

# Zelio Plug-In Relays

RXG interface relays

Catalog  
2014

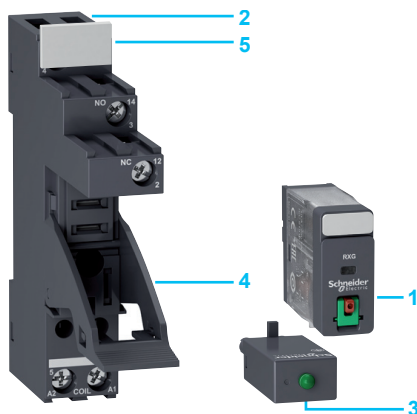


# Zelio™ Plug-In Relays

RXG interface relays

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### Introduction of the product range

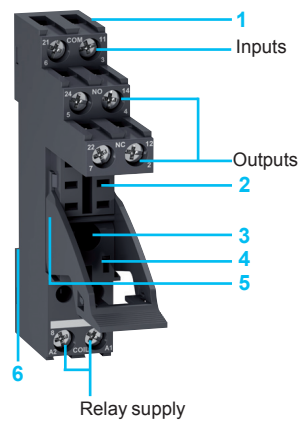
The RXG interface relay range includes:

- 1 10 A relays with 1 C/O contact and 5 A relays with 2 C/O contacts.
- 2 Sockets with separate contact terminals and screw terminal connection.
- 3 Protection modules (diode, diode + LED, RC circuit, or varistor + LED).
- 4 A plastic hold-down ejector clip for all RXG sockets.
- 5 Clip-in ID tags for all RXG sockets.



### Relay description

- 1 Spring return pushbutton for testing the contacts (green: DC coil, red: AC coil).
- 2 Mechanical "relay status" indicator.
- 3 Optional removable lock-down door enables continuous engagement of the contacts for test or maintenance purposes. During normal operation, this lock-down door must always be in the closed position.
- 4 Bipolar LED (option) indicating relay status.
- 5 Removable ID tag for relay identification.
- 6 Five or eight Quick-Connect terminals.
- 7 Standard cover versions include test button, lock-down door, mechanical indicator, and LED button.
- 8 Clear cover version.



### Socket description

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

- 1 Connection by screw terminals.
- 2 Five or eight female contacts for the relay pins.
- 3 A fixing hole for panel mounting.
- 4 Location for protection modules.
- 5 Locking components for plastic ejector clips.
- 6 Locating slot for mounting on DIN rail.

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

### General specifications

|   |                            |        |  |
|---|----------------------------|--------|--|
| <b>Conforming to standards</b>                                |                            |        | IEC/EN 61810-1, UL 508, CSA C22-2 n° 14  |
| <b>Product certifications</b>                                 |                            |        | cULus File E173076 CCN NRNT, NRNT7; cURus File E173076 CCN NRNT2, NRNT8; CSA, CE; RoHS compliant |
| <b>Ambient air temperature</b><br>around the device           | Storage                    | °C (F) | - 40 to + 85 (-40 to +185)   |
|   | Operation                  | °C (F) | - 40 to + 70 (-40 to +158)   |
| <b>Vibration resistance</b><br>conforming to IEC/EN 60068-2-6 | In operation               |        | 3 gn (10 to 150 Hz), ±1.5 mm (10 to 150 Hz)  |
|   | Not operating              |        | 5 gn (10 to 150 Hz), ±1.5 mm (10 to 150 Hz)  |
| <b>Degree of protection</b>                                   | Conforming to IEC/EN 60529 |        | IP 40  |
| <b>Shock resistance</b><br>conforming to IEC/EN 60068-2-27    | In operation               |        | 20 gn (11 ms)  |
|   | Not operating              |        | 100 gn (11 ms)   |
| <b>Protection category</b>                                    |                            |        | RT I   |
| <b>Mounting position</b>                                      |                            |        | Any  |

