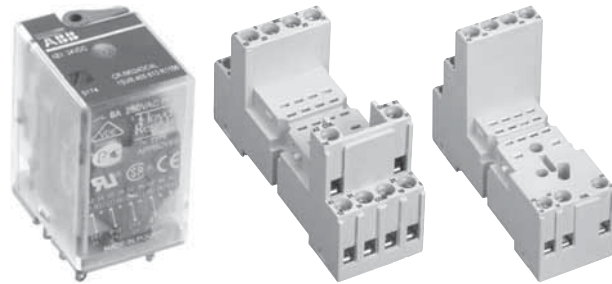




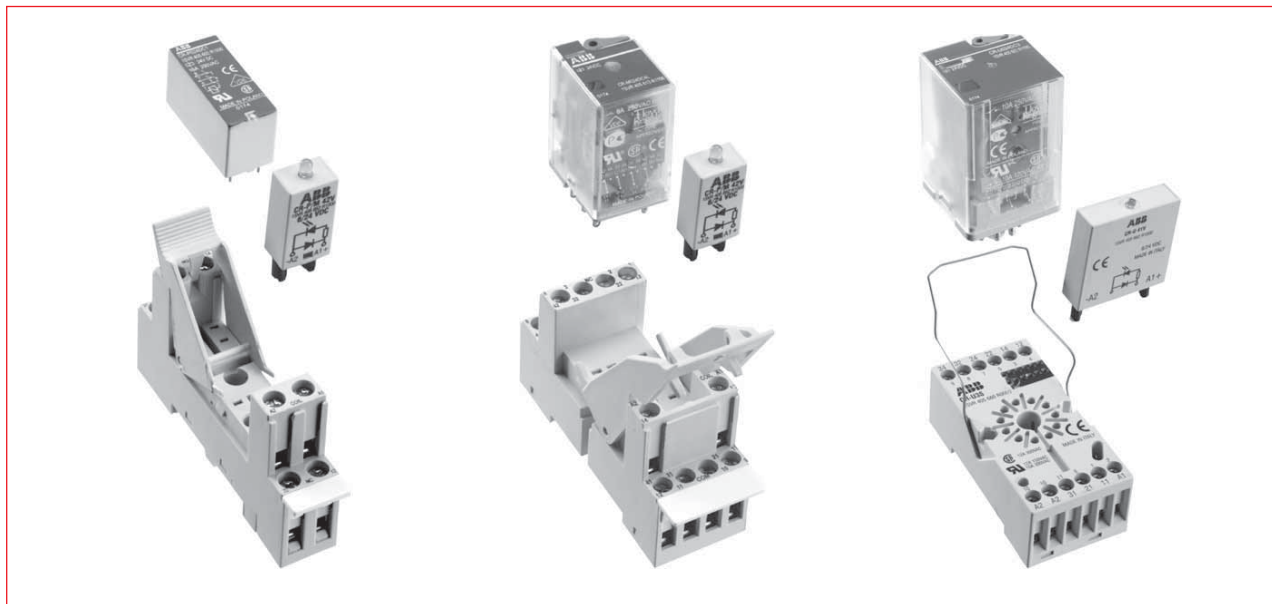
## Plug-in relays CR-P, CR-M & CR-U range



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## Description, approvals / marks CR-P, CR-M and CR-U range



### Pluggable pcb relays CR-P

- 9 different coil voltages  
DC versions:  
12 V, 24 V, 48 V, 110 V  
AC versions:  
24 V, 48 V, 110 V, 120 V, 230 V
- Output contacts:  
1 c/o (16 A) or  
2 c/o (8 A)
- Logical or standard sockets
- Cadmium-free contact material
- Width on socket: 15,5 mm
- Pluggable function modules:  
reverse polarity protection, LED indication,  
RC element, overvoltage protection

### Pluggable miniature relays CR-M

- 11 different coil voltages:  
DC versions:  
12 V, 24 V, 48 V, 60 V, 110 V, 220 V  
AC versions:  
24 V, 48 V, 110 V, 120 V, 230 V
- Output contacts:  
2 c/o (12 A) or  
3 c/o (10 A) or  
4 c/o (6 A)
- Integrated test button for manual actuation  
and locking of the output contacts  
(blue = DC, orange = AC)
- With or without integrated LED
- 4-c/o contact version optionally equipped  
with gold contacts and LED
- Logical or standard sockets
- Cadmium-free contact material
- Width on socket: 27 mm
- Pluggable function modules:  
reverse polarity protection, LED indication,  
RC element, overvoltage protection

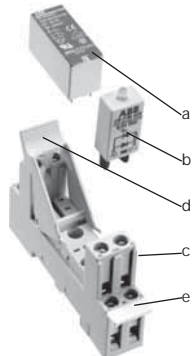
### Pluggable universal relays CR-U

- 10 different coil voltages:  
DC versions:  
12 V, 24 V, 48 V, 110 V, 220 V  
AC versions:  
24 V, 48 V, 110 V, 120 V, 230 V
- Output contacts:  
2 c/o (10 A) or  
3 c/o (10 A)
- Integrated test button for manual actuation  
and locking of the output contacts  
(blue = DC, orange = AC)
- With or without integrated LED
- Cadmium-free contact material
- Width on socket: 38 mm
- Pluggable function modules:  
reverse polarity protection, LED indication,  
RC element, overvoltage protection

- all devices
- some devices

|                  | CR-P | CR-M | CR-U | CR-P Sockets | CR-M Sockets | CR-U Sockets | CR-P/M Modules | CR-U Modules |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------|------|------|--------------|--------------|--------------|----------------|--------------|--|--|--|--|--|--|--|--|--|--|--|
| <b>Approvals</b> |      |      |      |              |              |              |                |              |  |  |  |  |  |  |  |  |  |  |  |
|                  | ■/-  | ■/-  | ■/-  | ■/■          | ■/■          | ■/■          | -/■            | -/■          |  |  |  |  |  |  |  |  |  |  |  |
|                  | ■    | ■    | ■    | ■            | ■            | ■            |                |              |  |  |  |  |  |  |  |  |  |  |  |
|                  | ■    | ■    | ■    | ■            | ■            | ■            |                |              |  |  |  |  |  |  |  |  |  |  |  |
|                  |      | ■    | ■    |              |              |              |                |              |  |  |  |  |  |  |  |  |  |  |  |
| <b>Marks</b>     |      |      |      |              |              |              |                |              |  |  |  |  |  |  |  |  |  |  |  |
|                  | ■    | ■    | ■    | ■            | ■            | ■            | ■              | ■            |  |  |  |  |  |  |  |  |  |  |  |

# Pcb relays



CR-P

- a interface relay
- b Pluggable function module
- c Socket
- d Holder
- e Marker

| Type                              | Supply voltage | Catalog number     | Pack. unit pieces |
|-----------------------------------|----------------|--------------------|-------------------|
| <b>1 c/o contact: 250 V, 16 A</b> |                |                    |                   |
| CR-P012DC1                        | 12 V DC        | 1SVR 405 600 R4000 | 10                |
| CR-P024DC1                        | 24 V DC        | 1SVR 405 600 R1000 | 10                |
| CR-P048DC1                        | 48 V DC        | 1SVR 405 600 R6000 | 10                |
| CR-P110DC1                        | 110 V DC       | 1SVR 405 600 R8000 | 10                |
| CR-P024AC1                        | 24 V AC        | 1SVR 405 600 R0000 | 10                |
| CR-P048AC1                        | 48 V AC        | 1SVR 405 600 R5000 | 10                |
| CR-P110AC1                        | 110 V AC       | 1SVR 405 600 R7000 | 10                |
| CR-P120AC1                        | 120 V AC       | 1SVR 405 600 R2000 | 10                |
| CR-P230AC1                        | 230 V AC       | 1SVR 405 600 R3000 | 10                |
| <b>2 c/o contacts: 250 V, 8 A</b> |                |                    |                   |
| CR-P012DC2                        | 12 V DC        | 1SVR 405 601 R4000 | 10                |
| CR-P024DC2                        | 24 V DC        | 1SVR 405 601 R1000 | 10                |
| CR-P048DC2                        | 48 V DC        | 1SVR 405 601 R6000 | 10                |
| CR-P110DC2                        | 110 V DC       | 1SVR 405 601 R8000 | 10                |
| CR-P024AC2                        | 24 V AC        | 1SVR 405 601 R0000 | 10                |
| CR-P048AC2                        | 48 V AC        | 1SVR 405 601 R5000 | 10                |
| CR-P110AC2                        | 110 V AC       | 1SVR 405 601 R7000 | 10                |
| CR-P120AC2                        | 120 V AC       | 1SVR 405 601 R2000 | 10                |
| CR-P230AC2                        | 230 V AC       | 1SVR 405 601 R3000 | 10                |

