Pluggable interface relays

CR-P, CR-M and CR-U range

Content

Benefits and advantages 252
Approvals and marks 253
Ordering details
- CR-P relays 254
- Sockets for CR-P relays 254
- Pluggable function modules for CR-P relays 258
- CR-M relays 255
- Sockets for CR-M relays 257
- Pluggable function modules for CR-M relays 258
- CR-U relays 259
- Sockets for CR-U relays 259
- Pluggable function modules for CR-U relays 260

Technical data 261
Technical diagrams 263
Connection diagrams 265
Dimensional drawings 265

Pluggable interface relays CR-P, CR-M and CR-U range
Benefits and advantages

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 contact (16 A) or
  - 2 c/o contacts (8 A) optionally equipped with gold contacts
- Logical or standard sockets
- Cadmium-free contact material
- Width on socket: 15,5 mm
- Pluggable function modules
  - Reverse polarity protection/ Free wheeling diode
  - LED indication
  - RC elements
  - Overvoltage protection
  - Time modules

Pluggable miniature relays CR-M

- 12 different coil voltages
  - DC versions:
    12 V, 24 V, 48 V, 60 V, 110 V, 125 V, 220 V
  - AC versions:
    24 V, 48 V, 110 V, 120 V, 230 V
- Output contacts
  - 2 c/o contacts (12 A) or
  - 3 c/o contacts (10 A) or
  - 4 c/o contacts (6 A) optionally equipped with gold contacts, LED and free wheeling diode
- Integrated test button for manual actuation and locking of the output contacts (blue = DC, orange = AC) that can be removed if necessary
- With or without integrated LED
- Logical or standard sockets
- Cadmium-free contact material
- Width on socket: 27 mm
- Pluggable function modules
  - Reverse polarity protection/ Free wheeling diode
  - LED indication
  - RC elements
  - Overvoltage protection
  - Time modules

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 contacts (10 A) or
  - 3 c/o contacts (10 A)
- Integrated test button for manual actuation and locking of the output contacts (blue = DC, orange = AC) that can be removed if necessary
- With or without integrated LED
- Cadmium-free contact material
- Width on socket: 38 mm
- Pluggable function modules
  - Reverse polarity protection/ Free wheeling diode
  - LED indication
  - RC elements
  - Overvoltage protection
  - Multifunction time module

Pluggable interface relays
CR-P, CR-M and CR-U range
Approvals and marks

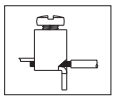
Kinds of sockets

Standard sockets - Position of connecting terminals:
Coil connection (A1-A2) on lower socket side,
contact connections (n/o and n/c contacts)
on the lower and upper socket side.

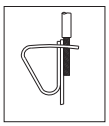
Logical sockets - Position of connecting terminals:
Coil connection (A1-A2) on lower socket side,
all contact connections (common contacts,
n/o and n/c contacts) on upper socket side.

Details see connection diagrams

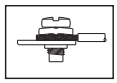
Kind of connecting terminals



Screw type



Spring type



Fork type

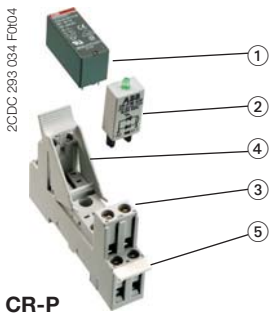
Approvals and marks

■ **existing**
□ **pending**

		Relays				Sockets							Modules	
Approvals		CR-P	CR-M	CR-U		CR-PLS CR-PSS	CR-PLC	CR-M..L.. CR-M..SS	CR-M..SF	CR-U..S CR-U..E	CR-U..SM		CR-P/M	CR-U
	UL 508	■	■ [1]	■		■	■	■		■				
	CAN/CSA C22.2 No.14	■	■ [2]	■									■ [6]	■ [7]
	CAN/CSA C22.2 No.14	■	■ [3]	■		■		■	■	■				
	VDE	■	■ [4]	■										
	GOST	■	■	■		■	■	■	■	■	■		■	■
	Lloyds Register		■ [5]	■										
	CCC	■	■	■										
	RMRS	■	■	■		■	■	■	■	■	■			
Marks														
	CE	■	■	■		■		■	■	■	■		■	■

[1] except 60 V DC and 125 V DC devices with gold contacts
[2] except devices with gold contacts
[3] except 60 V DC and 125 V DC devices
[4] except 125 V DC devices
[5] only devices with 4 c/o contacts
[6] except CR-P/M 42B, CR-P/M 42BV, CR-P/M 42C, CR-P/M 42CV, CR-P/M 52D, CR-P/M 62E, CR-P/M 62EV, CR-P/M 62D, CR-P/M 62DV, CR-P/M T...
[7] except CR-U 41B, CR-U 41BV, CR-U 41C, CR-U 41CV, CR-U 51D, CR-U 61CV, CR-U 61E, CR-U 61EV, CR-U 61D, CR-U 61DV, CR-U 91C, CR-U T

Pluggable interface relays CR-P
Pcb relays
Ordering details



CR-P

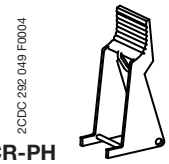
① interface relay
② Pluggable function module
③ Socket
④ Holder
⑤ Marker

CR-P

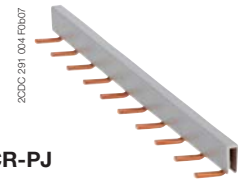
CR-PLS

CR-PSS

CR-PLC



CR-PH



CR-PJ

Type	Rated control supply voltage	Order code	Pack. unit pieces	Price 1 piece
Interface relays				
1 c/o contact: 250 V, 16 A				
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	
2 c/o contacts: 250 V, 8 A				
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**	
Interface relays with gold contacts				
2 c/o gold contacts: 250 V, 8 A				
CR-P024DC2G	24 V DC	1SVR 405 606 R1000	10	
CR-P024AC2G	24 V AC	1SVR 405 606 R0000	10	
CR-P110AC2G	110 V AC	1SVR 405 606 R7000	10	
CR-P230AC2G	230 V AC	1SVR 405 606 R3000	10	

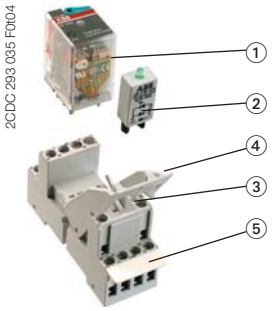
Accessories - Sockets

Type	Version	Connection terminals	Order code	Pack. unit pieces	Price 1 piece
Sockets					
CR-PLS	**Logical socket** with safety isolation	screw	**1SVR 405 650 R0000**	**10**	
CR-PLSx	**Logical socket** [1]	screw	**1SVR 405 650 R0100**	**10**	
CR-PLC	**Logical socket** [1]	spring connection	**1SVR 405 650 R0200**	**10**	
CR-PSS	**Standard socket**	screw	**1SVR 405 650 R1000**	**10**	
Socket accessories					
CR-PH	**Plastic Holder**		**1SVR 405 659 R0000**	**10**	
CR-PJ	**Jumper bar** for sockets with screw connection		**1SVR 405 658 R5000**	**10**	

