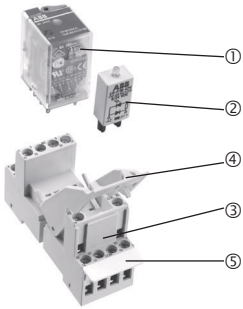


Pluggable interface relays CR-M

Miniature relays

Data sheet

2 CDC 293 035 F0004



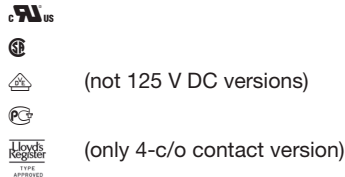
CR-M

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

Features

- Standard miniature relays with mechanical status indication
- 12 different supply 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 (12 A), 3 c/o (10 A) or 4 c/o (6 A)
- Available with or without LED
- 4-c/o version optionally equipped with gold contacts
- Integrated test button for manual actuation and locking of output contacts (blue = DC, orange = AC)
- Cadmium-free contact material
- Width on socket: 27 mm
- Suited for logical and standard sockets
- Pluggable function modules: reverse polarity protection, LED indication, RC elements, overvoltage protection

Approvals



Marks



Ordering data

Type	Supply voltage	Order code
Interface relays without LED 2 c/o contacts: 250 V, 12 A		
CR-M012DC2	12 V DC	1SVR 405 611 R4000
CR-M024DC2	24 V DC	1SVR 405 611 R1000
CR-M048DC2	48 V DC	1SVR 405 611 R6000
CR-M060DC2	60 V DC	1SVR 405 611 R4200
CR-M110DC2	110 V DC	1SVR 405 611 R8000
CR-M125DC2	125 V DC	1SVR 405 611 R8200
CR-M220DC2	220 V DC	1SVR 405 611 R9000
CR-M024AC2	24 V AC	1SVR 405 611 R0000
CR-M048AC2	48 V AC	1SVR 405 611 R5000
CR-M110AC2	110 V AC	1SVR 405 611 R7000
CR-M120AC2	120 V AC	1SVR 405 611 R2000
CR-M230AC2	230 V AC	1SVR 405 611 R3000

Bold printed products = stocked products. Packing unit = 10 pieces.
Sockets and pluggable function modules see separate data sheets.

Pluggable interface relays CR-M

Miniature relays

Data sheet

Ordering data (continued)

Type	Supply voltage	Order code
Interface relays without LED 3 c/o contacts: 250 V, 10 A		
CR-M012DC3	12 V DC	1SVR 405 612 R4000
CR-M024DC3	24 V DC	1SVR 405 612 R1000
CR-M048DC3	48 V DC	1SVR 405 612 R6000
CR-M060DC3	60 V DC	1SVR 405 612 R4200
CR-M110DC3	110 V DC	1SVR 405 612 R8000
CR-M125DC3	125 V DC	1SVR 405 612 R8200
CR-M220DC3	220 V DC	1SVR 405 612 R9000
CR-M024AC3	24 V AC	1SVR 405 612 R0000
CR-M048AC3	48 V AC	1SVR 405 612 R5000
CR-M110AC3	110 V AC	1SVR 405 612 R7000
CR-M120AC3	120 V AC	1SVR 405 612 R2000
CR-M230AC3	230 V AC	1SVR 405 612 R3000
Interface relays without LED 4 c/o contacts: 250 V, 6 A		
CR-M012DC4	12 V DC	1SVR 405 613 R4000
CR-M024DC4	24 V DC	1SVR 405 613 R1000
CR-M048DC4	48 V DC	1SVR 405 613 R6000
CR-M060DC4	60 V DC	1SVR 405 613 R4200
CR-M110DC4	110 V DC	1SVR 405 613 R8000
CR-M125DC4	125 V DC	1SVR 405 613 R8200
CR-M220DC4	220 V DC	1SVR 405 613 R9000
CR-M024AC4	24 V AC	1SVR 405 613 R0000
CR-M048AC4	48 V AC	1SVR 405 613 R5000
CR-M110AC4	110 V AC	1SVR 405 613 R7000
CR-M120AC4	120 V AC	1SVR 405 613 R2000
CR-M230AC4	230 V AC	1SVR 405 613 R3000
Interface relays with LED 2 c/o contacts: 250 V, 12 A		
CR-M012DC2L	12 V DC	1SVR 405 611 R4100
CR-M024DC2L	24 V DC	1SVR 405 611 R1100
CR-M048DC2L	48 V DC	1SVR 405 611 R6100
CR-M060DC2L	60 V DC	1SVR 405 611 R4300
CR-M110DC2L	110 V DC	1SVR 405 611 R8100
CR-M125DC2L	125 V DC	1SVR 405 611 R8300
CR-M220DC2L	220 V DC	1SVR 405 611 R9100
CR-M024AC2L	24 V AC	1SVR 405 611 R0100
CR-M048AC2L	48 V AC	1SVR 405 611 R5100
CR-M110AC2L	110 V AC	1SVR 405 611 R7100
CR-M120AC2L	120 V AC	1SVR 405 611 R2100
CR-M230AC2L	230 V AC	1SVR 405 611 R3100

