

INDUSTRIAL RELAYS

Industrial Electromagnetic Relays

Industrial electromagnetic relays are used mainly in industrial and power automation applications, in signaling controls, safety and protection systems and control and electric drives systems.



Features:

- DPDT, 3PDT and 4PDT contact configuration
- DC Coil voltages from 5VDC to 220V DC
- AC coil voltages from 6VAC to 240V AC 50/60 Hz
- Din Rail Plug in Socket are standard
- Rated load current: 5A/250V AC to 16A/250V AC rating
5A/24V DC to 16A/24VDC DC1 rating
- Test button with (K) or without block function (W)
- Built in LED light indicator (L)
- Surge suppression element with diode (D) or varistor (V)
- Approved for railroad applications (DE)
- Silver Nickel (AgNi) cadmium free contact material
- UL and CSA recognized relays
- ROHS2 and REACH compliance

Miniature Electromagnetic Relays

Miniature electromagnetic relays are used in many interface applications, standard automation projects, lighting control systems, emergency lighting applications, building application projects, food processing equipment control and many other electrical system applications.



Features:

- Standard SPDT, DPDT contact configuration
- DC Coil voltages from 3VDC to 110V DC
- AC coil voltages from 12VAC to 240V AC 50/60 Hz
- PCB mounting with socket or direct PCB solder
- Din Rail Plug in Socket are standard
- Rated load current: 8A/250V AC (DPDT) or 16A/250V AC (SPDT) rating;
8A/24V DC (DPDT) or 16A/24VDC (SPDT) DC1 rating
- Silver Nickel (AgNi) cadmium free contact material
- UL and CSA recognized relays
- ROHS2 and REACH compliance

Slimline Interface Relays

Slimline interface relays are used for PLC system and industrial automation applications, panel builders, machinery builders, time relays, office equipment and other applications that require a high switching capability in a small space.



Features:

- Standard SPDT contact configuration
- Standard 5 mm width
- DC Coil voltages from 5VDC to 60V DC
- Vertical or Horizontal configuration
- Sealed for Soldering and cleaning
- Can be used with Din rail socket or PCB mountable
- Rated load current
- 6A / 250V AC or 0.05A / 30V AC gold plated) rating
- 6A / 24V DC or 0.05A / 36V DC gold plated) rating
- 4A max for Solid state relays
- Silver Tin Oxide (AgSnO₂) cadmium free contact material
- Gold plated contact (AgSnO₂/Au 3μm) available
- UL recognized
- ROHS2 and REACH compliance

Subminiature Electromagnetic and Solid State Modules

Subminiature electromagnetic relays are used for PLC systems and industrial automation applications, panel builders, equipment builders and other applications that require a high switching capability in a small space. The Altech slim line interface relays can be used as a universal interface between the controller and the actuator to switch loads between 1 mA and 6A. They are available with electromechanical contacts or solid state configuration. Installation time is greatly reduced when a pre-assembled relays and sockets combination is used. Replacement relays and sockets are available from stock. Additional accessories include colored coded jumpers, spacers and markers (unmarked or marked based on the customer specification) for identification purposes.



Features:

- Standard SPDT contact configuration
- Space-saving 6.2 mm width
- Only 85 mm in height from DIN rail
- DC Coil voltages from 5VDC to 110V DC
- AC coil voltages from 6VAC to 240V AC 50/60 Hz
- Pre-assembled relay and DIN mount socket
- Screw clamp or Spring clamp terminals
- Universal AC/DC socket with built-in surge suppression and green LED
- Rated load current
- 6A / 250V AC or 0.05A / 30V AC gold plated) rating
- 6A / 24V DC or 0.05A / 36V DC gold plated) rating
- 4A max for Solid state relays
- Silver Tin Oxide (AgSnO₂) cadmium free contact material
- Gold plated contact (AgSnO₂/Au 3μm) available
- UL recognized
- ROHS2 and REACH compliance

Relays for Photovoltaic Systems

The Altech photovoltaic relays are suitable to be integrated in the solar converter to switch the DC voltage and current generated by the solar panels supplying the generated electricity to the electrical network. This requires an interface between the solar converter and the power grid. The circuit isolation gap between the converter and the power grid must have a contact gap of $\geq 1.5\text{mm}$ (according to safety standard DIN VDE 0126-1-1). Altech offers two different relays to meet this requirement.



Features:

- Standard DPST (2 NO) contact configuration
- DC Coil voltages from 5VDC to 110V DC
- Rated load current
- 35A / 250V AC or 48A / 250V AC
- 35A / 24V DC or 48A / 24V DC
- Contact gap $>1.75\text{ mm}$; Holding power 1W
- Silver Tin Oxide (AgSnO₂) cadmium free contact material
- Compact size, PCB mounting
- UL recognized
- ROHS2 and REACH compliance

MOUNTING OPTIONS					COIL			TYPE OF RELAY	NUMBER AND TYPE OF CONTACTS							RATED CURRENT [A]							
Direct PCB mounting	With plug-in socket PCB mounting	Panel mounting	35 mm rail mount acc. To PN-EN 60715	Others	AC	DC	AC/DC		SPDT	SPST(1NO)	SPST(1NC)	DPDT	DPST(2NO)	DPST(2NC)	3PDT	3PST(3NO)	4PDT	5	10	15	20	25	30

Industrial Electromagnetic Relays

					AC	DC	AC/DC	R2										12					
					AC	DC	AC/DC	R3										10					
					AC	DC	AC/DC	R4										6					
					AC	DC	AC/DC	RY2										12					
					AC	DC	AC/DC	R2M										5					
					AC	DC	AC/DC	RUC										16					
					AC	DC	AC/DC	R15 - DPDT										10					
					AC	DC	AC/DC	R15 - 3PDT										10					
					AC	DC	AC/DC	R15 - 4PDT										10					

Miniature Electromagnetic Relays

					AC	DC	AC/DC	RM40										5/8*					
					AC	DC	AC/DC	RM50										12					
					AC	DC	AC/DC	RM84										9					
					AC	DC	AC/DC	RM85										16					
					AC	DC	AC/DC	RM87										12					