## Accessories - Sockets

| Type                      | Version                              | Catalog number     | Pack. unit pieces |
|---------------------------|--------------------------------------|--------------------|-------------------|
| <b>Sockets</b>            |                                      |                    |                   |
| CR-PLS                    | Logical socket with safety isolation | 1SVR 405 650 R0000 | 10                |
| CR-PLSx                   | Logical socket                       | 1SVR 405 650 R0100 | 10                |
| CR-PSS                    | Standard socket                      | 1SVR 405 650 R1000 | 10                |
| <b>Socket accessories</b> |                                      |                    |                   |
| CR-PH                     | Holder                               | 1SVR 405 659 R0000 | 10                |



CR-P



CR-PLS

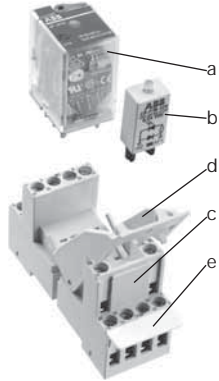


CR-PSS



CR-PH

## Miniature relays Type CR-M



CR-M

- a Interface relay
- b Pluggable function module
- c Socket
- d Holder
- e Marker



CR-M

| Type                                | Supply voltage | Catalog number     | Pack. unit pieces |
|-------------------------------------|----------------|--------------------|-------------------|
| <b>Interface relays without LED</b> |                |                    |                   |
| <b>2 c/o contacts: 250 V, 12 A</b>  |                |                    |                   |
| CR-M012DC2                          | 12 V DC        | 1SVR 405 611 R4000 | 10                |
| CR-M024DC2                          | 24 V DC        | 1SVR 405 611 R1000 | 10                |
| CR-M048DC2                          | 48 V DC        | 1SVR 405 611 R6000 | 10                |
| CR-M060DC2                          | 60 V DC        | 1SVR 405 611 R4200 | 10                |
| CR-M110DC2                          | 110 V DC       | 1SVR 405 611 R8000 | 10                |
| CR-M220DC2                          | 220 V DC       | 1SVR 405 611 R9000 | 10                |
| CR-M024AC2                          | 24 V AC        | 1SVR 405 611 R0000 | 10                |
| CR-M048AC2                          | 48 V AC        | 1SVR 405 611 R5000 | 10                |
| CR-M110AC2                          | 110 V AC       | 1SVR 405 611 R7000 | 10                |
| CR-M120AC2                          | 120 V AC       | 1SVR 405 611 R2000 | 10                |
| CR-M230AC2                          | 230 V AC       | 1SVR 405 611 R3000 | 10                |
| <b>3 c/o contacts: 250 V, 10 A</b>  |                |                    |                   |
| CR-M012DC3                          | 12 V DC        | 1SVR 405 612 R4000 | 10                |
| CR-M024DC3                          | 24 V DC        | 1SVR 405 612 R1000 | 10                |
| CR-M048DC3                          | 48 V DC        | 1SVR 405 612 R6000 | 10                |
| CR-M060DC3                          | 60 V DC        | 1SVR 405 612 R4200 | 10                |
| CR-M110DC3                          | 110 V DC       | 1SVR 405 612 R8000 | 10                |
| CR-M220DC3                          | 220 V DC       | 1SVR 405 612 R9000 | 10                |
| CR-M024AC3                          | 24 V AC        | 1SVR 405 612 R0000 | 10                |
| CR-M048AC3                          | 48 V AC        | 1SVR 405 612 R5000 | 10                |
| CR-M110AC3                          | 110 V AC       | 1SVR 405 612 R7000 | 10                |
| CR-M120AC3                          | 120 V AC       | 1SVR 405 612 R2000 | 10                |
| CR-M230AC3                          | 230 V AC       | 1SVR 405 612 R3000 | 10                |
| <b>4 c/o contacts: 250 V, 6 A</b>   |                |                    |                   |
| CR-M012DC4                          | 12 V DC        | 1SVR 405 613 R4000 | 10                |
| CR-M024DC4                          | 24 V DC        | 1SVR 405 613 R1000 | 10                |
| CR-M048DC4                          | 48 V DC        | 1SVR 405 613 R6000 | 10                |
| CR-M060DC4                          | 60 V DC        | 1SVR 405 613 R4200 | 10                |
| CR-M110DC4                          | 110 V DC       | 1SVR 405 613 R8000 | 10                |
| CR-M220DC4                          | 220 V DC       | 1SVR 405 613 R9000 | 10                |
| CR-M024AC4                          | 24 V AC        | 1SVR 405 613 R0000 | 10                |
| CR-M048AC4                          | 48 V AC        | 1SVR 405 613 R5000 | 10                |
| CR-M110AC4                          | 110 V AC       | 1SVR 405 613 R7000 | 10                |
| CR-M120AC4                          | 120 V AC       | 1SVR 405 613 R2000 | 10                |
| CR-M230AC4                          | 230 V AC       | 1SVR 405 613 R3000 | 10                |
| <b>Interface relays with LED</b>    |                |                    |                   |
| <b>2 c/o contacts: 250 V, 12 A</b>  |                |                    |                   |
| CR-M012DC2L                         | 12 V DC        | 1SVR 405 611 R4100 | 10                |
| CR-M024DC2L                         | 24 V DC        | 1SVR 405 611 R1100 | 10                |
| CR-M048DC2L                         | 48 V DC        | 1SVR 405 611 R6100 | 10                |
| CR-M060DC2L                         | 60 V DC        | 1SVR 405 611 R4300 | 10                |
| CR-M110DC2L                         | 110 V DC       | 1SVR 405 611 R8100 | 10                |
| CR-M220DC2L                         | 220 V DC       | 1SVR 405 611 R9100 | 10                |
| CR-M024AC2L                         | 24 V AC        | 1SVR 405 611 R0100 | 10                |
| CR-M048AC2L                         | 48 V AC        | 1SVR 405 611 R5100 | 10                |
| CR-M110AC2L                         | 110 V AC       | 1SVR 405 611 R7100 | 10                |
| CR-M120AC2L                         | 120 V AC       | 1SVR 405 611 R2100 | 10                |
| CR-M230AC2L                         | 230 V AC       | 1SVR 405 611 R3100 | 10                |