Bold printed products = stocked products. Packing unit = 10 pieces.
Sockets and pluggable function modules see separate data sheets.

Pluggable interface relays CR-M

Miniature relays

Data sheet

Ordering data (continued)

Type	Supply voltage	Order code
Interface relays with LED 3 c/o contacts: 250 V, 10 A		
CR-M012DC3L	12 V DC	1SVR 405 612 R4100
CR-M024DC3L	24 V DC	1SVR 405 612 R1100
CR-M048DC3L	48 V DC	1SVR 405 612 R6100
CR-M060DC3L	60 V DC	1SVR 405 612 R4300
CR-M110DC3L	110 V DC	1SVR 405 612 R8100
CR-M125DC3L	125 V DC	1SVR 405 612 R8300
CR-M220DC3L	220 V DC	1SVR 405 612 R9100
CR-M024AC3L	24 V AC	1SVR 405 612 R0100
CR-M048AC3L	48 V AC	1SVR 405 612 R5100
CR-M110AC3L	110 V AC	1SVR 405 612 R7100
CR-M120AC3L	120 V AC	1SVR 405 612 R2100
CR-M230AC3L	230 V AC	1SVR 405 612 R3100
Interface relays with LED 4 c/o contacts: 250 V, 6 A		
CR-M012DC4L	12 V DC	1SVR 405 613 R4100
CR-M024DC4L	24 V DC	1SVR 405 613 R1100
CR-M048DC4L	48 V DC	1SVR 405 613 R6100
CR-M060DC4L	60 V DC	1SVR 405 613 R4300
CR-M110DC4L	110 V DC	1SVR 405 613 R8100
CR-M125DC4L	125 V DC	1SVR 405 613 R8300
CR-M220DC4L	220 V DC	1SVR 405 613 R9100
CR-M024AC4L	24 V AC	1SVR 405 613 R0100
CR-M048AC4L	48 V AC	1SVR 405 613 R5100
CR-M110AC4L	110 V AC	1SVR 405 613 R7100
CR-M120AC4L	120 V AC	1SVR 405 613 R2100
CR-M230AC4L	230 V AC	1SVR 405 613 R3100
Interface relays with LED and gold contacts 4 c/o contacts: 250 V, 6 A		
CR-M012DC4LG	12 V DC	1SVR 405 618 R4100
CR-M024DC4LG	24 V DC	1SVR 405 618 R1100
CR-M048DC4LG	48 V DC	1SVR 405 618 R6100
CR-M060DC4LG	60 V DC	1SVR 405 618 R4300
CR-M110DC4LG	110 V DC	1SVR 405 618 R8100
CR-M125DC4LG	125 V DC	1SVR 405 618 R8300
CR-M220DC4LG	220 V DC	1SVR 405 618 R9100
CR-M024AC4LG	24 V AC	1SVR 405 618 R0100
CR-M048AC4LG	48 V AC	1SVR 405 618 R5100
CR-M110AC4LG	110 V AC	1SVR 405 618 R7100
CR-M120AC4LG	120 V AC	1SVR 405 618 R2100
CR-M230AC4LG	230 V AC	1SVR 405 618 R3100
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

