

### Presentation of the range

The RXM ●CB miniature relay range comprises:

- 1 10 A relays with 2 C/O contacts, 5 A relays with 4 C/O contacts. All these relays have the same dimensions.
- 2 Sockets with mixed or separate contact terminals.
- 3 Protection modules (diode, RC circuit or varistor). All these modules are common to all sockets.
- 4 A metal maintaining clamp for all sockets.
- 5 A plastic maintaining clamp for all sockets.
- 6 A 2-pole bus jumper that can be used on sockets with separate contact terminals in order to simplify cabling when creating an equipotential link between the coil terminals.
- 7 Clip-in legends for all the sockets except RXZ E2M114.

### Relay description

- 1 Spring return pushbutton for testing the contacts (green:  $\overline{\text{---}}$ , red:  $\sim$ ).
- 2 Mechanical "relay status" indicator.
- 3 Removable lock-down door enabling forced maintaining of the contacts for test sequences or maintenance purposes. During operation, this lock-down door must always be in the closed position.
- 4 LED (depending on version) indicating the relay status.
- 5 Four notches for rail mounting adapter or panel mounting adapter with fixing lugs.
- 6 Eight or fourteen Faston type pins.
- 7 Area by which the product can be easily gripped.
- 8 Mounting adapter enabling direct mounting of the relay on a panel.
- 9 Mounting adapter enabling direct mounting of the relay on a  $\perp$  rail.

### Socket description

#### Sockets with mixed contact terminals (1)

- 1 Connection by screw clamp terminals or screw connector.
- 2 Fourteen female contacts for the relay pins.
- 3 Location for protection modules.
- 4 Locking components for plastic and metal maintaining clamps.
- 5 Locating slot for mounting on  $\perp$  rail with its compression spring or fixing clip.
- 6 Two or four fixing holes for panel mounting.

#### Sockets with separate contact terminals (2)

- 1 Connection by screw connector.
- 2 Eight or fourteen female contacts for the relay pins.
- 3 Location for protection modules.
- 4 Locking components for plastic and metal maintaining clamps.
- 5 Locating slot for mounting on  $\perp$  rail with its compression spring or fixing clip.
- 6 Two fixing holes for panel mounting.
- 7 Location for bus jumpers (see mounting on sockets on page 28210/7).

(1) The inputs are mixed with the relay's supply, with the outputs being located on the opposite side of the socket.

(2) The inputs and outputs are separated from the relay supply.

### General characteristics

<b>Conforming to standards</b>		IEC/EN 61810-1, UL 508
<b>Product certifications</b>		UL, GOST
<b>Ambient air temperature</b> around the device	Storage	°C - 40...+ 70
	Operation	°C - 40...+ 55
<b>Vibration resistance</b> conforming to IEC/EN 60068-2-6	without clip	1 mm, 3 g (10...55 Hz)
	with clip	1 mm, 5 g (10...55 Hz)
<b>Degree of protection</b>	Conforming to IEC/EN 60529	IP 40
<b>Shock resistance</b> conforming to IEC/EN 60068-2-27	Opening	10 gn (11 ms)
	Closing	10 gn (11 ms)
<b>Protection category</b>		RT I
<b>Mounting position</b>		Any

### Insulation characteristics

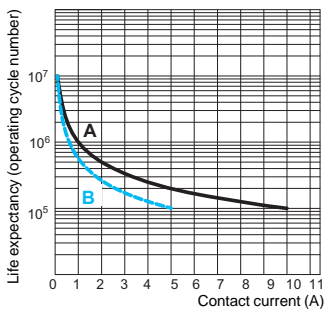
<b>Rated insulation voltage (U<sub>i</sub>)</b>	<b>V</b>	250 (IEC), 300 (UL)
<b>Rated impulse withstand voltage (U<sub>imp</sub>)</b>	<b>kV</b>	3.6 (2 C/O)
		2.5 (4 C/O)
<b>Dielectric strength</b> (rms voltage)	Between coil and contact	~ V 1800
	Between poles	~ V 1550
	Between contacts	~ V 1000