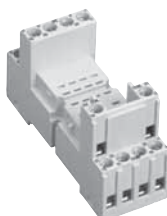
# Miniature relays & accessories

## Type CR-M

Plug-in  
Relays



CR-M



CR-M4SS



CR-M4LS



CR-MH

| Type   | Supply voltage              | Catalog number     | Pack. unit pieces |
|--|-----------------------------|--------------------|-------------------|
| <b>Interface relays with LED</b>                   |                             |                    |                   |
| <b>3 c/o: 250 V, 10 A</b>                          |                             |                    |                   |
| CR-M012DC3L  | 12 V DC                     | 1SVR 405 612 R4100 | 10                |
| CR-M024DC3L  | 24 V DC                     | 1SVR 405 612 R1100 | 10                |
| CR-M048DC3L  | 48 V DC                     | 1SVR 405 612 R6100 | 10                |
| CR-M060DC3L  | 60 V DC                     | 1SVR 405 612 R4300 | 10                |
| CR-M110DC3L  | 110 V DC                    | 1SVR 405 612 R8100 | 10                |
| CR-M220DC3L  | 220 V DC                    | 1SVR 405 612 R9100 | 10                |
| CR-M024AC3L  | 24 V AC                     | 1SVR 405 612 R0100 | 10                |
| CR-M048AC3L  | 48 V AC                     | 1SVR 405 612 R5100 | 10                |
| CR-M110AC3L  | 110 V AC                    | 1SVR 405 612 R7100 | 10                |
| CR-M120AC3L  | 120 V AC                    | 1SVR 405 612 R2100 | 10                |
| CR-M230AC3L  | 230 V AC                    | 1SVR 405 612 R3100 | 10                |
| <b>4 c/o: 250 V, 6 A</b>                           |                             |                    |                   |
| CR-M012DC4L  | 12 V DC                     | 1SVR 405 613 R4100 | 10                |
| CR-M024DC4L  | 24 V DC                     | 1SVR 405 613 R1100 | 10                |
| CR-M048DC4L  | 48 V DC                     | 1SVR 405 613 R6100 | 10                |
| CR-M060DC4L  | 60 V DC                     | 1SVR 405 613 R4300 | 10                |
| CR-M110DC4L  | 110 V DC                    | 1SVR 405 613 R8100 | 10                |
| CR-M220DC4L  | 220 V DC                    | 1SVR 405 613 R9100 | 10                |
| CR-M024AC4L  | 24 V AC                     | 1SVR 405 613 R0100 | 10                |
| CR-M048AC4L  | 48 V AC                     | 1SVR 405 613 R5100 | 10                |
| CR-M110AC4L  | 110 V AC                    | 1SVR 405 613 R7100 | 10                |
| CR-M120AC4L  | 120 V AC                    | 1SVR 405 613 R2100 | 10                |
| CR-M230AC4L  | 230 V AC                    | 1SVR 405 613 R3100 | 10                |
| <b>Interface relays with LED and gold contacts</b> |                             |                    |                   |
| <b>4 c/o: 250 V, 6 A</b>                           |                             |                    |                   |
| CR-M012DC4LG                                       | 12 V DC                     | 1SVR 405 618 R4100 | 10                |
| CR-M024DC4LG                                       | 24 V DC                     | 1SVR 405 618 R1100 | 10                |
| CR-M048DC4LG                                       | 48 V DC                     | 1SVR 405 618 R6100 | 10                |
| CR-M060DC4LG                                       | 60 V DC                     | 1SVR 405 618 R4300 | 10                |
| CR-M110DC4LG                                       | 110 V DC                    | 1SVR 405 618 R8100 | 10                |
| CR-M220DC4LG                                       | 220 V DC                    | 1SVR 405 618 R9100 | 10                |
| CR-M024AC4LG                                       | 24 V AC                     | 1SVR 405 618 R0100 | 10                |
| CR-M048AC4LG                                       | 48 V AC                     | 1SVR 405 618 R5100 | 10                |
| CR-M110AC4LG                                       | 110 V AC                    | 1SVR 405 618 R7100 | 10                |
| CR-M120AC4LG                                       | 120 V AC                    | 1SVR 405 618 R2100 | 10                |
| CR-M230AC4LG                                       | 230 V AC                    | 1SVR 405 618 R3100 | 10                |
| <b>Accessories - Sockets</b>                       |                             |                    |                   |
| Type   | Version                     | Catalog number     | Pack. unit pieces |
| <b>Sockets</b>                                     |                             |                    |                   |
| CR-M2LS  | Logical socket for 2 c/o    | 1SVR 405 651 R1100 | 10                |
| CR-M3LS  | Logical socket for 3 c/o    | 1SVR 405 651 R2100 | 10                |
| CR-M4LS  | Logical socket for 4 c/o    | 1SVR 405 651 R3100 | 10                |
| CR-M2SS  | Standard socket for 2 c/o   | 1SVR 405 651 R1000 | 10                |
| CR-M3SS  | Standard socket for 3 c/o   | 1SVR 405 651 R2000 | 10                |
| CR-M4SS  | Standard socket for 2/4 c/o | 1SVR 405 651 R3000 | 10                |
| <b>Socket accessories</b>                          |                             |                    |                   |
| CR-MH  | Holder for CR-M sockets     | 1SVR 405 659 R1000 | 10                |

## Miniature relays & accessories

### Type CR-M

### Plug-in function modules, Connection diagrams



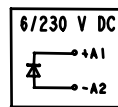
CR-P/M xx

#### Features

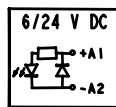
- Pluggable function modules to insert into logical or standard sockets for CR-P and CR-M interface relays
- Function modules: reverse polarity protection, LED indication, RC element, overvoltage protection

| Type        | Version   | Catalog number     | Pack. unit pieces |
|-------------|---|--------------------|-------------------|
| CR-P/M 22   | Reverse polarity protection, 6-230 V DC, A1+, A2- | 1SVR 405 651 R0000 | 10                |
| CR-P/M 42   | Diode and LED red, 6-24 V DC, A1+, A2-            | 1SVR 405 652 R0000 | 10                |
| CR-P/M 42V  | Diode and LED green, 6-24 V DC, A1+, A2-          | 1SVR 405 652 R1000 | 10                |
| CR-P/M 52B  | RC element, 6-24 V AC                             | 1SVR 405 653 R0000 | 10                |
| CR-P/M 52C  | RC element, 110-240 V AC                          | 1SVR 405 653 R1000 | 10                |
| CR-P/M 62   | Red LED, 6-24 V AC/DC                             | 1SVR 405 654 R0000 | 10                |
| CR-P/M 62V  | Green LED, 6-24 V AC/DC                           | 1SVR 405 654 R1000 | 10                |
| CR-P/M 92   | Red LED, 110-230 V AC/DC                          | 1SVR 405 654 R0100 | 10                |
| CR-P/M 92V  | Green LED, 110-230 V AC/DC                        | 1SVR 405 654 R1100 | 10                |
| CR-P/M 62C  | Varistor and red LED, 6-24 V AC/DC                | 1SVR 405 655 R0000 | 10                |
| CR-P/M 62CV | Varistor and green LED, 6-24 V AC/DC              | 1SVR 405 655 R1000 | 10                |
| CR-P/M 92C  | Varistor and red LED, 110-230 V AC/DC             | 1SVR 405 655 R0100 | 10                |
| CR-P/M 92CV | Varistor and green LED, 110-230 V AC/DC           | 1SVR 405 655 R1100 | 10                |
| CR-P/M 72   | Varistor without LED, 24 V AC                     | 1SVR 405 656 R0000 | 10                |
| CR-P/M 72A  | Varistor without LED, 115 V AC                    | 1SVR 405 656 R1000 | 10                |
| CR-P/M 82   | Varistor without LED, 230 V AC                    | 1SVR 405 656 R2000 | 10                |