### Insulation specifications

|   |                      |            |   |
|---|----------------------|------------|---|
| <b>Rated insulation voltage (Ui)</b>          |                      | <b>V</b>   | 250 (IEC), 300 (UL, CSA)                              |
| <b>Rated impulse withstand voltage (Uimp)</b> | Between coil/contact | <b>kV</b>  | 6 (1.2/50 µs) for <b>RXG1●●●</b> and <b>RXG2●●●</b>   |
|   | Between poles        | <b>kV</b>  | 4 (1.2/50 µs) for <b>RXG2●●●</b>                      |
|   | Between contacts     | <b>kV</b>  | 1.2 (1.2/50 µs) for <b>RXG1●●●</b> and <b>RXG2●●●</b> |
| <b>Dielectric strength (rms voltage)</b>      | Between coil/contact | <b>Vac</b> | 5000  |
|   | Between poles        | <b>Vac</b> | 3000 ( <b>RXG2●●●</b> only)                           |
|   | Between contacts     | <b>Vac</b> | 1000  |

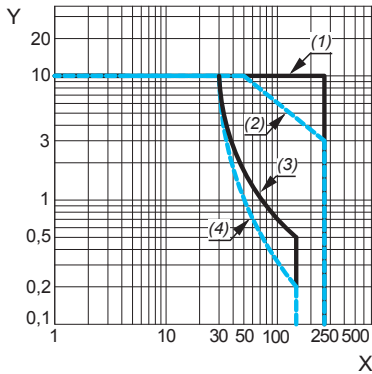
### Contact specifications

| Relay type                                |   |               | <b>RXG1●●●</b>  | <b>RXG2●●●</b>  |
|---|---|---------------|---|---|
| <b>Number and type of contacts</b>        |   |               | 1 C/O   | 2 C/O   |
| <b>Contact materials</b>                  |   |               | Ag alloy  |   |
| <b>Conventional thermal current (Ith)</b> | For ambient temperature ≤ 55 °C                           | <b>A</b>      | 10  | 5   |
| <b>Rated operational current</b>          | Conforming to IEC in utilization categories AC-1 and DC-1 | N.O.          | 10 at 250 Vac<br>10 at 30 Vdc   | 5 at 250 Vac<br>5 at 30 Vdc                             |
|   |   | N.C.          | 10 at 250 Vac<br>10 at 30 Vdc   | 5 at 250 Vac<br>5 at 30 Vdc                             |
|   | Conforming to UL  | Resistive     | <b>A</b> 10 at 250 Vac (100K cycles)<br><b>A</b> 10 at 30 Vdc (100K cycles) | 5 at 250 Vac (100K cycles)<br>5 at 30 Vdc (100K cycles) |
|   |   | Motor         | <b>hp</b> 1/3 at 240 Vac (6K cycles)  | 1/6 at 240 Vac (6K cycles)                              |
|   | <b>Minimum switching requirement</b>                      |               | <b>mA</b>   | 100 at 5 Vdc  |
| <b>Maximum switching voltage</b>          |   | <b>V</b>      | 250 Vac / 30 Vdc (IEC and UL)   |   |
| <b>Switching capacity</b>                 | Maximum   | AC            | <b>VA</b> 2500  | 1250  |
|   |   | DC            | <b>W</b> 300  | 150   |
|   | Minimum   | <b>mW</b> 500 | 50  |   |
| <b>Maximum operating rate</b>             | No-load   |               | 18 000  |   |
|   | In operating cycles per hour Under load                   |               | 1800  |   |
| <b>Utilization coefficient</b>            |   |               | 20 %  |   |
| <b>Mechanical durability</b>              | Cycles  |               | 10 000 000  |   |
| <b>Electrical durability</b>              | Resistive load  |               | 100,000 (unless otherwise specified)  |   |
|   | Operating cycles Inductive load                           |               | See performance curves on page 5.   |   |

### Performance curves

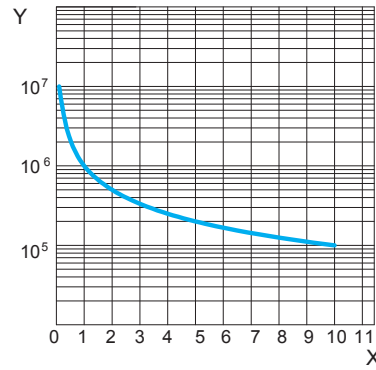
#### RXG1●●●

##### Maximum switching capacity



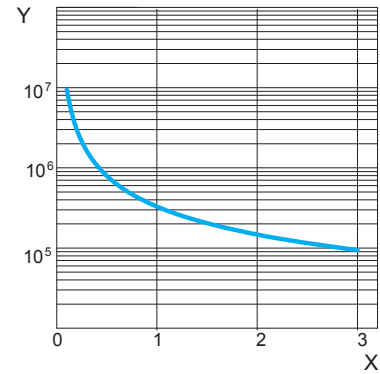
X: Switching voltage (V)  
 Y: Switching current (A)  
 (1): AC Resistive load  
 (2): AC Inductive load  $\cos \phi=0.4$   
 (3): DC Resistive load  
 (4): DC Inductive load T0.95=6P

