

Zelio Plug-In Relays

RPM power range

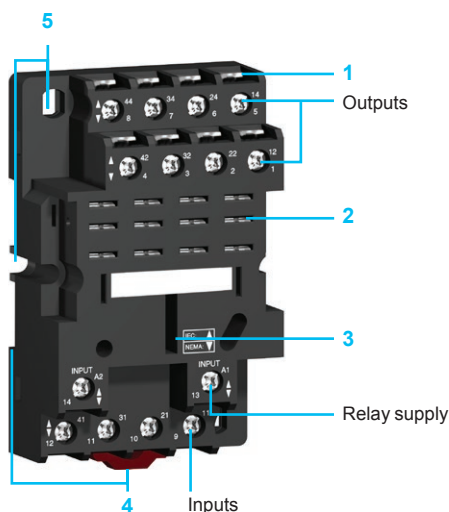
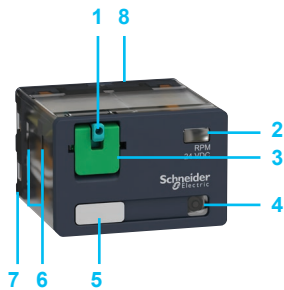
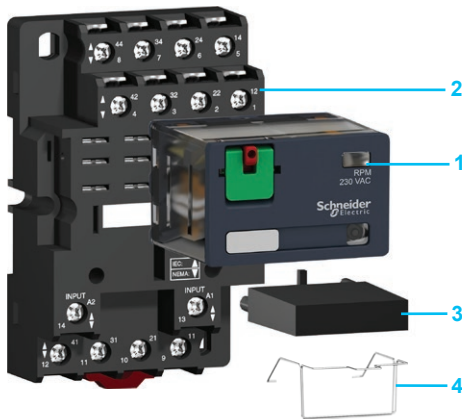
Catalog
2014



Schneider
Electric™



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Introduction of the range

The RPM power relay range includes:

- 1 15 A relays with 1, 2, 3, and 4 C/O (SPDT, DPDT, 3PDT and 4PDT) contacts.
- 2 Sockets with mixed contact terminals.
- 3 Protection modules (diode, RC circuit or varistor) or 1 timer module. These protection modules are common to all sockets except for the timer module, which can only be used on 3-pole or 4-pole sockets.
- 4 A metal maintaining clamp for single-contact relays.

Relay description

- 1 Spring return pushbutton for testing the contacts (green: Vdc, red: Vac).
- 2 Mechanical "relay status" indicator.
- 3 Removable lock-down door enabling forced maintaining of the contacts for test sequences or maintenance purposes.
- 4 LED (depending on version) indicating the relay status.
- 5 Removable legend for relay identification.
- 6 Four notches for rail mounting adapter or panel mounting adapter with fixing lugs.
- 7 Five, eight, eleven or fourteen Faston type pins.
- 8 Area by which the product can be easily gripped.
- 9 Mounting adapter enabling direct mounting of the relay on a panel.
- 10 Mounting adapter enabling direct mounting of the relay on a DIN rail.

Socket description

Sockets with mixed contact terminals (1)

- 1 Connection by screw clamp terminals.
- 2 Five, eight, eleven or fourteen female contacts for the relay pins.
- 3 Location for protection modules or the timer module.
- 4 Locating slot for mounting on rail with mounting clip.
- 5 Two or four mounting holes for panel mounting.

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

General Specifications

Conforming to standards			IEC/EN 61810-1, UL 508, CSA, UL60947-4-1A
Product certifications			UL recognized (E164862), UL listed with Zelio sockets (E164862), CSA (MC 225619), CE, ROHS, REACH, China ROHS, and GHOST compliant
Ambient air temperature around the device	Storage	°C (F)	- 40 to + 85 (-40 to +185)
	Operation	°C (F)	- 40 to + 55 (-40 to +131)
Vibration resistance conforming to IEC/EN 60068-2-6	In operation		3 gn (35 to 150 Hz) and +/- 1 mm (10 to 35 Hz) with and without maintaining clamp
	Not operating		5 gn (35 to 150 Hz) and +/- 1 mm (10 to 35 Hz) with and without maintaining clamp
Degree of protection	Conforming to IEC/EN 60529		IP 40
Shock resistance conforming to IEC/EN 60068-2-27	Opening		15 gn (11 ms)
	Closing		15 gn (11 ms)
Protection category			RT I
Mounting position			Any

Insulation Specifications

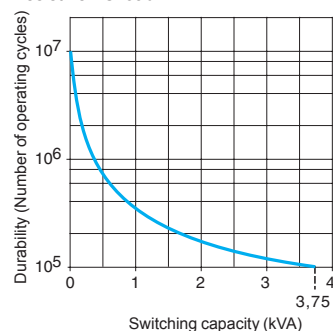
Rated insulation voltage (Ui)	Conforming to IEC/EN 60947	V	250 (IEC), 300 (UL, CSA)
Rated impulse withstand voltage (Uimp)		kV	4 (1.2/50 µs)
Dielectric strength (rms voltage)	Between coil and contact	Vac	2000
	Between poles	Vac	2000
	Between contacts	Vac	1500