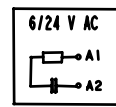
#### Position of connecting terminals



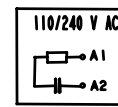
CM-P/M 22



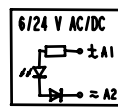
CM-P/M 42  
CM-P/M 42V



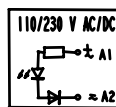
CM-P/M 52B



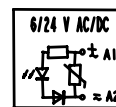
CM-P/M 52C



CM-P/M 62  
CM-P/M 62V



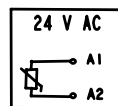
CM-P/M 92  
CM-P/M 92V



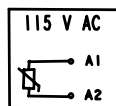
CM-P/M 62C  
CM-P/M 62CV



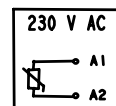
CM-P/M 92C  
CM-P/M 92CV



CM-P/M 72



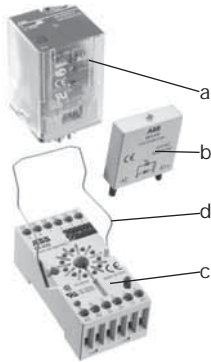
CM-P/M 72A



CM-P/M 82

# Universal relays Type CR-U

Plug-in  
Relays



CR-U

- a Interface relay
- b Pluggable function module
- c Socket
- d Holder



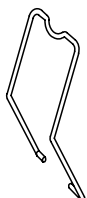
CR-U



CR-U2S



CR-U3S



CR-UH

| Type                                | Supply voltage | Catalog number     | Pack. unit pieces |
|-------------------------------------|----------------|--------------------|-------------------|
| <b>Interface relays without LED</b> |                |                    |                   |
| <b>2 c/o contacts: 250 V, 10 A</b>  |                |                    |                   |
| CR-U012DC2                          | 12 V DC        | 1SVR 405 621 R4000 | 10                |
| CR-U024DC2                          | 24 V DC        | 1SVR 405 621 R1000 | 10                |
| CR-U048DC2                          | 48 V DC        | 1SVR 405 621 R6000 | 10                |
| CR-U110DC2                          | 110 V DC       | 1SVR 405 621 R8000 | 10                |
| CR-U220DC2                          | 220 V DC       | 1SVR 405 621 R9000 | 10                |
| CR-U024AC2                          | 24 V AC        | 1SVR 405 621 R0000 | 10                |
| CR-U048AC2                          | 48 V AC        | 1SVR 405 621 R5000 | 10                |
| CR-U110AC2                          | 110 V AC       | 1SVR 405 621 R7000 | 10                |
| CR-U120AC2                          | 120 V AC       | 1SVR 405 621 R2000 | 10                |
| CR-U230AC2                          | 230 V AC       | 1SVR 405 621 R3000 | 10                |

|                                    |          |                    |    |
|------------------------------------|----------|--------------------|----|
| <b>3 c/o contacts: 250 V, 10 A</b> |          |                    |    |
| CR-U012DC3                         | 12 V DC  | 1SVR 405 622 R4000 | 10 |
| CR-U024DC3                         | 24 V DC  | 1SVR 405 622 R1000 | 10 |
| CR-U048DC3                         | 48 V DC  | 1SVR 405 622 R6000 | 10 |
| CR-U110DC3                         | 110 V DC | 1SVR 405 622 R8000 | 10 |
| CR-U220DC3                         | 220 V DC | 1SVR 405 622 R9000 | 10 |
| CR-U024AC3                         | 24 V AC  | 1SVR 405 622 R0000 | 10 |
| CR-U048AC3                         | 48 V AC  | 1SVR 405 622 R5000 | 10 |
| CR-U110AC3                         | 110 V AC | 1SVR 405 622 R7000 | 10 |
| CR-U120AC3                         | 120 V AC | 1SVR 405 622 R2000 | 10 |
| CR-U230AC3                         | 230 V AC | 1SVR 405 622 R3000 | 10 |

|                                    |          |                    |    |
|------------------------------------|----------|--------------------|----|
| <b>Interface relays with LED</b>   |          |                    |    |
| <b>2 c/o contacts: 250 V, 10 A</b> |          |                    |    |
| CR-U012DC2L                        | 12 V DC  | 1SVR 405 621 R4100 | 10 |
| CR-U024DC2L                        | 24 V DC  | 1SVR 405 621 R1100 | 10 |
| CR-U048DC2L                        | 48 V DC  | 1SVR 405 621 R6100 | 10 |
| CR-U110DC2L                        | 110 V DC | 1SVR 405 621 R8100 | 10 |
| CR-U220DC2L                        | 220 V DC | 1SVR 405 621 R9100 | 10 |
| CR-U024AC2L                        | 24 V AC  | 1SVR 405 621 R0100 | 10 |
| CR-U048AC2L                        | 48 V AC  | 1SVR 405 621 R5100 | 10 |
| CR-U110AC2L                        | 110 V AC | 1SVR 405 621 R7100 | 10 |
| CR-U120AC2L                        | 120 V AC | 1SVR 405 621 R2100 | 10 |
| CR-U230AC2L                        | 230 V AC | 1SVR 405 621 R3100 | 10 |

|                                    |          |                    |    |
|------------------------------------|----------|--------------------|----|
| <b>3 c/o contacts: 250 V, 10 A</b> |          |                    |    |
| CR-U012DC3L                        | 12 V DC  | 1SVR 405 622 R4100 | 10 |
| CR-U024DC3L                        | 24 V DC  | 1SVR 405 622 R1100 | 10 |
| CR-U048DC3L                        | 48 V DC  | 1SVR 405 622 R6100 | 10 |
| CR-U110DC3L                        | 110 V DC | 1SVR 405 622 R8100 | 10 |
| CR-U220DC3L                        | 220 V DC | 1SVR 405 622 R9100 | 10 |
| CR-U024AC3L                        | 24 V AC  | 1SVR 405 622 R0100 | 10 |
| CR-U048AC3L                        | 48 V AC  | 1SVR 405 622 R5100 | 10 |
| CR-U110AC3L                        | 110 V AC | 1SVR 405 622 R7100 | 10 |
| CR-U120AC3L                        | 120 V AC | 1SVR 405 622 R2100 | 10 |
| CR-U230AC3L                        | 230 V AC | 1SVR 405 622 R3100 | 10 |

## Accessories - Sockets

| Type                      | Version                     | Catalog number     | Pack. unit pieces |
|---------------------------|-----------------------------|--------------------|-------------------|
| <b>Sockets</b>            |                             |                    |                   |
| CR-U2S                    | Socket for 2 c/o and module | 1SVR 405 670 R0000 | 10                |
| CR-U3S                    | Socket for 3 c/o and module | 1SVR 405 660 R0000 | 10                |
| CR-U3E                    | Socket for 3 c/o            | 1SVR 405 660 R0100 | 10                |
| <b>Socket accessories</b> |                             |                    |                   |
| CR-UH                     | Holder for CR-U socket      | 1SVR 405 669 R0000 | 10                |

## Universal relays Type CR-U Accessories Plug-in function modules, Connection diagrams



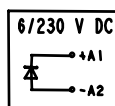
CR-U xx

### Features

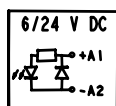
- Pluggable function modules to insert into sockets for CR-U interface relays
- Function modules: reverse polarity protection, LED indication, RC element, overvoltage protection

| Type      | Version   | Catalog number     | Pack. unit pieces |
|-----------|---|--------------------|-------------------|
| CR-U 21   | Reverse polarity protection, 6-230 V DC, A1+, A2- | 1SVR 405 661 R0000 | 10                |
| CR-U 41   | Diode and LED red, 6-24 V DC, A1+, A2-            | 1SVR 405 662 R0000 | 10                |
| CR-U 41V  | Diode and LED green, 6-24 V DC, A1+, A2-          | 1SVR 405 662 R1000 | 10                |
| CR-U 51B  | RC element, 6-24 V AC                             | 1SVR 405 663 R0000 | 10                |
| CR-U 51C  | RC element, 110-240 V AC                          | 1SVR 405 663 R1000 | 10                |
| CR-U 61   | Red LED, 6-24 V AC/DC                             | 1SVR 405 664 R0000 | 10                |
| CR-U 61V  | Green LED, 6-24 V AC/DC                           | 1SVR 405 664 R1000 | 10                |
| CR-U 91   | Red LED, 110-230 V AC/DC                          | 1SVR 405 664 R0100 | 10                |
| CR-U 91V  | Green LED, 110-230 V AC/DC                        | 1SVR 405 664 R1100 | 10                |
| CR-U 61C  | Varistor and red LED, 6-24 V AC/DC                | 1SVR 405 665 R0000 | 10                |
| CR-U 61CV | Varistor and green LED, 6-24 V AC/DC              | 1SVR 405 665 R1000 | 10                |
| CR-U 91C  | Varistor and red LED, 110-230 V AC/DC             | 1SVR 405 665 R0100 | 10                |
| CR-U 91CV | Varistor and green LED, 110-230 V AC/DC           | 1SVR 405 665 R1100 | 10                |
| CR-U 71   | Varistor without LED, 24 V AC                     | 1SVR 405 666 R0000 | 10                |
| CR-U 71A  | Varistor without LED, 115 V AC                    | 1SVR 405 666 R1000 | 10                |
| CR-U 81   | Varistor without LED, 230 V AC                    | 1SVR 405 666 R2000 | 10                |