##### Resistive load



X: Contact current (A)  
 Y: Operating cycle number

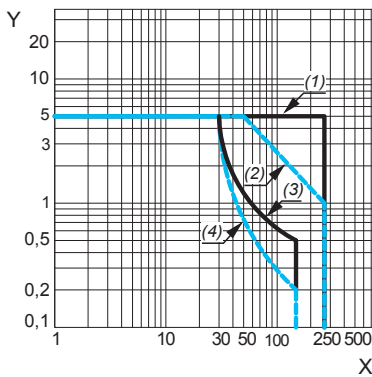
##### Inductive load



X: Contact current (A)  
 Y: Operating cycle number

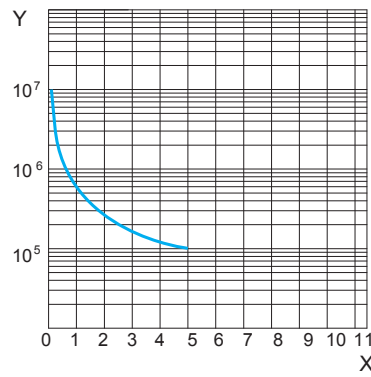
#### RXG2●●●

##### Maximum switching capacity



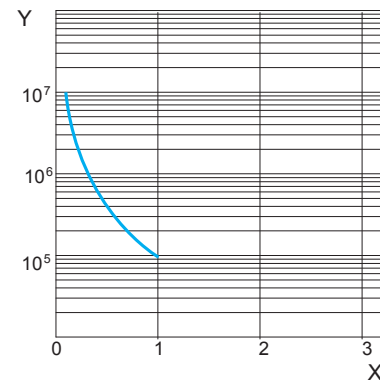
X: Switching voltage (V)  
 Y: Switching current (A)  
 (1): AC Resistive load  
 (2): AC Inductive load  $\cos \phi=0.4$   
 (3): DC Resistive load  
 (4): DC Inductive load T0.95=6P

##### Resistive load



X: Contact current (A)  
 Y: Operating cycle number

##### Inductive load



X: Contact current (A)  
 Y: Operating cycle number

### Coil specifications

|  |  |           |                                  |                                |           |           |           |            |            |            |            |     |
|--|--|-----------|----------------------------------|--------------------------------|-----------|-----------|-----------|------------|------------|------------|------------|-----|
| Average consumption                    | AC   | <b>VA</b> | 0.82 ± 20% at 50/60 Hz           |                                |           |           |           |            |            |            |            |     |
|  | DC   | <b>W</b>  | 0.53 ± 20%                       |                                |           |           |           |            |            |            |            |     |
| Drop-out voltage threshold             | AC   |           | ≥ 0.30 U <sub>c</sub> (at -40°C) |                                |           |           |           |            |            |            |            |     |
|  | DC   |           | ≥ 0.1 U <sub>c</sub> (at -40°C)  |                                |           |           |           |            |            |            |            |     |
| Response time                          | Operate time                               |           | <b>ms</b>                        | 20 max. (at 100% coil voltage) |           |           |           |            |            |            |            |     |
|  | Release time                               |           | <b>ms</b>                        | 20 max.                        |           |           |           |            |            |            |            |     |
| Control circuit voltage U <sub>c</sub> |  | <b>V</b>  | <b>6</b>                         | <b>12</b>                      | <b>24</b> | <b>48</b> | <b>60</b> | <b>110</b> | <b>120</b> | <b>220</b> | <b>230</b> |     |
| Relay control voltage codes            |  |           | <b>RD</b>                        | <b>JD</b>                      | <b>BD</b> | <b>ED</b> | <b>ND</b> | <b>FD</b>  | –          | –          | –          |     |
| DC supply                              | Average resistance at 20 °C <sup>(1)</sup> | Ω         | 68                               | 270                            | 1100      | 4400      | 6700      | 22 800     | –          | –          | –          |     |
|  | Operating voltage limits                   | Min.      | <b>V<sub>ac</sub></b>            | 4.5                            | 9         | 18        | 36        | 45         | 82.5       | –          | –          | –   |
|  |  | Max.      | <b>V<sub>ac</sub></b>            | 6.7                            | 13.3      | 26.6      | 53.3      | 66.6       | 122.1      | –          | –          | –   |
| Relay control voltage codes            |  |           | –                                | –                              | <b>B7</b> | <b>E7</b> | –         | –          | <b>F7</b>  | <b>M7</b>  | <b>P7</b>  |     |
| AC supply                              | Average resistance at 20 °C <sup>(2)</sup> | Ω         | –                                | –                              | 260       | 1100      | –         | –          | 6300       | 21 000     | 23 500     |     |
|  | Operating voltage limits                   | Min.      | <b>V<sub>dc</sub></b>            | –                              | –         | 19.2      | 38.4      | –          | –          | 96         | 176        | 184 |
|  |  | Max.      | <b>V<sub>dc</sub></b>            | –                              | –         | 26.4      | 52.8      | –          | –          | 132        | 242        | 253 |