Contact Specifications

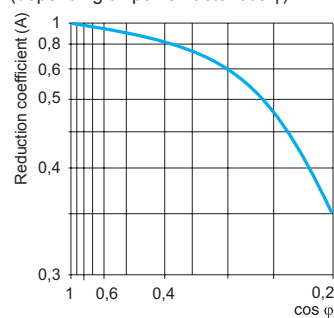
Relay type				RPM1●●●	RPM2●●●	RPM3●●●	RPM4●●●		
Number and type of contacts					1 C/O (SPDT)	2 C/O (DPDT)	3 C/O (3PDT)	4 C/O (4PDT)	
Contact materials					AgNi				
Conventional thermal current (Ith)	For ambient temperature ≤ 55 °C			A	15				
Rated operational current	Conforming to IEC in utilization categories AC-1 and DC-1	NO	A	15 at 250 Vac / 28 Vdc					
		NC	A	7.5 at 250 Vac / 28 Vdc					
		Resistive	A	15 at 120 Vac (100k cycles) 15 at 277 Vac (100k cycles) 15 at 28 Vdc (100k cycles)					
			Motor	HP	1/2 at 120 Vac (1k cycles) 1 at 277 Vac (1k cycles)				
	Conforming to UL	Pilot Duty		B300					
		Resistive	A	15 at 150 Vac (100k cycles) 10 at 277 Vac (100k cycles) 15 at 28 Vdc (100k cycles)				15 at 150 Vac (100k cycles, 30 A max. total) 10 at 277 Vac (100k cycles, 20 A max. total) 15 at 28 Vdc (100k cycles, 30 A max. total)	
			Motor	HP	1/2 at 120 Vac (1k cycles) 1 at 277 Vac (1k cycles)				1/2 at 120 Vac (1k cycles) 1 at 277 Vac (1k cycles, 2 HP max. total)
		Pilot Duty		B300					
Switching current	Minimum			mA	10 at 17 Vdc				
Maximum switching voltage				V	250 Vac / 28 Vdc (IEC); 300 VAC / 30 Vdc (UL)				
Switching capacity	Maximum	Vac	VA	3750 (IEC), 4155 (UL)					
		Vdc	W	420 (IEC & UL)					
	Minimum		mW	170					
Maximum operating rate	No-load				18 000				
	Under load				1200				
Utilization coefficient				20%					
Mechanical durability				In millions of operating cycles				10	
Electrical durability	In millions of operating cycles	Resistive load				0.1			
		Inductive load				See curves below			

Electrical durability of contacts

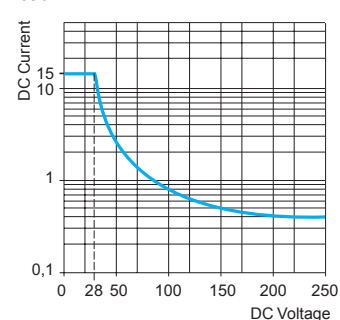
Resistive AC load



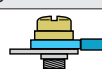
Reduction coefficient for inductive AC load (depending on power factor cos φ)



Maximum switching capacity on resistive DC load



Durability (inductive load) = durability (resistive load) x reduction coefficient.