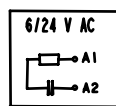
### Position of connecting terminals



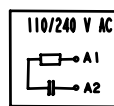
CM-U 21



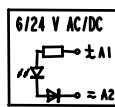
CM-U 41  
CM-U 41V



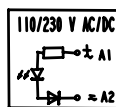
CM-U 51B



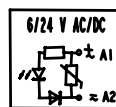
CM-U 51C



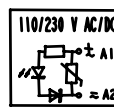
CM-U 61  
CM-U 61V



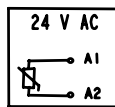
CM-U 91  
CM-U 91V



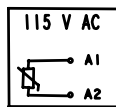
CM-U 61C  
CM-U 61CV



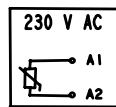
CM-U 91C  
CM-U 91CV



CM-U 71



CM-U 71A




CM-U 81

## Technical data




### Input circuit - coil data


#### CR-P range

|  | Rated voltage | Rated voltage frequency | Make voltage (at 20 °C) | Maximum voltage (at 20 °C) | Break voltage         | Rated power | Coil resistance (at 20 °C) | Tolerance of coil resistance |
|---|---------------|-------------------------|-------------------------|----------------------------|-----------------------|-------------|----------------------------|------------------------------|
| DC coils  | 12 V DC       | -                       | 8.4 V DC                | 30.6 V DC                  | M 0.1 U <sub>n</sub>  | 0.4-0.48 W  | 360 q                      | w 10%                        |
|   | 24 V DC       | -                       | 16.8 V DC               | 61.2 V DC                  | M 0.1 U <sub>n</sub>  | 0.4-0.48 W  | 1440 q                     | w 10%                        |
|   | 48 V DC       | -                       | 33.6 V DC               | 122.4 V DC                 | M 0.1 U <sub>n</sub>  | 0.4-0.48 W  | 5700 q                     | w 10%                        |
|   | 110 V DC      | -                       | 77 V DC                 | 280 V DC                   | M 0.1 U <sub>n</sub>  | 0.4-0.48 W  | 25200 q                    | w 10%                        |
| AC coils  | 24 V AC       | 50 / 60 Hz              | 19.2 V AC               | 28.8 V AC                  | M 0.15 U <sub>n</sub> | 0.75 VA     | 400 q                      | w 10%                        |
|   | 48 V AC       | 50 / 60 Hz              | 38.4 V AC               | 57.6 V AC                  | M 0.15 U <sub>n</sub> | 0.75 VA     | 1550 q                     | w 10%                        |
|   | 110 V AC      | 50 / 60 Hz              | 88 V AC                 | 132 V AC                   | M 0.15 U <sub>n</sub> | 0.75 VA     | 8900 q                     | w 10%                        |
|   | 120 V AC      | 50 / 60 Hz              | 96 V AC                 | 144 V AC                   | M 0.15 U <sub>n</sub> | 0.75 VA     | 10200 q                    | w 10%                        |
|   | 230 V AC      | 50 / 60 Hz              | 184 V AC                | 276 V AC                   | M 0.15 U <sub>n</sub> | 0.75 VA     | 38500 q                    | w 10%                        |

#### CR-M range

|  | Rated voltage | Rated voltage frequency | Make voltage (at 20 °C) | Maximum voltage (at 20 °C) | Break voltage        | Rated power | Coil resistance (at 20 °C) | Tolerance of coil resistance |
|---|---------------|-------------------------|-------------------------|----------------------------|----------------------|-------------|----------------------------|------------------------------|
| DC coils  | 12 V DC       | -                       | 9.6 V DC                | 13.2 V DC                  | M 0.1 U <sub>n</sub> | 0.9 W       | 160 q                      | w 10%                        |
|   | 24 V DC       | -                       | 19.2 DC                 | 26.4 V DC                  | M 0.1 U <sub>n</sub> | 0.9 W       | 640 q                      | w 10%                        |
|   | 48 V DC       | -                       | 38.4 V DC               | 52.8 V DC                  | M 0.1 U <sub>n</sub> | 0.9 W       | 2600 q                     | w 10%                        |
|   | 110 V DC      | -                       | 88 V DC                 | 121 V DC                   | M 0.1 U <sub>n</sub> | 0.9 W       | 13600 q                    | w 10%                        |
|   | 220 V DC      | -                       | 176 V DC                | 242 V DC                   | M 0.1 U <sub>n</sub> | 0.9 W       | 54000 q                    | w 10%                        |
| AC coils  | 24 V AC       | 50 / 60 Hz              | 19.2 V AC               | 26.4 V AC                  | M 0.2 U <sub>n</sub> | 1.6 VA      | 158 q                      | w 10%                        |
|   | 48 V AC       | 50 / 60 Hz              | 38.4 V AC               | 52.8 V AC                  | M 0.2 U <sub>n</sub> | 1.6 VA      | 640 q                      | w 10%                        |
|   | 110 V AC      | 50 / 60 Hz              | 88 V AC                 | 121 V AC                   | M 0.2 U <sub>n</sub> | 1.6 VA      | 3450 q                     | w 10%                        |
|   | 120 V AC      | 50 / 60 Hz              | 96 V AC                 | 132 V AC                   | M 0.2 U <sub>n</sub> | 1.6 VA      | 3770 q                     | w 10%                        |
|   | 230 V AC      | 50 / 60 Hz              | 184 V AC                | 253 V AC                   | M 0.2 U <sub>n</sub> | 1.6 VA      | 16100 q                    | w 10%                        |

#### CR-U range

|  | Rated voltage | Rated voltage frequency | Make voltage (at 20 °C) | Maximum voltage (at 20 °C) | Break voltage         | Rated power                      | Coil resistance (at 20 °C) | Tolerance of coil resistance |
|---|---------------|-------------------------|-------------------------|----------------------------|-----------------------|----------------------------------|----------------------------|------------------------------|
| DC coils  | 12 V DC       | -                       | 9.6 V DC                | 13.2 V DC                  | M 0.1 U <sub>n</sub>  | 1.5 W                            | 110 q                      | w 10%                        |
|   | 24 V DC       | -                       | 19.2 DC                 | 26.4 V DC                  | M 0.1 U <sub>n</sub>  | 1.5 W                            | 430 q                      | w 10%                        |
|   | 48 V DC       | -                       | 38.4 V DC               | 52.8 V DC                  | M 0.1 U <sub>n</sub>  | 1.5 W                            | 1750 q                     | w 10%                        |
|   | 110 V DC      | -                       | 88 V DC                 | 121 V DC                   | M 0.1 U <sub>n</sub>  | 1.5 W                            | 9200 q                     | w 10%                        |
|   | 220 V DC      | -                       | 176 V DC                | 242 V DC                   | M 0.1 U <sub>n</sub>  | 1.5 W                            | 37000 q                    | w 10%                        |
| AC coils  | 24 V AC       | 50 / 60 Hz              | 19.2 V AC               | 26.4 V AC                  | M 0.15 U <sub>n</sub> | 2.8 VA (50 Hz)<br>2.5 VA (60 Hz) | 75 q                       | w 10%                        |
|   | 48 V AC       | 50 / 60 Hz              | 38.4 V AC               | 52.8 V AC                  | M 0.15 U <sub>n</sub> | 2.8 VA (50 Hz)<br>2.5 VA (60 Hz) | 305 q                      | w 10%                        |
|   | 110 V AC      | 50 / 60 Hz              | 88 V AC                 | 121 V AC                   | M 0.15 U <sub>n</sub> | 2.8 VA (50 Hz)<br>2.5 VA (60 Hz) | 1700 q                     | w 10%                        |
|   | 120 V AC      | 50 / 60 Hz              | 96 V AC                 | 132 V AC                   | M 0.15 U <sub>n</sub> | 2.8 VA (50 Hz)<br>2.5 VA (60 Hz) | 1910 q                     | w 10%                        |
|   | 230 V AC      | 50 / 60 Hz              | 184 V AC                | 253 V AC                   | M 0.15 U <sub>n</sub> | 2.8 VA (50 Hz)<br>2.5 VA (60 Hz) | 7080 q                     | w 10%                        |