[1] can be used with time modules CR-P/M T...
Bold printed products = stocked products

• Pluggable function modules .....258 • Technical data .....261 • Dimensional drawings 265

Pluggable interface relays CR-M
Miniature relays
Ordering details



CR-M

① Interface relay
② Pluggable function module
③ Socket
④ Holder
⑤ Marker

CR-M

Type	Rated control supply voltage	Order code	Pack. unit pieces	Price 1 piece
Interface relays without LED				
2 c/o contacts: 250 V, 12 A				
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-M125DC2	125 V DC	1SVR 405 611 R8200	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**	
3 c/o contacts: 250 V, 10 A				
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-M125DC3	125 V DC	1SVR 405 612 R8200	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**	
4 c/o contacts: 250 V, 6 A				
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-M125DC4	125 V DC	1SVR 405 613 R8200	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**	

Bold printed products = stocked products

• Pluggable function modules .....258 • Technical data .....261 • Dimensional drawings 265

Pluggable interface relays CR-M
Miniature relays
Ordering details (continued)

2CDC 291 046 F0b04

CR-M

Type	Rated control supply voltage	Order code	Pack. unit pieces	Price 1 piece
Interface relays with LED				
2 c/o contacts: 250 V, 12 A				
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-M125DC2L	125 V DC	1SVR 405 611 R8300	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**	
3 c/o contacts: 250 V, 10 A				
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-M125DC3L	125 V DC	1SVR 405 612 R8300	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**	
4 c/o contacts: 250 V, 6 A				
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-M125DC4L	125 V DC	1SVR 405 613 R8300	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**	
Interface relays with LED and free-wheeling diode				
4 c/o contacts: 250 V, 6 A				
CR-M024DC4LD	24 V DC	1SVR 405 614 R1100	10	

Bold printed products = stocked products

• Pluggable function modules .....258 • Technical data .....261 • Dimensional drawings 265

Pluggable interface relays CR-M
Miniature relays
Ordering details (continued)

2CDC 291 046 F0b04

CR-M

2CDC 291 041 F0b04

CR-M4SS

2CDC 291 042 F0b04

CR-M4LS

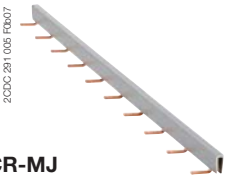
2CDC 291 004 F0b05

CR-M4LC

2CDC 292 072 F0004

CR-MH

2CDC 291 005 F0b07



CR-MJ

Type	Rated control supply voltage	Order code	Pack. unit pieces	Price 1 piece
Interface relays with gold contacts				
4 c/o contacts: 250 V, 6 A				
CR-M024DC4G	24 V DC	1SVR 405 618 R1000	10	
CR-M024AC4G	24 V AC	1SVR 405 618 R0000	10	
CR-M110AC4G	110 V AC	1SVR 405 618 R7000	10	
CR-M230AC4G	230 V AC	1SVR 405 618 R3000	10	
Interface relays with gold contacts and LED				
4 c/o contacts: 250 V, 6 A				
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-M125DC4LG	125 V DC	1SVR 405 618 R8300	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**	
Interface relays with gold contacts, LED and free-wheeling diode				
4 c/o contacts: 250 V, 6 A				
CR-M012DC4LDG	12 V DC	1SVR 405 618 R4400	10	
CR-M024DC4LDG	24 V DC	1SVR 405 618 R1400	10	

Accessories - Sockets

Type	Version	Connection terminals	Order code	Pack. unit pieces	Price 1 piece
Sockets					
CR-M2LS	**Logical socket [1] for 2 c/o**	screw	**1SVR 405 651 R1100**	**10**	
CR-M3LS	**Logical socket [1] for 3 c/o**	screw	**1SVR 405 651 R2100**	**10**	
CR-M4LS	**Logical socket [1] for 2/4 c/o**	screw	**1SVR 405 651 R3100**	**10**	
CR-M2LC	**Logical socket [1] for 2 c/o**	spring connection	**1SVR 405 651 R1200**	**10**	
CR-M4LC	**Logical socket [1] for 4 c/o**	spring connection	**1SVR 405 651 R3200**	**10**	
CR-M2SS	**Standard socket for 2 c/o**	screw	**1SVR 405 651 R1000**	**10**	
CR-M3SS	**Standard socket for 3 c/o**	screw	**1SVR 405 651 R2000**	**10**	
CR-M4SS	**Standard socket for 2/4 c/o**	screw	**1SVR 405 651 R3000**	**10**	
CR-M2SF	**Standard socket for 2 c/o**	fork type	**1SVR 405 651 R1300**	**10**	
CR-M4SF	**Standard socket for 2/4 c/o**	fork type	**1SVR 405 651 R3300**	**10**	
Socket accessories					
CR-MH	**Plastic holder**		**1SVR 405 659 R1000**	**10**	
CR-MH1	**Metal holder**		**1SVR 405 659 R1100**	**10**	
CR-MJ	**Jumper bar** for sockets with screw connection		**1SVR 405 658 R6000**	**10**	

[1] can be used with time modules CR-P/M T...
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• Pluggable function modules .....258 • Technical data .....261 • Dimensional drawings 265

Pluggable interface relays CR-P, CR-M - Accessories
Pluggable function modules
Ordering details, Connection diagrams

2CDC 291 037 F0b04

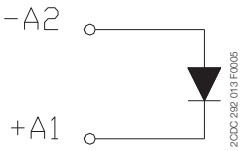
CR-P/M ..

2CDC 291 002 F0b07

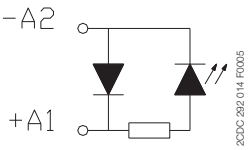
CR-P/M T..

