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RM51

miniature relays



- DC coils - of up to 48 V DC, insulation class F: 155 °C
- For PCB
- Small dimensions
- High switching capacity
- Application: for household electrical appliance, automation systems, electronic equipment, instrument and meter, telecommunication devices, remote control facilities
- Recognitions, certifications, directives: RoHS,  ( pending)

Contact data

Number and type of contacts	1 CO, 1 NO		
Contact material	AgSnO₂		
Rated / max. switching voltage	AC	250 V / 277 V	
Min. switching voltage		5 V	
Rated load	AC1	1 CO: 10 A / 7 A (NO/NC) / 250 V AC 1 CO: 20 A / 20 A (NO/NC) / 125 V AC	1 NO: 10 A / 250 V AC 1 NO: 20 A / 125 V AC
	DC1	1 CO: 10 A / 7 A (NO/NC) / 30 V DC	1 NO: 10 A / 30 V DC
Min. switching current	15 mA		
Rated current	10 A		
Max. breaking capacity	AC1	3 000 VA	
	AC3	1 CO: 750 W / 375 W (NO/NC) 1 CO: 1,0 HP / 0,5 HP (NO/NC) UL 508 (single-phase motor)	1 NO: 750 W 1 NO: 1,0 HP UL 508 (single-phase motor)
Contact resistance	≤ 100 mΩ		

Coil data

Rated voltage	DC	5 ... 48 V
Must release voltage	DC: ≥ 0,05 U _n	
Operating range of supply voltage	see Table 1	
Rated power consumption	DC	0,36 W

Insulation according to PN-EN 60664-1

Rated surge voltage	4 000 V 1,2 / 50 μs	
Insulation resistance	250 MΩ 500 V DC, 60 s	
Dielectric strength	• between coil and contacts	2 500 V AC type of insulation: basic
	• contact clearance	1 000 V AC type of clearance: micro-disconnection
Contact - coil distance	• clearance	≥ 1,9 mm
	• creepage	≥ 1,9 mm

General data

Operating / release time (typical values)	15 ms / 10 ms		
Electrical life (number of cycles)			
• resistive AC1	1 800 cycles/hour	10 ⁵ 1 CO: 10 A / 7 A (NO/NC), 250 V AC	1 NO: 10 A, 250 V AC
• resistive DC1	1 800 cycles/hour	10 ⁵ 1 CO: 10 A / 7 A (NO/NC), 30 V DC	1 NO: 10 A, 30 V DC
Mechanical life	18 000 cycles/hour	10 ⁷	
Dimensions (L x W x H)	19,5 x 16 x 17,1 mm		
Weight	10 g		
Ambient temperature	• operating	-40...+85 °C	
Cover protection category	IP 64 PN-EN 60529		
Shock resistance	10 g		
Vibration resistance	1,0 mm DA (constant amplitude) 10...55 Hz		
Solder bath temperature	max. 235 °C		
Soldering time	max. 3 s		

