

RM40 and RM50

Miniature Electromagnetic Relays

RM40



- Very small dimensions
- High switching capacity up to 5 A or 8 A
- Cover with enhanced sealing protects the relay in course of soldering and cleaning
- Applications: for household equipment, office machines, control devices, alarm systems, in industrial control, industrial controllers
- Recognitions, certifications, directives: RoHS



E105728

RM50



- Small dimensions
- Switching current up to 10 A / 15 A
- The plastics applied provide for the operation of the relays at high temperature and in chemical environment
- Sealed, for soldering
- Applications: for household equipment, office machines, audio equipment, coffee machines, control devices, etc.
- Recognitions, certifications, directives: RoHS



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RM40

RM50

Contact Data

No. and type of contacts	SPDT	SPST (1N0)	SPDT, SPST (1N0)
Contact material	AgNi	AgSnO ₂	AgSnO ₂
Rated / max. switching voltage AC	250 V / 380 V	250 V / 440 V	240 V / 277 V
Min. switching voltage	5 V AgNi	5 V AgSnO ₂	5 V
Rated load AC1	5 A / 250 V AC	8 A / 250 V AC	10 A / 240 V AC
DC1	5 A / 30 V DC	8 A / 30 V DC	15 A / 24 V DC
Min. switching current	10 mA AgNi	10 mA AgSnO ₂	15 mA
Rated current	5 A	8 A	12 A
Max. breaking capacity AC1	1250 VA	2000 VA	3000 VA
Min. breaking capacity	50 mW AgNi	50 mW AgSnO ₂	0.75 W
Contact resistance	≤ 100 mΩ	≤ 100 mΩ	≤ 100 mΩ

Coil Data

Rated voltage DC	3 ... 48 V	3 ... 48 V	3 ... 48 V
Must release voltage	DC: ≥ 0.05 U _N	DC: ≥ 0.05 U _N	DC: ≥ 0.05 U _N
Operating range of supply voltage	see page 75	see page 75	see page 75
Rated power consumption DC	0.20 W	0.20 W	0.36 W 3 ... 24 V; 0.45 W 48 V

Insulation

Dielectric strength	4000 V AC type of insulation: reinforced	4000 V AC type of insulation: reinforced	1000 V AC type of insulation: basic
• between coil and contacts	1000 V AC type of clearance: micro-disconnection	1000 V AC type of clearance: micro-disconnection	500 V AC type of clearance: micro-disconnection
• contact clearance			
Contact - coil distance			
• clearance	≥ 5 mm	≥ 5 mm	≥ 1.9 mm
• creepage	≥ 5 mm	≥ 5 mm	≥ 1.9 mm

General Data

Operating / release time (typical values)	8 ms / 4 ms	8 ms / 4 ms	10 ms / 5 ms
Electrical life (number of cycles)			
• resistive AC1 360 cycles/hour	> 10 ⁵ ; 5 A, 250 V AC	> 10 ⁵ ; 8 A, 250 V AC	—
• resistive AC1 1 200 cycles/hour	—	—	> 10 ⁵ ; 7 A, 250 V AC
• resistive AC1 1 200 cycles/hour	—	—	> 3 x 10 ⁴ ; 12 A, 250 V AC
• resistive DC1 1 200 cycles/hour	—	—	> 5 x 10 ⁴ ; 15 A, 24 V DC
• resistive DC1 1 800 cycles/hour	> 10 ⁵ ; 5 A, 30 V DC	> 10 ⁵ ; 8 A, 30 V DC	—
Mechanical life 18 000 cycles/hour	> 10 ⁷	> 10 ⁷	> 10 ⁷
Dimensions (L x W x H)	20 x 10 x 10.5 mm	20 x 10 x 10.5 mm	19 x 15.4 x 15.5 mm
Weight	6 g	6 g	11 g
Ambient temperature			
• operating	-40...+85 °C	-40...+85 °C	-30...+55 °C
Cover protection category	IP 64 PN-EN 60529	IP 64 PN-EN 60529	IP 64 PN-EN 60529
Shock resistance	10 g	10 g	10 g
Vibration resistance	1.5 mm DA (constant amplitude) 10...55 Hz	1.5 mm DA (constant amplitude) 10...55 Hz	1.5 mm DA (constant amplitude) 10...55 Hz
Solder bath temperature	max. 235 °C	max. 235 °C	max. 235 °C
Soldering time	max. 3.5 s	max. 3.5 s	max. 3.5 s

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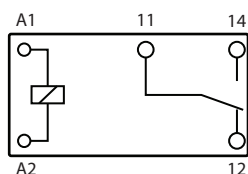
Miniature Electromagnetic Relays