Slimline Interface Relays

					AC	DC	AC/DC	RM699B										6					
					AC	DC	AC/DC	RSR30-...-D1-24-010-1										1					
					AC	DC	AC/DC	RSR30-...-A1-24-020-1										2					
					AC	DC	AC/DC	RSR30-...-D1-04-025-1										2.5					
					AC	DC	AC/DC	RSR30-...-D1-02-040-1										4					

Subminiature Electromagnetic and Solid State Modules

					AC	DC	AC/DC	PI6-1P										6					
					AC	DC	AC/DC	PI6-1T										1					
					AC	DC	AC/DC	PI6-1OC										1					
					AC	DC	AC/DC	PIR6W-1PS-...										max 6 ***					
					AC	DC	AC/DC	PIR6WB-1PS-...**										max 6 ***					

Relay Socket Combinations

					AC	DC	AC/DC	PI84 with socket GZT80										8					
					AC	DC	AC/DC	PI85 with socket GZT80										16					
					AC	DC	AC/DC	PI84 with socket GZM80										8					
					AC	DC	AC/DC	PI85 with socket GZM80										16					
					AC	DC	AC/DC	PIR2 with socket GZM2										12					
					AC	DC	AC/DC	PIR3 with socket GZM3										10					
					AC	DC	AC/DC	PIR4 with socket GZM4										6					
					AC	DC	AC/DC	PIR2M with socket GZ2										5					

* SPDT 5 A; SPST (1NO) 8A. **spring clamp socket. *** for more information see data sheet.

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



E105728

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 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

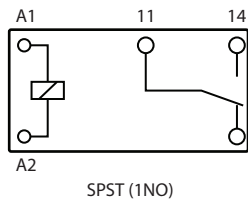
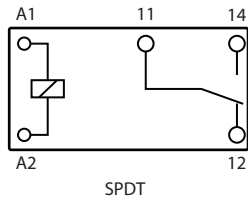
RM40 and RM50

Miniature Electromagnetic Relays

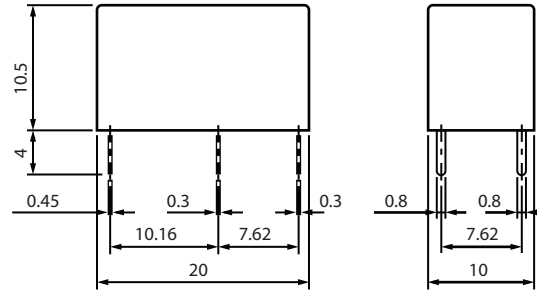
RM40



CONNECTION DIAGRAM



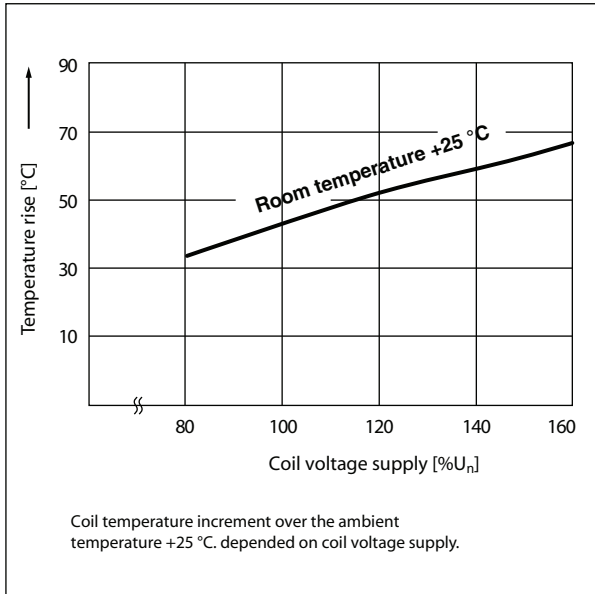
DIMENSIONS



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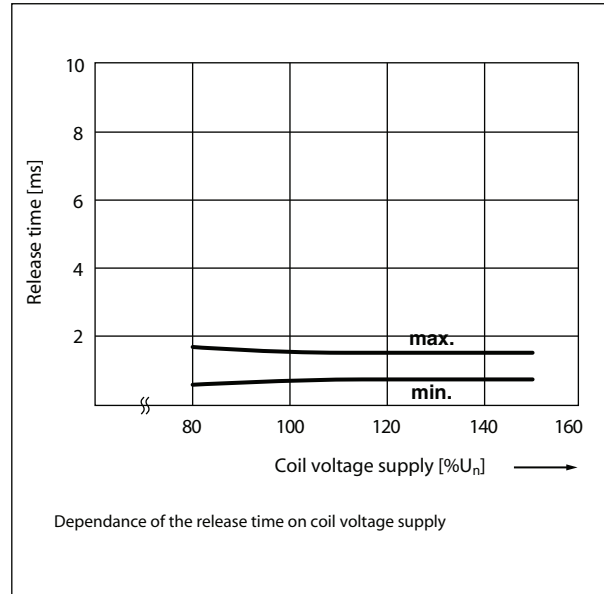
Coil temperature rise

Fig. 1



Release time

Fig. 2



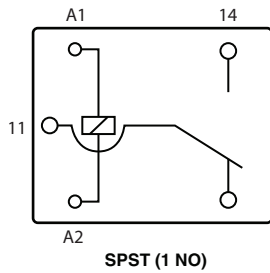
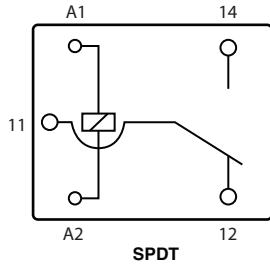
RM40 and RM50