Bold printed products = stocked products. Packing unit = 10 pieces.
Sockets and pluggable function modules see separate data sheets.

Pluggable interface relays CR-M

Miniature relays

Data sheet

Ordering data - Accessories

Type	Version	Connection	Order code
Logical sockets			
CR-M2LS	for 2 c/o contacts	screw	1SVR 405 651 R1100
CR-M3LS	for 3 c/o contacts	screw	1SVR 405 651 R2100
CR-M4LS	for 2 or 4 c/o contacts	screw	1SVR 405 651 R3100
CR-M2LC	for 2 c/o contacts	spring	1SVR 405 651 R1200
CR-M4LC	for 2 or 4 c/o contacts	spring	1SVR 405 651 R3200
Standard sockets			
CR-M2SS	for 2 c/o contacts	screw	1SVR 405 651 R1000
CR-M3SS	for 3 c/o contacts	screw	1SVR 405 651 R2000
CR-M4SS	for 2 or 4 c/o contacts	screw	1SVR 405 651 R3000
CR-M2SF	for 2 c/o contacts	fork type screw	1SVR 405 651 R1300
CR-M4SF	for 2 or 4 c/o contacts	fork type screw	1SVR 405 651 R3300
Accessories for CR-M sockets			
CR-MH	Plastic holder		1SVR 405 659 R1000
CR-MH1	Metall holder		1SVR 405 659 R1100

Bold printed products = stocked products. Packing unit = 10 pieces.
Sockets and pluggable function modules see separate data sheets.

Pluggable interface relays CR-M

Miniature relays

Data sheet

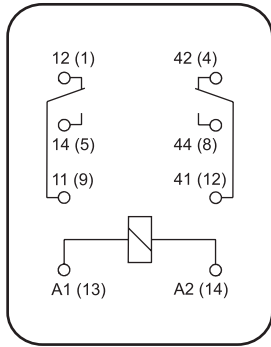
Application

Interface relays are electromechanic and electronic input and output modules for electrical isolation, leveling, noise suppression or signal amplification between control unit and process.

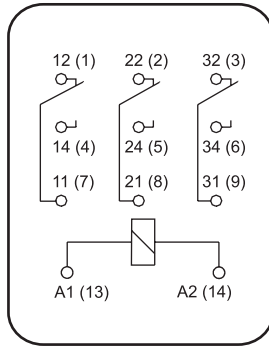
Operating mode

When power supply is applied, the output contacts get closed. When power supply is switched off, the contacts fall back into their starting position. Manual operation and locking of the outputs relays is possible via the integrated test button.