(1): Average coil resistance tolerance of ±10% for 6, 12, 24, 48, and 60 V<sub>dc</sub> coils, ±15% for 110 V<sub>dc</sub> coil.

(2): Average coil resistance tolerance of ±10% for 24, 48, and 120 V<sub>ac</sub> coils, ±15% for 220 and 230 V<sub>ac</sub> coils.

### Socket specifications

|                              |  |   |
|------------------------------|--|---|
| Socket type                  | <b>RGZE1S35M</b>   | <b>RGZE1S48M</b>                          |
| Relay types used             | <b>RXG11●●, RXG12●●, RXG13●●, RXG15●●</b>                    | <b>RXG21●●, RXG22●●, RXG23●●, RXG25●●</b> |
| Contact terminal arrangement | Separate   |   |
| Wire connection method       | Screw connector  |   |
| Product certifications       | cURus File E172326 CCN SWIV2, SWIV8; CSA; CE; RoHS compliant |   |
| Conforming to standards      | IEC 61984, UL 508, CSA 22.2 No. 14                           |   |

### Electrical specifications

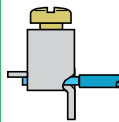
|   |                       |                     |   |
|---|-----------------------|---------------------|---|
| Conventional thermal current (I <sub>th</sub> ) | <b>A</b>              | 10                  | 5 |
| Maximum operating voltage                       | <b>V<sub>ac</sub></b> | 250 (IEC); 300 (UL) |   |

### Insulation specifications

|                                   |                        |      |      |
|-----------------------------------|------------------------|------|------|
| Between adjacent output contacts  | <b>V<sub>rms</sub></b> | –    | 3000 |
| Between input and output contacts | <b>V<sub>rms</sub></b> | 5000 |      |
| Between contacts and DIN rail     | <b>V<sub>rms</sub></b> | 3000 |      |

