


# R40N

## industrial relays of small dimensions



- High load 40 A • AC coils - of up to 220 V AC, DC coils - of up to 110 V DC, insulation class F: 155 °C
- For PCB • Small dimensions, light weight
- High shock and vibration resistance
- High quality, long life
- Application: for automobile, machine, electronic equipment, air conditioner, household appliance
- Recognitions, certifications, directives: RoHS, 

### Contact data

Number and type of contacts		1 CO, 1 NO	
Contact material		<b>AgSnO<sub>2</sub></b> , AgCdO	
Rated / max. switching voltage	AC	240 V / 300 V	
	DC	110 V / 110 V	
Min. switching voltage		10 V	
Rated load	AC1	1 CO: 40 A / 30 A (NO/NC) / 240 V AC	1 NO: 40 A / 240 V AC
	DC1	1 CO: 40 A / 30 A (NO/NC) / 30 V DC	1 NO: 40 A / 30 V DC
Rated current		40 A	
Max. breaking capacity	AC1	1 CO: 9 600 VA / 7 200 VA (NO/NC)	1 NO: 9 600 VA
	AC3	1 CO: 2,0 HP / 1,5 HP (NO/NC) UL 508 (single-phase motor)	1 NO: 2,0 HP UL 508 (single-phase motor)
	DC1	1 CO: 1 200 W / 900 W (NO/NC)	1 NO: 1 200 W
Contact resistance		≤ 30 mΩ	
<b>Coil data</b>			
Rated voltage	50/60 Hz AC	12 ... 220 V	
	DC	5 ... 110 V	
Must release voltage		DC: ≥ 0,1 U <sub>n</sub>	
Operating range of supply voltage		see Tables 1, 2	
Must operate voltage		≤ 0,75 U <sub>n</sub>	
Rated power consumption	AC	2,0 VA	
	DC	0,9 W	
<b>Insulation according to PN-EN 60664-1</b>			
Insulation rated voltage		500 V AC	
Overvoltage category		II	
Flammability degree		V-0 UL94	
Insulation resistance		> 1 000 MΩ 500 V DC, 60 s	
Dielectric strength			
• between coil and contacts		4 000 V AC	type of insulation: reinforced
• contact clearance		1 500 V AC	type of clearance: micro-disconnection
<b>General data</b>			
Operating / release time (typical values)		15 ms / 10 ms	
Electrical life			
• resistive AC1	1 200 cycles/hour	10 <sup>5</sup> 1 CO: 40 A / 30 A (NO/NC), 240 V AC	1 NO: 40 A, 240 V AC
• resistive DC1	1 200 cycles/hour	10 <sup>5</sup> 1 CO: 40 A / 30 A (NO/NC), 30 V DC	1 NO: 40 A, 30 V DC
Mechanical life (cycle)		10 <sup>7</sup>	
Dimensions (L x W x H)		32,5 x 27,6 x 20,5 mm	
Weight		30 g	
Ambient temperature • operating		-55...+100 °C	
Cover protection category		IP 40 or <b>IP 64</b> PN-EN 60529	
Shock resistance		20 g	
Vibration resistance		1,5 mm DA (constant amplitude) 10...55 Hz	
Solder bath temperature		max. 235 °C	
Soldering time		max. 3,5 s	

The data in bold type pertain to the standard versions of the relays.

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**Coil data - DC voltage version**

Table 1

Coil code	Rated voltage V DC	Coil resistance at 20 °C $\Omega$	Acceptable resistance	Coil operating range V DC	
				min. (at 20 °C)	max. (at 20 °C)
<b>1005</b>	<b>5</b>	<b>28</b>	$\pm 10\%$	<b>3,8</b>	<b>6,5</b>
<b>1012</b>	<b>12</b>	<b>160</b>	$\pm 10\%$	<b>9,0</b>	<b>15,6</b>
<b>1024</b>	<b>24</b>	<b>640</b>	$\pm 10\%$	<b>18,0</b>	<b>31,2</b>
1048	48	2 560	$\pm 10\%$	36,0	62,4
1110	110	13 445	$\pm 10\%$	82,5	143,0

The data in bold type pertain to the standard versions of the relays.

