

# RM40

## miniature relays



- Very small dimensions
- High switching capacity up to 5 A or 8 A
- Sealed, for wave soldering and cleaning
- Available special versions: halogen-free
- Applications: for household equipment, office machines, control devices, alarm systems, in industrial control, monitoring systems, industrial controllers
- Recognitions, certifications, directives : RoHS, : UL US : D'E : EAC

### Contact data

Number and type of contacts		1 CO	1 NO
Contact material		1 CO: <b>AgNi</b> , AgNi/Au hard gold plating	1 NO: <b>AgSnO<sub>2</sub></b>
Rated / max. switching voltage	AC	1 CO: 250 V / 380 V	1 NO: 250 V / 440 V
Min. switching voltage		5 V AgNi, 1 V AgNi/Au hard gold plating	5 V AgSnO <sub>2</sub>
Rated load	AC1 DC1	1 CO: 5 A / 250 V AC 1 CO: 5 A / 30 V DC	1 NO: 8 A / 250 V AC 1 NO: 8 A / 30 V DC
Min. switching current		10 mA AgNi, 1 mA AgNi/Au hard gold plating	10 mA AgSnO <sub>2</sub>
Rated current		1 CO: 5 A	1 NO: 8 A
Max. breaking capacity	AC1	1 CO: 1 250 VA	1 NO: 2 000 VA
Min. breaking capacity		50 mW AgNi, 1 mW AgNi/Au hard gold plating	50 mW AgSnO <sub>2</sub>
Contact resistance		≤ 100 mΩ	

### Coil data

Rated voltage	DC	3, 5, 6, 9, 12, 24, 48 V
Must release voltage		DC: ≥ 0,05 U <sub>n</sub>
Operating range of supply voltage		see Table 1
Rated power consumption	DC	0,20 W

### Insulation according to EN 60664-1

Rated surge voltage		10 000 V 1,2 / 50 μs
Insulation resistance		> 100 MΩ 500 V DC
Dielectric strength		
• between coil and contacts		4 000 V AC type of insulation: reinforced
• contact clearance		1 000 V AC type of clearance: micro-disconnection
Contact - coil distance		
• clearance		≥ 5 mm
• creepage		≥ 5 mm

### General data

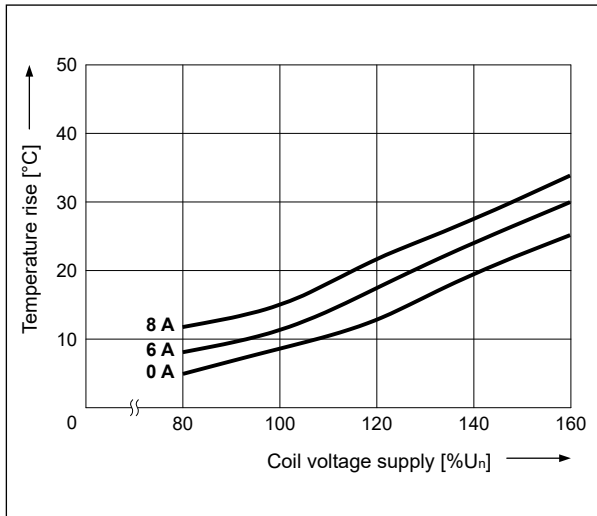
Operating / release time (typical values)		8 ms / 4 ms
Electrical life (number of cycles)		
• resistive AC1 360 cycles/hour	> 10 <sup>5</sup>	1 CO: 5 A, 250 V AC 1 NO: 8 A, 250 V AC
• resistive DC1 360 cycles/hour	> 10 <sup>5</sup>	1 CO: 5 A, 30 V DC 1 NO: 8 A, 30 V DC
Mechanical life 18 000 cycles/hour	> 10 <sup>7</sup>	
Dimensions (L x W x H)		20 x 10 x 10,5 mm
Weight		6 g
Ambient temperature (non-condensation and/or icing)	• operating	-40...+85 °C
Cover protection category		IP 67 EN 60529
Environmental protection		RTIII EN 61810-1
Shock resistance		10 g
Vibration resistance		1,5 mm DA (double amplitude) 10...55 Hz
Solder bath temperature		max. 260 °C
Soldering time		max. 5 s

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

The VDE certificate includes only standard versions.