Miniature Electromagnetic Relays

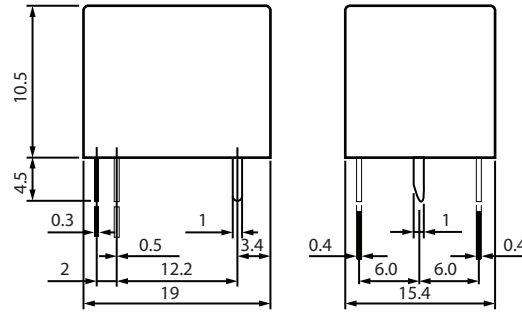
RM50



CONNECTION DIAGRAM



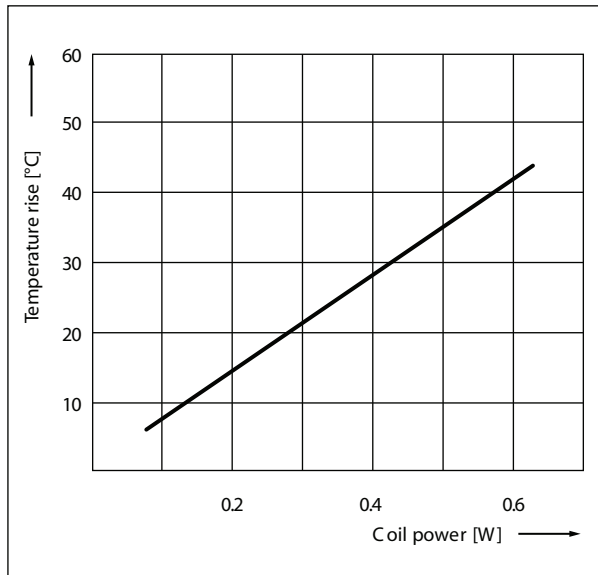
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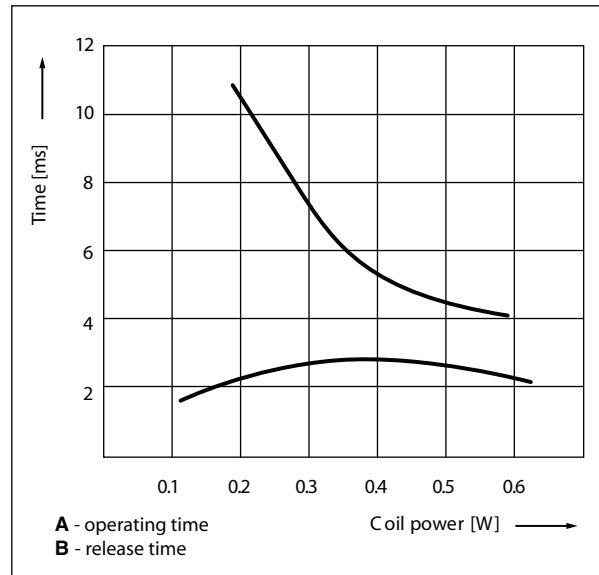
Coil temperature rise

Fig. 1



Operating / release time

Fig. 2



RM40 and RM50

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

RM84 / RM85 / RM87

Miniature Electromagnetic Relays



- Miniature dimensions
- 5000 V / 10 mm reinforced insulation
- Available special versions with the increased dielectric strength of the contact clearance
- IP67 flux proof, water proof and sealed cover protection (For IP40 unsealed, contact Altech)
- Cadmium - free contacts
- For PCB and plug-in sockets

Contact Data		RM84	RM85	RM87
No. and type of contacts		DPDT, DPST (2NO)	SPDT, SPST (1NO)	SPDT, SPST (1NO)
Contact material		AgNi	AgNi	AgNi
Rated / max. switching voltage	AC	250 V / 440 V	250 V / 440 V	250 V / 440 V
Min. switching voltage		5 V	5 V	5 V
Rated load (capacity)		8 A / 250 V AC	16 A / 250 V AC	12 A / 250 V AC
	AC15	3 A / 120 V; 1.5 A / 240 V (B300)	3 A / 120 V; 1.5 A / 240 V (B300)	3 A / 120 V; 1.5 A / 240 V (B300)
	AC3	550 W (single-phase motor)	750 W (single-phase motor)	750 W (single-phase motor)
	DC1	8 A / 24 V DC (see Fig. 3.1)	16 A / 24 V DC (see Fig. 3.2)	12 A / 24 V DC (see Fig. 3.3)
	DC13	0.22 A / 120 V; 0.1 A / 250 V (R300)	0.22 A / 120 V; 0.1 A / 250 V (R300)	0.22 A / 120 V; 0.1 A / 250 V (R300)
Min. switching current		5 mA	5 mA	5 mA
Max. inrush current		12 A	24 A	18 A
Rated current		8 A	16 A	12 A
Max. breaking capacity	AC1	2 000 VA	4 000 VA	3 000 VA
Min. breaking capacity		0.3 W	0.3 W	0.3 W
Contact resistance		≤ 100 mΩ	≤ 100 mΩ	≤ 100 mΩ
Max. operating frequency		600 cycles/hour	600 cycles/hour	600 cycles/hour
	• at rated load	72000 cycles/hour	72000 cycles/hour	72000 cycles/hour
	• no load			
Coil Data				
Rated voltage	50/60 Hz AC	12 ... 240 V	12 ... 240 V	12 ... 240 V
	DC	3 ... 110 V	3 ... 110 V	3 ... 110 V
Must release voltage		AC: ≥ 0.15 U _N ; DC: ≥ 0.1 U _N	AC: ≥ 0.15 U _N ; DC: ≥ 0.1 U _N	AC: ≥ 0.15 U _N ; DC: ≥ 0.1 U _N
Operating range of supply voltage		see page 80 and Fig. 4.1. 5.1	see page 80 and Fig. 4.2. 5.2	see page 80 and Fig. 4.3. 5.3
Rated power consumption	AC	0.75 VA	0.75 VA	0.75 VA
	DC	0.4 ... 0.48 W	0.4 ... 0.48 W	0.4 ... 0.48 W
Insulation				
Insulation rated voltage		400 V AC	400 V AC	400 V AC
Rated surge voltage		4000 V 1.2 / 50 μs	4000 V 1.2 / 50 μs	4000 V 1.2 / 50 μs
Overvoltage category		III	III	III
Insulation pollution degree		3	3	3
Dielectric strength		5000 V AC type of insulation: reinforced	5000 V AC type of insulation: reinforced	5000 V AC type of insulation: reinforced
	• between coil and contacts	1000 V AC type of clearance: micro-disconnection	1000 V AC type of clearance: micro-disconnection	1000 V AC type of clearance: micro-disconnection
	• contact clearance	2000 V AC contacts DPST (2NO). type of clearance: full-disconnect	2000 V AC contacts DPST (2NO). type of clearance: full-disconnect	2000 V AC contacts SPST (1NO). type of clearance: full-disconnect
	• pole - pole	2500 V AC type of insulation: basic	-	-
Contact - coil distance		≥ 10 mm	≥ 10 mm	≥ 10 mm
	• clearance	≥ 10 mm	≥ 10 mm	≥ 10 mm
	• creepage			
General data				
Operating / release time (typical values)		7 ms / 3 ms	7 ms / 3 ms	7 ms / 3 ms
Electrical life				
	• resistive	> 10 ⁶ ; 8 A. 250 V AC	> 0.7 x 10 ⁶ ; 16 A. 250 V AC	> 10 ⁶ ; 12 A. 250 V AC
	• cosφ	see Fig. 2.1	see Fig. 2.2	see Fig. 2.3
	• DC L/R=40 ms	> 10 ⁶ ; 0.15 A. 220 V DC	> 10 ⁶ ; 0.15 A. 220 V DC	> 10 ⁶ ; 0.15 A. 220 V DC
Mechanical life (cycles)		> 3 x 10 ⁷	> 3 x 10 ⁷	> 3 x 10 ⁷
Dimensions (L x W x H)		29 x 12.7 x 15.7 mm	29 x 12.7 x 15.7 mm	29 x 12.7 x 15.7 mm
Weight		14 g	14 g	14 g
Ambient temperature				
	• storage	-40...+85 °C	40...+85 °C	40...+85 °C
	• operating	AC: -40...+70 °C DC: -40...+85 °C	AC: -40...+70 °C DC: -40...+85 °C	AC: -40...+70 °C DC: -40...+85 °C
Cover protection category		IP 67 PN-EN 60529	IP 67 PN-EN 60529	IP 67 PN-EN 60529
Environmental protection		RTIII PN-EN 116000-3	RTIII PN-EN 116000-3	RTIII PN-EN 116000-3
Shock resistance (NO/NC)		20 g	30 g	30 g
Vibration resistance		10 g / 5 g 10...150 Hz	10 g 10...150 Hz	10 g 10...150 Hz
Solder bath temperature		max. 270 °C	max. 270 °C	max. 270 °C
Soldering time		max. 5 s	max. 5 s	max. 5 s