Type	Rated control supply voltage	Version	Order code	Pack. unit pieces	Price 1 piece
Diode - Reverse polarity protection/free wheeling diode					
CR-P/M 22	**6-230 V DC**	**A1+, A2-**	**1SVR 405 651 R0000**	**10**	
Diode and LED - Reverse polarity protection/free wheeling diode					
CR-P/M 42	**6-24 V DC**	**red, A1+, A2-**	**1SVR 405 652 R0000**	**10**	
CR-P/M 42V	**6-24 V DC**	**green, A1+, A2-**	**1SVR 405 652 R1000**	**10**	
CR-P/M 42B	**24-60 V DC**	**red, A1+, A2-**	**1SVR 405 652 R4000**	**10**	
CR-P/M 42BV	**24-60 V DC**	**green, A1+, A2-**	**1SVR 405 652 R4100**	**10**	
CR-P/M 42C	**110-230 V DC**	**red, A1+, A2-**	**1SVR 405 652 R9000**	**10**	
CR-P/M 42CV	**110-230 V DC**	**green, A1+, A2-**	**1SVR 405 652 R9100**	**10**	
RC element - Spark quenching					
CR-P/M 52B	**6-24 V AC**		**1SVR 405 653 R0000**	**10**	
CR-P/M 52D	**24-60 V AC**		**1SVR 405 653 R4000**	**10**	
CR-P/M 52C	**110-230 V AC**		**1SVR 405 653 R1000**	**10**	
Diode and LED					
CR-P/M 62	**6-24 V AC/DC**	**red, for DC A1+, A2-**	**1SVR 405 654 R0000**	**10**	
CR-P/M 62V	**6-24 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 654 R1000**	**10**	
CR-P/M 62E	**24-60 V AC/DC**	**red, for DC A1+, A2-**	**1SVR 405 654 R4000**	**10**	
CR-P/M 62EV	**24-60 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 654 R4100**	**10**	
CR-P/M 92	**110-230 V AC/DC**	**red, for DC A1+, A2-**	**1SVR 405 654 R0100**	**10**	
CR-P/M 92V	**110-230 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 654 R1100**	**10**	
Varistor and LED - Overvoltage protection					
CR-P/M 62C	**6-24 V AC/DC**	**red, for DC A1+, A2-**	**1SVR 405 655 R0000**	**10**	
CR-P/M 62CV	**6-24 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 655 R1000**	**10**	
CR-P/M 62D	**24-60 V AC/DC**	**red, for DC A1+, A2-**	**1SVR 405 655 R4000**	**10**	
CR-P/M 62DV	**24-60 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 655 R4100**	**10**	
CR-P/M 92C	**110-230 V AC/DC**	**red, for DC A1+, A2-**	**1SVR 405 655 R0100**	**10**	
CR-P/M 92CV	**110-230 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 655 R1100**	**10**	
Varistor - Overvoltage protection					
CR-P/M 72	**24 V AC**		**1SVR 405 656 R0000**	**10**	
CR-P/M 72A	**115 V AC**		**1SVR 405 656 R1000**	**10**	
CR-P/M 82	**230 V AC**		**1SVR 405 656 R2000**	**10**	
Time modules					
CR-P/M T1	**12-24 V AC/DC**	**ON-delay**	**1SVR 405 657 R0000**	**10**	
CR-P/M T2	**12-24 V AC/DC**	**Impulse-ON**	**1SVR 405 657 R0100**	**10**	

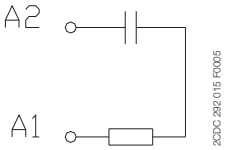
Connection diagrams



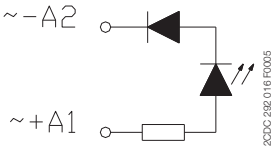
CR-P/M 22



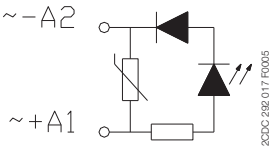
CR-P/M 42, CR-P/M 42B, CR-P/M 42C, CR-P/M 42V, CR-P/M 42BV, CR-P/M 42CV



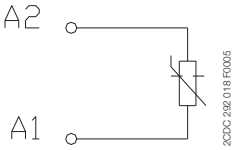
CR-P/M 52B, CR-P/M 52C, CR-P/M 52D,



CR-P/M 62, CR-P/M 62E, CR-P/M 92, CR-P/M 62V, CR-P/M 62EV, CR-P/M 92V



CR-P/M 62C, CR-P/M 62D, CR-P/M 92C, CR-P/M 62CV, CR-P/M 62DV CR-P/M 92CV

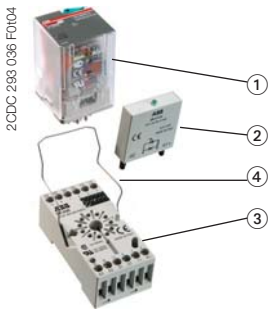


CR-P/M 72, CR-P/M 82, CR-P/M 72A,

All CR-P/M modules - except time modules CR-P/M T... - can be plugged onto all CR-P or CR-M sockets. The time modules CR-P/M T... can be plugged onto the following sockets only: CR-PLSx, CR-PLC and CR-M2LS, CR-M3LS, CR-M4LS, CR-M2LC, CR-M4LC.

Bold printed products = stocked products

Pluggable interface relays CR-U
Universal relays
Ordering details



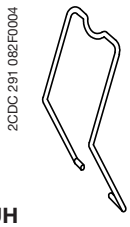
CR-U

① Interface relay
② Pluggable function module
③ Socket
④ Holder

CR-U

CR-U3S

CR-U3E



CR-UH

Type	Rated control supply voltage	Order code	Pack. unit pieces	Price 1 piece
Interface relays without LED: 2 c/o contacts: 250 V, 10 A				
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**	
Interface relays without LED: 3 c/o contacts: 250 V, 10 A				
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**	
Interface relays with LED: 2 c/o contacts: 250 V, 10 A				
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**	
Interface relays with LED: 3 c/o contacts: 250 V, 10 A				
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	Order code	Pack. unit pieces	Price 1 piece
Sockets				
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 2 c/o**	**1SVR 405 660 R0100**	**10**	
CR-U2SM	**Socket small for 2 c/o**	**1SVR 405 670 R1100**	**10**	
CR-U3SM	**Socket small for 3 c/o**	**1SVR 405 660 R1100**	**10**	
Sockelzubehör				
CR-UH	**Holder for CR-U socket**	**1SVR 405 669 R0000**	**10**	

Bold printed products = stocked products

• Pluggable function modules .....260 • Technical data .....261 • Dimensional drawings 265

Pluggable interface relays CR-U - Accessories
Pluggable function modules
Ordering details, Connection diagrams

2CDC 291 038 F0b04

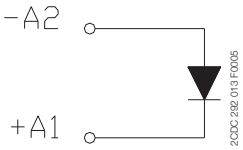
CR-U ..

