

# RSR92-...-T

## three-phase solid state relays, industrial

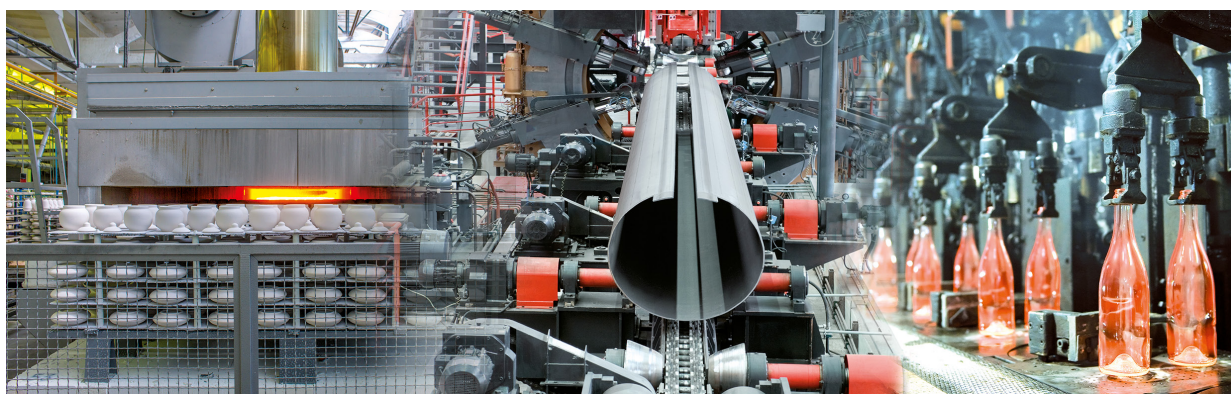


**NEW**

- Three-phase power controller (phase angle load control)
- Control input: DC voltage 0...10 V DC or current 4...20 mA
- SCR output (thyristors) • Load current 25...80 A
- Max. load voltage 530 V AC (three-phase)
- Dielectric strength 4 000 Vrms (opto-isolation)
- RC/MOV protection (built-in resistor, capacitor, varistor)
- LED indicators (green, red) • Screw terminals
- Mounting on heatsinks
- Recognitions, certifications, directives: RoHS, REACH, **CE ENEC**

### Applications

They are used to regulate the power delivered to the receiver, where this power is proportional to the input control signal. They are used in automation control systems where smooth control of receiver power is required for resistive or resistive-inductive loads. Typical applications for power controllers: heaters, industrial furnaces (annealing, quenching, drying, etc.), dryers, plastics processing equipment, industrial sealing machines, glass production industry, industrial heating systems (matting and lining of pipelines), load transformers.



### Basic technical data

Load voltage: 200...530 V AC  
 Control input: DC voltage 0...10 V DC or current 4...20 mA  
 Load current: 25 A, 40 A, 60 A, 80 A

#### Type

Load voltage	Control voltage/current	Load current	
		25 A	40 A
200...530 V AC	0...10 V DC / 4...20 mA	<b>RSR92-48W25-T</b>	<b>RSR92-48W40-T</b>

#### Type

Load voltage	Control voltage/current	Load current	
		60 A	80 A
200...530 V AC	0...10 V DC / 4...20 mA	<b>RSR92-48W60-T</b>	<b>RSR92-48W80-T</b>

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### Load voltage

	<b>RSR92-48...</b>
Rated load voltage	480 V AC
Rated range of load voltage	200...530 V AC
Blocking voltage	1 200 V <sub>pk</sub>
Maximum voltage permissible for voltage sensitivity	550 V AC
MOV protection voltage range	819...1001 V
Rated frequency	47...63 Hz
Output power	0...99%