### Contact characteristics

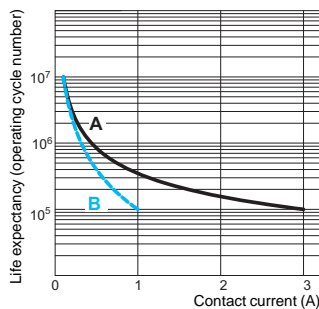
Relay type		RXM 2CB●●●	RXM 4CB●●●
<b>Number and type of contacts</b>		2 C/O	4 C/O
<b>Contact materials</b>		AgNi	
<b>Conventional thermal current (I<sub>th</sub>)</b>	For ambient temperature ≤ 55 °C	<b>A</b> 10	5
<b>Rated operational current</b> in utilisation categories AC-1 and DC-1	Conforming to IEC	N/O 10	5
		N/C 5	2.5
	Conforming to UL	10	5
<b>Switching current</b>	Minimum	<b>mA</b> 10	
<b>Switching voltage</b>	Maximum	<b>V</b> ~ 250, ∴ 125	
	Minimum	<b>V</b> 17	
<b>Nominal load (resistive)</b>		<b>A</b> 10 / 250 ~ V	5 / 250 ~ V
		<b>A</b> 10 / 30 ∴ V	5 / 30 ∴ V
<b>Switching capacity</b>	Maximum	~ <b>VA</b> 2500	1250
		∴ <b>W</b> 300	150
	Minimum	<b>mW</b> 170	
<b>Maximum operating rate</b> In operating cycles	No-load	18 000	
	Under load	1200	
<b>Utilisation coefficient</b>		20 %	
<b>Mechanical durability</b>	In millions of operating cycles	10	
<b>Electrical durability</b> In millions of operating cycles	Resistive load	See curves below	
	Inductive load	See curves below	

#### Electrical durability of contacts

##### Resistive load

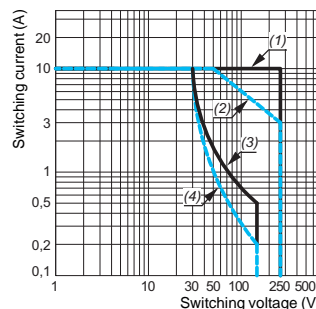


##### Inductive load

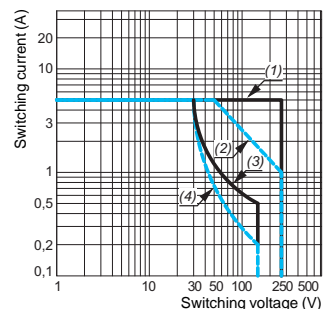


#### Maximum switching capacity on resistive and inductive loads

##### RXM 2CB●●●

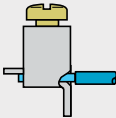
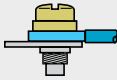


##### RXM 4CB●●●



A : RXM 2CB●●●  
B : RXM 4CB●●●

(1) ~ resistive load  
(2) ~ inductive load ( $\text{Cos}\mu = 0.4$ )  
(3) ∴ resistive load  
(4) ∴ inductive load ( $T_{0.95} = 6 P$ )