2CDC 291 032 F0b05

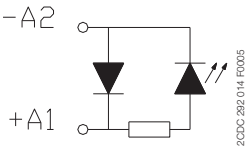
CR-U T

Type	Rated control supply voltage	Version	Order code	Pack. unit pieces	Price 1 piece
Diode - Reverse polarity protection/free wheeling diode					
CR-U 21	**6-230 V DC**	**A1+, A2-**	**1SVR 405 661 R0000**	**10**	
Diode and LED - Reverse polarity protection/free wheeling diode					
CR-U 41	**6-24 V DC**	**red, A1+, A2-**	**1SVR 405 662 R0000**	**10**	
CR-U 41V	**6-24 V DC**	**green, A1+, A2-**	**1SVR 405 662 R1000**	**10**	
CR-U 41B	**24-60 V DC**	**red, A1+, A2-**	**1SVR 405 662 R4000**	**10**	
CR-U 41BV	**24-60 V DC**	**green, A1+, A2-**	**1SVR 405 662 R4100**	**10**	
CR-U 41C	**110-230 V DC**	**red, A1+, A2-**	**1SVR 405 662 R9000**	**10**	
CR-U 41CV	**110-230 V DC**	**green, A1+, A2-**	**1SVR 405 662 R9100**	**10**	
RC element - Spark quenching					
CR-U 51B	**6-24 V AC**		**1SVR 405 663 R0000**	**10**	
CR-U 51D	**24-60 V AC**		**1SVR 405 663 R4000**	**10**	
CR-U 51C	**110-230 V AC**		**1SVR 405 663 R1000**	**10**	
Diode and LED					
CR-U 61	**6-24 V AC/DC**	**red, for DC: A1+, A2-**	**1SVR 405 664 R0000**	**10**	
CR-U 61V	**6-24 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 664 R1000**	**10**	
CR-U 61E	**24-60 V AC/DC**	**red, for DC: A1+, A2-**	**1SVR 405 664 R4000**	**10**	
CR-U 61EV	**24-60 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 664 R4100**	**10**	
CR-U 91	**110-230 V AC/DC**	**red, for DC: A1+, A2-**	**1SVR 405 664 R0100**	**10**	
CR-U 91V	**110-230 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 664 R1100**	**10**	
Varistor and LED - Overvoltage protection					
CR-U 61C	**6-24 V AC/DC**	**red, for DC: A1+, A2-**	**1SVR 405 665 R0000**	**10**	
CR-U 61CV	**6-24 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 665 R1000**	**10**	
CR-U 61D	**24-60 V AC/DC**	**red, for DC: A1+, A2-**	**1SVR 405 665 R4000**	**10**	
CR-U 61DV	**24-60 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 665 R4100**	**10**	
CR-U 91C	**110-230 V AC/DC**	**red, for DC: A1+, A2-**	**1SVR 405 665 R0100**	**10**	
CR-U 91CV	**110-230 V AC/DC**	**green, for DC A1+, A2-**	**1SVR 405 665 R1100**	**10**	
Varistor - Overvoltage protection					
CR-U 71	**24 V AC**		**1SVR 405 666 R0000**	**10**	
CR-U 71A	**115 V AC**		**1SVR 405 666 R1000**	**10**	
CR-U 81	**230 V AC**		**1SVR 405 666 R2000**	**10**	
Multifunction time module					
CR-U T	**24-240 V AC/DC**	**pluggable onto CR-U2S and CR-U3S**	**1SVR 405 667 R0000**	**10**	

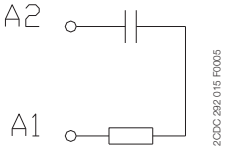
Connection diagrams



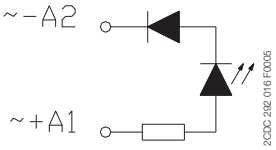
CR-U 21



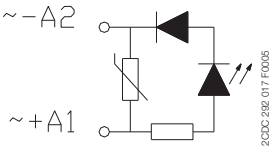
CR-U 41, CR-U 41B, CR-U 41C, CR-U 41V, CR-U 41BV, CR-U 41CV



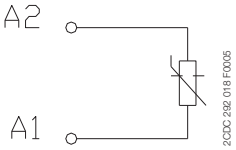
CR-U 51B, CR-U 51C CR-U 51D,



CR-U 61, CR-U 61E, CR-U 91, CR-U 61V, CR-U 61EV, CR-U 91V



CR-U 61C, CR-U 61D, CR-U 91C, CR-U 61CV, CR-U 61DV CR-U 91CV



CR-U 71, CR-U 81 CR-U 71A,

All CR-U modules can be plugged onto sockets CR-U2S and CR-U3S.
Bold printed products = stocked products

Input circuit - coil data

CR-P range

	Rated control supply voltage U_s	Rated frequency	Make voltage (at 20 °C)	Maximum voltage (at 55 °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	≥ 0.1 U_s	0.4-0.48 W	360 Ω	± 10%
	24 V DC	-	16.8 V DC	61.2 V DC	≥ 0.1 U_s	0.4-0.48 W	1440 Ω	± 10%
	48 V DC	-	33.6 V DC	122.4 V DC	≥ 0.1 U_s	0.4-0.48 W	5700 Ω	± 10%
	110 V DC	-	77 V DC	280 V DC	≥ 0.1 U_s	0.4-0.48 W	25200 Ω	± 10%
AC coils	24 V AC	50 / 60 Hz	19.2 V AC	28.8 V AC	≥ 0.15 U_s	0.75 VA	400 Ω	± 10%
	48 V AC	50 / 60 Hz	38.4 V AC	57.6 V AC	≥ 0.15 U_s	0.75 VA	1550 Ω	± 10%
	110 V AC	50 / 60 Hz	88 V AC	132 V AC	≥ 0.15 U_s	0.75 VA	8900 Ω	± 10%
	120 V AC	50 / 60 Hz	96 V AC	144 V AC	≥ 0.15 U_s	0.75 VA	10200 Ω	± 10%
	230 V AC	50 / 60 Hz	184 V AC	276 V AC	≥ 0.15 U_s	0.75 VA	38500 Ω	± 10%

CR-M range

	Rated control supply voltage U_s	Rated frequency	Make voltage (at 20 °C)	Maximum voltage (at 55 °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	≥ 0.1 U_s	0.9 W	160 Ω	± 10%
	24 V DC	-	19.2 DC	26.4 V DC	≥ 0.1 U_s	0.9 W	640 Ω	± 10%
	48 V DC	-	38.4 V DC	52.8 V DC	≥ 0.1 U_s	0.9 W	2600 Ω	± 10%
	60 V DC	-	48.0 V DC	66.0 V DC	≥ 0.1 U_s	0.9 W	4000 Ω	± 10%
	110 V DC	-	88 V DC	121 V DC	≥ 0.1 U_s	0.9 W	13600 Ω	± 10%
	125 V DC	-	100 V DC	137,5 V DC	≥ 0.1 U_s	0.9 W	16000 Ω	± 10%
	220 V DC	-	176 V DC	242 V DC	≥ 0.1 U_s	0.9 W	54000 Ω	± 10%
AC coils	24 V AC	50 / 60 Hz	19.2 V AC	26.4 V AC	≥ 0.2 U_s	1.6 VA	158 Ω	± 10%
	48 V AC	50 / 60 Hz	38.4 V AC	52.8 V AC	≥ 0.2 U_s	1.6 VA	640 Ω	± 10%
	110 V AC	50 / 60 Hz	88 V AC	121 V AC	≥ 0.2 U_s	1.6 VA	3450 Ω	± 10%
	120 V AC	50 / 60 Hz	96 V AC	132 V AC	≥ 0.2 U_s	1.6 VA	3770 Ω	± 10%
	230 V AC	50 / 60 Hz	184 V AC	253 V AC	≥ 0.2 U_s	1.6 VA	16100 Ω	± 10%