### Control input

voltage and current control

	<b>RSR92-...-T</b>
Control voltage range	0...10 V DC
Power supply voltage range	10...32 V DC
Must turn-on voltage	max. 0,4 V DC
Must turn-off voltage	min. 0,1 V DC
Control current range	4...20 mA
Must turn-on current	max. 4,6 mA
Must turn-off current	min. 3,8 mA
Input impedance (typical)	voltage control: 22 kΩ current control: 200 kΩ

### Output circuit ①

	<b>RSR92-...25-T</b>	<b>RSR92-...40-T</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
Maximum off-state leakage current (at rated load voltage)	5 mA 220 VAC 50 Hz	5 mA 220 VAC 50 Hz
Minimum off-state dV/dt (at max. rated voltage)	500 V/μs	500 V/μs

### Output circuit ①

	<b>RSR52-...60-T</b>	<b>RSR52-...80-T</b>
Rated load current	60 A	80 A
Maximum surge current	700 A 10 ms	1 280 A 10 ms
I <sup>2</sup> t for fusing	2 450 A <sup>2</sup> s 10 ms	8 192 A <sup>2</sup> s 10 ms
Maximum off-state leakage current (at rated load voltage)	5 mA 220 VAC 50 Hz	5 mA 220 VAC 50 Hz
Minimum off-state dV/dt (at max. rated voltage)	500 V/μs	500 V/μs

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

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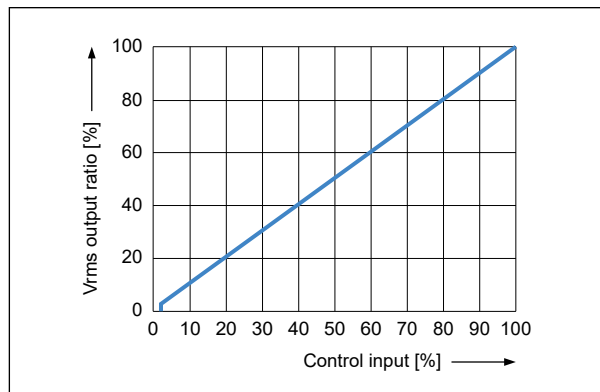
### General data ①

	RSR92-...-T
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
Burst immunity level IEC61000-4-4	2 kV 100 kHz
Surge immunity level IEC61000-4-5	2 kV line-PE 1 kV line-line
Electrostatic discharge immunity level IEC61000-4-2	4 kV touching 8 kV in the air

### Mechanical data

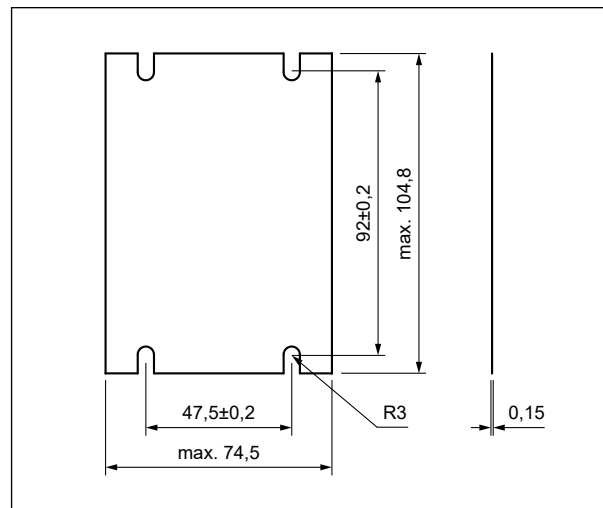
	RSR92-...25-T RSR92-...40-T	RSR92-...60-T RSR92-...80-T
Dimensions (L x W x H)	105 x 78 x 38 mm	105 x 78 x 38 mm
Weight (typical)	360 g	560 g
Protection category EN 60529	IP 20	IP 20
Connection mode	input: screws M3 (plugable connector) ② tightening moment: 0,58...0,98 N•m output: screws M4 ② tightening 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

### Output / proportional control characteristic ④



① Data given for ambient temperature  $\leq 25$  °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. ④ The output curves were measured at 50 Hz.