RM84 / RM85 / RM87

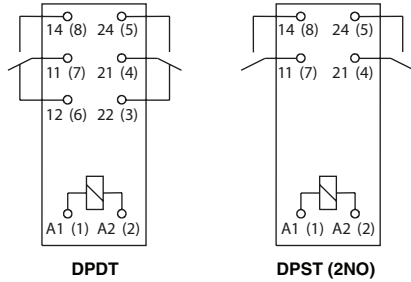
Miniature Electromagnetic Relays



RM84

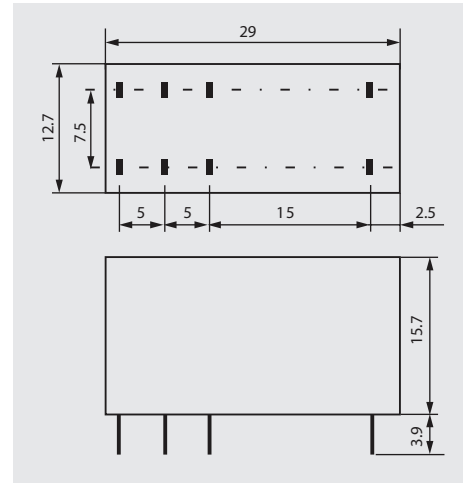


CONNECTION DIAGRAM



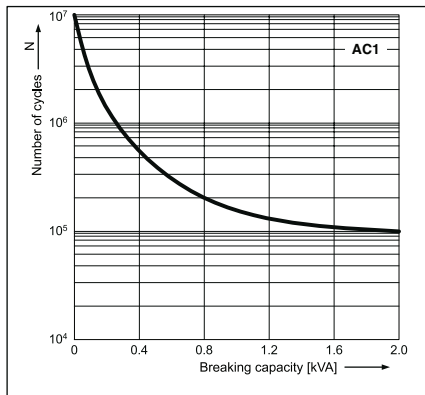
Terminal (pin)	A1(1); A2(2)	22(3); 21(4); 24(5); 12(6); 11(7); 14(8)
[mm]	∅ 0.6	0.5 x 0.9
Drilling hole:		
• for relays	∅ 1.3 + 0.1 mm	
• for sockets	∅ 1.5 + 0.1 mm	

DIMENSIONS

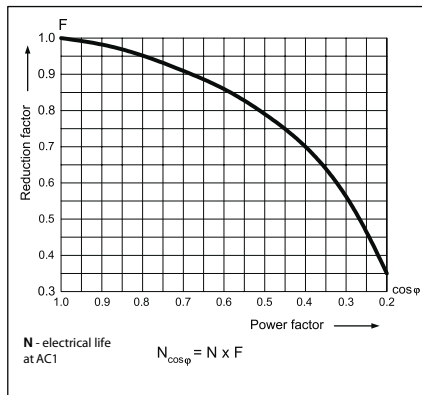


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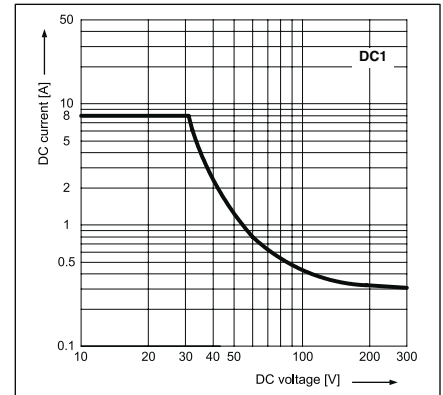
Electrical life at AC resistive load. Switching frequency: 600 cycles/hour Fig. 1.1



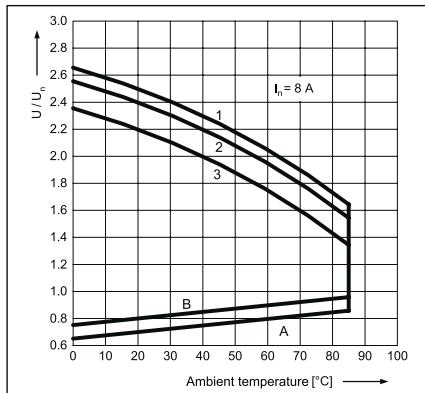
Electrical life reduction factor at AC inductive load Fig. 2.1