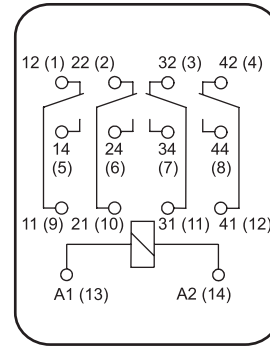
Position of connecting terminals



2CDC 292 011 F0004



2CDC 292 016 F0004



2CDC 292 020 F0004

CR-M with 2 c/o contacts

A1-A2 Supply voltage
11-12/14 Relay outputs
41-42/44

CR-M with 3 c/o contacts

A1-A2 Supply voltage
11-12/14 Relay outputs
21-22/24
31-32/34

CR-M with 4 c/o contacts

A1-A2 Supply voltage
11-12/14 Relay outputs
21-22/24
31-32/34
41-42/44

Technical data

Input circuit - Coil data A1-A2

	Rated voltage	Rated voltage frequency	Make voltage (at 20 °C)	Maxium 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	$\geq 0.1 U_n$	0.9 W	160 Ω	$\pm 10 \%$
	24 V DC	-	19.2 DC	26.4 V DC	$\geq 0.1 U_n$	0.9 W	640 Ω	$\pm 10 \%$
	48 V DC	-	38.4 V DC	52.8 V DC	$\geq 0.1 U_n$	0.9 W	2600 Ω	$\pm 10 \%$
	60 V DC	-	48.0 V DC	66.0 V	$\geq 0.1 U_n$	0.9 W	4000 Ω	$\pm 10 \%$
	110 V DC	-	88 V DC	121 V DC	$\geq 0.1 U_n$	0.9 W	13600 Ω	$\pm 10 \%$
	125 V DC	-	100 V DC	137.5 V DC	$\geq 0.1 U_n$	0.9 W	16000 Ω	$\pm 10 \%$
	220 V DC	-	176 V DC	242 V DC	$\geq 0.1 U_n$	0.9 W	54000 Ω	$\pm 10 \%$
AC coils	24 V AC	50 / 60 Hz	19.2 V AC	26.4 V AC	$\geq 0.2 U_n$	1.6 VA	158 Ω	$\pm 10 \%$
	48 V AC	50 / 60 Hz	38.4 V AC	52.8 V AC	$\geq 0.2 U_n$	1.6 VA	640 Ω	$\pm 10 \%$
	110 V AC	50 / 60 Hz	88 V AC	121 V AC	$\geq 0.2 U_n$	1.6 VA	3450 Ω	$\pm 10 \%$
	120 V AC	50 / 60 Hz	96 V AC	132 V AC	$\geq 0.2 U_n$	1.6 VA	3770 Ω	$\pm 10 \%$
	230 V AC	50 / 60 Hz	184 V AC	253 V AC	$\geq 0.2 U_n$	1.6 VA	16100 Ω	$\pm 10 \%$

Pluggable interface relays CR-M

Miniature relays

Data sheet

Technical data (continued)

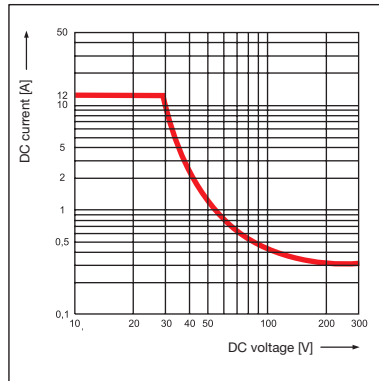
Type		CR-M...2	CR-M...3	CR-M...4
Output circuits - relay contacts		11-12/14 21-22/24	11-12/14 21-22/24 31-32/34	11-12/14 21-22/24 31-32/34 41-42/44
Number of contacts		2 c/o	3 c/o	4 c/o
Contact material		AgNi	AgNi	AgNi AgNi/Au 5 µm
Rated voltage	acc. to VDE 0110, IEC 60947-1	250 V		
Min. switching voltage		5 V		
Max. switching voltage	DC	250 V DC		
	AC	250 V AC		
Min. switching current		5 mA		
Rated current		12 A	10 A	6 A
Rated operating current acc. to IEC 60947-5-1	AC12 (resistive) 230 V	12 A	10 A	6 A
	AC15 (inductive) 230 V	1.5 A	1.5 A	1 A
	DC12 (resistive) 24 V	12 A	10 A	6 A
	DC13 (inductive) 24 V	8 A	8 A	6 A
Min. switching power		0.3 W (AgNi), 0.1 W (AgNi/Au)		
Max. switching power	AC1	3000 VA	2500 VA	1500 VA
Contact resistance		≤ 100 mΩ		
Max. switching capacity	rated load AC1	1200 switching cycles/h		
	without load	18000 switching cycles/h		
Max. lifetime	mechanical	> 2 x 10 ⁷ switching cycles		
	electrical AC1 (resistive)	> 10 ⁵ switching cycles		
		(12 A, 250 V)	(10 A, 250 V)	(6 A, 250 V)
	cos	see load limit curve		
Response time		typ. 13/10 ms		
Release time		typ. 3/8 ms		
Isolation data				
Rated insulation voltage		250 V AC		
Insulation class		C250 / B250		
Rated impulse withstand voltage U _{imp} between	coil and contacts	2.5 kV AC		
	contacts	1.5 kV AC		
	c/o contacts	2.5 kV AC / 2 kV AC		
Clearance/creepage distance	betw. coil and contacts	≥ 4 mm / ≥ 3.2 mm		
General data				
Dimensions (L x W x H)		27.5 x 21.2 x 35.6 mm		
Weight		35 g (0.077 lb)		
Mounting position		any		
Degree of protection		IP 40		
Temperature range	operation	DC	-40...+70 °C	
		AC	-40...+55 °C	
	storage	-40...+85 °C		
Connection		by socket		
Mounting		on socket (see accessories)		
Vibration resistance (10-150 Hz)	n/o, n/c	10 g / 5 g		
Shock resistance		5 g		
Standards				
Product standard		EN 60810-1, EN 60255-23, IEC 61810-7		
Low Voltage Directive		73/23/EEC		