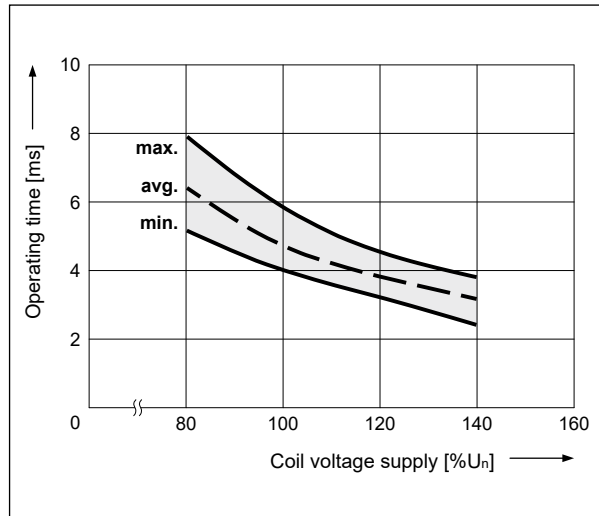
**Coil temperature rise at 85 °C**

**Fig. 1**



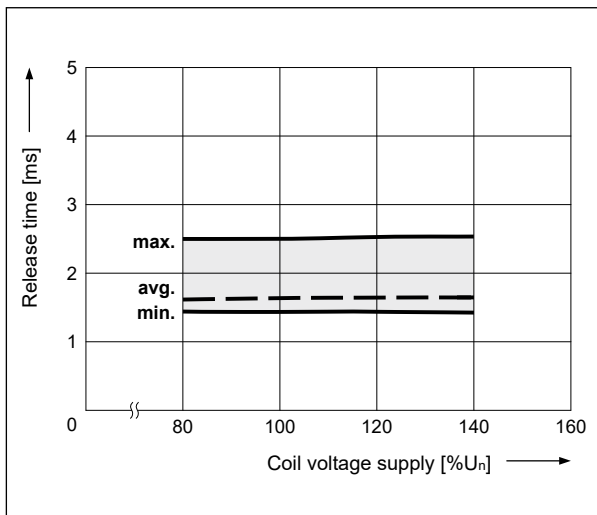
**Operating time**

**Fig. 2**

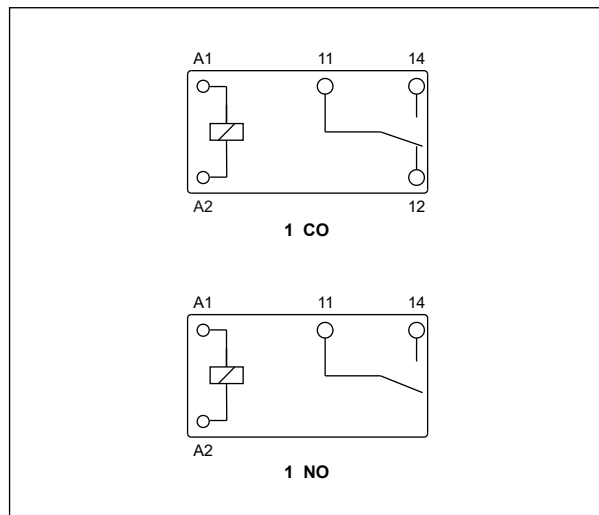


**Release time**

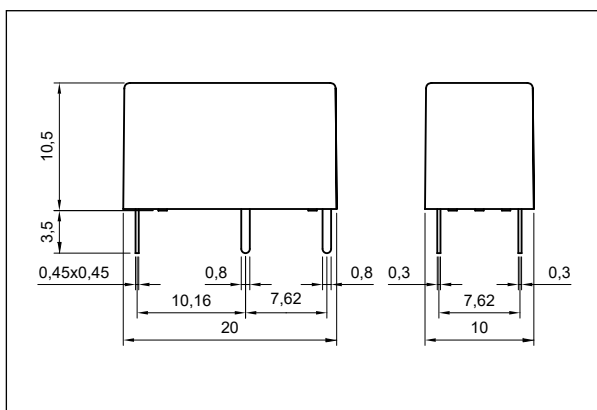
**Fig. 3**



**Connection diagrams (pin side view)**



**Dimensions**



**Mounting**

Relays **RM40** are designed for direct PCB mounting.