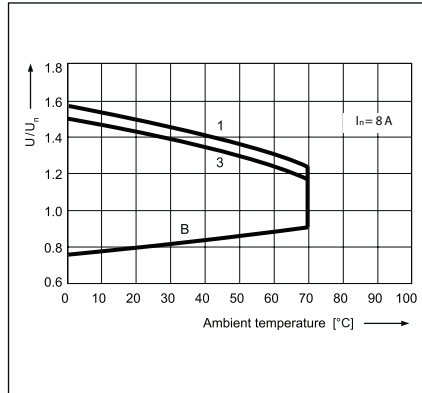
Max. DC resistive load breaking capacity Fig. 3.1



Coil operating range - DC Fig. 4.1



Coil operating range - AC 50 Hz Fig. 5.1



Description of Fig. 4.1 and 5.1

A - relations between make voltage and ambient temperature at no load on contacts. Coil temperature and ambient temperature are equal before coil energizing. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).
B - relations between make voltage and ambient temperature after initial coil heating up with 1.1 U_n at continues load of I_n on contacts. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).
1, 2, 3 - values on Y axis represent allowed overvoltage on coil at certain ambient temperature and contact load:
1 - no load
2 - 50% of rated load
3 - rated load

RM84 / RM85 / RM87

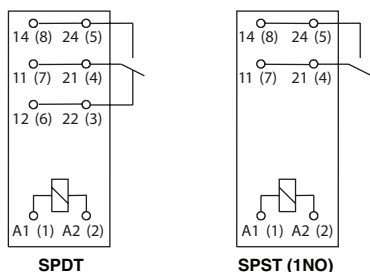
Miniature Electromagnetic Relays



RM85



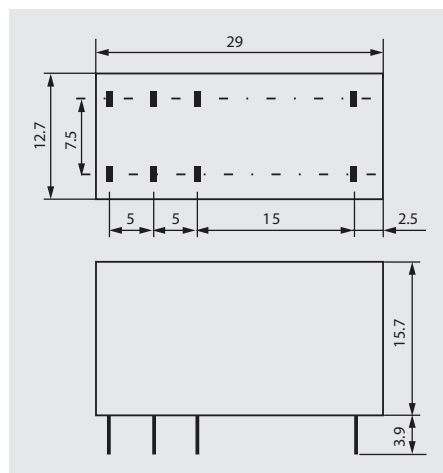
CONNECTION DIAGRAM



Terminal (pin)	A1(1); A2(2)	22(3); 21(4); 24(5); 12(6); 11(7); 14(8)
[mm]	Ø 0.6	0.5 x 0.9
Drilling hole:		
• for relays	Ø 1.3 + 0.1 mm	
• for sockets	Ø 1.5 + 0.1 mm	

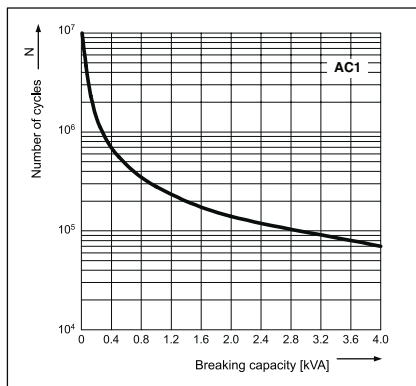
RM85 terminals are doubled for each contact.
Both terminals are to be used while connecting to load.

DIMENSIONS

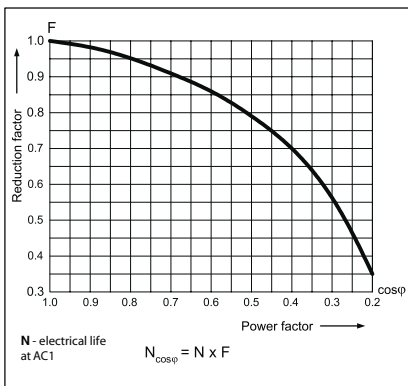


LOAD CHARTS

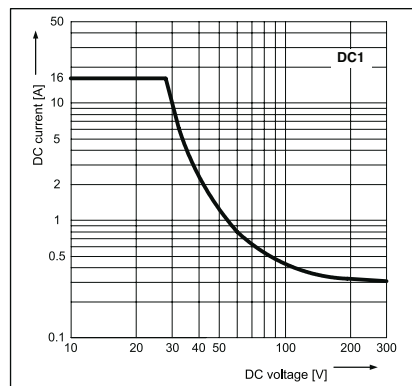
Electrical life at AC resistive load.
Switching frequency: 600 cycles/hour Fig. 1.2



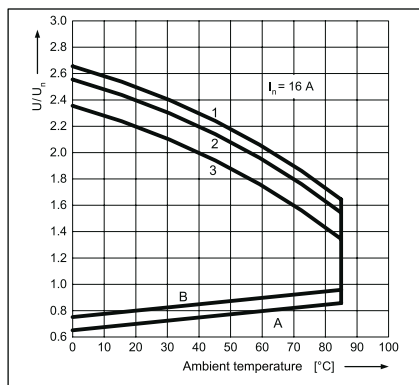
Electrical life reduction factor at AC inductive load Fig. 2.2



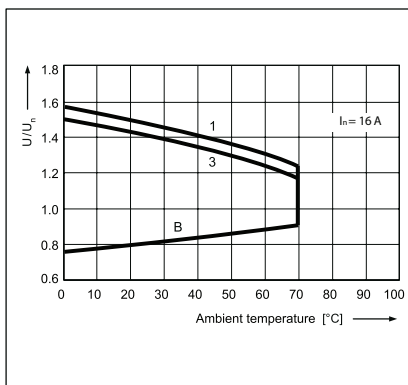
Max. DC resistive load breaking capacity Fig. 3.2



Coil operating range - DC Fig. 4.2



Coil operating range - AC 50 Hz Fig. 5.2



Description of Fig. 4.2 and 5.2

A - relations between make voltage and ambient temperature at no load on contacts. Coil temperature and ambient temperature are equal before coil energizing. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).
B - relations between make voltage and ambient temperature after initial coil heating up with $1.1 U_n$ at continues load of I_n on contacts. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).
1, 2, 3 - values on Y axis represent allowed overvoltage on coil at certain ambient temperature and contact load:
1 - no load
2 - 50% of rated load
3 - rated load