| Type   |                               | CR-P...1   | CR-P...2             | CR-M...2   | CR-M...3                         | CR-M...4                                     | CR-U...2  | CR-U...3                         |  |
|--|-------------------------------|--|----------------------|--|----------------------------------|--|---|----------------------------------|--|
| Output circuit(s) - relay contact(s)             |                               | 11-12/14   | 11-12/14<br>21-22/24 | 11-12/14<br>21-22/24   | 11-12/14<br>21-22/24<br>31-32/34 | 11-12/14<br>21-22/24<br>31-32/34<br>41-42/44 | 11-12/14<br>31-32/34                                | 11-12/14<br>31-32/34<br>31-32/34 |  |
| Number of contacts                               |                               | 1 c/o  | 2 c/o                | 2 c/o  | 3 c/o                            | 4 c/o  | 2 c/o   | 3 c/o                            |  |
| Contact material                                 |                               | AgNi   |                      | AgNi   | AgNi                             | AgNi<br>AgNi/Au 5 µm                         | AgNi  |                                  |  |
| Rated voltage                                    | acc. to VDE 0110, IEC 60947-1 | 250 V  |                      | 250 V  |                                  |  | 250 V   |                                  |  |
| Min. switching voltage                           |                               | 5 V  |                      | 5 V  |                                  |  | 5 V   |                                  |  |
| Max. switching voltage                           | DC                            | 300 V DC   |                      | 250 V DC   |                                  |  | 250 V DC  |                                  |  |
|  | AC                            | 400 V AC   |                      | 250 V AC   |                                  |  | 250 V AC  |                                  |  |
| Min. switching current                           |                               | 5 mA   |                      | 5 mA   |                                  |  | 5 mA  |                                  |  |
| Rated current                                    |                               | 16 A   | 8 A                  | 12 A   | 10 A                             | 6 A  | 10 A  |                                  |  |
| Rated operating current<br>acc. to IEC 60947-5-1 | AC-12 (resistive) 230 V       | 16 A   | 8 A                  | 12 A   | 10 A                             | 6 A  | 10 A  |                                  |  |
|  | AC-15 (inductive) 230 V       | 6 A  | 3 A                  | 5 A  | 5 A                              | 4 A  | 5 A (n/o) / 3 A (n/c)                               |                                  |  |
|  | DC-12 (resistive) 24 V        | 16 A   | 8 A                  | 12 A   | 10 A                             | 6 A  | 10 A  |                                  |  |
|  | DC-13 (inductive) 24 V        | 2 A  | 2 A                  | 8 A  | 8 A                              | 6 A  | 2 A   |                                  |  |
| Min. switching power                             |                               | 0.3 W  |                      | 0.3 W (AgNi), 0.1 W (AgNi/Au)  |                                  |  | 0.3 W   |                                  |  |
| Max. switching power                             | AC-1                          | 4000 VA  | 2000 VA              | 3000 VA  | 2500 VA                          | 1500 VA                                      | 2500 VA   |                                  |  |
| Contact resistance                               |                               | m 100 mΩ   |                      | m 100 mΩ   |                                  |  | m 100 mΩ  |                                  |  |
| Max. switching capacity                          | rated load AC-1               | 600 switching cycles/h   |                      | 1200 switching cycles/h  |                                  |  | 1200 switching cycles/h                             |                                  |  |
|  | without load                  | 72000 switching cycles/h   |                      | 18000 switching cycles/h   |                                  |  | 12000 switching cycles/h                            |                                  |  |
| Max. lifetime                                    | mechanical                    | > 3 x 10 <sup>7</sup> switching cycles                             |                      | > 2 x 10 <sup>7</sup> switching cycles   |                                  |  | > 2 x 10 <sup>7</sup> switching cycles              |                                  |  |
|  | electrical AC-1 (resistive)   | > 10 <sup>8</sup> switching cycles<br>(16 A, 250 V)   (8 A, 250 V) |                      | > 10 <sup>8</sup> switching cycles<br>(12 A, 250 V)   (10 A, 250 V)   (6 A, 250 V) |                                  |  | > 10 <sup>8</sup> switching cycles<br>(10 A, 250 V) |                                  |  |
|  | cos φ                         | see load limit curve   |                      | see load limit curve   |                                  |  | see load limit curve                                |                                  |  |
| Response time                                    |                               | typ. 7 ms  |                      | typ. 13/10 ms  |                                  |  | typ. 18 ms (DC), 12 ms (AC)                         |                                  |  |
| Release time                                     |                               | typ. 3 ms  |                      | typ. 3/8 ms  |                                  |  | typ. 7 ms (DC), 10 ms (AC)                          |                                  |  |
| <b>Isolation data</b>                            |                               |  |                      |  |                                  |  |   |                                  |  |
| Rated insulation voltage                         |                               | 400 V AC   |                      | 250 V AC   |                                  |  | 250 V AC  |                                  |  |
| Insulation class                                 |                               | C250 / B400  |                      | C250 / B250  |                                  |  | C250  |                                  |  |
| Insulation resistance                            | between coil and contacts     | 5 kV AC  |                      | 2.5 kV AC  |                                  |  | 2.5 kV AC   |                                  |  |
|  | between contacts              | 1 kV AC  |                      | 1.5 kV AC  |                                  |  | 1.5 kV AC   |                                  |  |
|  | between c/o contacts          | - / 2.5 kV AC  |                      | 2.5 kV AC / 2 kV AC  |                                  |  | 2 kV AC   |                                  |  |
| Clearance / creepage distance                    | betw. coil and contacts       | M 10 mm / M 10 mm  |                      | M 4 mm / M 3.2 mm  |                                  |  | M 3 mm / M 4.2 mm                                   |                                  |  |
| <b>General data</b>                              |                               |  |                      |  |                                  |  |   |                                  |  |
| Dimensions (L x W x H)                           |                               | 29 x 12.7 x 15.7 mm  |                      | 27.5 x 21.2 x 35.6 mm  |                                  |  | 35 x 35 x 54.4 mm                                   |                                  |  |
| Weight   |                               | 14 g (0.031 lb)  |                      | 35 g (0.077 lb)  |                                  |  | 83 g (0.18 lb)                                      |                                  |  |
| Mounting position                                |                               | any  |                      | any  |                                  |  | any   |                                  |  |
| Degree of protection                             |                               | IP 67  |                      | IP 40  |                                  |  | IP 40   |                                  |  |
| Temperature range                                | operation                     | DC   | -40 °C ... +85 °C    |  | -40 °C ... +70 °C                |  |   | -40 °C ... +70 °C                |  |
|  |                               | AC   | -40 °C ... +70 °C    |  | -40 °C ... +55 °C                |  |   | -40 °C ... +55 °C                |  |
|  | storage                       | -40 °C ... +85 °C  |                      | -40 °C ... +85 °C  |                                  |  | -40 °C ... +85 °C                                   |                                  |  |
| Connection                                       |                               | by socket  |                      | by socket  |                                  |  | by socket   |                                  |  |
| Mounting   |                               | on socket (see accessories)  |                      | on socket (see accessories)  |                                  |  | on socket (see accessories)                         |                                  |  |
| Vibration resistance                             | n/o, n/c                      | 10 g / 5 g   |                      | 10 g / 5 g   |                                  |  | 10 g  |                                  |  |
| Shock resistance                                 | 10-150 Hz                     | 30 g   | 20 g                 | 5 g  |                                  |  | 5 g   |                                  |  |
| <b>Standards</b>                                 |                               |  |                      |  |                                  |  |   |                                  |  |
| Product standard                                 |                               | EN 61810-1, EN 60255-23<br>IEC 60664-1                             |                      | EN 60810-1, EN 60255-23<br>IEC 61810-7   |                                  |  | EN 60255-1-00                                       |                                  |  |
| Low Voltage Directive                            |                               | 73/23/EEC  |                      | 73/23/EEC  |                                  |  | 73/23/EEC   |                                  |  |
| <b>Approvals / marks</b>                         |                               |  |                      |  |                                  |  |   |                                  |  |
| Approvals  |                               | RU (UL), CSA, VDE, GOST  |                      | RU (UL), CSA, VDE, GOST<br>Lloyd Type Approval (only 4 c/o version)                |                                  |  | RU (UL), CSA, VDE, GOST<br>Lloyd Type Approval      |                                  |  |
| Marks  |                               | CE   |                      | CE   |                                  |  | CE  |                                  |  |