Coil Specifications												
Relay type				RPM1●●●		RPM2●●●		RPM3●●●		RPM4●●●		
Average consumption	Models without LED indication	Vac	VA	1.6	1.1	1.7	2.5					
		Vdc	W	1.1	0.85	1.5	1.6					
	Models with LED indication	Vac	VA	1.9	1.4	2.05	2.85					
		Vdc	W	1.4	1.15	1.85	1.95					
Drop-out voltage threshold		Vac		≥ 0.15 Uc								
		Vdc		≥ 0.1 Uc								
Operating time (response time)	Between coil energization and making of the On-delay contact	Vac	ms	20								
		Vdc	ms	20								
	Between coil de-energization and making of the Off-delay contact	Vac	ms	20								
		Vdc	ms	20								
Control circuit voltage Uc			V	12	24	48	110	120	230			
Relay control voltage codes				JD	BD	ED	FD	–	–			
d.c. supply	Average resistance at 20 °C ± 10%	RPM1●●●	Ω	115	450	1800	9460	–	–			
		RPM2●●●	Ω	160	640	2560	13440	–	–			
		RPM3●●●	Ω	80	320	1280	6720	–	–			
		RPM4●●●	Ω	75.8	303	1210	6370	–	–			
	Operating voltage limits	Min.	Vdc	9.6	19.2	38.4	88	–	–			
		Max.	Vac	13.2	26.4	52.8	121	–	–			
	Relay control voltage codes				–	B7	E7	–	F7	P7		
	a.c. supply	Average resistance at 20 °C ± 15%	RPM1●●●	Ω	–	177	708	–	4430	16270		
RPM2●●●			Ω	–	177	708	–	4430	16270			
RPM3●●●			Ω	–	110	460	–	2880	9600			
RPM4●●●			Ω	–	80	310	–	2100	7350			
Operating voltage limits		Min.	Vdc	–	19.2	38.4	–	96	184			
		Max.	Vac	–	26.4	52.8	–	132	253			
Socket Specifications												
Socket type				RPZF1			RPZF2	RPZF3	RPZF4			
Relay types used				RPM1●●●			RPM2●●●	RPM3●●●	RPM4●●●			
Protection module types used				RXM02●●● RXM04●●●			RXM02●●● RXM04●●●	RUW24●●●	RUW24●●●			
Contact terminal arrangement				Mixed								
Wire connection method				Screw clamp terminals								
Product certifications				CE, CSA, cURus (E172326), RoHS, REACH, EAC, China ROHS compliant								
Conforming to standards				IEC 61984, CÉ								
Electrical Specifications												
Conventional thermal current (Ith)				A	16							
Maximum operating voltage				V	250 (IEC)							
Insulation Specifications												
Between adjacent output contacts				Vrms	2500							
Between input and output contacts				Vrms	2500							
Between contacts and DIN rail				Vrms	2500							
General Specifications												
Ambient air temperature around the device	Operation		°C (F)	- 40 to + 55 (-40 to +131)								
	Storage		°C (F)	- 40 to + 85 (-40 to +185)								
Degree of protection			Conforming to IEC/EN 60529 IP 20									
Cabling	Coil terminals	Flexible cable with cable end	1 conductor	0.5 to 1.5 mm² / AWG 20 to AWG 16			0.25 to 2 x 1 mm² / AWG 22 to AWG 17					
			2 conductors	0.5 to 1.5 mm² / AWG 20 to AWG 16			–					
		Solid cable without cable end	1 conductor	0.5 to 2.5 mm² / AWG 20 to AWG 14			0.5 to 2 x 1.5 mm² / AWG 20 to AWG 16					
			2 conductors	0.5 to 2.5 mm² / AWG 20 to AWG 14			–					
	Contact terminals	Flexible cable with cable end	1 conductor	0.5 to 2.5 mm² / AWG 20 to AWG 14			0.25 to 2 x 1 mm² / AWG 22 to AWG 17					
			2 conductors	0.5 to 2.5 mm² / AWG 20 to AWG 14			–					
		Solid cable without cable end	1 conductor	0.5 to 4 mm² / AWG 20 to AWG 12			0.5 to 2 x 1.5 mm² / AWG 20 to AWG 16					
			2 conductors	0.5 to 4 mm² / AWG 20 to AWG 12			–					
Maximum tightening torque / Screw size				N•m	1 / M3 screw			1 / M3.5 screw				
Mounting				On 35 mm DIN rail / on panel								
Mounting on DIN rail				By red plastic clip								
Terminal referencing				IEC, NEMA								
Compatibility with the metal maintaining clamp				Yes			No					
Timer module				No						Yes		
Protection module				RXM040W, RXM041●●, RXM021●●			RUW24●●					
Clip-in legends				No								
Wire connection method				Screw clamp terminals								

Zelio Plug-In Relays

RPM power relays



RPM12F7



RPM22F7



RPM32F7



RPM42F7



RPM43BD

References

Power relays without LED, with lockable test button (sold in lots of 10)

Control circuit voltage	Number and type of contacts - Thermal current (Ith)				3 C/O (3PDT) - 15 A		4 C/O (4PDT) - 15 A	
	1 C/O (SPDT) - 15 A	2 C/O (DPDT) - 15 A	3 C/O (3PDT) - 15 A	4 C/O (4PDT) - 15 A	Unit reference	Weight	Unit reference	Weight
V	Unit reference	Weight	Unit reference	Weight	Unit reference	Weight	Unit reference	Weight
		kg/lb		kg/lb		kg/lb		kg/lb
12 Vdc	RPM11JD	0.026/0.057	RPM21JD	0.036/0.079	RPM31JD	0.054/0.119	RPM41JD	0.071/0.157
24 Vdc	RPM11BD	0.026/0.057	RPM21BD	0.036/0.079	RPM31BD	0.054/0.119	RPM41BD	0.071/0.157
48 Vdc	RPM11ED	0.026/0.057	RPM21ED	0.036/0.079	RPM31ED	0.054/0.119	RPM41ED	0.071/0.157
110 Vdc	RPM11FD	0.026/0.057	RPM21FD	0.036/0.079	RPM31FD	0.054/0.119	RPM41FD	0.071/0.157
24 Vac	RPM11B7	0.026/0.057	RPM21B7	0.036/0.079	RPM31B7	0.054/0.119	RPM41B7	0.071/0.157
48 Vac	RPM11E7	0.026/0.057	RPM21E7	0.036/0.079	RPM31E7	0.054/0.119	RPM41E7	0.071/0.157
120 Vac	RPM11F7	0.026/0.057	RPM21F7	0.036/0.079	RPM31F7	0.054/0.119	RPM41F7	0.071/0.157
230 Vac	RPM11P7	0.026/0.057	RPM21P7	0.036/0.079	RPM31P7	0.054/0.119	RPM41P7	0.071/0.157

Power relays with LED, with lockable test button (sold in lots of 10)