RM84 / RM85 / RM87

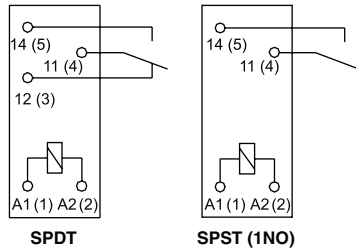
Miniature Electromagnetic Relays



RM87

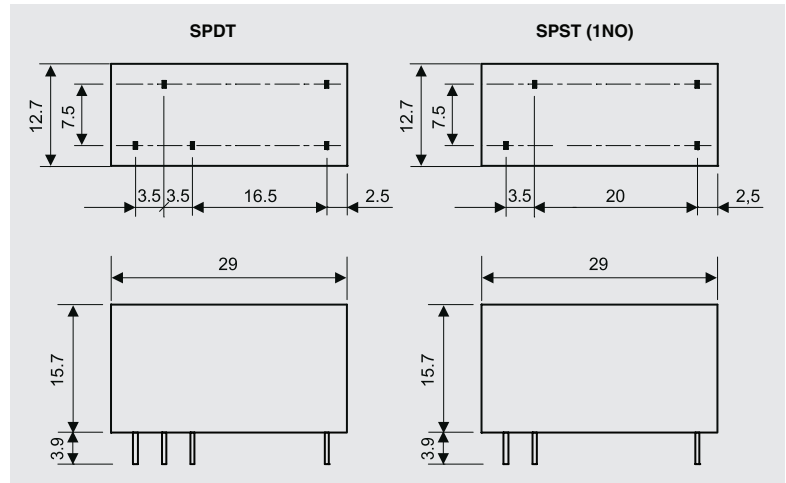


CONNECTION DIAGRAM



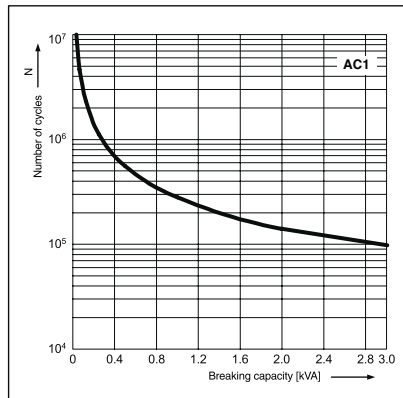
Terminal (pin)	A1(1); A2(2)	12(3); 11(4); 14(5)
[mm]	Ø 0.6	0.5 x 0.9
Drilling hole:		
• for relays Ø 1.3 + 0.1 mm		
• for sockets Ø 1.5 + 0.1 mm		

DIMENSIONS

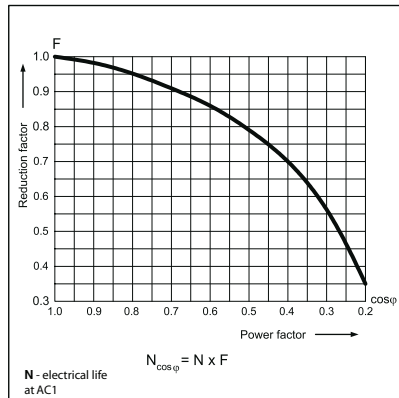


LOAD CHARTS

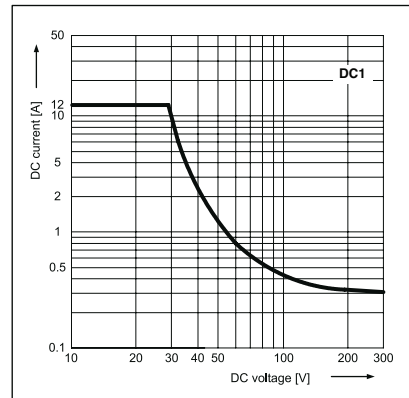
Electrical life at AC resistive load. Fig. 1.3
Switching frequency: 600 cycles/hour



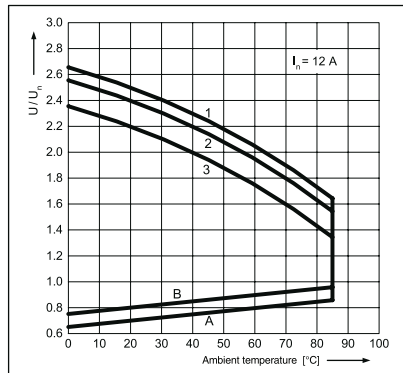
Electrical life reduction factor at AC inductive load Fig. 2.3



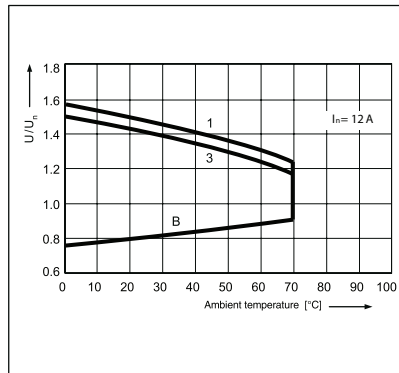
Max. DC resistive load breaking capacity Fig. 3.3
- standard version



Coil operating range - DC Fig. 4.3
- standard version



Coil operating range - AC 50 Hz Fig. 5.3



Description of Fig. 4.3 and 5.3

A - relations between make voltage and ambient temperature at no load on contacts. Coil temperature and ambient temperature are equal before coil energizing. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage). **B** - relations between make voltage and ambient temperature after initial coil heating up with 1,1 U_n at continues load of I_n on contacts. Make voltage is not higher than the value read on Y axis (multiplication of rated voltage).
1, 2, 3 - values on Y axis represent allowed overvoltage on coil at certain ambient temperature and contact load: 1 - no load; 2 - 50% of rated load; 3 - rated load

RM84 / RM85 / RM87

Miniature Electromagnetic Relays

R84 DPDT AC 50/60Hz & 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)
▶ RM84-2012-35-1012	12	DC	360	8.4	30.6
▶ RM84-2012-35-1024	24	DC	1440	16.8	61.2
▶ RM84-2012-35-1110	110	DC	25200	77.0	280.0
▶ RM84-2012-35-5120	120	AC 50/60Hz	10200	96.0	144.0
▶ RM84-2012-35-5230	230	AC 50/60Hz	38500	184.0	276.0

