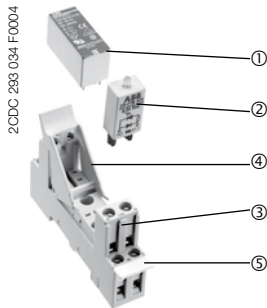


Pluggable interface relays CR-P

Pcb relays

Data sheet










CR-P

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

Features

- 9 different rated control supply voltages U_s :
DC versions: 12 V, 24 V, 48 V, 110 V
AC versions: 24 V, 48 V, 110 V, 120 V, 230 V
- Output: 1 c/o (SPDT) contact (16 A) or 2 c/o (SPDT) contacts (8 A)
- Cadmium-free contact material
- Suited for logical and standard sockets
- Width on socket: 15,5 mm
- Pluggable function modules: reverse polarity protection/free wheeling diode, LED indication, RC elements, overvoltage protection, time modules

Approvals

-  UL508
-  CAN/CSA C22.2 No.14
-  CAN/CSA C22.2 No.14
-  VDE
-  GOST
-  CCC
-  RMRS

Marks

CE CE

Order data

Type	Rated control supply voltage U_s	Order code
1 c/o (SPDT) contact: 250 V, 16 A		
CR-P012DC1	12 V DC	1SVR 405 600 R4000
CR-P024DC1	24 V DC	1SVR 405 600 R1000
CR-P048DC1	48 V DC	1SVR 405 600 R6000
CR-P110DC1	110 V DC	1SVR 405 600 R8000
CR-P024AC1	24 V AC	1SVR 405 600 R0000
CR-P048AC1	48 V AC	1SVR 405 600 R5000
CR-P110AC1	110 V AC	1SVR 405 600 R7000
CR-P120AC1	120 V AC	1SVR 405 600 R2000
CR-P230AC1	230 V AC	1SVR 405 600 R3000
2 c/o (SPDT) contacts: 250 V, 8 A		
CR-P012DC2	12 V DC	1SVR 405 601 R4000
CR-P024DC2	24 V DC	1SVR 405 601 R1000
CR-P048DC2	48 V DC	1SVR 405 601 R6000
CR-P110DC2	110 V DC	1SVR 405 601 R8000
CR-P024AC2	24 V AC	1SVR 405 601 R0000
CR-P048AC2	48 V AC	1SVR 405 601 R5000
CR-P110AC2	110 V AC	1SVR 405 601 R7000
CR-P120AC2	120 V AC	1SVR 405 601 R2000
CR-P230AC2	230 V AC	1SVR 405 601 R3000

Bold printed products = stocked products. Packing unit = 10 pieces.