CR-U range

	Rated control supply voltage U_s	Rated frequency	Make voltage (at 20 °C)	Maximum voltage (at 55 °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	≥ 0.1 U_s	1.5 W	110 Ω	± 10%
	24 V DC	-	19.2 DC	26.4 V DC	≥ 0.1 U_s	1.5 W	430 Ω	± 10%
	48 V DC	-	38.4 V DC	52.8 V DC	≥ 0.1 U_s	1.5 W	1750 Ω	± 10%
	110 V DC	-	88 V DC	121 V DC	≥ 0.1 U_s	1.5 W	9200 Ω	± 10%
	220 V DC	-	176 V DC	242 V DC	≥ 0.1 U_s	1.5 W	37000 Ω	± 10%
AC coils	24 V AC	50 / 60 Hz	19.2 V AC	26.4 V AC	≥ 0.15 U_s	2.8 VA (50 Hz) 2.5 VA (60 Hz)	75 Ω	± 10%
	48 V AC	50 / 60 Hz	38.4 V AC	52.8 V AC	≥ 0.15 U_s	2.8 VA (50 Hz) 2.5 VA (60 Hz)	305 Ω	± 10%
	110 V AC	50 / 60 Hz	88 V AC	121 V AC	≥ 0.15 U_s	2.8 VA (50 Hz) 2.5 VA (60 Hz)	1700 Ω	± 10%
	120 V AC	50 / 60 Hz	96 V AC	132 V AC	≥ 0.15 U_s	2.8 VA (50 Hz) 2.5 VA (60 Hz)	1910 Ω	± 10%
	230 V AC	50 / 60 Hz	184 V AC	253 V AC	≥ 0.15 U_s	2.8 VA (50 Hz) 2.5 VA (60 Hz)	7080 Ω	± 10%

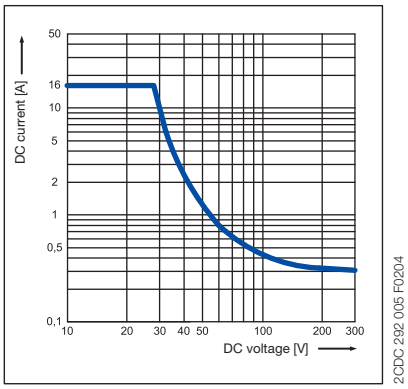
Pluggable interface relays CR-P, CR-M and CR-U
Pcb-, miniature- and universal relays
Technical data (continued)

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)		**11-12/14**	**11-12/14 21-22/24**	**11-12/14 21-22/24**	**11-12/14 21-22/24 31-32/34**	**11-12/14 21-22/24 31-32/34 41-42/44**	**11-12/14 31-32/34**	**11-12/14 21-22/24 31-32/34**
Kind of output		Relay, 1 c/o	Relay, 2 c/o	Relay, 2 c/o	Relay, 3 c/o	Relay, 4 c/o	Relay, 2 c/o	Relay, 3 c/o
Contact material		AgNi	AgNi AgNi/Au 5 µm	AgNi	AgNi	AgNi AgNi/Au 5 µm	AgNi	
Rated operational voltage U_e (VDE 0110, IEC 60947-1)		250 V						
Minimum switching voltage		5 V						
Maximum switching voltage	DC	300 V DC		250 V DC				
	AC	400 V AC		250 V AC				
Minimum switching current		5 mA (AgNi), 2 mA (AgNi/Au)						
Rated free air thermal current I_{th}		16 A	8 A	12 A	10 A	6 A	10 A	
Rated operational current (IEC 60947-5-1)	AC12 (resistive) 230 V	16 A	8 A	12 A	10 A	6 A	10 A	
	AC15 (inductive) 230 V	1.5 A	1 A	1.5 A	1.5 A	1 A	1.5 A	
	DC12 (resistive) 24 V	16 A	8 A	12 A	10 A	6 A	10 A	
	DC13 (inductive) 24 V	2 A	2 A	8 A	8 A	6 A	2 A	
AC rating (UL 508)	Utilization category (Control Circuit Rating Code)	-		-			-	B 300
	max. rated operational voltage	-		-			-	300 V AC
	max. continuous thermal current at B 300	-		-			-	5 A
	max. making / breaking apparent power at B 300	-		-			-	3600/360 VA
	Utilization category General Purpose (single phase)	-		-			10 A, 250 V AC	10 A, 250 V AC
	Utilization category (Resistive)	16 A, 250 V AC	8 A, 250 V AC	10 A, 250 V AC 12 A, 150 V AC	6 A, 250 V AC 10 A, 150 V AC	6 A, 250 V AC 10 A, 150 V AC	10 A, 250 V AC	-
Minmum switching power		0.3 W (AgNi), 0.1 W (AgNi/Au)					0.3 W	
Maximum switching power	AC-1	4000 VA	2000 VA	3000 VA	2500 VA	1500 VA	2500 VA	
Contact resistance		≤ 100 mΩ		≤ 100 mΩ				
Maximum switching capacity	rated load AC-1	600 switching cycles/h		1200 switching cycles/h				
	without load	72000 switching cycles/h		18000 switching cycles/h			12000 switching cycles/h	
Mechanical lifetime		> 3 x 10^7 switching cycles		> 2 x 10^7 switching cycles				
Electrical lifetime	AC1 (resistive)	> 10^5 switching cycles		> 10^5 switching cycles			> 10^5 switching cycles	
		(16 A, 250 V)	(8 A, 250 V)	(12 A, 250 V)	(10 A, 250 V)	(6 A, 250 V)	(10 A, 250 V)	
	cos φ	see reduction factor F						
Response time		typ. 7 ms		typ. 13 ms (DC),10 ms (AC)			typ. 18 ms (DC), 12 ms (AC)	
Release time		typ. 3 ms		typ. 3 ms (DC), 8 ms (AC)			typ. 7 ms (DC), 10 ms (AC)	
Isolation data								
Rated insulation voltage		400 V AC		250 V AC				
Insulation class		C250 / B400		C250 / B250			C250	
Rated impulse withstand voltage U_{imp}	between coil and contacts	5 kV AC		2.5 kV AC				
	between open contacts	1 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 distance	between coil and contacts	≥ 10 mm		≥ 2.5 mm		≥ 1.6 mm	≥ 3 mm	
Creepage distance	between coil and contacts	≥ 10 mm		≥ 4 mm		≥ 3.2 mm	≥ 4.2 mm	
Overvoltage category		III		III		II	III	
Pollution degree		3		3		2	3	

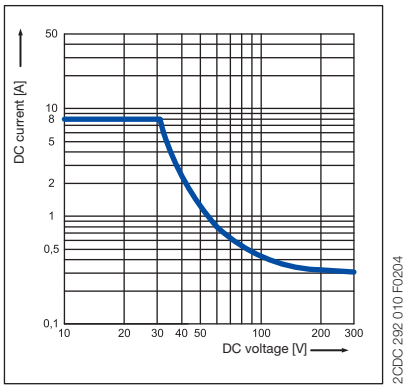
Type		CR-P...1	CR-P...2	CR-M...2	CR-M...3	CR-M...4	CR-U...2	CR-U...3
General data								
Dimensions (W x H x D) when mounted		12.7 x 29 x 15.7 mm		21.2 x 27.5 x 35.6 mm			35 x 35 x 54.4 mm	
Weight		14 g (0.031 lb)		35 g (0.077 lb)			83 g (0.18 lb)	
Mounting		on socket (see accessories)						
Mounting position		any						
Degree of protection		IP 67		IP 40				
Electrical connection								
Connection		by socket						
Environmental data								
Ambient temperature range	operation DC	-40 ... +85 °C		-40 ... +70 °C				
	operation AC	-40 ... +70 °C		-40 ... +55 °C				
	storage	-40 ... +85 °C						
Vibration resistance 10-150 Hz	n/o contact	10 g		5 g			5 g	
	n/c contact	10 g	5 g	5 g			5 g	
Shock resistance	n/o contact	30 g	20 g	10 g			10 g	
	n/c contact	30 g	20 g	5 g			10 g	
Standards								
Product standard		EN 61810-1, EN 60255-23 IEC 60664-1		EN 60810-1, EN 60255-23 IEC 61810-7			EN 60255-1-00	
Low Voltage Directive		73/23/EEC						