### Dimensions



Thermal pad RTP-30

### Mounting, accessories for relays

Relays RSR92-...-T are designed for mounting on heatsinks RH.  
For RSR92-...-T relays we offer thermal pads RTP-30.

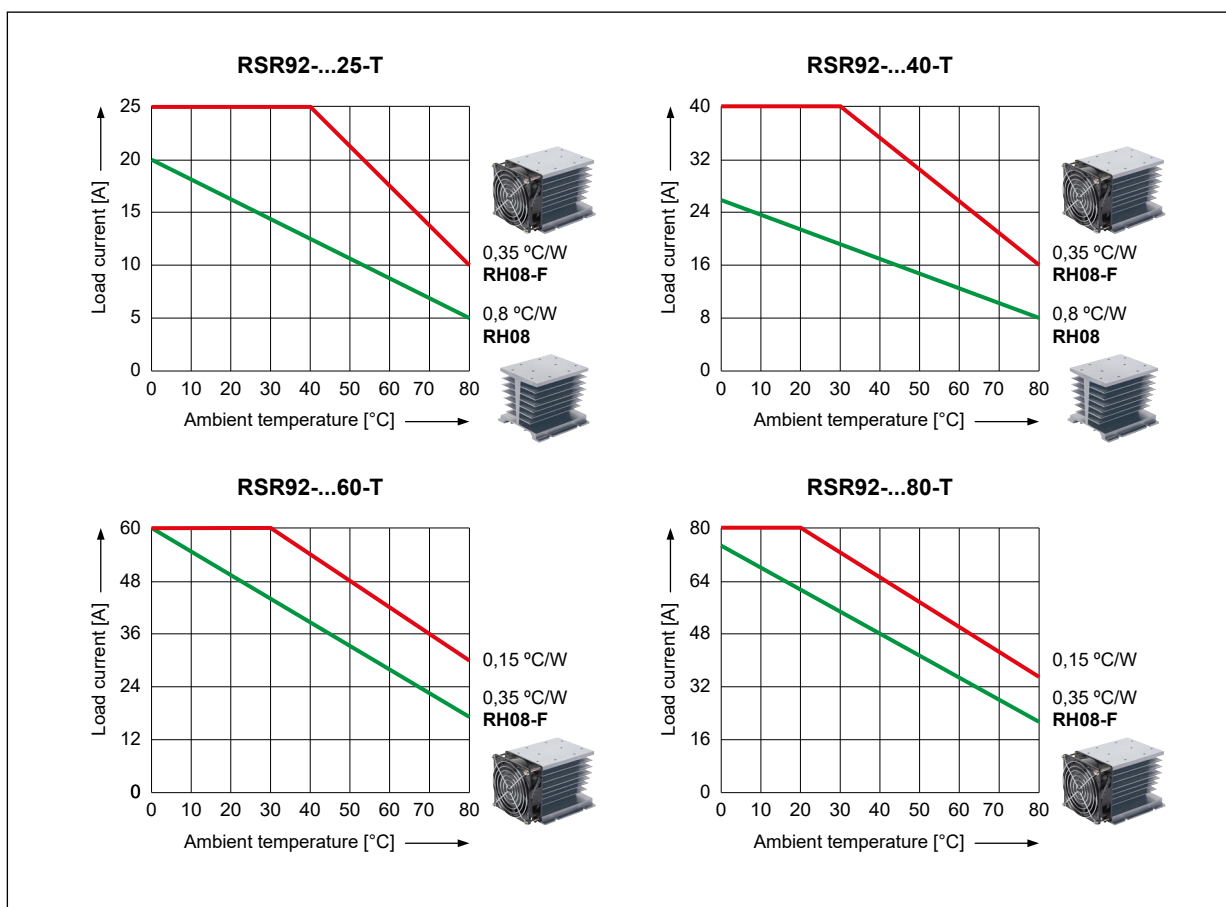


Thermal pad RTP-30

# RSR92-...-T

## three-phase solid state relays, industrial

### Thermal derating curves

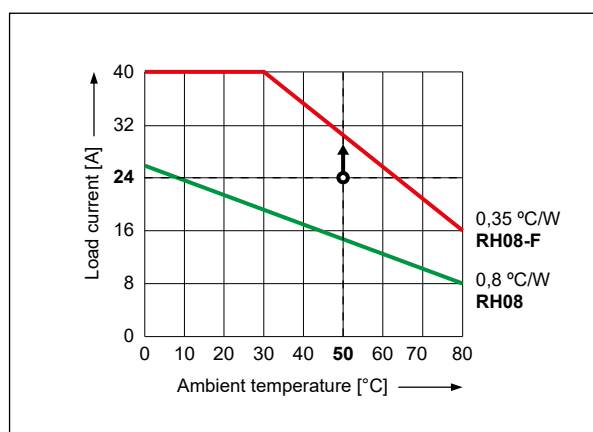


#### To select the proper sized heatsink:

- 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 **RSR92-...-T** 40 A, at 24 A load current and ambient temperature at 50 °C:

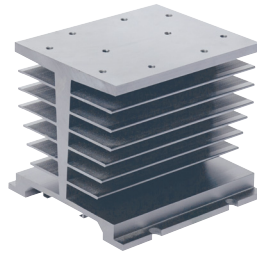
- on the Y axis we find the current value for which we draw a line perpendicular to Y,
- on the X axis we find the ambient temperature for which we draw a line perpendicular to X,
- we determine the intersection of both lines,
- read the heatsink rating – **always choose the rating above your point**: 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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three-phase solid state relays, industrial