Coil voltage	Number and type of contacts - Thermal current (Ith)				3 C/O (3PDT) - 15 A		4 C/O (4PDT) - 15 A	
	1 C/O (SPDT) - 15 A	2 C/O (DPDT) - 15 A	3 C/O (3PDT) - 15 A	4 C/O (4PDT) - 15 A	Unit reference	Weight	Unit reference	Weight
V	Unit reference	Weight	Unit reference	Weight	Unit reference	Weight	Unit reference	Weight
		kg/lb		kg/lb		kg/lb		kg/lb
12 Vdc	RPM12JD	0.026/0.057	RPM22JD	0.036/0.079	RPM32JD	0.054/0.119	RPM42JD	0.071/0.157
24 Vdc	RPM12BD	0.026/0.057	RPM22BD	0.036/0.079	RPM32BD	0.054/0.119	RPM42BD	0.071/0.157
48 Vdc	RPM12ED	0.026/0.057	RPM22ED	0.036/0.079	RPM32ED	0.054/0.119	RPM42ED	0.071/0.157
110 Vdc	RPM12FD	0.026/0.057	RPM22FD	0.036/0.079	RPM32FD	0.054/0.119	RPM42FD	0.071/0.157
24 Vac	RPM12B7	0.026/0.057	RPM22B7	0.036/0.079	RPM32B7	0.054/0.119	RPM42B7	0.071/0.157
48 Vac	RPM12E7	0.026/0.057	RPM22E7	0.036/0.079	RPM32E7	0.054/0.119	RPM42E7	0.071/0.157
120 Vac	RPM12F7	0.026/0.057	RPM22F7	0.036/0.079	RPM32F7	0.054/0.119	RPM42F7	0.071/0.157
230 Vac	RPM12P7	0.026/0.057	RPM22P7	0.036/0.079	RPM32P7	0.054/0.119	RPM42P7	0.071/0.157

Power relays without lockable test button, with LED (sold in lots of 10)

Coil voltage	Number and type of contacts - Thermal current (Ith)				3 C/O (3PDT) - 15 A		4 C/O (4PDT) - 15 A	
	1 C/O (SPDT) - 15 A	2 C/O (DPDT) - 15 A	3 C/O (3PDT) - 15 A	4 C/O (4PDT) - 15 A	Unit reference	Weight	Unit reference	Weight
V	Unit reference	Weight	Unit reference	Weight	Unit reference	Weight	Unit reference	Weight
		kg/lb		kg/lb		kg/lb		kg/lb
12 Vdc	RPM13JD	0.024/0.05	RPM23JD	0.036/0.08	RPM33JD	0.054/0.12	RPM43JD	0.068/0.15
24 Vdc	RPM13BD	0.024/0.05	RPM23BD	0.036/0.08	RPM33BD	0.054/0.12	RPM43BD	0.068/0.15
48 Vdc	RPM13ED	0.024/0.05	RPM23ED	0.036/0.08	RPM33ED	0.054/0.12	RPM43ED	0.068/0.15
110 Vdc	RPM13FD	0.024/0.05	RPM23FD	0.036/0.08	RPM33FD	0.054/0.12	RPM43FD	0.068/0.15
24 Vac	RPM13B7	0.024/0.05	RPM23B7	0.036/0.08	RPM33B7	0.054/0.12	RPM43B7	0.068/0.15
48 Vac	RPM13E7	0.024/0.05	RPM23E7	0.036/0.08	RPM33E7	0.054/0.12	RPM43E7	0.068/0.15
120 Vac	RPM13F7	0.024/0.05	RPM23F7	0.036/0.08	RPM33F7	0.054/0.12	RPM43F7	0.068/0.15
230 Vac	RPM13P7	0.024/0.05	RPM23P7	0.036/0.08	RPM33P7	0.054/0.12	RPM43P7	0.068/0.15



RPZF4 + Relay RPM42P7



RUW24...



RPZ1DA



RPZ4FA

References (continued)

Sockets

Contact terminal arrangement	Connection	Relay type	Sold in lots of	Unit reference	Weight kg/lb
Mixed	Screw clamp terminals	RPM1...	10	RPZF1	0.042/0.093
		RPM2...	10	RPZF2	0.054/0.119
		RPM3...	10	RPZF3	0.072/0.159
		RPM4...	10	RPZF4	0.094/0.207

Protection modules

Description	Voltage	Socket type	Sold in lots of	Unit reference	Weight kg/lb
V					
Diode	6 to 250 Vdc	RPZF1	10	RXM040W	0.003/0.007
		RPZF2	10	RXM040W	0.003/0.007
		RPZF3 RPZF4	10	RUW240BD	0.004/0.009
RC circuit	24 to 60 Vac	RPZF1	10	RXM041BN7	0.010/0.022
		RPZF2	10	RXM041BN7	0.010/0.022
	110 to 240 Vac	RPZF1	10	RXM041FU7	0.010/0.022
		RPZF2	10	RXM041FU7	0.010/0.022
Varistor	6 to 24 Vac/Vdc	RPZF1	10	RXM021RB	0.030/0.066
		RPZF2	10	RXM021RB	0.030/0.066
	24 to 60 Vac/Vdc	RPZF1	10	RXM021BN	0.030/0.066
		RPZF2	10	RXM021BN	0.030/0.066
	110 to 240 Vac/Vdc	RPZF1	10	RXM021FP	0.030/0.066
		RPZF2	10	RXM021FP	0.030/0.066
	24 Vac/Vdc	RPZF3	10	RUW242B7	0.004/0.009
		RPZF4	10	RUW242B7	0.004/0.009
	240 Vac/Vdc	RPZF3	10	RUW242P7	0.004/0.009
		RPZF4	10	RUW242P7	0.004/0.009