Load limit curves - Maximum switching power at resistive DC load

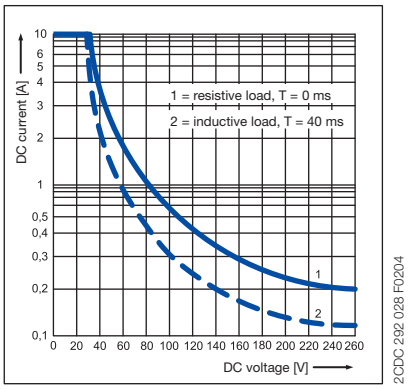
CR-P with 1 c/o contact



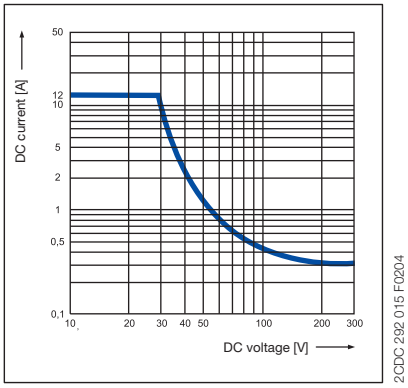
CR-P with 2 c/o contacts



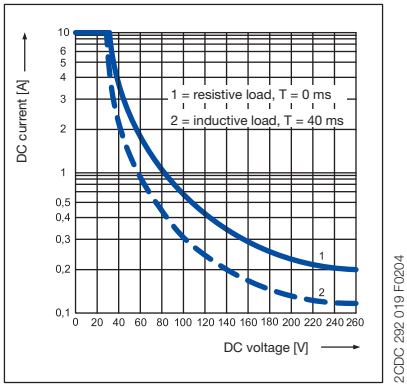
CR-U with 2 and 3 c/o contacts



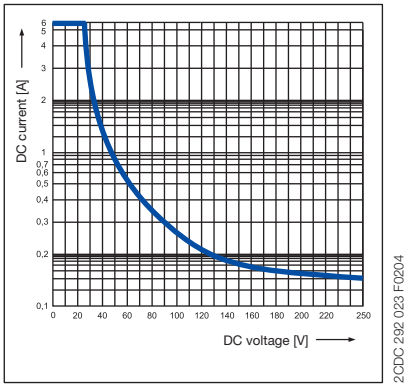
CR-M with 2 c/o contacts



CR-M with 3 c/o contacts



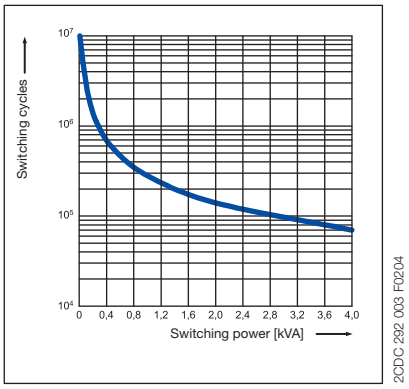
CR-M with 4 c/o contacts



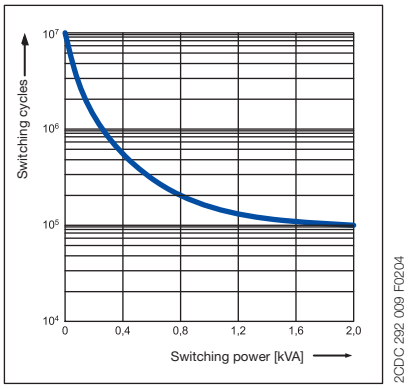
• **Approvals** 253

Load limit curves - Electrical lifetime at resistive AC load

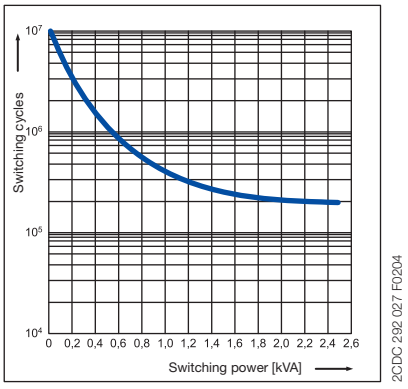
CR-P with 1 c/o contact



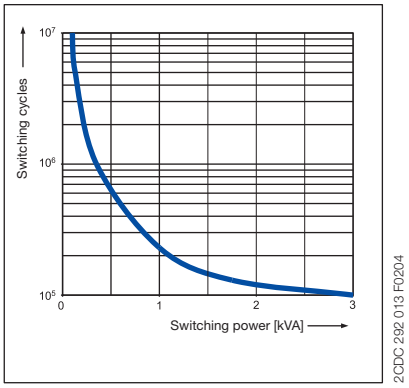
CR-P with 2 c/o contacts



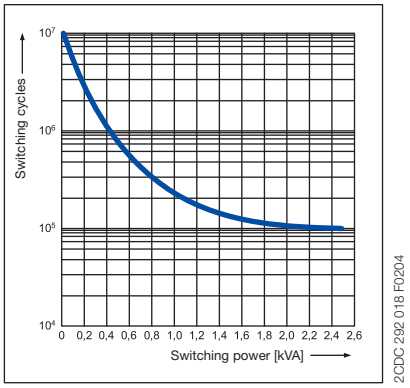
CR-U with 2 and 3 c/o contacts



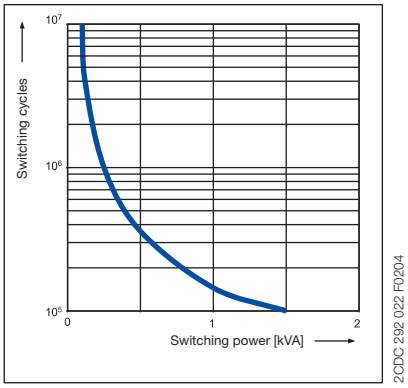
CR-M with 2 c/o contacts



CR-M with 3 c/o contacts



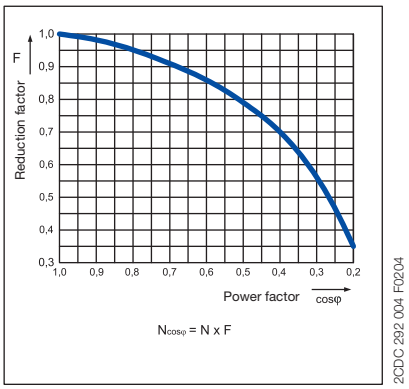
CR-M with 4 c/o contacts



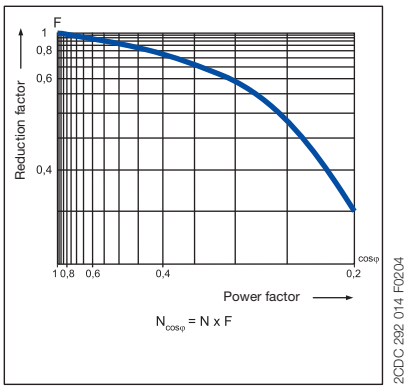
6

Reduction factor F at inductive AC load

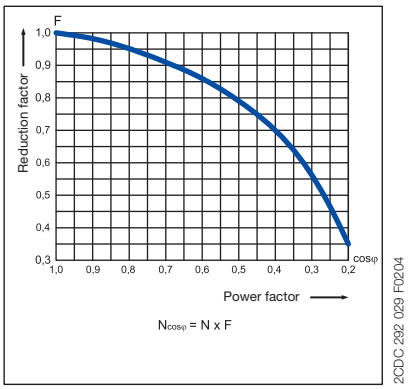
CR-P



CR-M

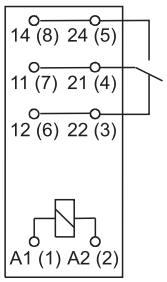


CR-U



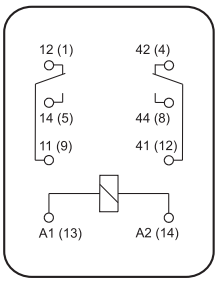