Coil characteristics										
Average consumption		~	VA	1.55 (without LED); 1.90 (with LED)						
			W	0.90 (without LED); 1.00 (with LED)						
Drop-out voltage threshold		~		≥ 0.15 U <sub>c</sub>						
				≥ 0.1 U <sub>c</sub>						
Operate time		~	ms	20						
			ms	20						
Release time		~	ms	20						
			ms	20						
Control circuit voltage U <sub>c</sub>			V	12	24	48	110	120	220	230
Relay control voltage codes				JD	BD	ED	FD	–	MD	–
d.c. supply	Average resistance at 20 °C ± 10%		Ω	160	630	2600	11 000	–	42 000	–
	Operating voltage limits	Min.	V	9.6	19.2	38.4	88	–	176	–
		Max.	V	13.2	26.4	52.8	121	–	242	–
Relay control voltage codes				–	B7	E7	–	F7	–	P7
a.c. supply	Average resistance at 20 °C ± 15%		Ω	–	160	600	–	4500	–	15 000
	Operating voltage limits	Min.	V	–	19.2	38.4	–	96	–	184
		Max.	V	–	26.4	52.8	–	132	–	253
Socket characteristics										
Socket type				RXZ E2S108M	RXZ E2S114M	RXZ E2M114M	RXZ E2M114			
Relay types used				RXM 2●●●●●	RXM 4●●●●●	RXM 2●●●●● (1) RXM 4●●●●●	RXM 2●●●●● (1) RXM 4●●●●●			
Contact terminal arrangement				Separate			Mixed			
Wire connection method				Connector					Screw clamp terminals	
Product certifications				UL						
Conforming to standards				IEC 61984, CE						
Electrical characteristics										
Conventional thermal current (I <sub>th</sub> )			A	12	10					
Maximum operating voltage			V	250 (IEC)						
Insulation characteristics										
Between adjacent output contacts			V <sub>rms</sub>	2500						
Between input and output contacts			V <sub>rms</sub>	2500						
Between contacts and L rail			V <sub>rms</sub>	2500						
General characteristics										
Ambient air temperature around the device	Operation		°C	- 40...+ 55						
	Storage		°C	- 40...+ 85						
Degree of protection				Conforming to IEC/EN 60529 IP 20						
Cabling	Solid cable without cable end	1 conductor		0.5...2.5 mm <sup>2</sup> - AWG 20...AWG 14					0.5... 1.5 mm <sup>2</sup> AWG 20...AWG 16	
		2 conductors		0.5...1.5 mm <sup>2</sup> - AWG 20...AWG 16						
	Flexible cable with cable end	1 conductor		0.25...2.5 mm <sup>2</sup> - AWG 22...AWG 14					0.25...1 mm <sup>2</sup> AWG 22...AWG 17	
		2 conductors		0.25...1 mm <sup>2</sup> - AWG 22...AWG 17						
Maximum tightening torque / Screw size			Nm	1 / M3 screw						
Mounting				On 35 mm L rail / on panel						
Fixing on L rail				By red plastic clip			By metal compression spring		By red plastic clip	
Terminal referencing				IEC, NEMA						
Bus jumper (I <sub>th</sub> : 5 A)				Yes			No			
Compatibility with the plastic maintaining clamp				Yes						
Compatibility with the metal maintaining clamp				Yes						
Protection module				All RXM 040W, RXM 041●●, RXM 021●●						
Clip-in legends				Yes					No	
Wire connection method				Screw connector					Screw clamp terminals	
										

(1) When mounting relay RXM 2●●●●● on socket RXZ E2M●●●●●, the thermal current must not exceed 10 A.



RXM ●CB1F7



RXM ●CB2F7

RXZ E2M114M  
+ RXM 4CB2F7 relayRXZ E2S114M  
+ RXM 4CB2F7 relay

RXM 041●●7



RXZ 400

## References

## Miniature relays without LED (sold in lots of 10)

Control circuit voltage	Number and type of contacts - 2 C/O - 10 A		Thermal current (I <sub>th</sub> ) 4 C/O - 5 A	
	Unit reference	Weight	Unit reference	Weight
V		kg		kg
--- 12	RXM 2CB1JD	0.037	RXM 4CB1JD	0.038
--- 24	RXM 2CB1BD	0.037	RXM 4CB1BD	0.038
--- 48	RXM 2CB1ED	0.037	RXM 4CB1ED	0.038
--- 110	RXM 2CB1FD	0.037	RXM 4CB1FD	0.038
--- 220	—	—	RXM 4CB1MD	0.038
~ 24	RXM 2CB1B7	0.037	RXM 4CB1B7	0.038
~ 48	RXM 2CB1E7	0.037	RXM 4CB1E7	0.038
~ 120	RXM 2CB1F7	0.035	RXM 4CB1F7	0.036
~ 230	RXM 2CB1P7	0.035	RXM 4CB1P7	0.036

## Miniature relays with LED (sold in lots of 10)

--- 12	RXM 2CB2JD	0.037	RXM 4CB2JD	0.038
--- 24	RXM 2CB2BD	0.037	RXM 4CB2BD	0.038
--- 48	RXM 2CB2ED	0.037	RXM 4CB2ED	0.038
--- 110	RXM 2CB2FD	0.037	RXM 4CB2FD	0.038
~ 24	RXM 2CB2B7	0.037	RXM 4CB2B7	0.038
~ 48	RXM 2CB2E7	0.037	RXM 4CB2E7	0.038
~ 120	RXM 2CB2F7	0.035	RXM 4CB2F7	0.036
~ 230	RXM 2CB2P7	0.035	RXM 4CB2P7	0.036

## Sockets

Contact terminal arrangement	Connection	Relay type	Sold in lots of	Unit reference	Weight kg
Mixed	Screw clamp terminals	RXM 2●●●●(1) RXM 4●●●●	10	RXZ E2M114 (2)	0.048
	Screw connector	RXM 2●●●●(1) RXM 4●●●●	10	RXZ E2M114M (2)	0.056
Separate	Screw connector	RXM 2●●●●	10	RXZ E2S108M (3)	0.058
		RXM 4●●●●	10	RXZ E2S114M (2)	0.070