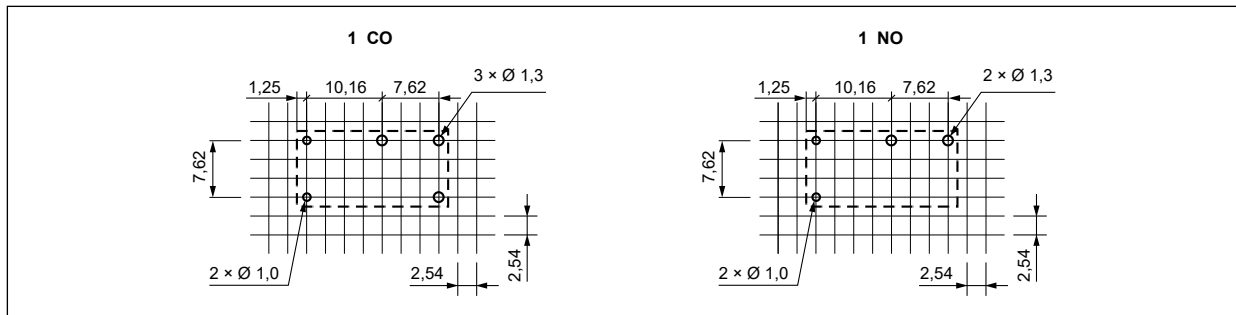
**PRECAUTIONS:**

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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### Pinout (solder side view)

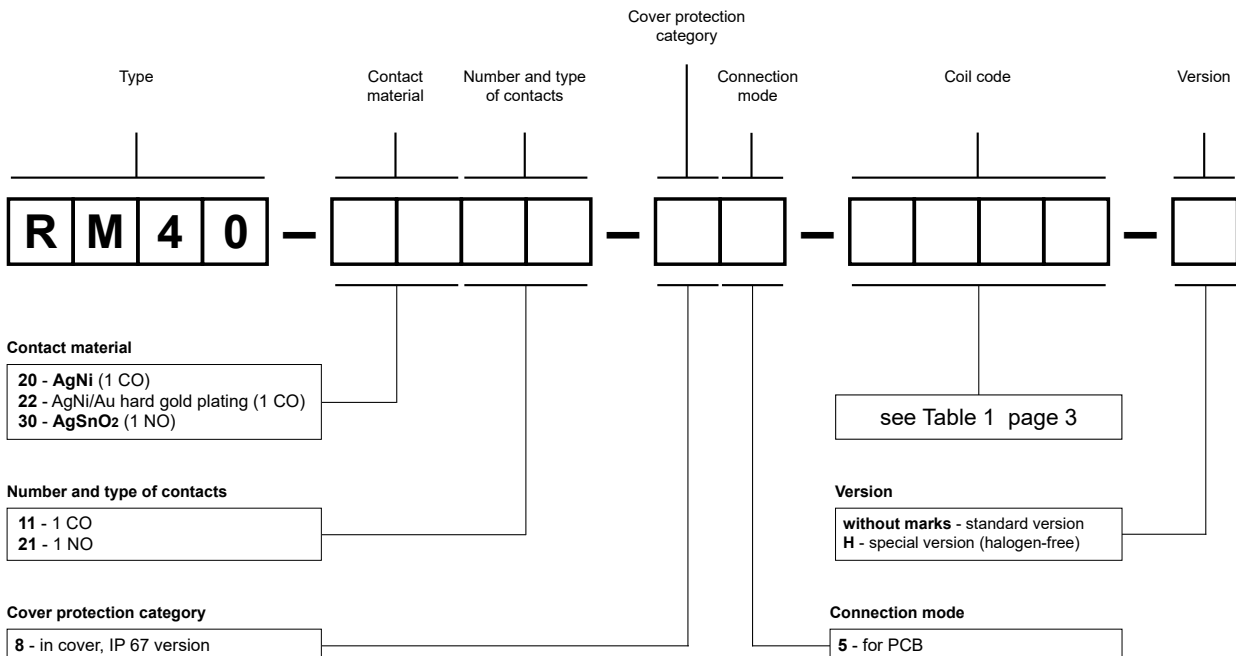


### Coil data - DC voltage version

Table 1

Coil code	Rated voltage V DC	Coil resistance at 20 °C Ω	Acceptable resistance	Coil operating range V DC	
				min. (at 20 °C)	max. (at 20 °C)
1003	3	45	± 10%	2,25	4,5
1005	5	125	± 10%	3,75	7,5
1006	6	180	± 10%	4,50	9,0
1009	9	405	± 10%	6,75	13,5
1012	12	720	± 10%	9,00	18,0
1024	24	2 880	± 10%	18,00	36,0
1048	48	11 520	± 10%	36,00	72,0

### Ordering codes



Examples of ordering codes:

**RM40-2011-85-1003** relay **RM40**, for PCB, one changeover contact, contact material AgNi, coil voltage 3 V DC, in cover IP 67, standard version

**RM40-3021-85-1024-H** relay **RM40**, for PCB, one normally open contact, contact material AgSnO<sub>2</sub>, coil voltage 24 V DC, in cover IP 67, special version (halogen-free)

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