Connection diagrams

2CDC 292 001 F0004



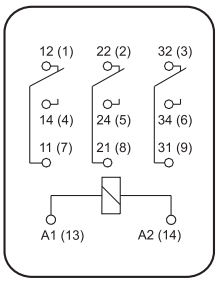
CR-P with 1 c/o contact

2CDC 292 011 F0004



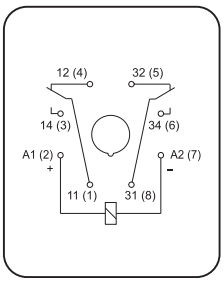
CR-M with 2 c/o contacts

2CDC 292 016 F0004



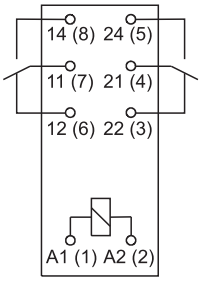
CR-M with 3 c/o contacts

2CDC 292 024 F0004



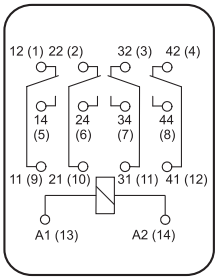
CR-U with 2 c/o contacts

2CDC 292 008 F0004



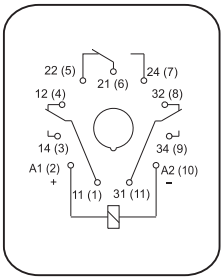
CR-P with 2 c/o contacts

2CDC 292 020 F0004



CR-M with 4 c/o contacts

2CDC 292 030 F0004

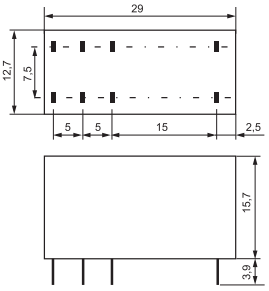


CR-U with 3 c/o contacts

Dimensional drawings

Dimensions in mm

2CDC 292 002 F0004



CR-P

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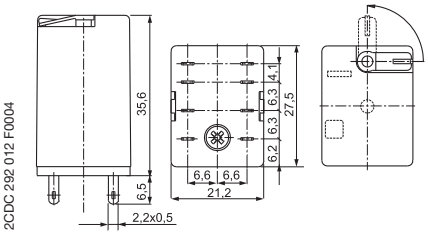

CR-M with 2 c/o contacts

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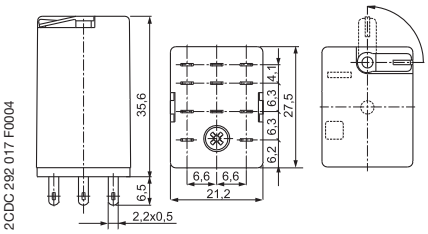
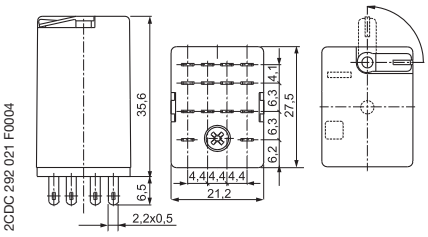


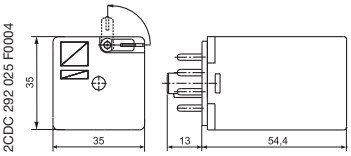
CR-M with 3 c/o contacts

2CDC 292 021 F0004



CR-M with 4 c/o contacts

2CDC 292 025 F0004



CR-U with 2 c/o contacts

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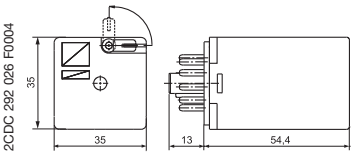