**RH08**

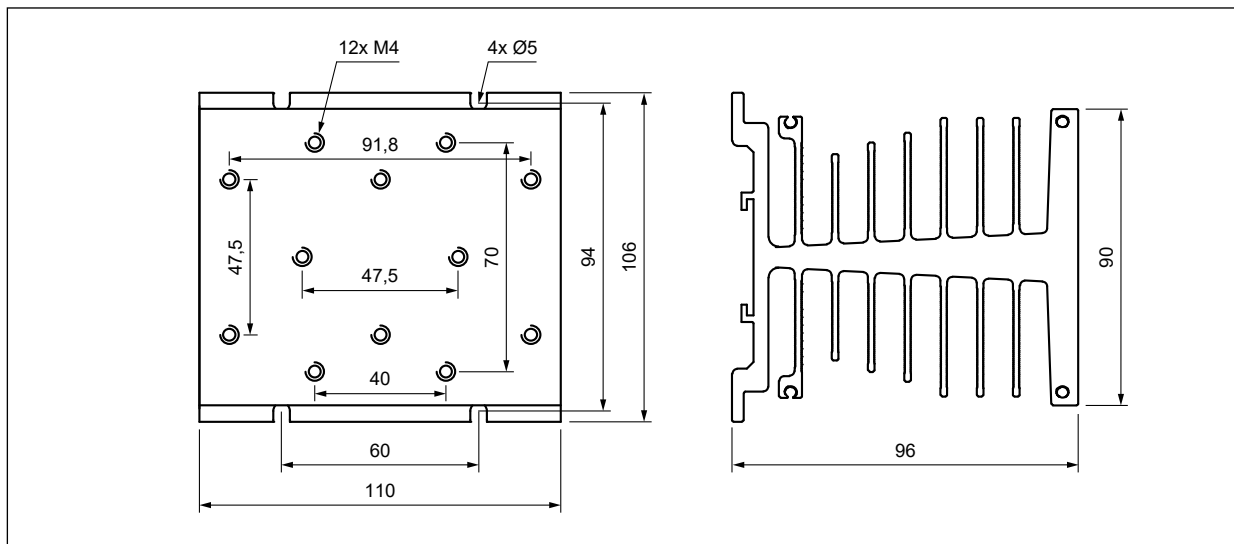


**RH08-F**

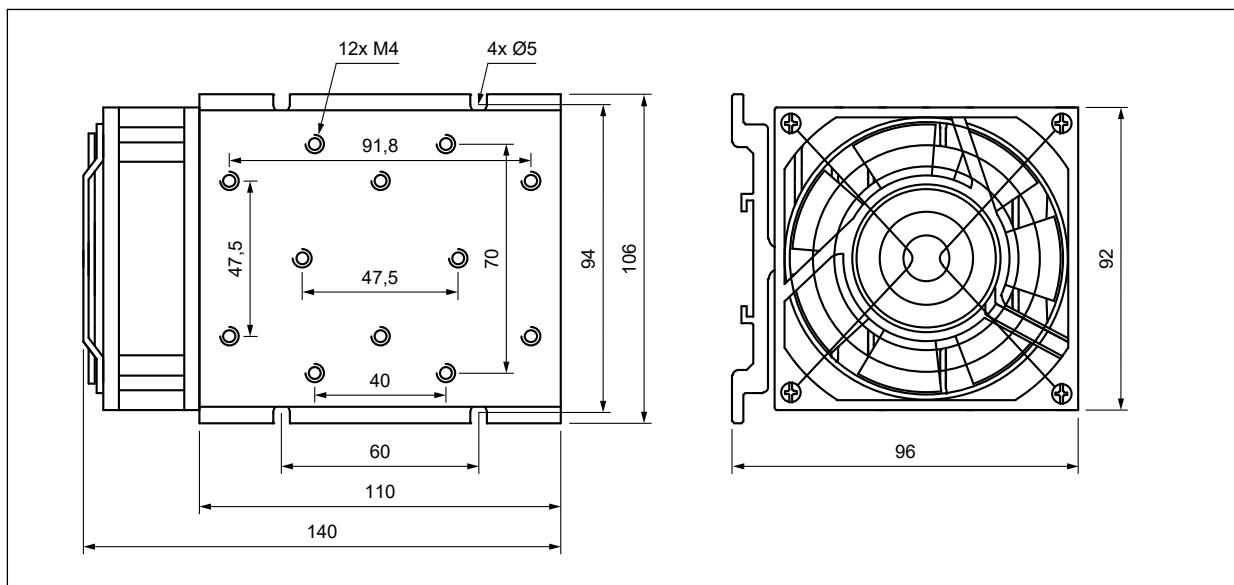


Material	aluminum	aluminum
Dimensions (L x W x H)	106 x 110 x 96 mm	106 x 140 x 96 mm
Weight (typical)	825 g	1 095 g
Thermal resistance	0,8 °C/W	0,35 °C/W
Additional equipment	–	built-in fan
Mounting	on panel, on 35 mm rail mount	on panel, on 35 mm rail mount