Pluggable interface relays CR-M

Miniature relays

Data sheet

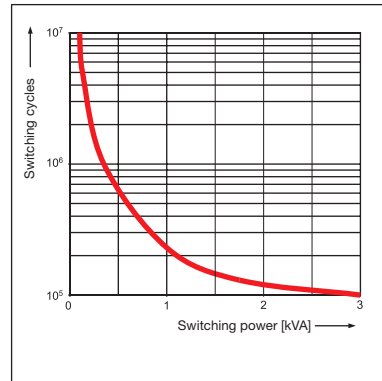
Maximum switching power
at resistive DC load



2CDC 292 015 F2004

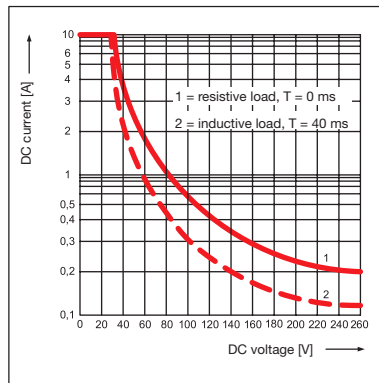
Versions with 2 c/o contacts (CR-M ... 2)

Electrical lifetime
at resistive AC load



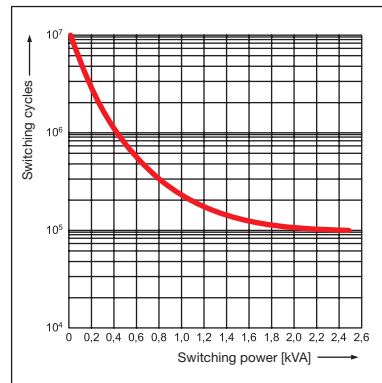
2CDC 292 013 F2004

Versions with 2 c/o contacts (CR-M ... 2)



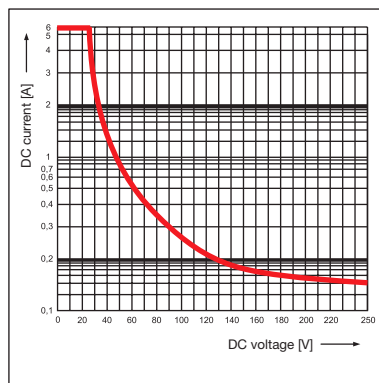
2CDC 292 019 F0204

Versions with 3 c/o contacts (CR-M ... 3)



