

RM18B

miniature relays



- Low coil power consumption.
- Micro-miniature relay, standard PCB terminals.
- EX version – GLOW WIRE design suitable for use in systems using refrigerants such as R134
- IEC60335-1 compliant product is available.
- IEC60079-15 compliant product is available.
- Applications: Home appliances: air conditioner, heater, etc.; Vending machine; Office equipment: computer, fax machine, etc.; Electric controlled window, car antenna, door lock, etc.
- Recognitions, certifications, directives: RoHS, 

Contact data

Number and type of contacts		1 NO
Contact material		AgSnO ₂
Rated / max. switching voltage	AC	250 V AC/ 277 V AC
Min. switching voltage		6 V DC
Rated load (capacity)	AC1	10 A / 250 V AC
Motor load	• acc. to UL 508	FLA 5 A, LRA 7.5 A, 125 / 250 / 277 V AC, Definite Purpose, 0.4 Power Factor, 10 ⁵ cycles, 105 °C 1/3 Hp, 240 V AC, 3 × 10 ⁴ cycles, 105 °C
Min. switching current		6 V DC / 1 A
Max. make current		12 A
Rated current		10 A
Max. breaking capacity	AC1	3324 VA
Min. breaking capacity		6 W
Contact resistance		≤ 100 mΩ (at 1 A, 6 V DC)
Max. operating frequency:	• at rated load AC1 • no load	360 cycles/hour 18 000 cycles/hour

Coil data

Rated voltage	DC	5, 6, 9, 12, 24
Operating range of supply voltage		see Tables 1, 2
Rated power consumption		0,45 W (standard coil)/ 0,2 W (sensitive coil) – see table 1,2

Insulation according to EN 60664-1

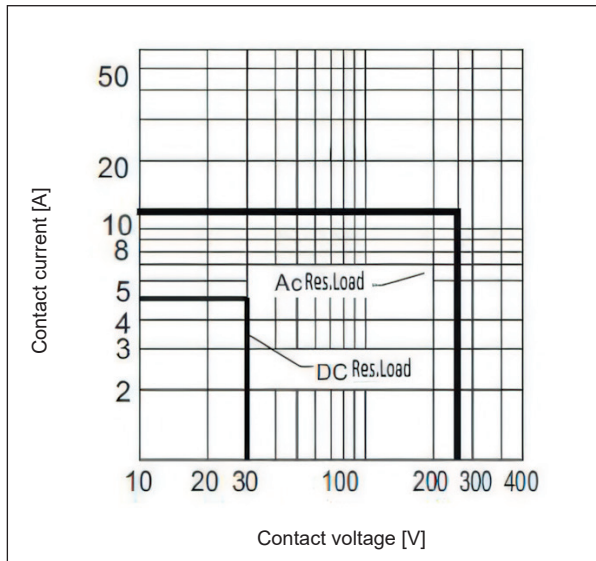
Insulation resistance		1000 MΩ Min(DC 500 V)
Rated surge voltage		10 kV 1,2 / 50 μs
Overvoltage category		II
Insulation pollution degree		2
Flammability class		UL 94 V-0
Dielectric strength	• between coil and contacts • between open contacts	4 000 V AC 1 000 V AC
Contact - coil distance	• clearance • creepage	≥ 8 mm ≥ 8 mm

General data

Max. Operate/release time (typical values)		10 ms / 5 ms
Electrical life	• resistive AC1 (number of cycles) • motor load acc. to UL 508	≥ 10 ⁵ cycles see above 10 A, 250 V AC, 23 °C
Mechanical life (cycles)		≥ 10 ⁷ Cycles
Dimensions (L × W × H) / Weight		18.2 × 10.2 × 15.5 / 5.7g
Ambient temperature (non-condensation and/or icing)	• storage • operating	-40... +85 °C -40... +105 °C
Cover protection category		RT II / RT III
Environmental protection		RT II / RT III
Shock resistance		Functional: 10G
Vibration resistance (NO)		10~55Hz, at double amplitude of 1.5 mm
Solder bath temperature / Soldering time		max. 270 °C / max. 5 s