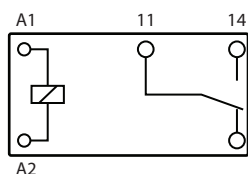
RM40



CONNECTION DIAGRAM

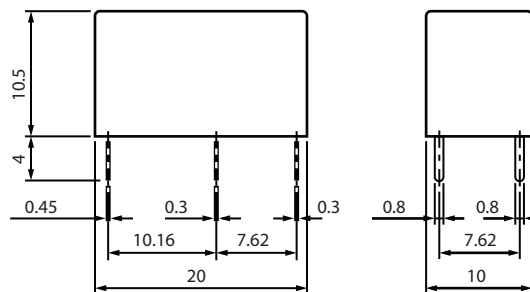


SPDT



SPST (1NO)

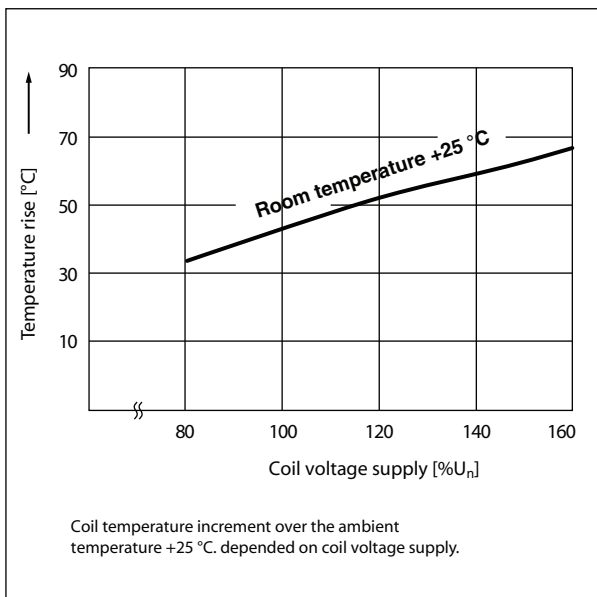
DIMENSIONS



LOAD CHARTS

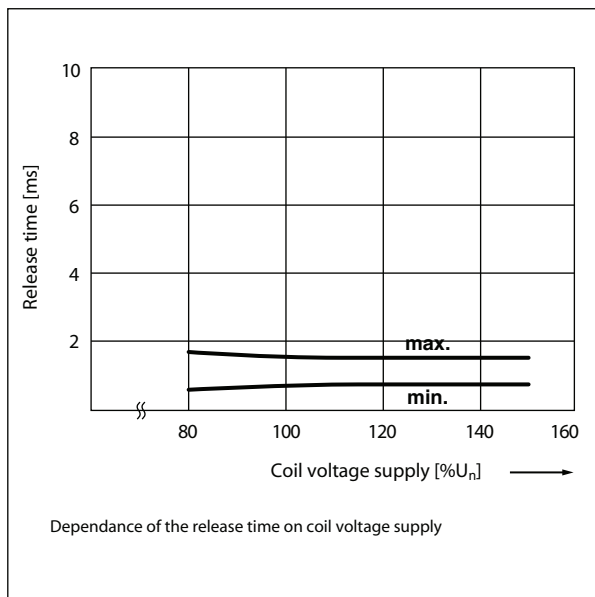
Coil temperature rise

Fig. 1



Release time

Fig. 2



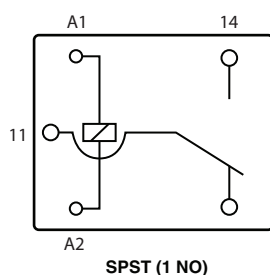
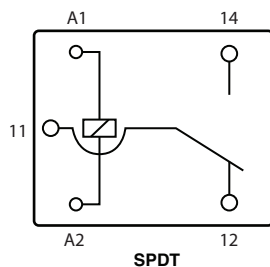
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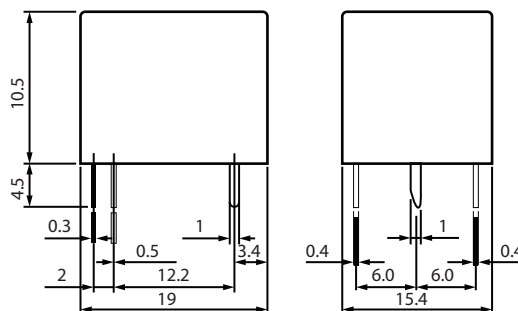
RM50