Timer module (1)

Description	Voltage	Socket type	Reference	Weight kg/lb
V				
Multifunction	24 to 240 Vac/Vdc	RPZF3 RPZF4	RUW101MW	0.020/0.044

Accessories

Description	For use with	Sold in lots of	Unit reference	Weight kg/lb
V				
Metal maintaining clamp (for single-pole relays)	RPZF1	10	RPZR235	0.001/0.002
Mounting adapters for DIN rail (2)	RPM1...	10	RPZ1DA	0.004/0.009
	RPM2...	10	RXZE2DA	0.004/0.009
	RPM3...	10	RPZ3DA	0.004/0.009
	RPM4...	10	RPZ4DA	0.006/0.013
Mounting adapters with mounting lugs for panel	RPM1...	10	RPZ1FA	0.002/0.004
	RPM2...	10	RXZE2FA	0.002/0.004
	RPM3...	10	RPZ3FA	0.003/0.007
	RPM4...	10	RPZ4FA	0.004/0.009
Clip-in legends (sheet of 108 legends)	All relays	10	RXZL520	0.080/0.176
Clip-in legends (sheet of 16 legends)	All relays	10	RGZL520	0.080/0.176

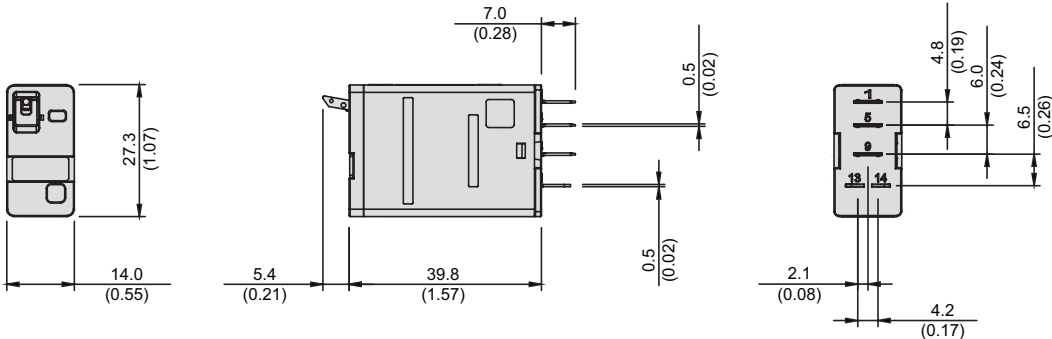
(1) See timer module description (selection of functions and time delays) on page 14.

(2) Test button becomes inaccessible.

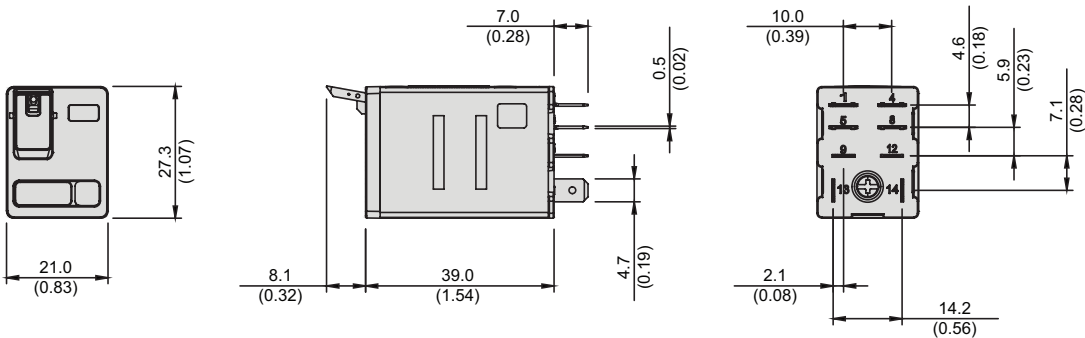
Dimensions: mm (in.)