## Protection modules

Description	Voltage	For use with	Sold in lots of	Unit reference	Weight kg
	V				kg
Diode	--- 6...250	All sockets	10	RXM 040W	0.003
RC circuit	~ 24...60	All sockets	10	RXM 041BN7	0.010
	~ 110...240	All sockets	10	RXM 041FU7	0.010
Varistor	~ / --- 6...24	All sockets	10	RXM 021RB	0.030
	~ / --- 24...60	All sockets	10	RXM 021BN	0.030
	~ / --- 110...240	All sockets	10	RXM 021FP	0.030

## Accessories

Description	For use with	Sold in lots of	Unit reference	Weight kg
Metal maintaining clamp	All sockets	10	RXZ 400	0.001
Plastic maintaining clamp	All sockets	10	RXZ R335	0.005
Bus jumper 2-pole (I <sub>th</sub> : 5 A)	All sockets with separate contacts	10	RXZ S2	0.005
Mounting adapter for $\perp$ rails (4)	All relays	10	RXZ E2DA	0.004
Mounting adapter with fixing lugs for panel	All relays	10	RXZ E2FA	0.002
	All relays (sheet of 108 legends)	10	RXZ L520	0.080
Clip-in legends	All sockets except RXZ E2M114	10	RXZ L420	0.001

(1) When mounting relay RXM 2●●●● on socket RXZ E2M●●●●, the thermal current must not exceed 10 A

(2) Thermal current I<sub>th</sub>: 10 A(3) Thermal current I<sub>th</sub>: 12 A

(4) Test button becomes inaccessible

#### Dimensions

##### Miniature relays

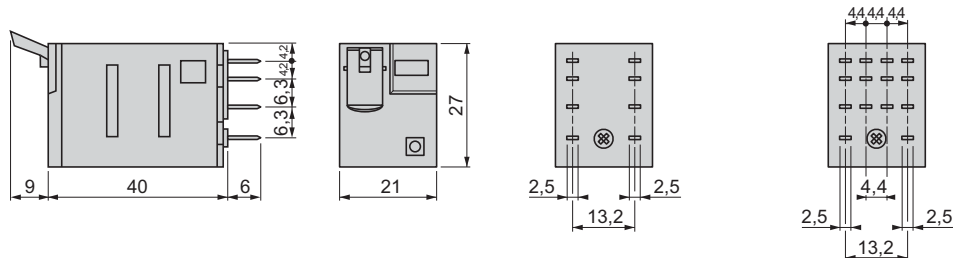
RXM ●●●●●

RXM 2

RXM 4

Common view

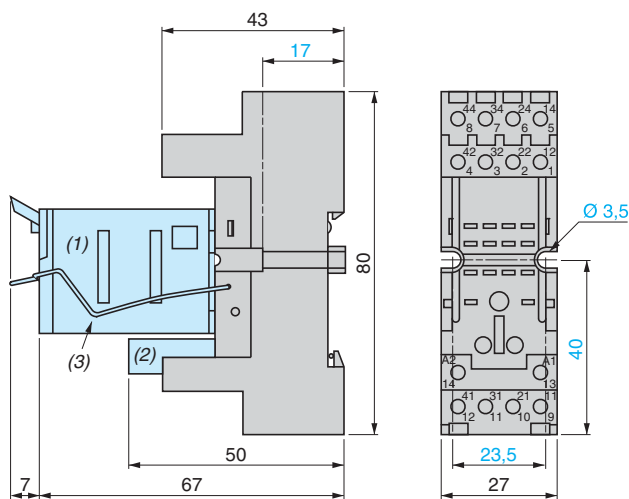
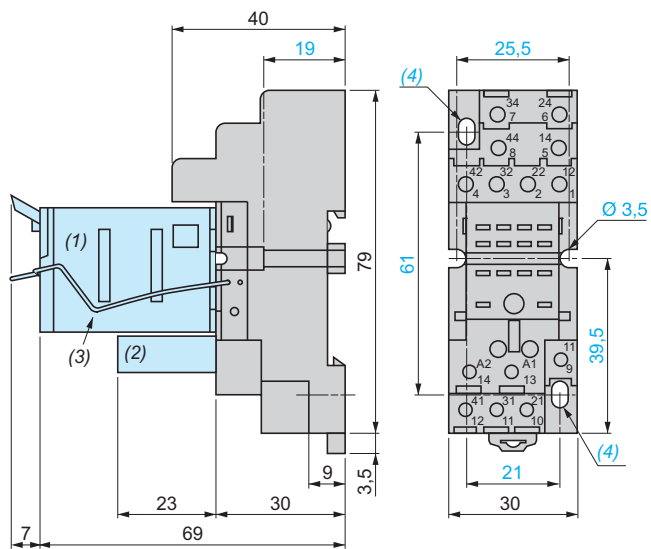
Pin side view