### General specifications

|   |                                     |   |   |  |
|---|-------------------------------------|---|---|--|
| Ambient air temperature around the device         | Storage                             | <b>°C (°F)</b>                                  | - 40 to + 85 (- 40 to + 185)                  |  |
|   | Operation                           | <b>°C (°F)</b>                                  | - 40 to + 70 (- 40 to + 158)                  |  |
| Degree of protection                              | Conforming to IEC/EN 60529          |   | IP 20   |  |
| Connection  | Solid wire without cable end        | 1 conductor                                     | 0.5 to 2.5 mm <sup>2</sup> - AWG 20 to AWG 14 |  |
|   |                                     | 2 conductors                                    | 0.5 to 1.5 mm <sup>2</sup> - AWG 20 to AWG 16 |  |
|   | Flexible wire with cable end        | 1 conductor                                     | 0.2 to 2.5 mm <sup>2</sup> - AWG 22 to AWG 14 |  |
|   |                                     | 2 conductors                                    | 0.2 to 1.0 mm <sup>2</sup> - AWG 22 to AWG 17 |  |
| Maximum tightening torque / Screw size            | <b>N•m</b>                          | 0.8 / M3 screw                                  |   |  |
| Maximum wire pull force                           | min. wire size, 0.2 mm <sup>2</sup> | <b>N</b>  | 10  |  |
|   | max. wire size, 1.5 mm <sup>2</sup> | <b>N</b>  | 40  |  |
|   | max. wire size, 2.5 mm <sup>2</sup> | <b>N</b>  | 50  |  |
| Mounting  |                                     | 35 mm DIN rail / panel                          |   |  |
| Panel mounting screw torque                       | <b>N•m</b>                          | 0.8   |   |  |
| Panel mounting screw size (max.)                  | <b>mm</b>                           | 3.5   |   |  |
| Mounting on DIN rail                              |                                     | By plastic clip                                 |   |  |
| Terminal referencing                              |                                     | IEC, NEMA                                       |   |  |
| Compatibility with plastic hold-down ejector clip |                                     | Yes   |   |  |
| Protection module compatibility                   |                                     | All RZM040W, RZM041●●●, RZM031●●●, and RZM021●● |   |  |
| Clip-in ID tag compatibility                      |                                     | Yes (see page 9 for more information)           |   |  |
| Wire connection method                            |                                     | Screw connector                                 |   |  |



# Zelio Plug-In Relays

## RXG interface relays



RXG11RD



RXG22B7

| Standard cover relays with lockable test button only    |                 |   |                               |                 |
|---|-----------------|---|-------------------------------|-----------------|
| Control circuit voltage                                 | Sold in lots of | Number and type of contacts - Thermal current (Ith) |                               | Weight<br>kg/lb |
|   |                 | 1 C/O - 10 A<br>Unit reference                      | 2 C/O - 5 A<br>Unit reference |                 |
| V   |                 |   |                               |                 |
| 6 Vdc   | 10              | RXG11RD   | RXG21RD                       | 0.020/0.044     |
| 12 Vdc  | 10              | RXG11JD   | RXG21JD                       | 0.020/0.044     |
| 24 Vdc  | 10              | RXG11BD   | RXG21BD                       | 0.020/0.044     |
| 48 Vdc  | 10              | RXG11ED   | RXG21ED                       | 0.020/0.044     |
| 60 Vdc  | 10              | RXG11ND   | RXG21ND                       | 0.020/0.044     |
| 110 Vdc   | 10              | RXG11FD   | RXG21FD                       | 0.020/0.044     |
| 24 Vac  | 10              | RXG11B7   | RXG21B7                       | 0.020/0.044     |
| 48 Vac  | 10              | RXG11E7   | RXG21E7                       | 0.020/0.044     |
| 120 Vac   | 10              | RXG11F7   | RXG21F7                       | 0.020/0.044     |
| 220 Vac   | 10              | RXG11M7   | RXG21M7                       | 0.020/0.044     |
| 230 Vac   | 10              | RXG11P7   | RXG21P7                       | 0.020/0.044     |
| Standard cover relays with lockable test button and LED |                 |   |                               |                 |
| 6 Vdc   | 10              | RXG12RD   | RXG22RD                       | 0.020/0.044     |
| 12 Vdc  | 10              | RXG12JD   | RXG22JD                       | 0.020/0.044     |
| 24 Vdc  | 10              | RXG12BD   | RXG22BD                       | 0.020/0.044     |
| 48 Vdc  | 10              | RXG12ED   | RXG22ED                       | 0.020/0.044     |
| 60 Vdc  | 10              | RXG12ND   | RXG22ND                       | 0.020/0.044     |
| 110 Vdc   | 10              | RXG12FD   | RXG22FD                       | 0.020/0.044     |
| 24 Vac  | 10              | RXG12B7   | RXG22B7                       | 0.020/0.044     |
| 48 Vac  | 10              | RXG12E7   | RXG22E7                       | 0.020/0.044     |
| 120 Vac   | 10              | RXG12F7   | RXG22F7                       | 0.020/0.044     |
| 220 Vac   | 10              | RXG12M7   | RXG22M7                       | 0.020/0.044     |
| 230 Vac   | 10              | RXG12P7   | RXG22P7                       | 0.020/0.044     |