Power relays

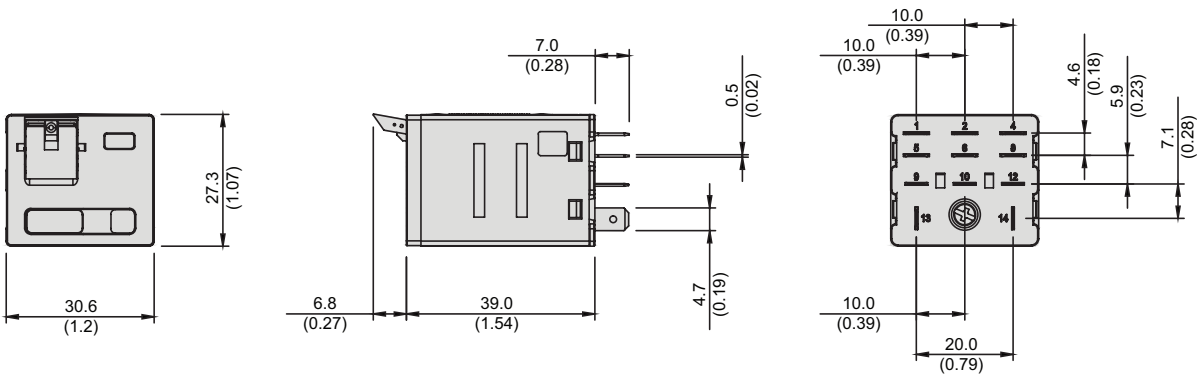
RPM1



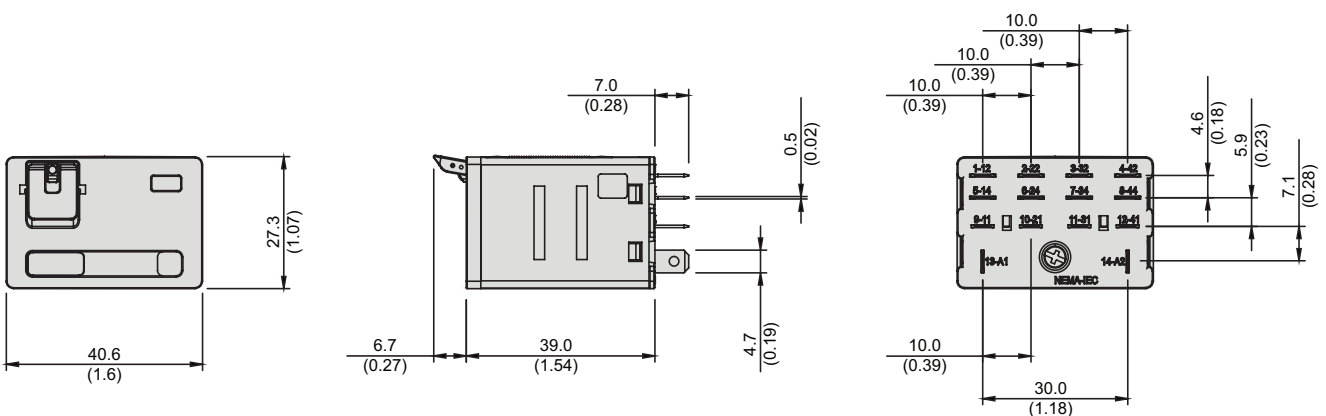
RPM2



RPM3



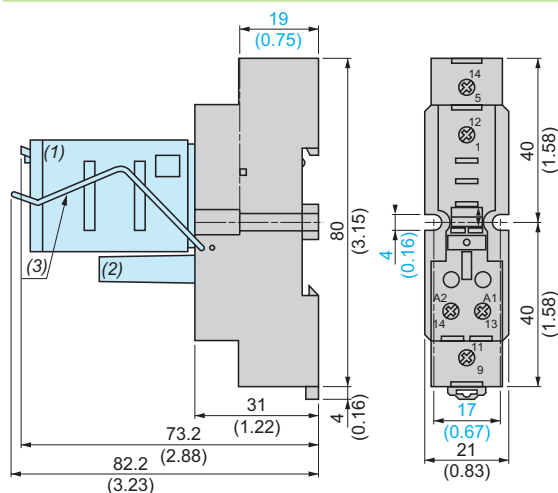
RPM4



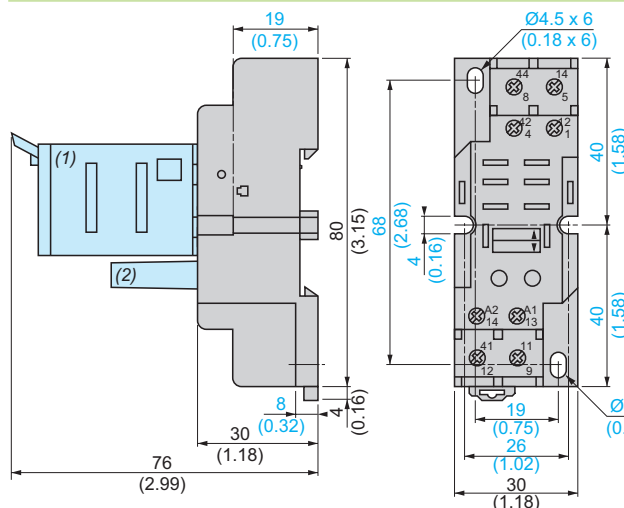
Dimensions: mm (in.) (continued)