#### Sockets

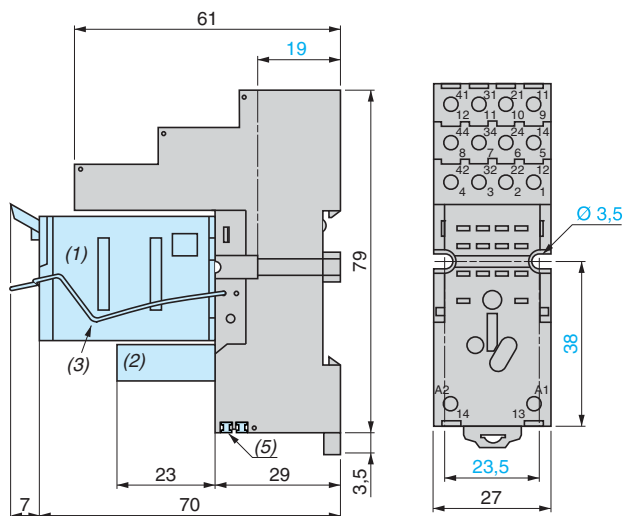
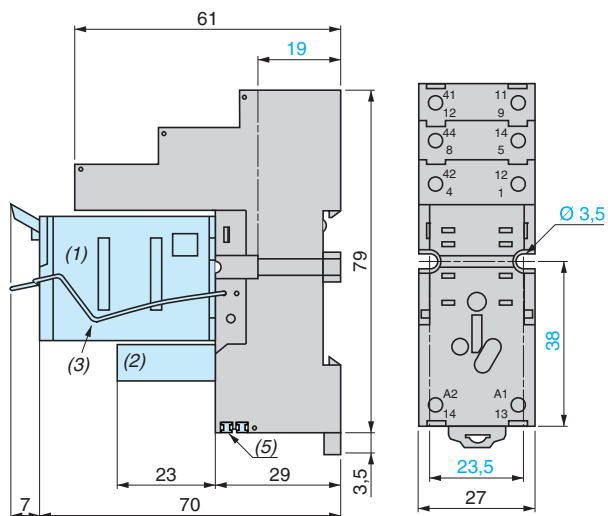
RXZ E2M114

RXZ E2M114M



RXZ E2S108M

RXZ E2S114M

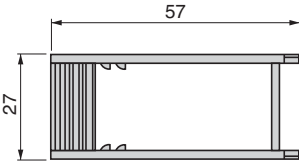


- (1) Relays
- (2) Protection module
- (3) Maintaining clamp
- (4) 2 elongated holes  $\varnothing 3.5 \times 6.5$
- (5) 2 bus jumpers

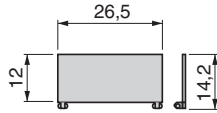
**Dimensions (continued)**

**Plastic clamp and clip-in legends**

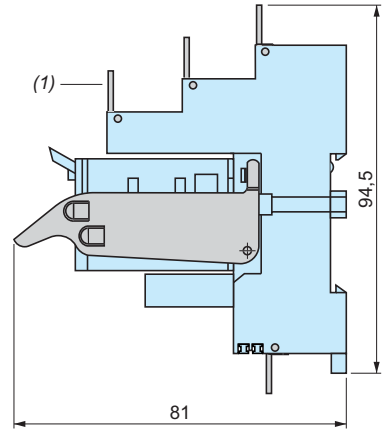
**RXZ R335**



**RXZ L420**



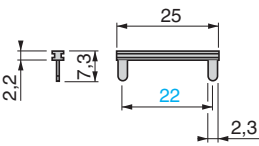
**Mounting on all sockets (1)**



(1) Clip-in legends for all sockets except RXZ E2M114

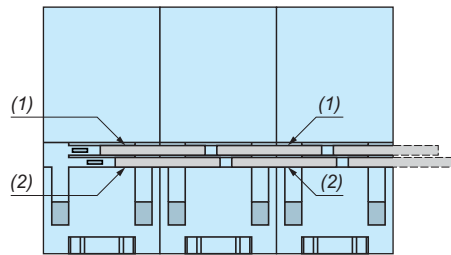
**Bus jumper**

**RXZ S2**



**Mounting on sockets with separate contacts (view from below)**

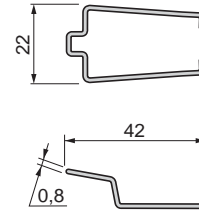
**Example of bus jumper mounting on sockets**