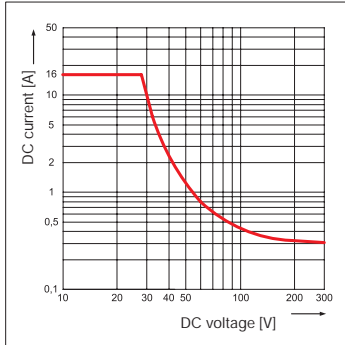
# Technical data

## Load limit curves

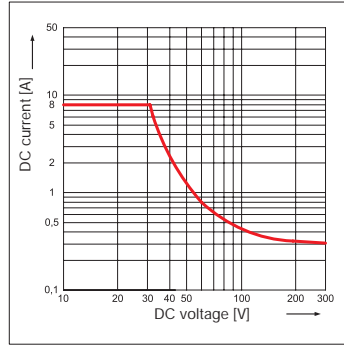


### Maximum switching power at resistive DC load

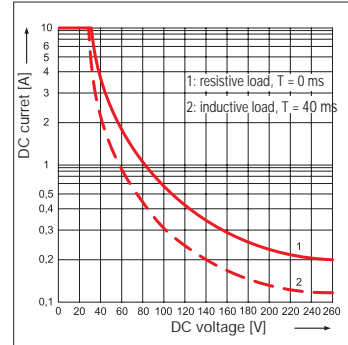
CR-P with 1 c/o contact



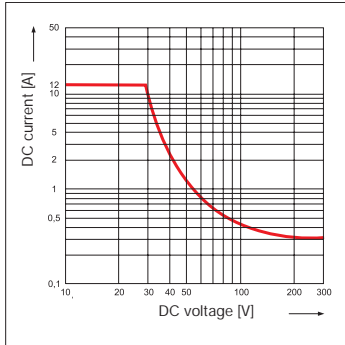
CR-P with 2 c/o contacts



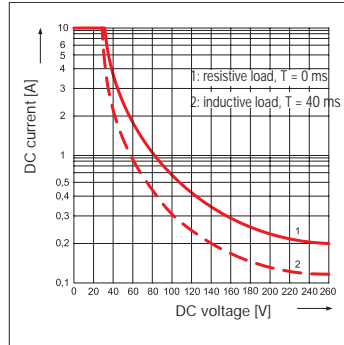
CR-U with 2 and 3 c/o contacts



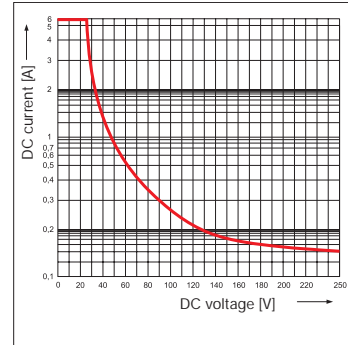
CR-M with 2 c/o contacts



CR-M with 3 c/o contacts

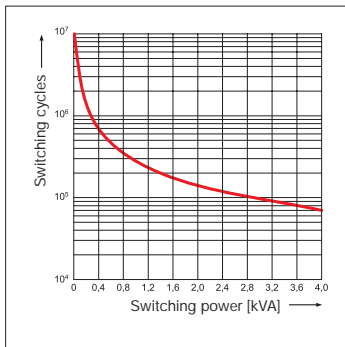


CR-M with 4 c/o contacts

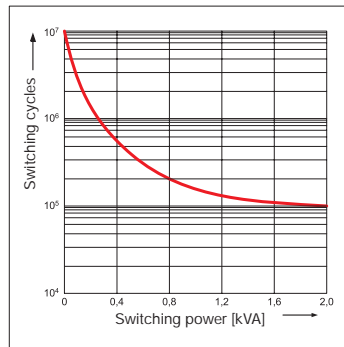


### Electrical lifetime at resistive AC load

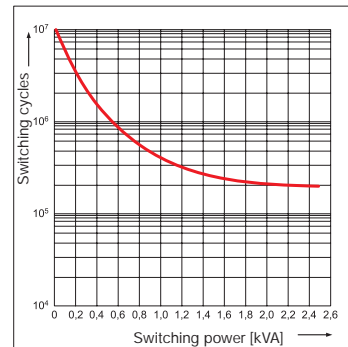
CR-P with 1 c/o contact



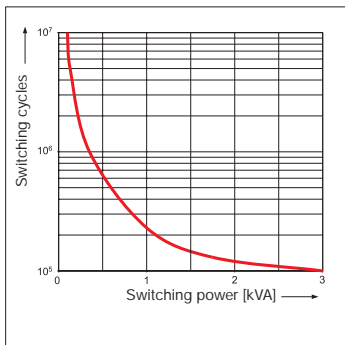
CR-P with 2 c/o contacts



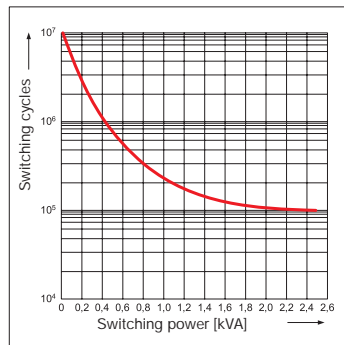
CR-U with 2 and 3 c/o contacts



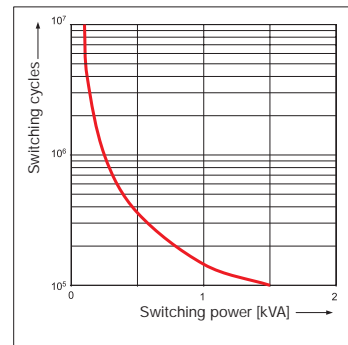
CR-M with 2 c/o contacts



CR-M with 3 c/o contacts

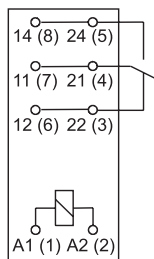


CR-M with 4 c/o contacts

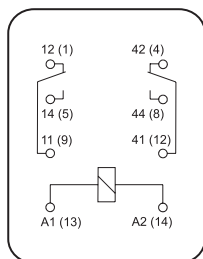


# Connection diagrams Approximate dimensions

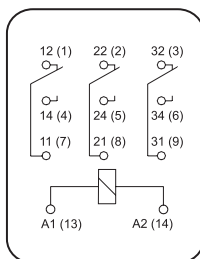
## Position of connection terminals



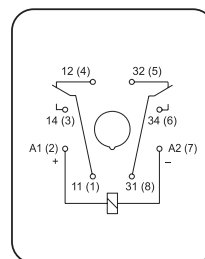
