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

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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 (1NO)**	**SPDT, SPST (1NO)**
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 AgSnO2	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 AgSnO2	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 AgSnO2	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				
• between coil and contacts		4000 V AC type of insulation: reinforced	4000 V AC type of insulation: reinforced	1000 V AC type of insulation: basic
• contact clearance		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 - 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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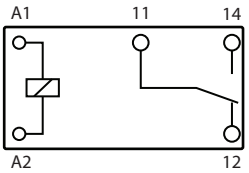
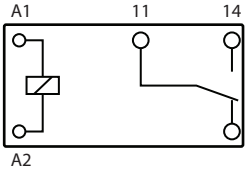
CONNECTION DIAGRAM

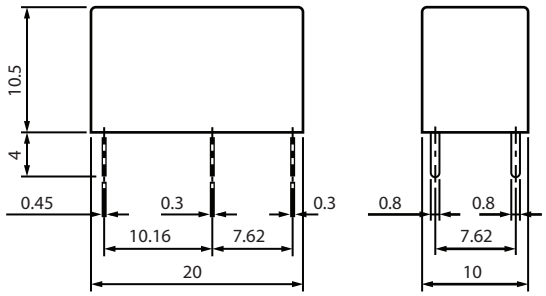


SPDT



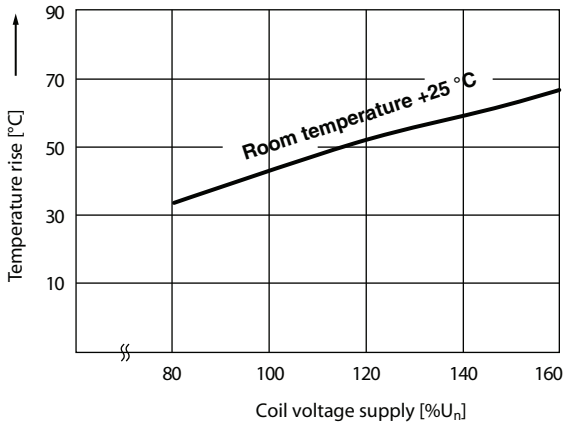
SPST (1NO)

DIMENSIONS



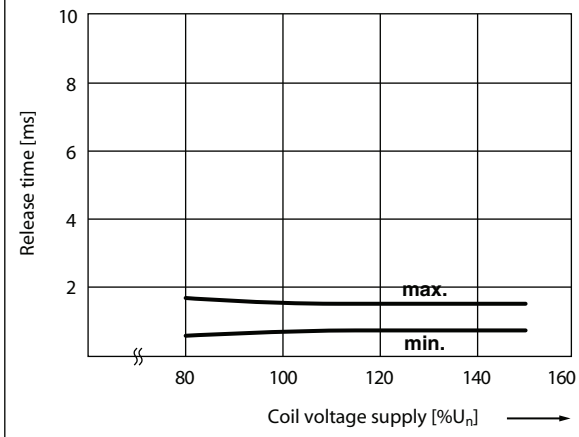
LOAD CHARTS

Coil temperature rise Fig. 1



Coil temperature increment over the ambient temperature +25 °C. depended on coil voltage supply.

Release time Fig. 2



Dependance of the release time on coil voltage supply

RM50

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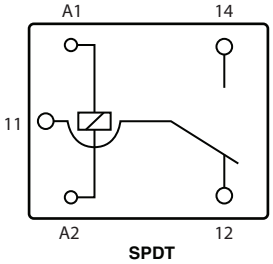
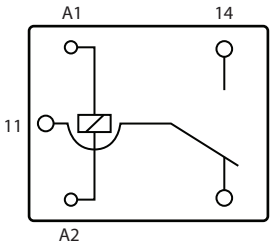
CONNECTION DIAGRAM

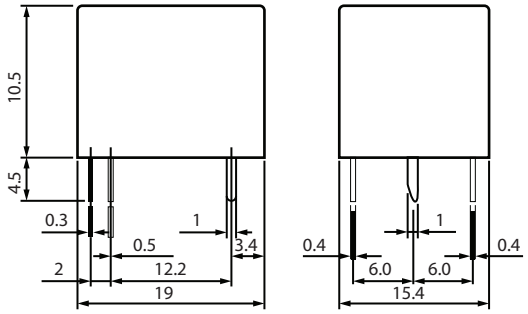


SPDT



SPST (1 NO)

DIMENSIONS



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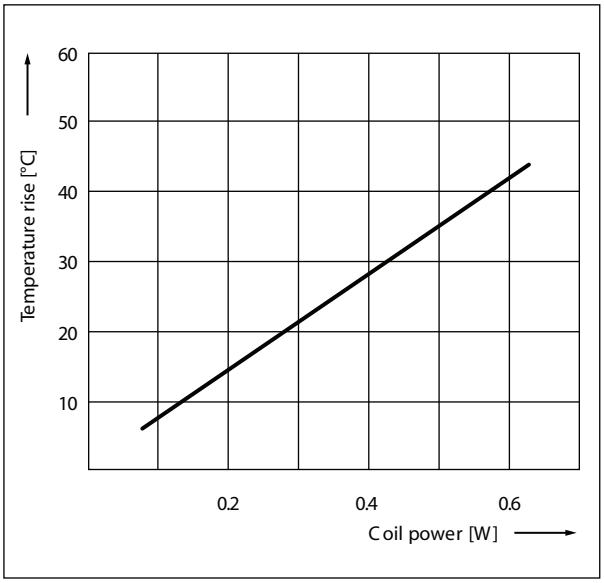
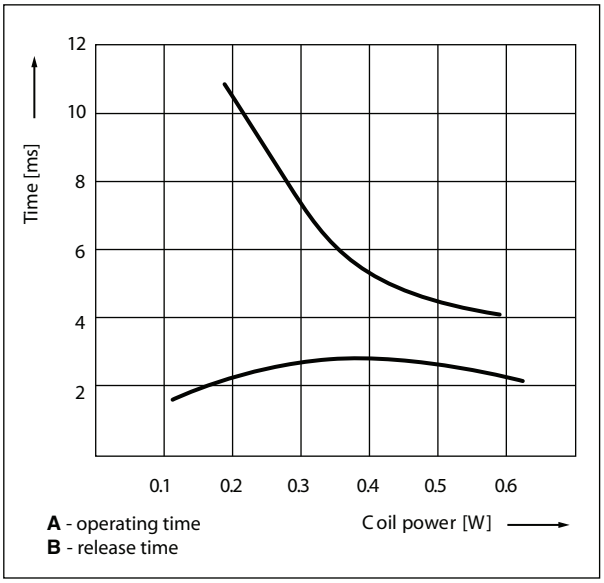
Coil temperature rise Fig. 1



Operating / release time Fig. 2



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)	Coil operating range 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)	Coil operating range 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)	Coil operating range 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)	Coil operating range 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