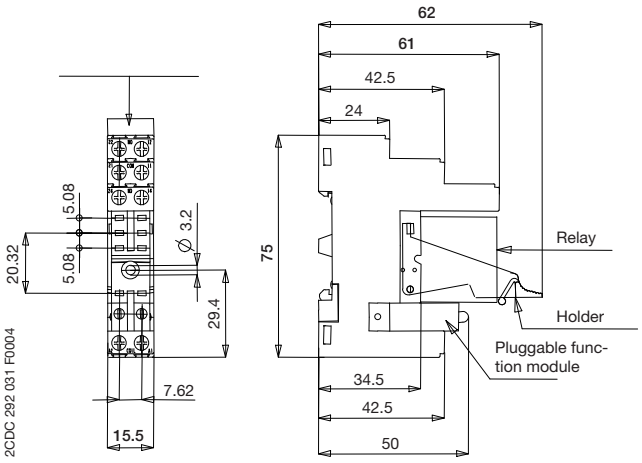
CR-U with 3 c/o contacts

6

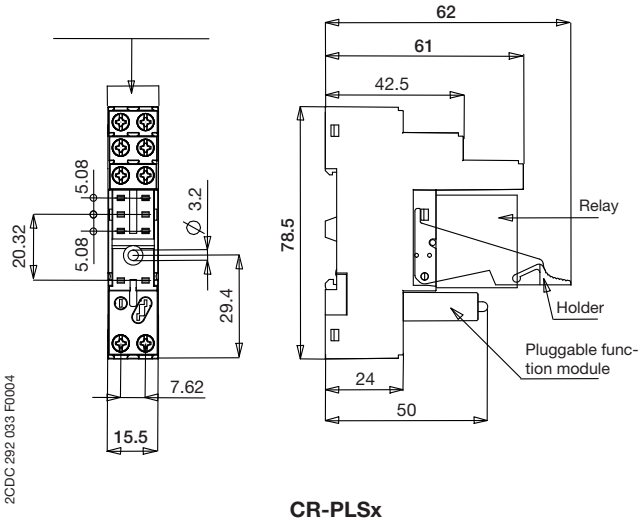
Dimensional drawings

Dimensions in mm

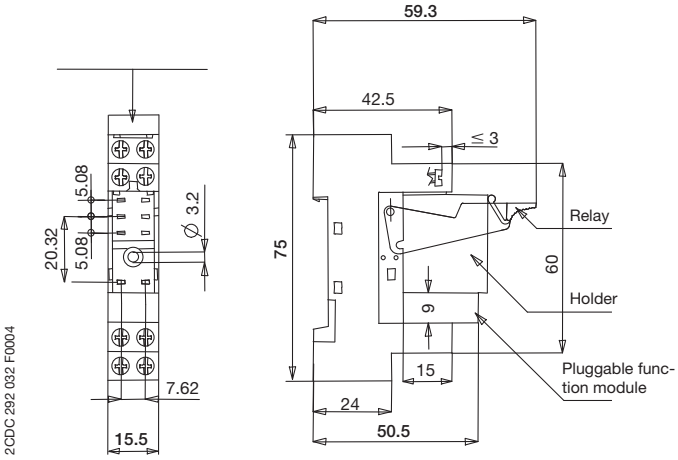
Sockets for screw connection



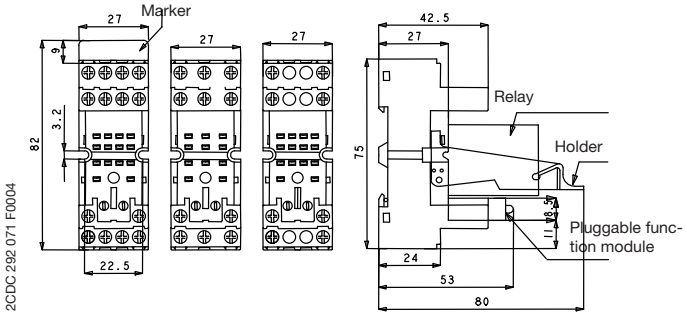
CR-PLS



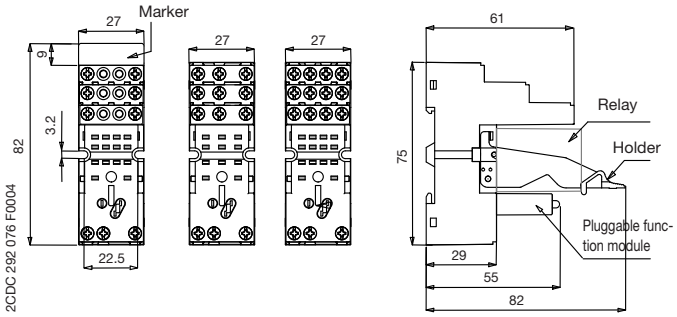
CR-PLSx



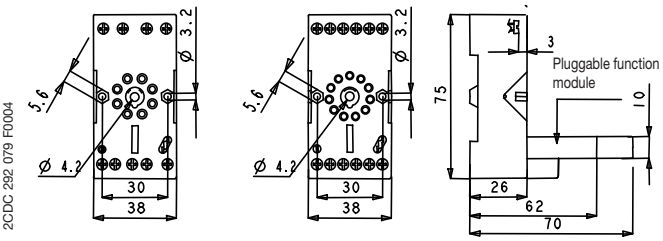
CR-PSS



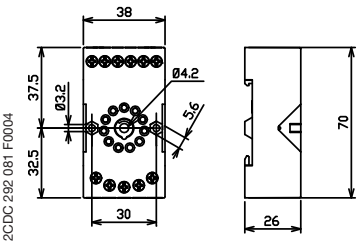
CR-M2SS - CR-M3SS - CR-M4SS



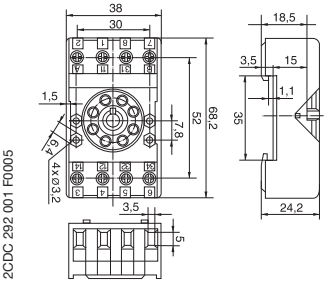
CR-M2LS - CR-M3LS - CR-M4LS



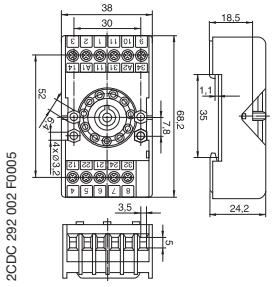
CR-U2S - CR-U3S



CR-U3E



CR-U2SM

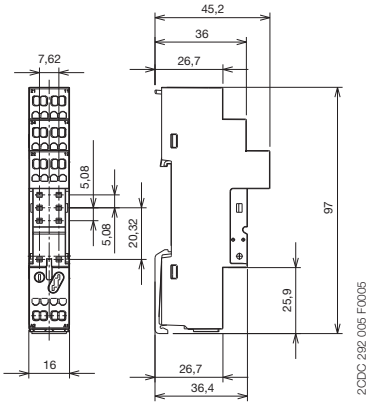


CR-U3SM

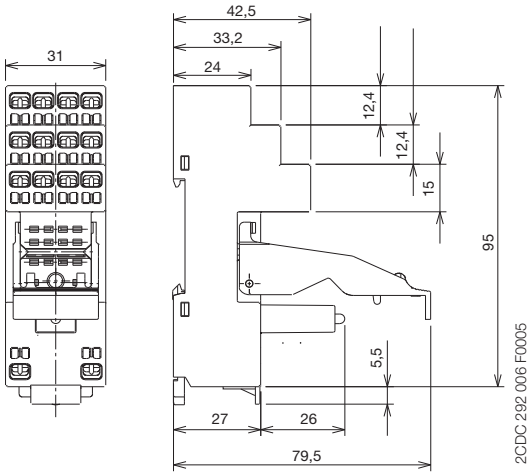
Dimensional drawings

Dimensions in mm

Sockets for spring connection

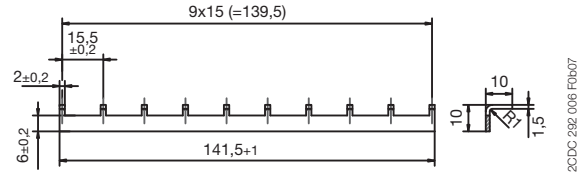


CR-PLC

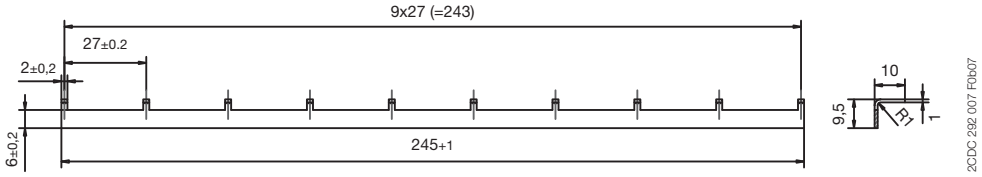


CR-M2LC , CR-M4LC

Jumper



CR-PJ



CR-MJ

6

Notes