CONNECTION DIAGRAM



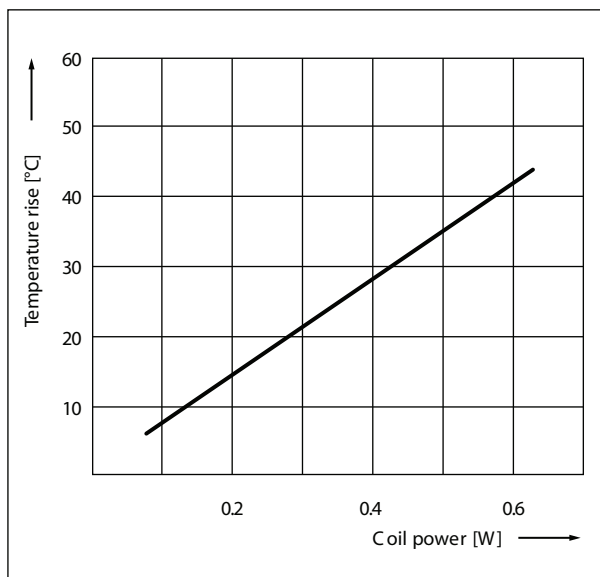
DIMENSIONS



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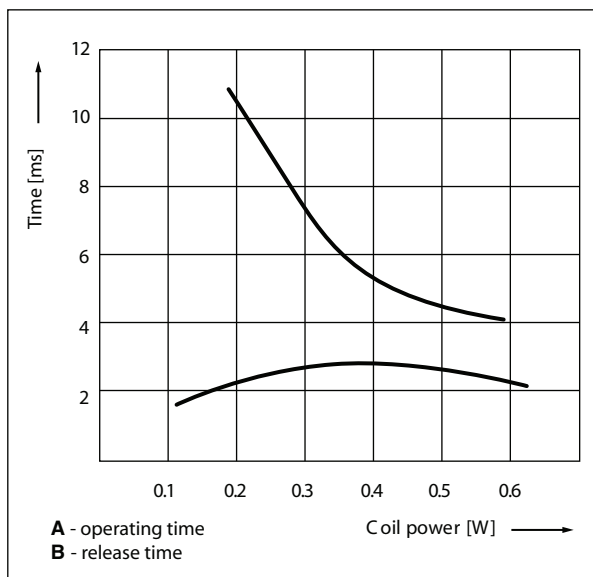
Coil temperature rise

Fig. 1



Operating / release time

Fig. 2



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Miniature Electromagnetic Relays



R40 SPDT DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range	
				min. (at 20°C)	max. (at 55°C)
RM40-2011-85-1003	3	DC	45	2.25	4.50
RM40-2011-85-1005	5	DC	125	3.75	7.50
RM40-2011-85-1006	6	DC	180	4.50	9.00
RM40-2011-85-1009	9	DC	405	6.75	13.50
RM40-2011-85-1012	12	DC	720	9.00	18.00
RM40-2011-85-1024	24	DC	2880	18.00	36.00
RM40-2011-85-1048	48	DC	11520	36.00	72.00

R40 SPST(1NO) DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range	
				min. (at 20°C)	max. (at 55°C)
RM40-3021-85-1003	3	DC	45	2.25	4.50
RM40-3021-85-1005	5	DC	125	3.75	7.50
RM40-3021-85-1006	6	DC	180	4.50	9.00
RM40-3021-85-1009	9	DC	405	6.75	13.50
RM40-3021-85-1012	12	DC	720	9.00	18.00
RM40-3021-85-1024	24	DC	2880	18.00	36.00
RM40-3021-85-1048	48	DC	11520	36.00	72.00

R50 SPDT DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range	
				min. (at 20°C)	max. (at 55°C)
RM50-3011-85-1003	3	DC	25	2.25	3.90
RM50-3011-85-1005	5	DC	70	3.75	6.50
RM50-3011-85-1006	6	DC	100	4.50	7.80
RM50-3011-85-1009	9	DC	225	6.75	11.70
RM50-3011-85-1012	12	DC	400	9.00	15.60
RM50-3011-85-1018	18	DC	900	13.50	23.40
RM50-3011-85-1024	24	DC	1600	18.00	31.20
RM50-3011-85-1048	48	DC	6400	38.40	62.40

R50 SPST(1NO) DC coil

Part Number	Coil Voltage (V)	Coil Type	Coil resistance at 20 °C in Ω	Coil operating range	
				min. (at 20°C)	max. (at 55°C)
RM50-3021-85-1003	3	DC	25	2.25	3.90
RM50-3021-85-1005	5	DC	70	3.75	6.50
RM50-3021-85-1006	6	DC	100	4.50	7.80
RM50-3021-85-1009	9	DC	225	6.75	11.70
RM50-3021-85-1012	12	DC	400	9.00	15.60
RM50-3021-85-1018	18	DC	900	13.50	23.40
RM50-3021-85-1024	24	DC	1600	18.00	31.20
RM50-3021-85-1048	48	DC	6400	38.40	62.40

Mouser Electronics

Authorized Distributor

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[RM50-3011-85-1024](#) [RM40-2011-85-1005](#)