Pluggable interface relays CR-P

Pcb relays

Data sheet

Ordering data - Accessories

Function modules

Type	Rated control supply voltage	Version	Order code
Diode - Reverse polarity protection			
CR-P/M 22	6-230 V DC	A1+, A2-	1SVR 405 651 R0000
Diode and LED - Reverse polarity protection			
CR-P/M 42	6-24 V DC	red, A1+, A2-	1SVR 405 652 R0000
CR-P/M 42V	6-24 V DC	green, A1+, A2-	1SVR 405 652 R1000
CR-P/M 42B	24-60 V DC	red, A1+, A2-	1SVR 405 652 R4000
CR-P/M 42BV	24-60 V DC	green, A1+, A2-	1SVR 405 652 R4100
CR-P/M 42C	110-230 V DC	red, A1+, A2-	1SVR 405 652 R9000
CR-P/M 42CV	110-230 V DC	green, A1+, A2-	1SVR 405 652 R9100
RC element - Arc elimination			
CR-P/M 52B	6-24 V AC		1SVR 405 653 R0000
CR-P/M 52D	24-60 V AC		1SVR 405 653 R4000
CR-P/M 52C	110-230 V AC		1SVR 405 653 R1000
Diode and LED			
CR-P/M 62	6-24 V AC/DC	red, for DC: A1+, A2-	1SVR 405 654 R0000
CR-P/M 62V	6-24 V AC/DC	green, for DC: A1+, A2-	1SVR 405 654 R1000
CR-P/M 62E	24-60 V AC/DC	red, for DC: A1+, A2-	1SVR 405 654 R4000
CR-P/M 62EV	24-60 V AC/DC	green, for DC: A1+, A2-	1SVR 405 654 R4100
CR-P/M 92	110-230 V AC/DC	red, for DC: A1+, A2-	1SVR 405 654 R0100
CR-P/M 92V	110-230 V AC/DC	green, for DC: A1+, A2-	1SVR 405 654 R1100
Varistor and LED - Overvoltage protection			
CR-P/M 62C	6-24 V AC/DC	red, for DC: A1+, A2-	1SVR 405 655 R0000
CR-P/M 62CV	6-24 V AC/DC	green, for DC: A1+, A2-	1SVR 405 655 R1000
CR-P/M 62D	24-60 V AC/DC	red, for DC: A1+, A2-	1SVR 405 655 R4000
CR-P/M 62DV	24-60 V AC/DC	green, for DC: A1+, A2-	1SVR 405 655 R4100
CR-P/M 92C	110-230 V AC/DC	red, for DC: A1+, A2-	1SVR 405 655 R0100
CR-P/M 92CV	110-230 V AC/DC	green, for DC: A1+, A2-	1SVR 405 655 R1100
Varistor - Overvoltage protection			
CR-P/M 72	24 V AC		1SVR 405 656 R0000
CR-P/M 72A	115 V AC		1SVR 405 656 R1000
CR-P/M 82	230 V AC		1SVR 405 656 R2000

Time modules

Type	Timing function	Order code
Time module		
CR-P/M T1	ON-delay	1SVR 405 657 R0000
CR-P/M T2	Impulse-ON	1SVR 405 657 R0100

Bold printed products = stocked products. Packing unit = 10 pieces.

Pluggable interface relays CR-P

Pcb relays

Data sheet

Sockets

Type	Version	Connection	Order code
Logical sockets			
CR-PLS	with safety isolation	screw	1SVR 405 650 R0000
CR-PLSx		screw	1SVR 405 650 R0100
CR-PLC		spring	1SVR 405 650 R0200
Standard socket			
CR-PSS		screw	1SVR 405 650 R1000
Accessories for CR-P sockets			
CR-PH	Plastic holder		1SVR 405 659 R0000
CR-PJ	Jumper bar		1SVR 405 658 R5000

Bold printed products = stocked products. Packing unit = 10 pieces.

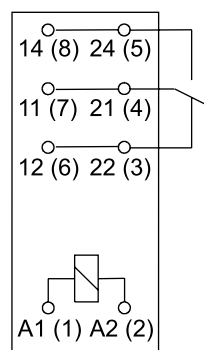
Application

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

Operating mode

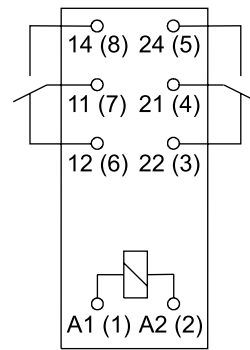
When power supply is applied, the output contacts get closed. When control supply voltage is switched off, the contacts fall back into their starting position.