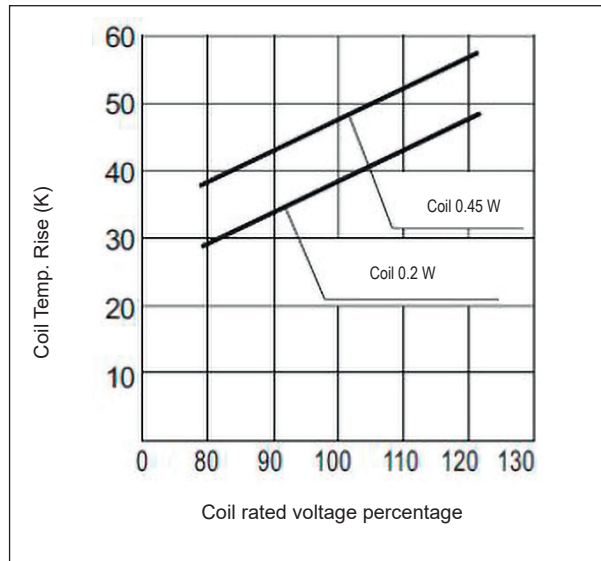
Max. Switching Power

Fig. 1



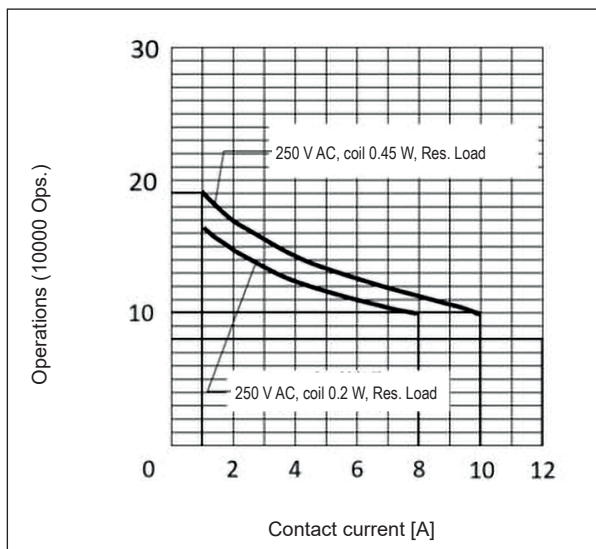
Coil Temp. Rise

Fig. 2



Endurance Curve

Fig. 3

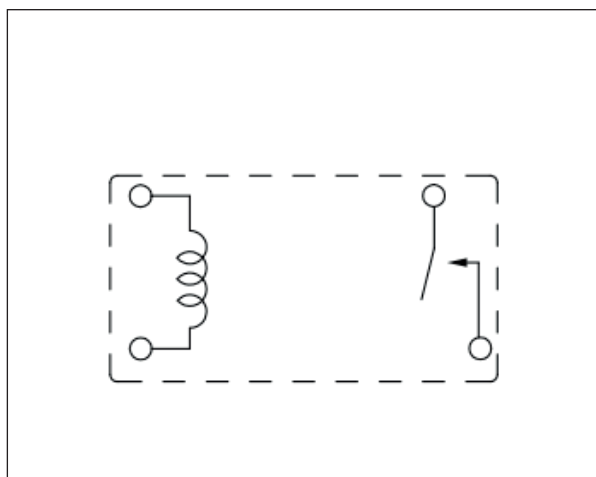


Note:

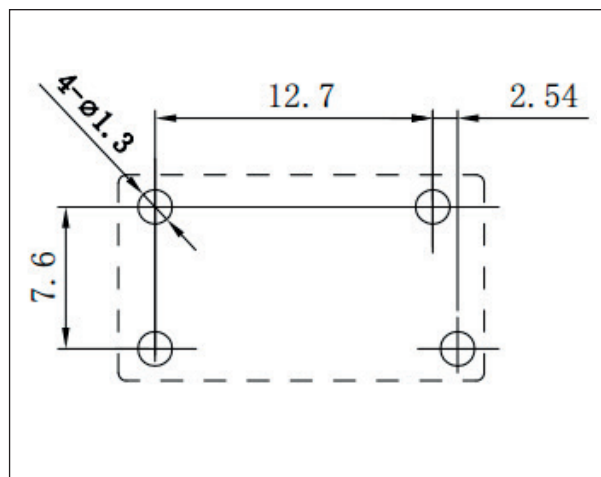
(1) Test conditions: room temperature, flux-proof product, resistive load, 1s on, 9s off.

(2) The above curves are for reference only, and the final result is subject to the experiment.

Connection diagrams (bottom)



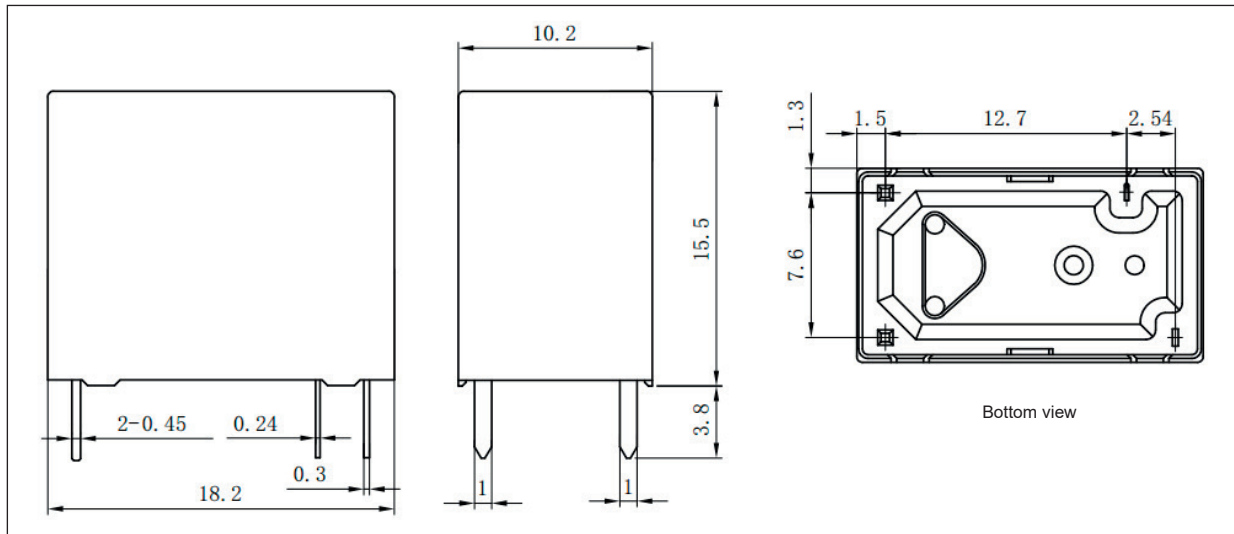
PCB Layouts (bottom view)



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Dimension



Note:

1. The dimension of pin is the size before tinning
2. Tolerance of PCB layout: ± 0.1 m.

Coil data – DC voltage version, standard

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 (20 °C)
1005	5	55	$\pm 10\%$	3,75	5,5
1006	6	80	$\pm 10\%$	4,5	6,6
1009	9	180	$\pm 10\%$	6,75	9,9
1012	12	320	$\pm 10\%$	9,0	13,2
1024	24	1280	$\pm 10\%$	18,0	26,4