(1) 2 bus jumpers (polarity A2)  
(2) 2 bus jumpers (polarity A1)

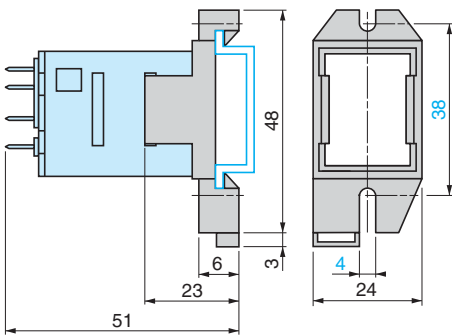
**Metal clamp**

**RXZ 400**



**Mounting adapter for rails (1)**

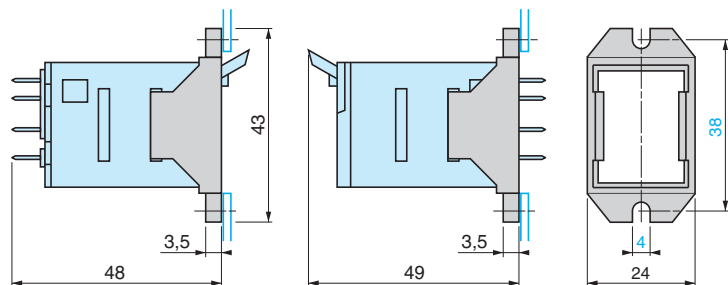
**RXZ E2DA**



(1) Test button becomes inaccessible

**Mounting adapter for panel**

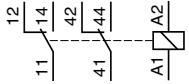
**RXZ E2FA**



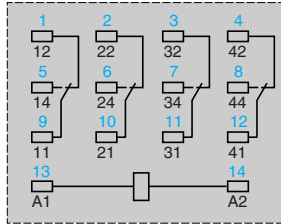
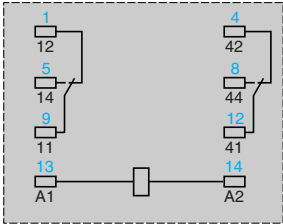
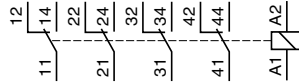
#### Schemes

##### Miniature relays

###### RXM 2●●●●●



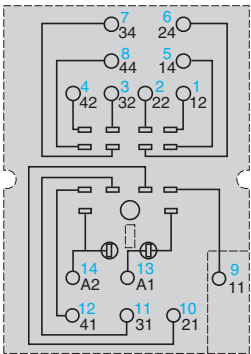
###### RXM 4●●●●●



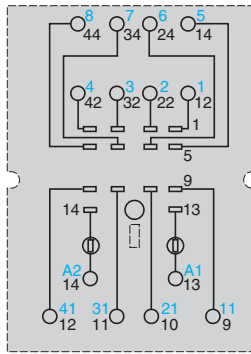
Symbols shown in blue correspond to Nema marking.

##### Sockets

###### RXZ E2M114

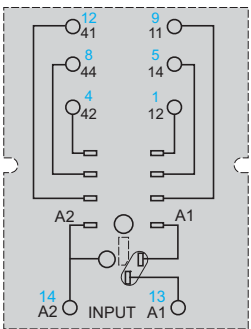


###### RXZ E2M114M

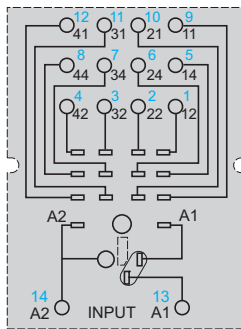


Symbols shown in blue correspond to Nema marking.

###### RXZ E2S108M



###### RXZ E2S114M

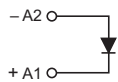


Symbols shown in blue correspond to Nema marking.

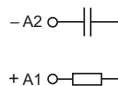
**Schemes (continued)**

**Protection modules**

**RXM 040W**



**RXM 041●●●**



**RXM 021●●●**

