table "Type" on page 1.

Connecting accessories



ZGGZ80-1 grey
ZGGZ80-2 black

Plug-in sockets **GZMA-71** may be linked with interconnection strip type **ZGGZ80**.

Strips 8-poles ZGGZ80: unlimited possibilities of connection configurations in sockets GZMA-71 (bridging of common input signals of 8 sockets - A1, A2), fast, safe and easy bridging of signals on the coil, maximum permissible current is 10 A / 250 V AC.