R84 DPST(2NO) AC 50/60Hz & 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)
▶ RM84-2022-35-1012	12	DC	360	8.4	30.6
▶ RM84-2022-35-1024	24	DC	1440	16.8	61.2
▶ RM84-2022-35-1110	110	DC	25200	77.0	280.0
▶ RM84-2022-35-5120	120	AC 50/60Hz	10200	96.0	144.0
▶ RM84-2022-35-5230	230	AC 50/60Hz	38500	184.0	276.0

R85 SPDT AC 50/60Hz & 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)
▶ RM85-2011-35-1012	12	DC	360	8.4	30.6
▶ RM85-2011-35-1024	24	DC	1440	16.8	61.2
▶ RM85-2011-35-1110	110	DC	25200	77.0	280.0
▶ RM85-2011-35-5120	120	AC 50/60Hz	10200	96.0	144.0
▶ RM85-2011-35-5230	230	AC 50/60Hz	38500	184.0	276.0

R85 SPST(1NO) AC 50/60Hz & 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)
▶ RM85-2021-35-1012	12	DC	360	8.4	30.6
▶ RM85-2021-35-1024	24	DC	1440	16.8	61.2
▶ RM85-2021-35-1110	110	DC	25200	77.0	280.0
▶ RM85-2021-35-5120	120	AC 50/60Hz	10200	96.0	144.0
▶ RM85-2021-35-5230	230	AC 50/60Hz	38500	184.0	276.0

R87 SPDT AC 50/60Hz & 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)
▶ RM87N-2011-35-1012	12	DC	360	8.4	30.6
▶ RM87N-2011-35-1024	24	DC	1440	16.8	61.2
▶ RM87N-2011-35-1110	110	DC	25200	77.0	280.0
▶ RM87N-2011-35-5120	120	AC 50/60Hz	10200	96.0	144.0
▶ RM87N-2011-35-5230	230	AC 50/60Hz	38500	184.0	276.0

R87 SPST(1NO) AC 50/60Hz & 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)
▶ RM87N-2021-35-1012	12	DC	360	8.4	30.6
▶ RM87N-2021-35-1024	24	DC	1440	16.8	61.2
▶ RM87N-2021-35-1110	110	DC	25200	77.0	280.0
▶ RM87N-2021-35-5120	120	AC 50/60Hz	10200	96.0	144.0
▶ RM87N-2021-35-5230	230	AC 50/60Hz	38500	184.0	276.0

* waterproof version

▶ BOLD - Regular stocked items.

RM84 / RM85 / RM87

Miniature Electromagnetic Relays - Plug-in Sockets and Accessories **Altech**[®]

GZT80 (for RM84 / RM85)

Screw terminals
 Max. tightening moment
 for the terminal: 0.7 Nm
 35 mm rail mount
 acc. to PN-EN 60715
 or on panel mounting
 75.3 x 15.5 x 61(67) mm*
 Two poles, 5 mm pinout
 12 A, 300 V AC

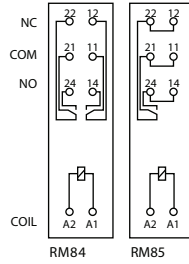


E22891



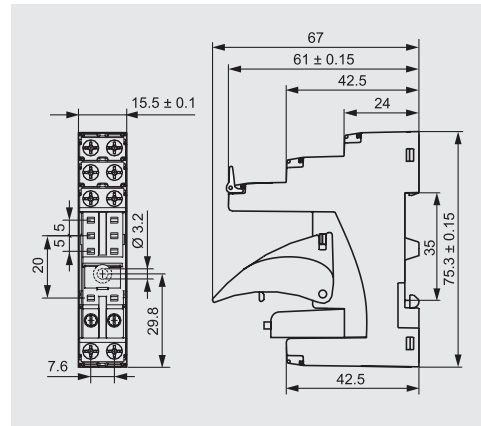
GZT80

CONNECTION DIAGRAM



RM84 RM85

DIMENSIONS



ZGGZ80 (see page 110)



GZT80-0040



GZM80-0041**



GZT80-0035



Module type M... (see page 113)

GZM80 (for RM84 / RM85)

Screw terminals
 Max. tightening moment
 for the terminal: 0.7 Nm
 35 mm rail mount
 acc. to PN-EN 60715
 or on panel mounting
 78.1 x 15.9 x 61(66.5) mm*
 Two poles, 5 mm pinout
 12 A, 300 V AC

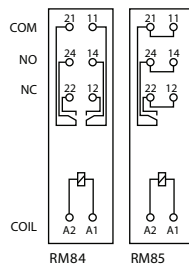


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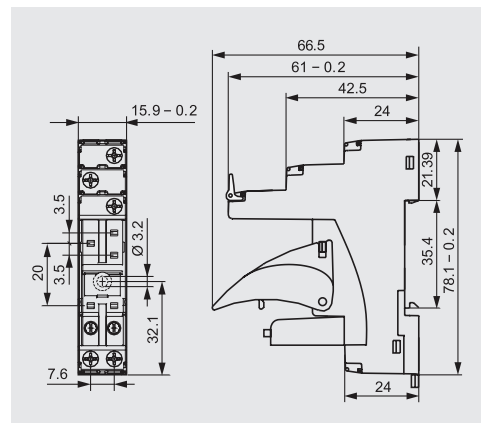
GZM80

CONNECTION DIAGRAM



RM84 RM85

DIMENSIONS



ZGGZ80 (see page 110)



GZT80-0040



GZM80-0041**



GZT80-0035



Module type M... (see page 113)

* In parenthesis is the height of the socket with plastic retainer clip. ** For lower profile application.

All accessories are sold separately.