Connection diagrams



CR-P with 1 c/o (SPDT) contact

A1-A2 Control supply voltage
11(21)-12(22)/14(24) Relay output



CR-P with 2 c/o (SPDT) contacts

A1-A2 Control supply voltage
11-12/14 21-22/24 Relay outputs

Pluggable interface relays CR-P

Pcb relays

Data sheet

Technical data

Type	CR-P...1 and CP-P...2
Input circuit - Supply circuit	A1-A2

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

Type			CR-P...1	CR-P...2
Output circuit(s) - Relay contact(s)			11-12/14	11-12/14, 21-22/24
Number of contacts			1 c/o (SPDT) contact	2 c/o (SPDT) contacts
Contact material			AgNi	
Rated operational voltage U_o (VDE 0110, IEC 60947-1)			250 V	
Min. switching voltage			5 V	
Max. switching voltage		DC	300 V DC	
		AC	400 V AC	
Min. switching current			5 mA	
Conventional free-air thermal current I_{th}			16 A	8 A
Rated operational current (IEC 60947-5-1)	AC12 (resistive)	230 V	16 A	8 A
	AC15 (inductive)	230 V	1.5 A	1 A
	DC12 (resistive)	24 V	16 A	8 A
	DC13 (inductive)	24 V	2 A	2 A
Min. switching power			0.3 W	
Max. switching power		AC1	4000 VA	2000 VA
Contact resistance			$\leq 100 \text{ m}\Omega$	
Max. switching capacity		rated load AC1	600 switching cycles / h	
		without load	72000 switching cycles / h	
Lifetime		mechanical	$> 3 \times 10^7$ switching cycles	
		electrical AC1 (resistive)	$> 0.7 \times 10^5$ switching cycles (16 A, 250 V)	$> 10^5$ switching cycles (8 A, 250 V)
		cos φ	see curve „Reduction factor“	
Response time			typ. 7 ms	
Release time			typ. 3 ms	

Pluggable interface relays CR-P

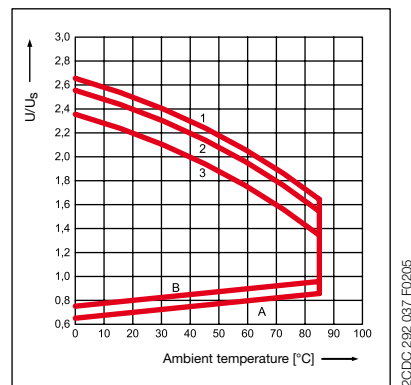
Pcb relays

Data sheet

Isolation data			
Rated insulation voltage	400 V AC		
Insulation class	C250 / B400		
Overvoltage category	(IEC/EN 61810-5)	III	
Polution degree	3		
Rated impulse withstand voltage U_{imp} between	coil and contacts	5 kV AC	
	open contacts	1 kV AC	
	c/o (SPDT) contacts	-	2.5 kV AC
Clearance / creepage distance	between coil and contacts	≥ 10 mm / ≥ 10 mm	
General data			
Dimensions (L x W x H)	when mounted	29 x 12.7 x 15.7 mm	
Weight	14 g (0.031 lb)		
Type of connection	by socket		
Mounting position	any		
Mounting	on socket (see accessories)		
Degree of protection	IP 67		
Environmental data			
Temperature range	operation	DC	-40...+85 °C
		AC	-40...+70 °C
	storage	-40...+85 °C	
Vibration resistance (10-150 Hz)	n/o	10 g	
	n/c	5 g	
Shock resistance		30 g	20 g
Standards			
Product standard	EN 61810-1, EN 60255-23, IEC 60664-1		
Low Voltage Directive	73/23/EEC		

Technical diagrams

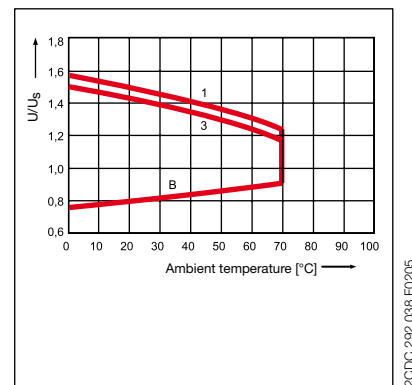
Operating range of DC coil



Relation between switching voltage and ambient temperature:

A unloaded contacts, coil temperature = ambient temperature
 B continued with I_{th} (16 A at CR-P ... 1 and 8 A at CR-P ... 2) loaded contacts,

Operating range of AC coil



Permitted overload on coil:

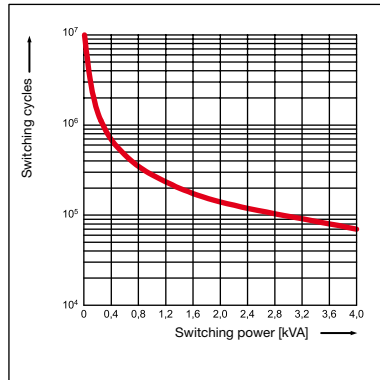
1 at unloaded contacts
 2 at 50 % rated load
 3 at rated load

Pluggable interface relays CR-P

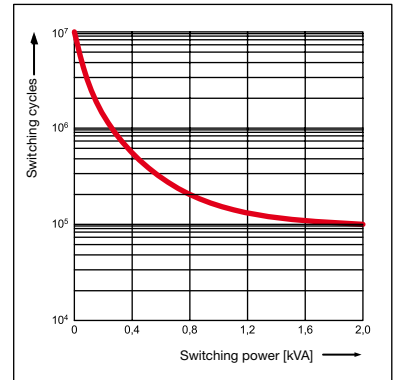
Pcb relays

Data sheet

Load limit curves - Electrical lifetime at resistive AC load

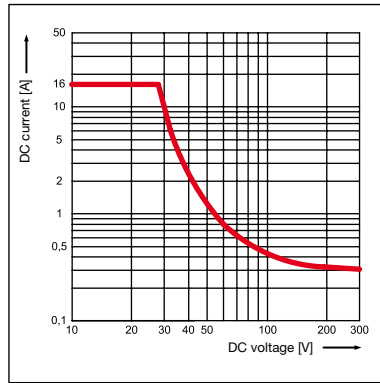


Versions with 1 c/o (SPDT) contact (CR-P ... 1)

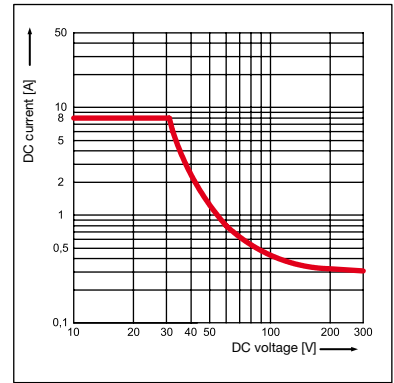


Versions with 2 c/o (SPDT) contacts (CR-P ... 2)

Load limit curves - Maximum switching power at resistive DC load

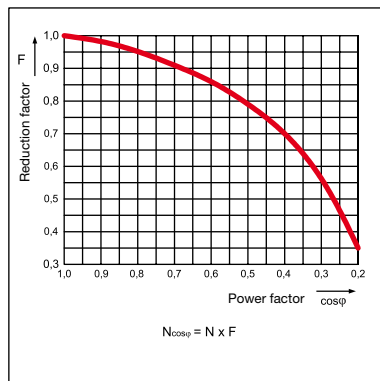


Versions with 1 c/o (SPDT) contact (CR-P ... 1)



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

Reduction factor F at inductive AC load



Versions with 1 or 2 c/o (SPDT) contacts (CR-P ... 1 and CR-P ... 2)

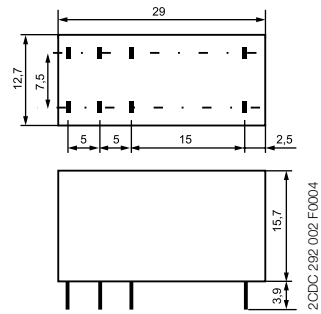
Pluggable interface relays CR-P

Pcb relays

Data sheet

Dimensions

in mm



Further documentation

Document title	Document type	Document number
Sockets CR-P	Data sheet	2CDC 117 004 D0203
Jumper bar CR-PJ	Data sheet	2CDC 117 015 D0201
Pluggable function modules CR-P/M	Data sheet	2CDC 117 007 D0204
Pluggable time modules CR-P/M T	Data sheet	2CDC 117 011 D0201



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