# Zelio Plug-In Relays

## RXG interface relays



RXG13RD

| Standard cover relays with LED only |                 |   |                               |                 |
|-------------------------------------|-----------------|---|-------------------------------|-----------------|
| Control circuit voltage             | Sold in lots of | Number and type of contacts - Thermal current (Ith) |                               | Weight<br>kg/lb |
|                                     |                 | 1 C/O - 10 A<br>Unit reference                      | 2 C/O - 5 A<br>Unit reference |                 |
| <b>V</b>                            |                 |   |                               |                 |
| 6 Vdc                               | 10              | RXG13RD   | RXG23RD                       | 0.020/0.044     |
| 12 Vdc                              | 10              | RXG13JD   | RXG23JD                       | 0.020/0.044     |
| 24 Vdc                              | 10              | RXG13BD   | RXG23BD                       | 0.020/0.044     |
| 48 Vdc                              | 10              | RXG13ED   | RXG23ED                       | 0.020/0.044     |
| 60 Vdc                              | 10              | RXG13ND   | RXG23ND                       | 0.020/0.044     |
| 110 Vdc                             | 10              | RXG13FD   | RXG23FD                       | 0.020/0.044     |
| 24 Vac                              | 10              | RXG13B7   | RXG23B7                       | 0.020/0.044     |
| 48 Vac                              | 10              | RXG13E7   | RXG23E7                       | 0.020/0.044     |
| 120 Vac                             | 10              | RXG13F7   | RXG23F7                       | 0.020/0.044     |
| 220 Vac                             | 10              | RXG13M7   | RXG23M7                       | 0.020/0.044     |
| 230 Vac                             | 10              | RXG13P7   | RXG23P7                       | 0.020/0.044     |



RXG15RD

| Clear cover relays |    |         |         |             |
|--------------------|----|---------|---------|-------------|
| 6 Vdc              | 10 | RXG15RD | RXG25RD | 0.019/0.042 |
| 12 Vdc             | 10 | RXG15JD | RXG25JD | 0.019/0.042 |
| 24 Vdc             | 10 | RXG15BD | RXG25BD | 0.019/0.042 |
| 48 Vdc             | 10 | RXG15ED | RXG25ED | 0.019/0.042 |
| 60 Vdc             | 10 | RXG15ND | RXG25ND | 0.019/0.042 |
| 110 Vdc            | 10 | RXG15FD | RXG25FD | 0.019/0.042 |
| 24 Vac             | 10 | RXG15B7 | RXG25B7 | 0.018/0.040 |
| 48 Vac             | 10 | RXG15E7 | RXG25E7 | 0.018/0.040 |
| 120 Vac            | 10 | RXG15F7 | RXG25F7 | 0.018/0.040 |
| 220 Vac            | 10 | RXG15M7 | RXG25M7 | 0.018/0.040 |
| 230 Vac            | 10 | RXG15P7 | RXG25P7 | 0.018/0.040 |





RGZE1S48M



RZM031RB



RSZL300

### Sockets with separate contact terminal arrangement and connector connection

| Description               | Thermal current (Ith) | Relay type | Sold in lots of | Unit reference           | Weight kg/lb |
|---------------------------|-----------------------|------------|-----------------|--------------------------|--------------|
| 1 C/O socket with 1 pole  | 10 A                  | RXG1●●●    | 10              | RGZE1S35M <sup>(1)</sup> | 0.034/0.075  |
| 2 C/O socket with 2 poles | 5 A                   | RXG2●●●    | 10              | RGZE1S48M <sup>(1)</sup> | 0.042/0.093  |

### Protection modules

| Description          | For use with | Voltage            | Sold in lots of | Unit reference | Weight kg/lb |
|----------------------|--------------|--------------------|-----------------|----------------|--------------|
| <b>V</b>             |              |                    |                 |                |              |
| Diode                | All sockets  | 6 to 230 Vdc       | 10              | RZM040W        | 0.003/0.007  |
|                      |              | 24 to 60 Vac       | 10              | RZM041BN7      | 0.010/0.022  |
| RC circuit           | All sockets  | 110 to 240 Vac     | 10              | RZM041FU7      | 0.010/0.022  |
|                      |              | 6 to 24 Vdc        | 10              | RZM031RB       | 0.004/0.009  |
|                      |              | 24 to 60 Vdc       | 10              | RZM031BN       | 0.004/0.009  |
| Diode + green LED    | All sockets  | 110 to 230 Vdc     | 10              | RZM031FPD      | 0.004/0.009  |
|                      |              | 6 to 24 Vdc/Vac    | 10              | RZM021RB       | 0.005/0.011  |
|                      |              | 24 to 60 Vdc/Vac   | 10              | RZM021BN       | 0.005/0.011  |
| Varistor + green LED | All sockets  | 110 to 230 Vdc/Vac | 10              | RZM021FP       | 0.005/0.011  |