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

Coil data – DC voltage version, sensitive

Table 2

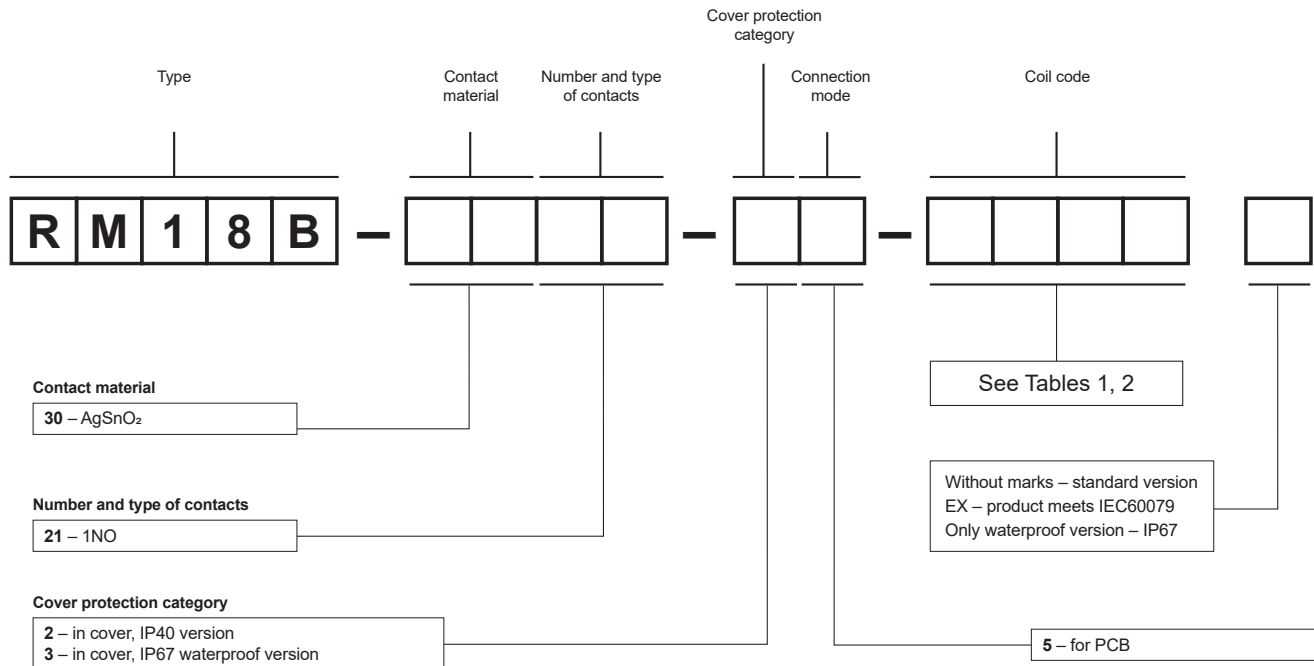
Coil code	Rated voltage V DC	Coil resistance at 20 °C Ω	Acceptable resistance	Coil operating range V DC	
				min. (at 20 °C)	max (20 °C)
S005	5	125	$\pm 10\%$	3,75	5,5
S006	6	180	$\pm 10\%$	4,5	6,6
S009	9	405	$\pm 10\%$	6,75	9,9
S012	12	720	$\pm 10\%$	9,0	13,2
S024	24	2880	$\pm 10\%$	18,0	26,4

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

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Ordering codes



Examples of ordering code:

RM18B-3021-25-1012

relay **RM18B**, contact material AgSnO₂, one normally open contact, in cover, IP40 version, for PCB, standard coil voltage 12 V DC

RM18B-3021-35-1024-EX

relay **RM18B**, contact material AgSnO₂, one normally open contact, in cover, IP67 waterproof version, for PCB, standard coil voltage 24 V DC, EX version

RM18B-3021-35-S024

relay **RM18B**, contact material AgSnO₂, one normally open contact, in cover, IP67 waterproof version, for PCB, sensitive coil voltage 24 V DC,

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.