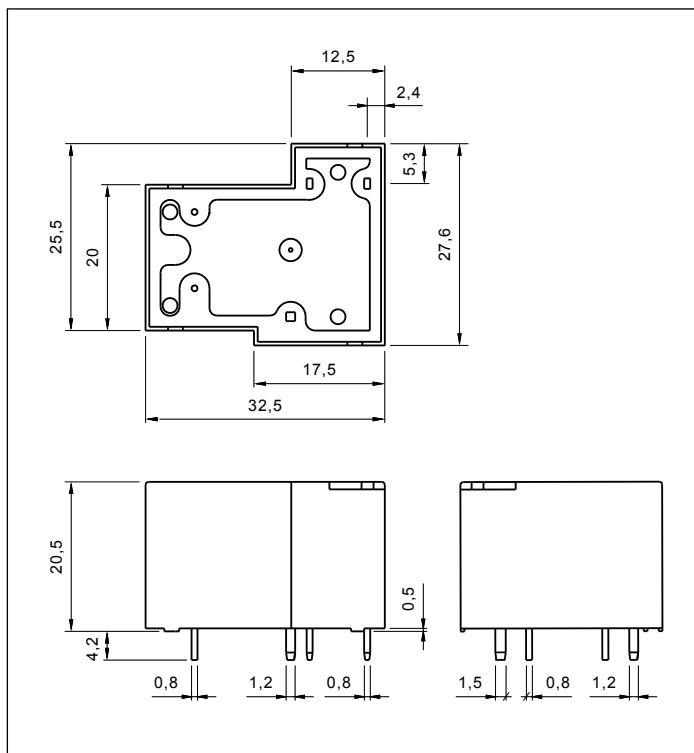
**Coil data - AC 50/60 Hz voltage version**

Table 2

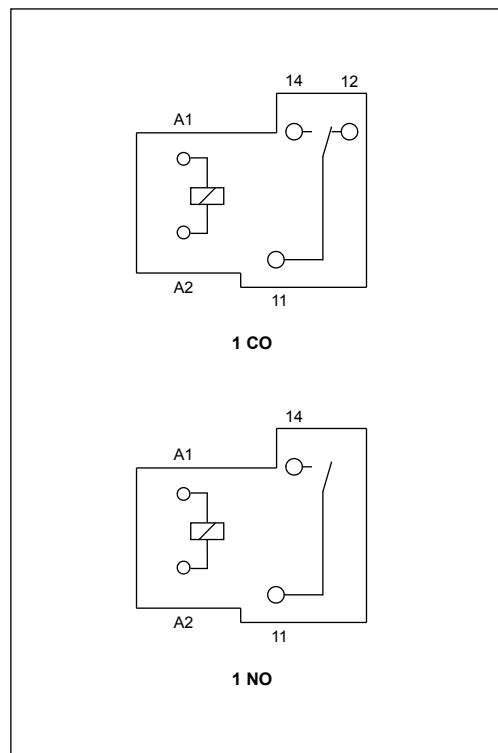
Coil code	Rated voltage V AC	Coil resistance at 20 °C $\Omega$	Acceptable resistance	Coil operating range V AC 50 Hz	
				min. (at 20 °C)	max. (at 20 °C)
5012	12	27	$\pm 10\%$	9,0	15,6
<b>5024</b>	<b>24</b>	<b>120</b>	$\pm 10\%$	<b>18,0</b>	<b>31,2</b>
5110	110	2 360	$\pm 10\%$	82,5	143,0
5120	120	3 040	$\pm 10\%$	90,0	156,0
<b>5220</b>	<b>220</b>	<b>13 490</b>	$\pm 10\%$	<b>165,0</b>	<b>286,0</b>

The data in bold type pertain to the standard versions of the relays.