### Accessories

| Description          | For use with | Sold in lots of | Unit reference         | Weight kg/lb |
|----------------------|--------------|-----------------|------------------------|--------------|
| Plastic ejector clip | All sockets  | 10              | RGZR215 <sup>(1)</sup> | 0.002/0.004  |
| Socket ID tags       | All sockets  | 10              | RSZL300                | 0.001/0.002  |
| Relay ID tags        | All relays   | 10              | RGZL520                | 0.001/0.002  |

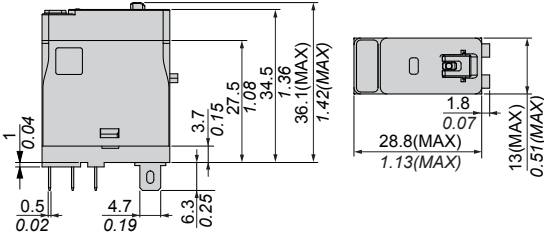
(1) Please note that RGZE1S35M and RGZE1S48M sockets both come with RGZR215 ejector clip as standard.

**Dimensions: mm (in.)**

**Interface relays**

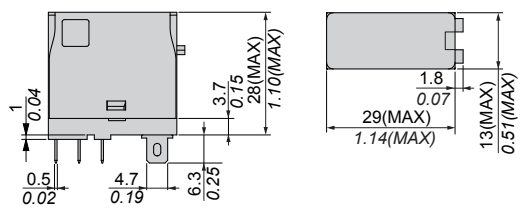
RXG11●●, RXG12●●, RXG13●●, RXG21●●, RXG22●●, RXG23●●