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

RM51

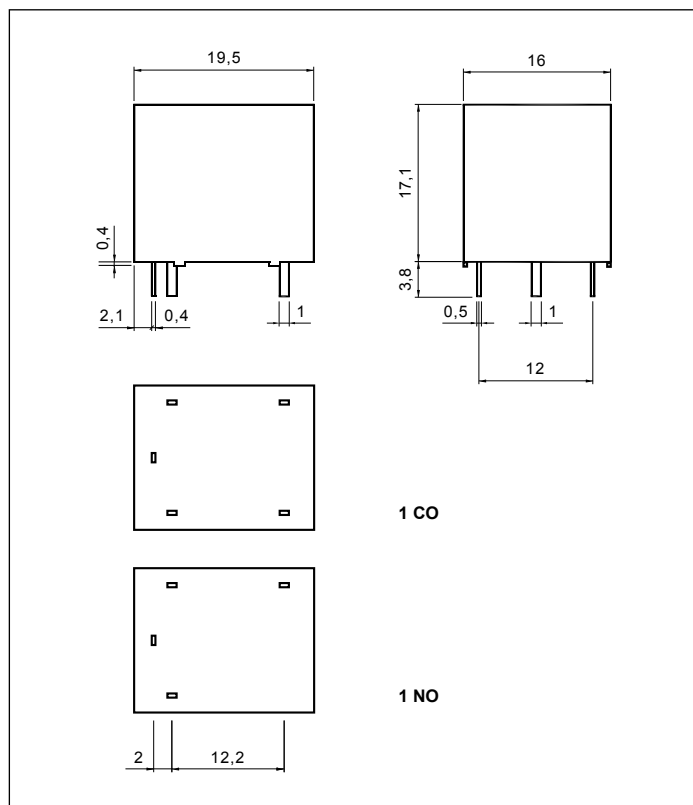
miniature relays

Coil data - DC voltage version

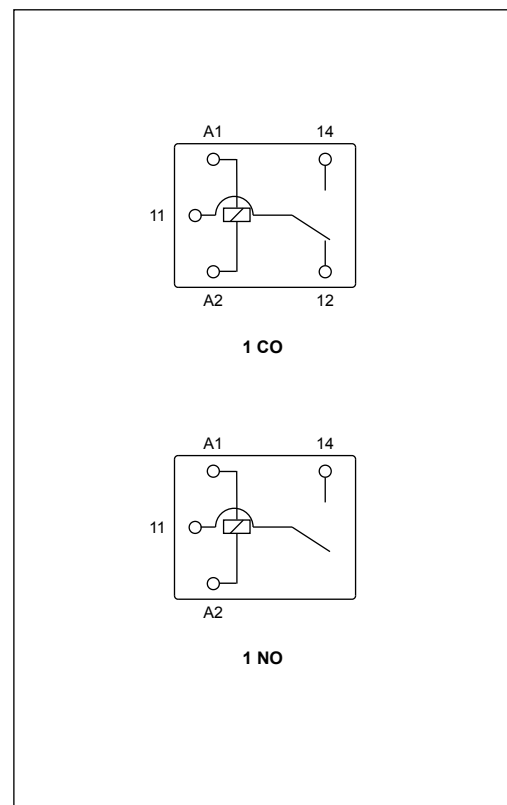
Table 1

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)
1005	5	69	$\pm 10\%$	3,75	6,5
1009	9	225	$\pm 10\%$	6,75	11,7
1012	12	400	$\pm 10\%$	9,00	15,6
1024	24	1 600	$\pm 10\%$	18,00	31,2
1048	48	6 400	$\pm 10\%$	36,00	62,4

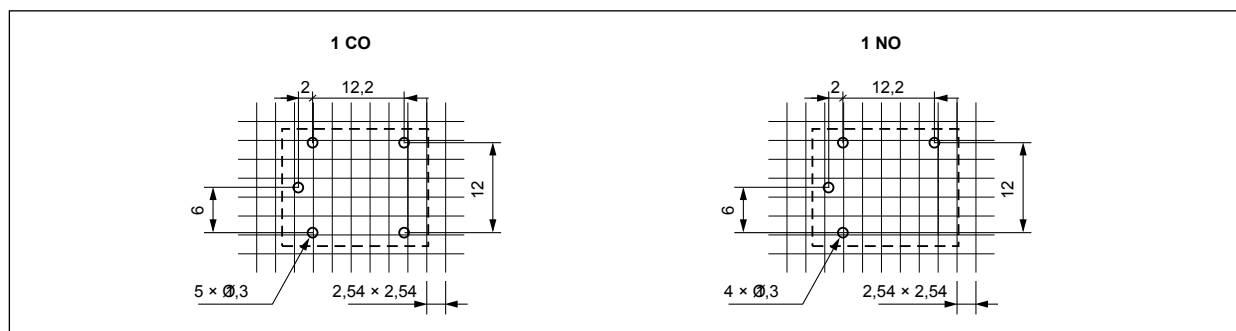
Dimensions



Connection diagrams (pin side view)



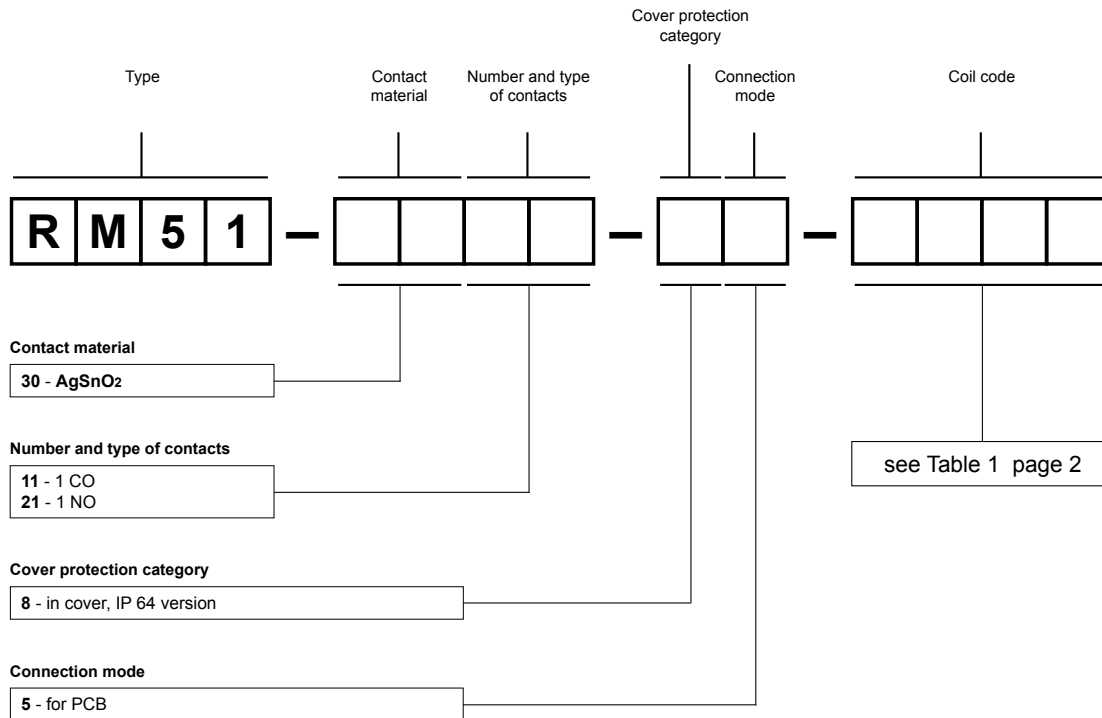
Pinout (solder side view)



Mounting

Relays **RM51** are designed for direct PCB mounting.

Ordering codes



Examples of ordering codes:

- RM51-3011-85-1012** relay **RM51**, for PCB, one changeover contact, contact material AgSnO₂, coil voltage 12 V DC, in cover IP 64
- RM51-3021-85-1048** relay **RM51**, for PCB, one normally open contact, contact material AgSnO₂, coil voltage 48 V DC, in cover IP 64

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.