## Dimensions



## Connection diagrams (pin side view)



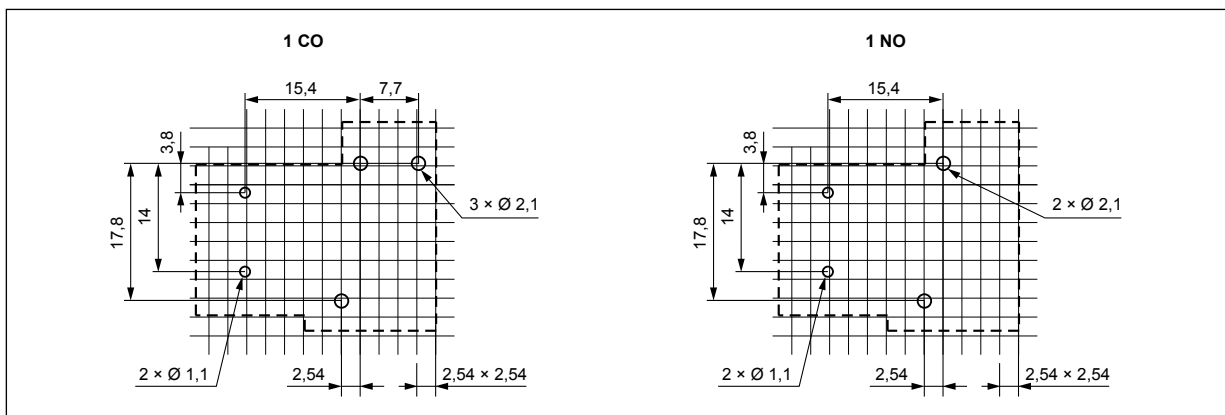
## Mounting

Relays **R40N** are designed for direct PCB mounting.

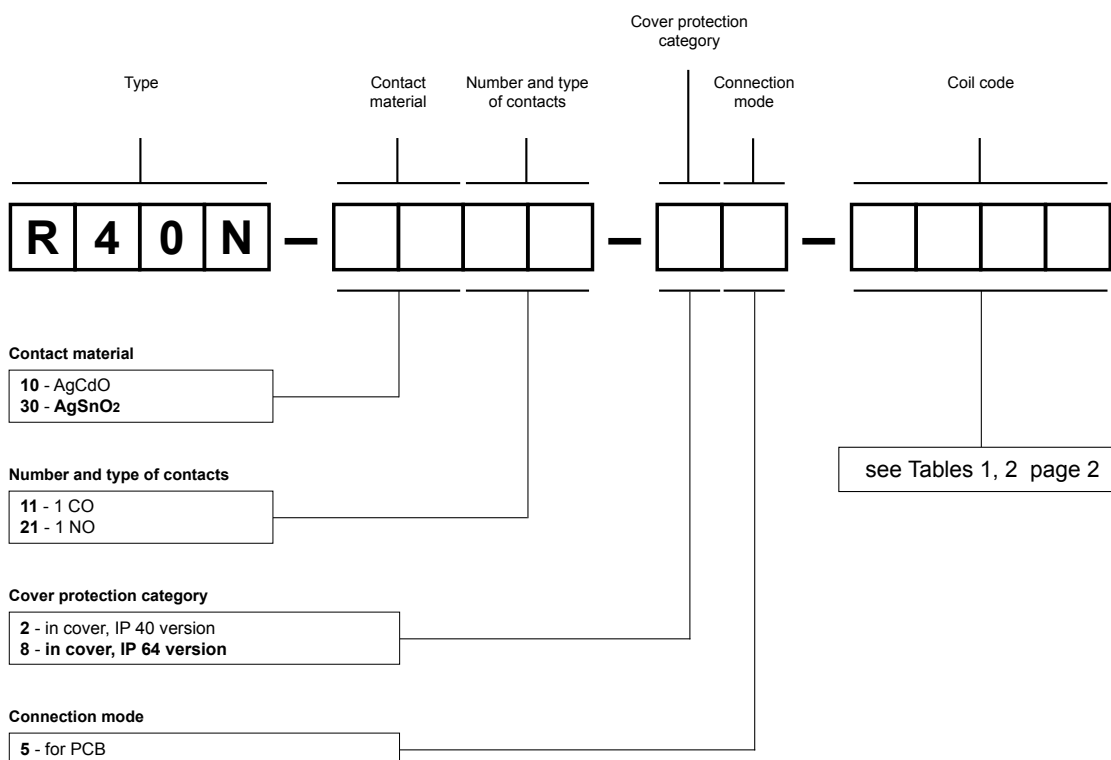
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## Pinout (solder side view)



## Ordering codes



Examples of ordering codes:

**R40N-3011-85-1012** relay **R40N**, for PCB, one changeover contact, contact material AgSnO<sub>2</sub>, coil voltage 12 V DC, in cover IP 64

**R40N-1021-25-5024** relay **R40N**, for PCB, one normally open contact, contact material AgCdO, coil voltage 24 V AC 50/60 Hz, in cover IP 40

### PRECAUTIONS:

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.

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