Common view



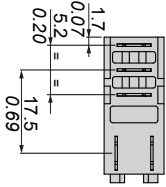
RXG15●●, RXG25●●,

Common view



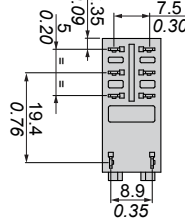
**RXG1●●●**

Pin side view



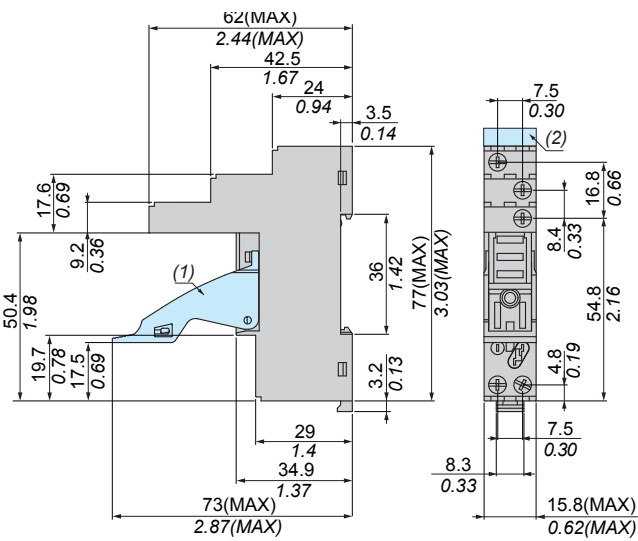
**RXG2●●●**

Pin side view

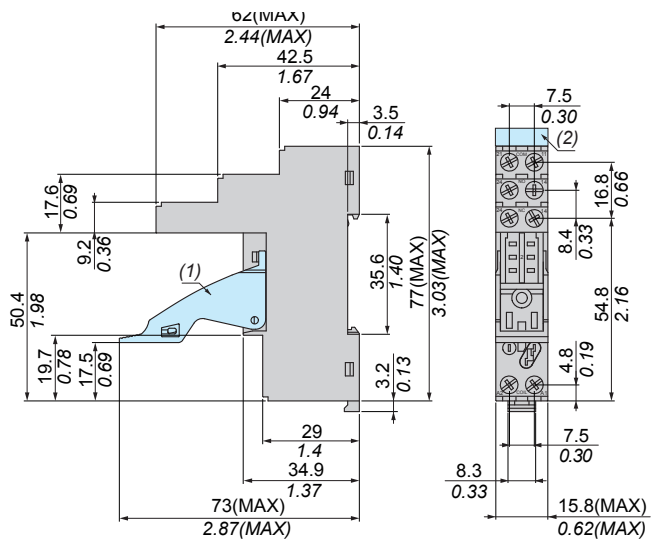


**Sockets**

**RGZE1S35M**



**RGZE1S48M**

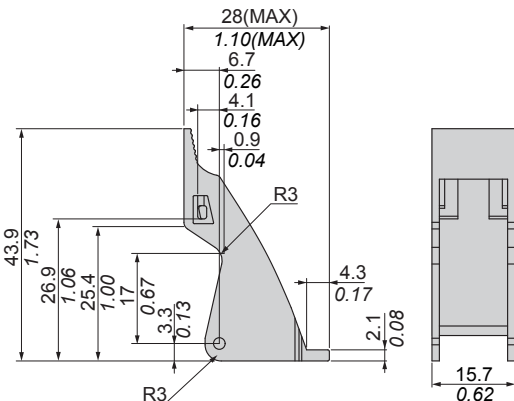


(1): RGZR215 ejector clip  
(2): RSZL300 socket ID tag

(1): RGZR215 ejector clip  
(2): RSZL300 socket ID tag

**Plastic ejector clip**

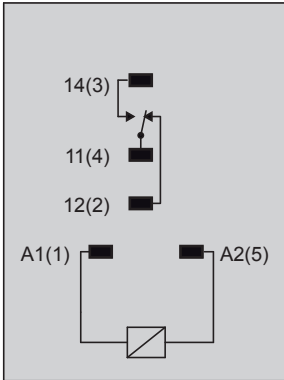
**RGZR215**



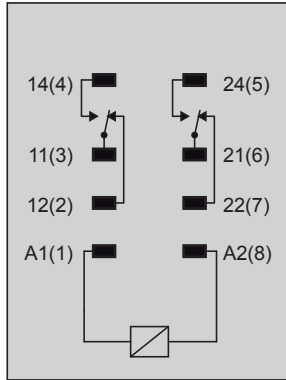
**Wiring diagrams: IEC numbering (NEMA numbering)**

**Interface relays**

**RXG1...**

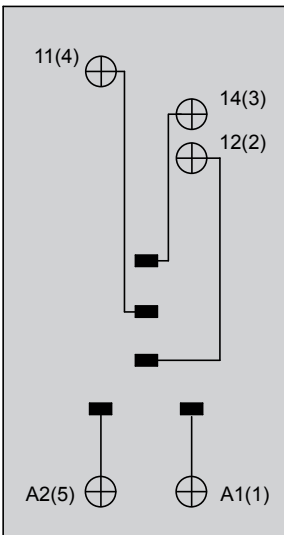


**RXG2...**

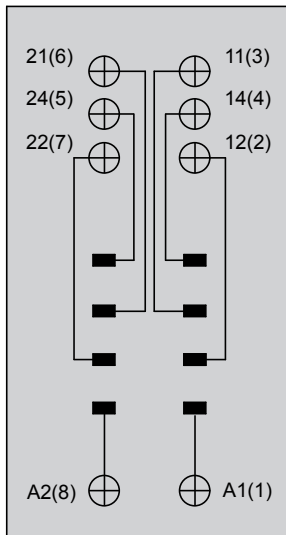


**Sockets**

**RGZE1S35M**

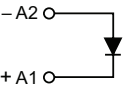


**RGZE1S48M**

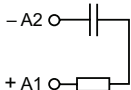


**Protection modules**

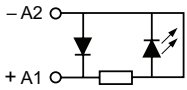
**RZM040W**



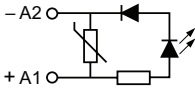
**RZM041...**



**RZM031...**



**RZM021...**



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Replaces 8501CT0301R07/08, 08/2008