Sockets

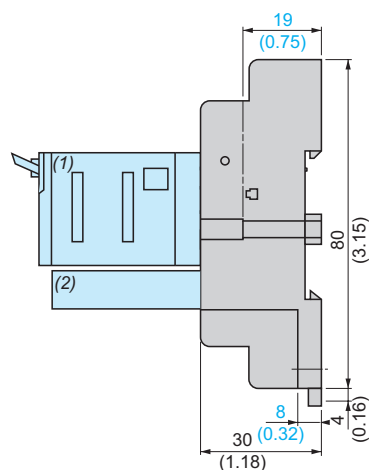
RPZF1



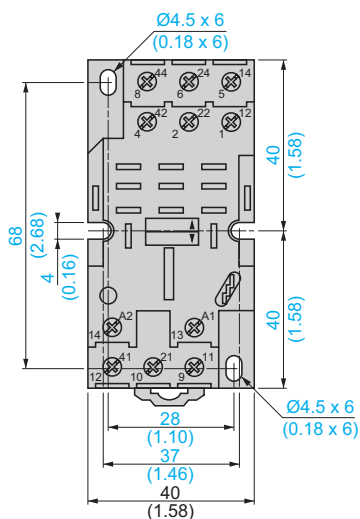
RPZF2



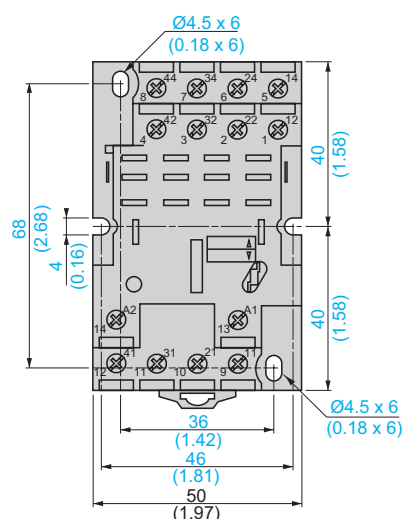
Common side view



RPZF3



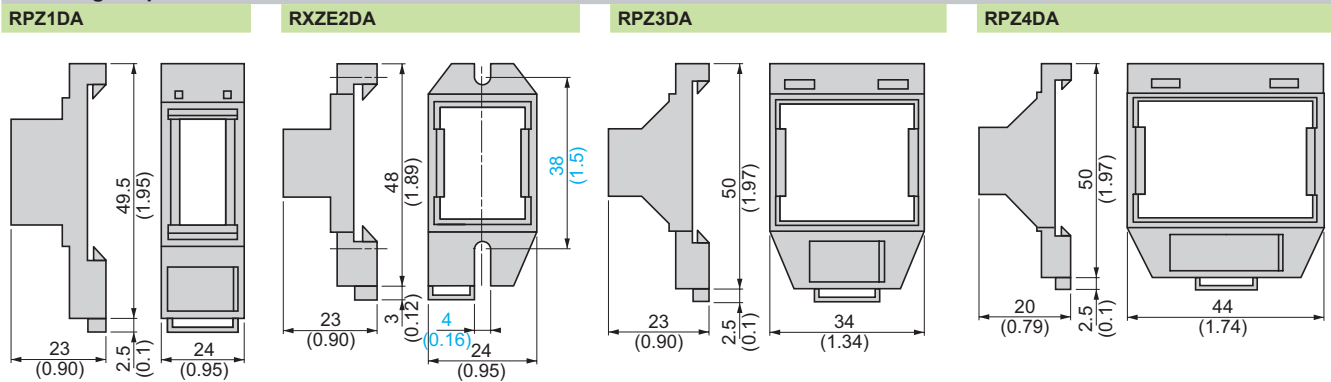
RPZF4



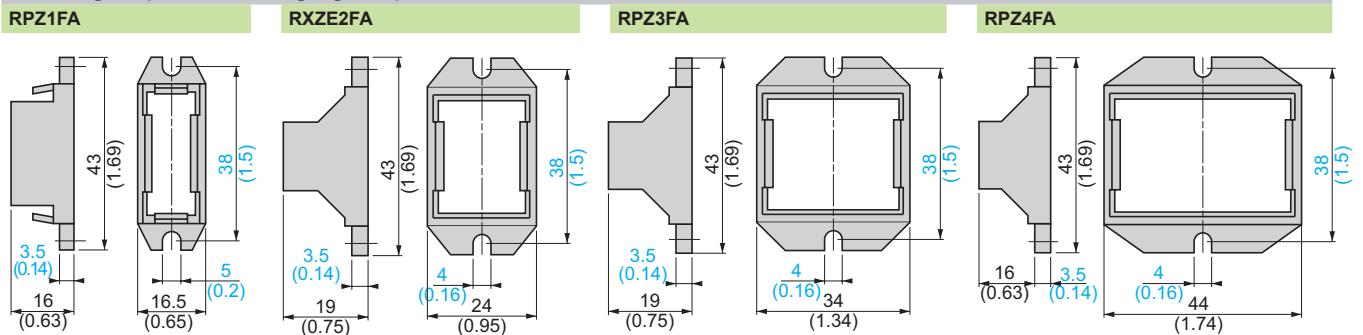
(1) Relays (2) Protection module (3) Maintaining clamp

Dimensions: mm (in.) (continued)

Mounting adapters for DIN rail

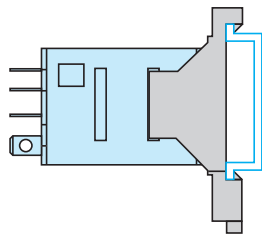


Mounting adapters with fixing lugs for panel

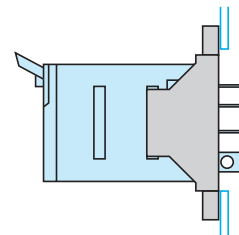
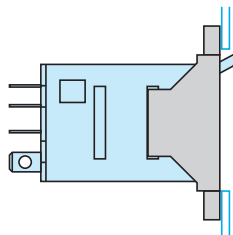


Mounting

Mounting adapters for DIN rail (1)