CR-P with 1 c/o contact



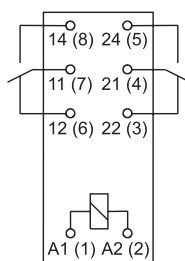
CR-M with 2 c/o contacts



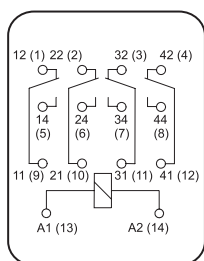
CR-M with 3 c/o contacts



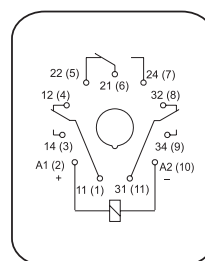
CR-U with 2 c/o contacts



CR-P with 2 c/o contacts

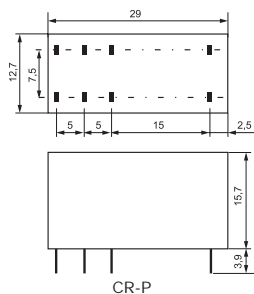


CR-M with 4 c/o contacts

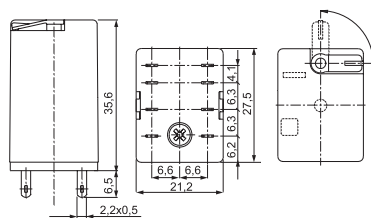


CR-U with 3 c/o contacts

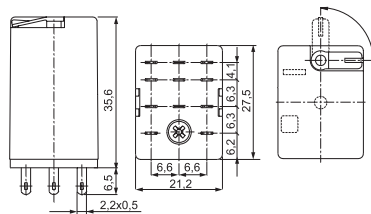
## Dimensions in mm



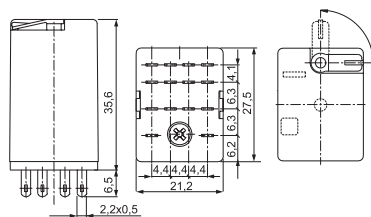
CR-P



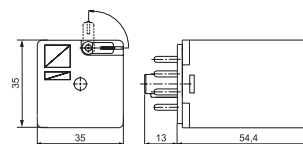
CR-M with 2 c/o contacts



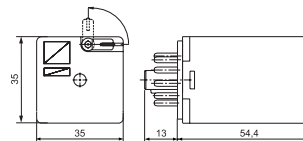
CR-M with 3 c/o contacts



CR-M with 4 c/o contacts



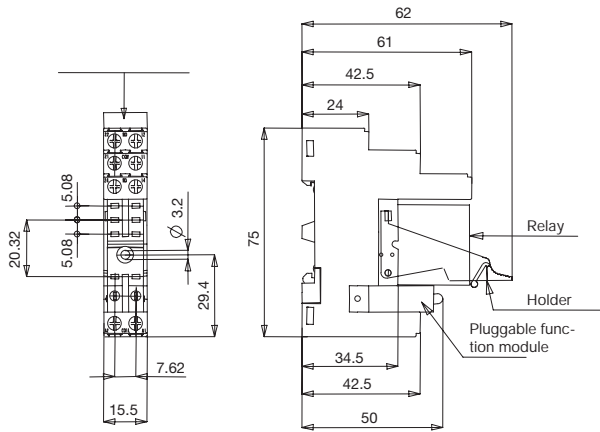
CR-U with 2 c/o contacts



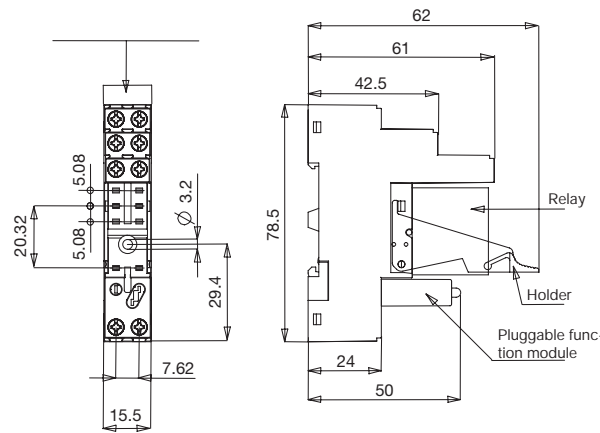
CR-U with 3 c/o contacts

# Approximate dimensions

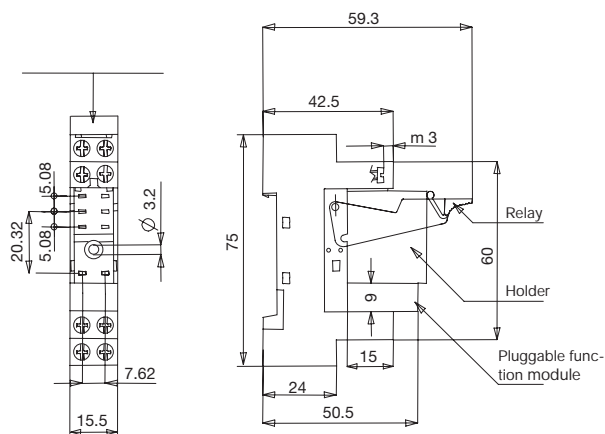
Dimensions in mm



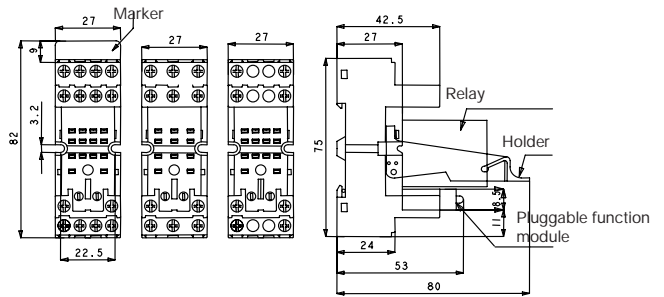
CR-PLS



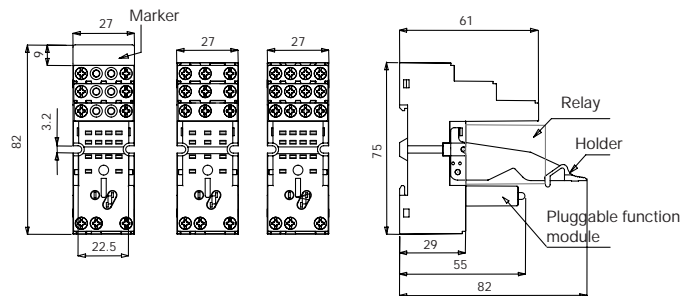
CR-PLSx



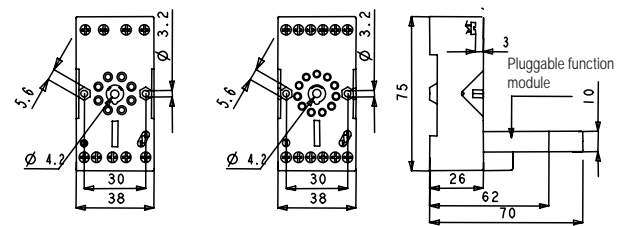
CR-PSS



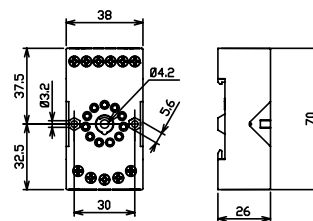
CR-M2SS - CR-M3SS - CR-M4SS



CR-M2LS - CR-M3LS - CR-M4LS



CR-U2S - CR-U3S



CR-U2E



## Notes

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