## Dimensions



Heatsink **RH08**

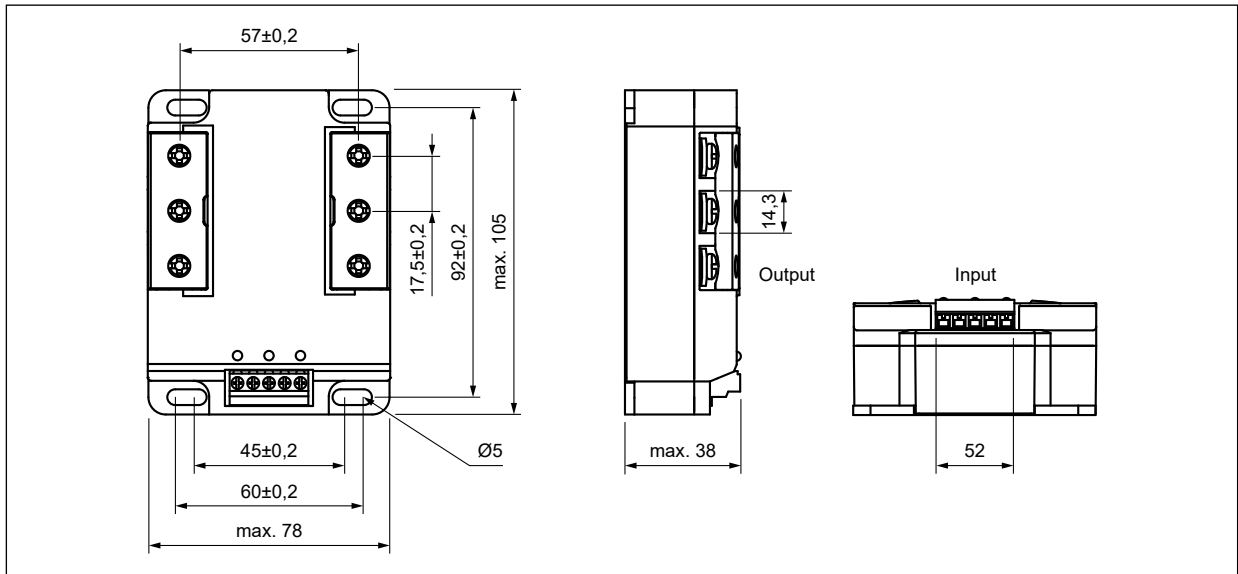


Heatsink **RH08-F**