Mounting adapters with fixing lugs for panel

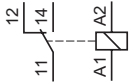


(1) Test button becomes inaccessible

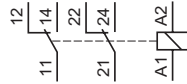
Wiring diagrams

Power relays

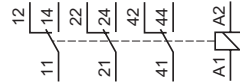
RPM1●●●



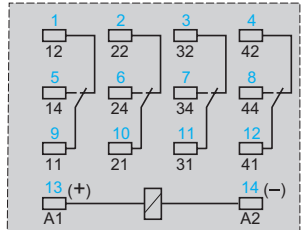
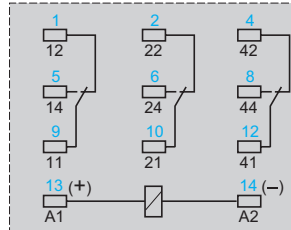
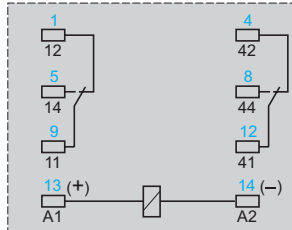
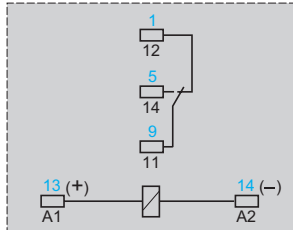
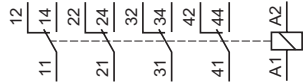
RPM2●●●



RPM3●●●



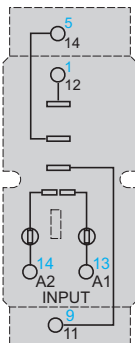
RPM4●●●



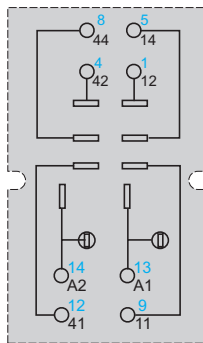
Symbols shown in blue correspond to Nema marking.

Sockets

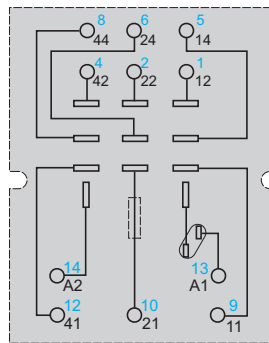
RPZF1



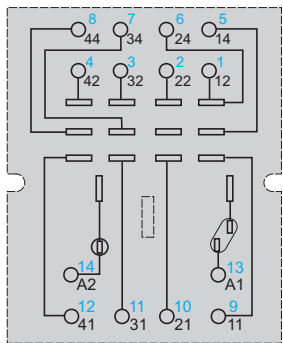
RPZF2



RPZF3



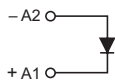
RPZF4



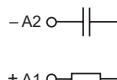
Symbols shown in blue correspond to Nema marking.

Protection modules

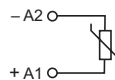
RXM040W, RUW240BD



RXM041●●●, RUW241P7



RXM021●●●, RUW242●●

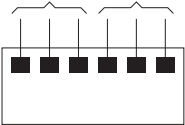


Multifunction timer module RUW101MW

Programming

Timing range selection

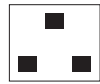
Function selection
Timing range selection



0.1 to 1 s



0.1 to 10 s



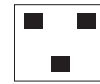
0.1 to 1 min



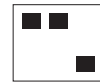
1 to 10 min



0.1 to 1 h



1 to 10 h



0.1 to 1 day



1 to 10 days

Function selection

Selection

Function

Control

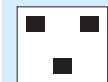
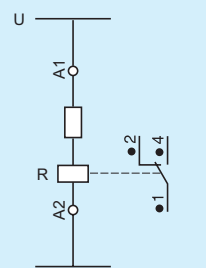
Function diagram

Control scheme



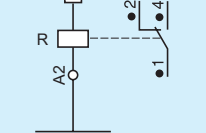
On-delay Timer
E

Series control



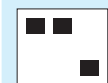
Monostable with maintained control
Wu

Series control



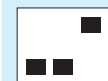
Flashing relay, starting On-delay phase
Bi

Series control



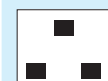
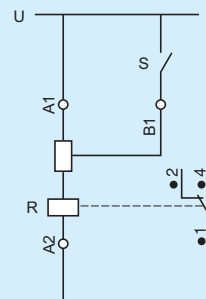
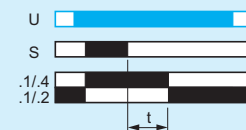
Flashing relay, starting Off-delay phase
Bp

Series control



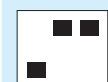
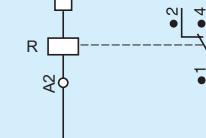
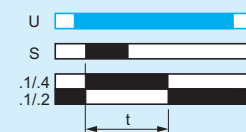
Off-delay timer
R

Control by external contact (S)



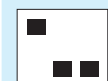
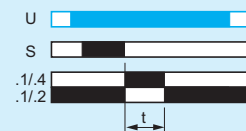
Monostable with pulse control
Ws

Control by external contact (S)



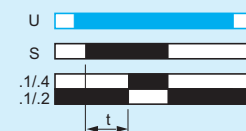
Monostable, starting on de-energization
Wa

Control by external contact (S)



On-delay Timer
Es

Control by external contact (S)



Power off

Contact open

U : voltage

S : external control

Power on

Contact closed

R : relay RPM●●●●

t : adjustable time delay



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