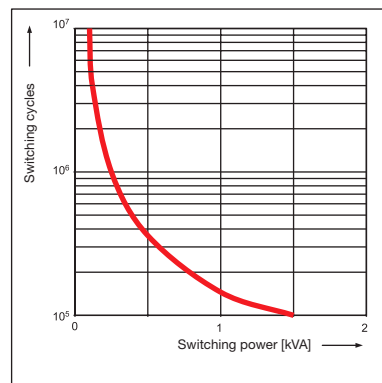
2CDC 292 018 F0204

Versions with 3 c/o contacts (CR-M ... 3)



2CDC 292 023 F0204

Versions with 4 c/o contacts (CR-M ... 4)



2CDC 292 022 F0204

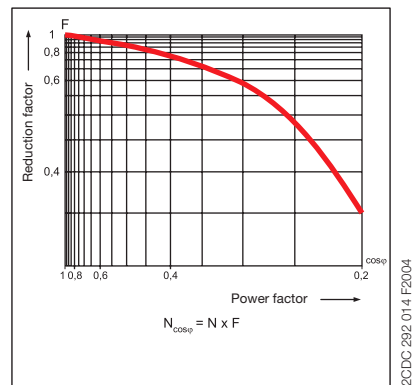
Versions with 4 c/o contacts (CR-M ... 4)

Pluggable interface relays CR-M

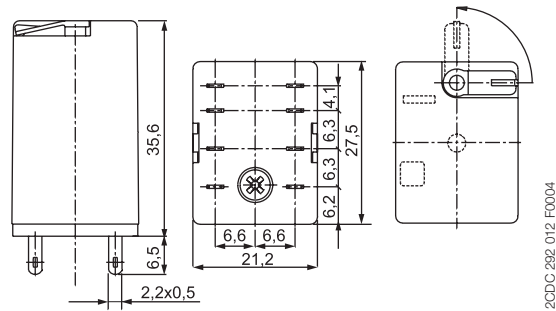
Miniature relays

Data sheet

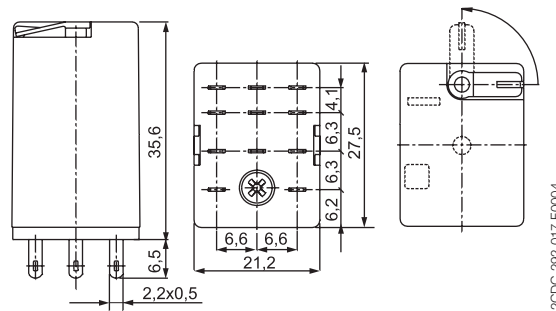
Reduktion faktor F at inductive AC load



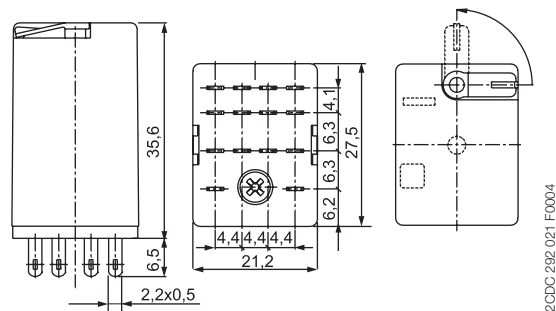
Dimensions
in mm



Versions with 2 c/o contacts (CR-M ... 2)



Versions with 3 c/o contacts (CR-M ... 3)



Versions with 4 c/o contacts (CR-M ... 4)

Accessories

Sockets: see data sheet 2CDC 117 005 D02xx
 Pluggable function modules: see data sheet 2CDC 117 007 D02xx

Pluggable interface relays CR-M

Miniature relays

Data sheet



Subject to change without prior notice. All statements serve exclusively to describe the product and have not to be understood as assured characteristics with legal force.

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