RM84 / RM85 / RM87

Miniature Electromagnetic Relays - Plug-in Sockets and Accessories

GZT92 (for RM87)

Screw terminals
 Max. tightening moment
 for the terminal: 0.7 Nm
 35 mm rail mount
 acc. to PN-EN 60715
 or on panel mounting
 75.3 x 15.5 x 61(67) mm*
 One pole, 3,5 mm
 12 A, 300 V AC



E22891

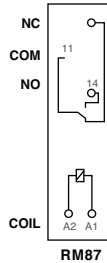


GZT92



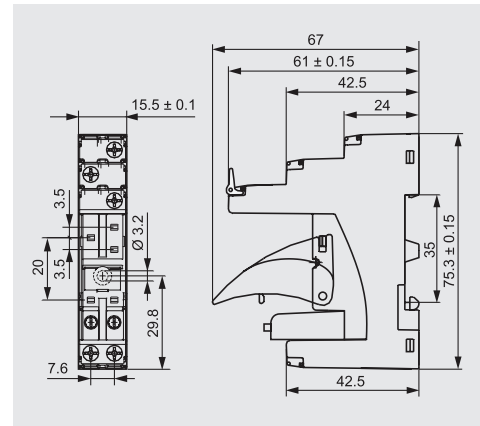
ZGGZ80 (see page 110)

CONNECTION DIAGRAM



RM87

DIMENSIONS



GZT80-0040



GZM80-0041**



GZT80-0035



Module type M... (see page 113)

GZM92 (for RM87)

Screw terminals
 Max. tightening moment
 for the terminal: 0.7 Nm
 35 mm rail mount
 acc. to PN-EN 60715
 or on panel mounting
 78.1 x 15.9 x 61(66.5) mm*
 One pole, 3,5 mm pinout
 12 A, 300 V AC



E22891

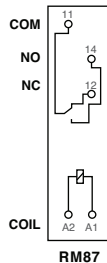


GZM92



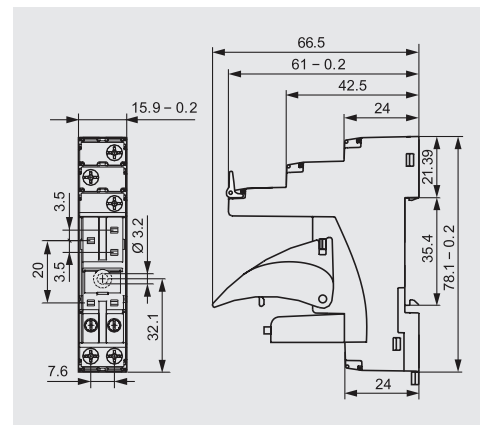
ZGGZ80 (see page 110)

CONNECTION DIAGRAM



RM87

DIMENSIONS



GZT80-0040



GZM80-0041**



GZT80-0035



Module type M... (see page 113)

* In parenthesis is the height of the socket with plastic retainer clip. ** For lower profile application.

All accessories are sold separately.

RM84 / RM85 / RM87

Miniature Electromagnetic Relays - Plug-in Sockets and Accessories

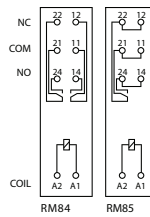
GZMB80 (for RM84, RM85)

Spring terminals
 Max. cross section of the cables:
 1 x 0.2...1.5 mm²
 (1 x 24...16 AWG)
 Stripping length deinsulation:
 9...11 mm
 35 mm rail mount
 acc. to PN-EN 60715
 97 x 16 x 45.2(69) mm*
 Two poles, 5 mm pinout
 10 A, 300 V AC

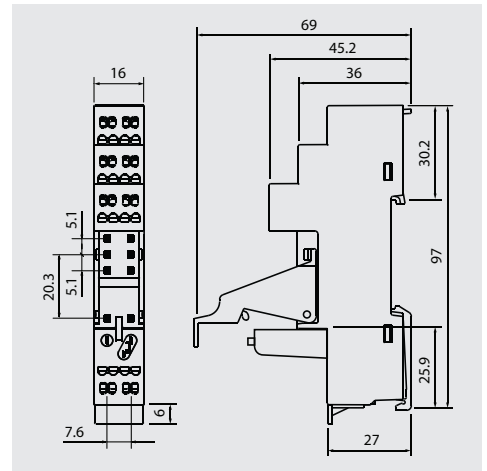


GZMB80

CONNECTION DIAGRAM



DIMENSIONS



GZMB80-0040



GZMB80-0041**



TR



Module type M... (see page 113)

GD50 (for RM84, RM85)

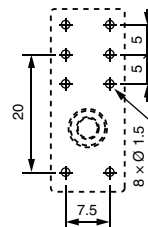
For RM84, RM85

For PCB
 31.5 x 13 x 9 mm
 Two poles, 5 mm pinout
 8 A, 300 V AC

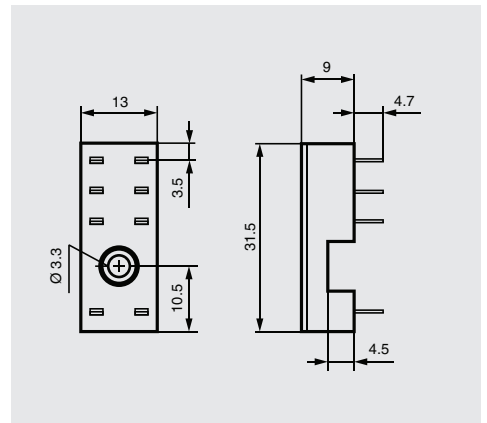


GD50

CONNECTION DIAGRAM



DIMENSIONS



MH16-2

GD35 (for RM87N)

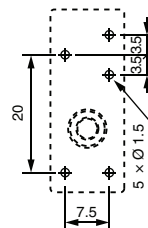
For RM87

For PCB
 31.5 x 13 x 9 mm
 One pole, 3.5 mm pinout
 12 A, 300 V AC

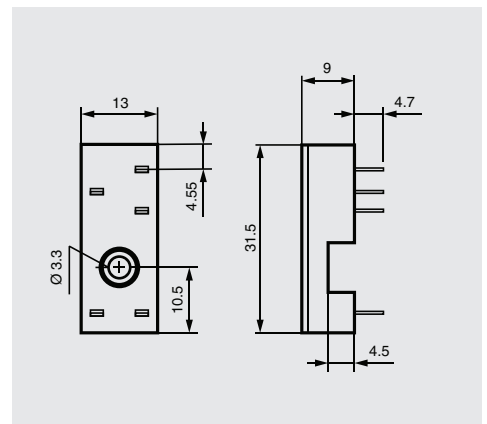


GD35

CONNECTION DIAGRAM



DIMENSIONS



MH16-2

* In parenthesis is the height of the socket with plastic retainer clip. ** For lower profile application.

All accessories are sold separately.