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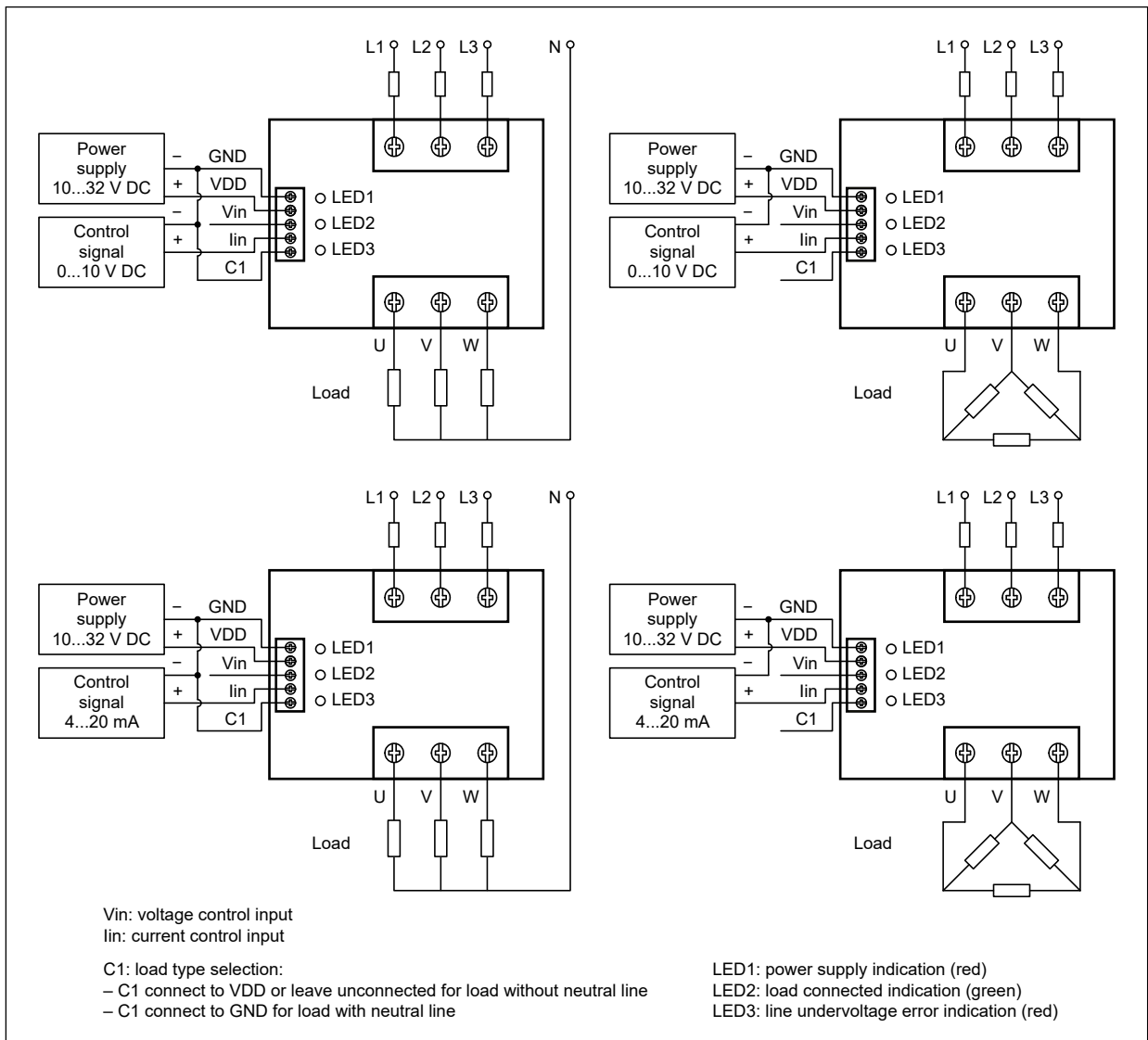
three-phase solid state relays, industrial

## Dimensions



Solid state relay **RSR92-...-T**

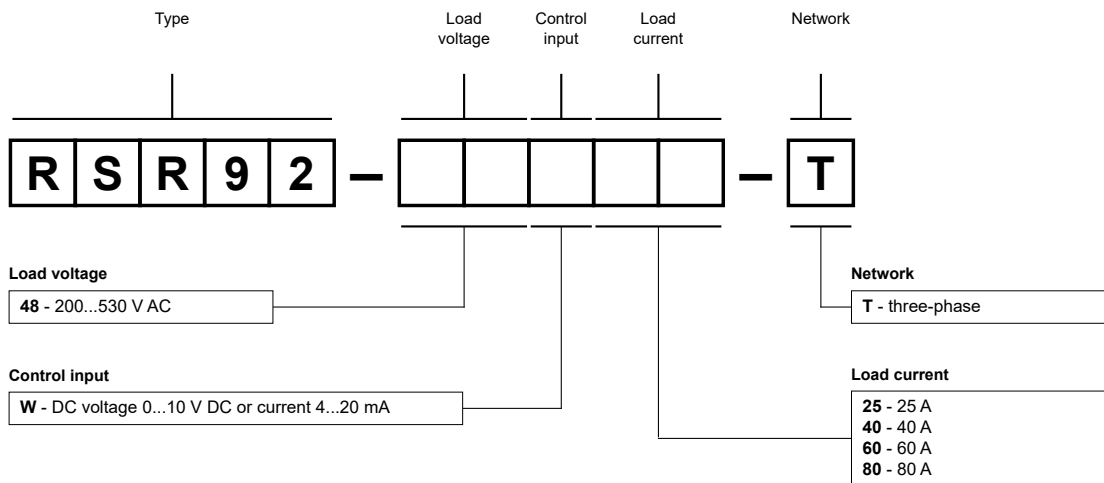
## Connection diagrams



# RSR92-...-T

## three-phase solid state relays, industrial

### Ordering codes



Examples of ordering codes ⑥:

**RSR92-48W25-T**

relay **RSR92-...-T**, power controller, DC voltage or current control, load voltage 176...280 V AC (three-phase), load current 25 A

**RSR92-48W80-T**

relay **RSR92-...-T**, power controller, DC voltage or current control, load voltage 300...530 V AC (three-phase), load current 80 A

⑥ Ordering codes **RSR92-...-T** are specified in tables "Type" on page 1.

### RSR92 RSR92-...-T

Solid state relays  
– power controllers

**NEW**

