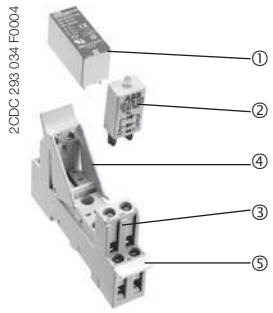
Pluggable interface relays CR-P
Pcb relays
Data sheet



CR-P

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

Features

- 9 different supply 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)
- Cadmium-free contact material
- Width on socket: 15,5 mm
- Suited for logical and standard sockets
- Pluggable function modules: reverse polarity protection, LED indication, RC element, overvoltage protection

Approvals

Marks

CE

Ordering data

Type	Supply voltage	Order code
1 c/o 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 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**

Ordering data - Accessories

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	**Standard socket**	**screw**	**1SVR 405 650 R1000**
Accessories for CR-P sockets			
CR-PH	**Plastic holder**		**1SVR 405 659 R0000**

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

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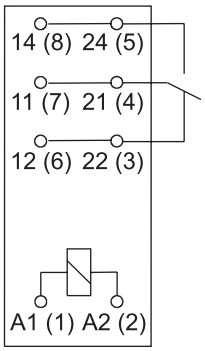
Application

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

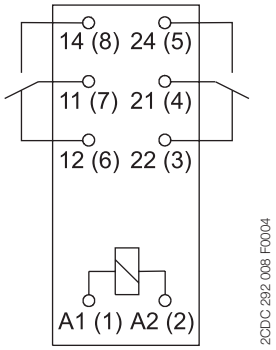
When power supply is applied, the output contacts get closed. When power supply is switched off, the contacts fall back into their starting position.

Position of connecting terminals



CR-P with 1 c/o contact

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



CR-P with 2 c/o contacts

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

Technical data

Input circuit - Coil data A1-A2

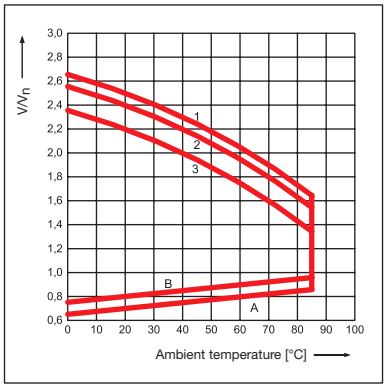
	Rated voltage	Rated voltage frequency	Make voltage (at 20 °C)	Maxium voltage (at 55 °C)	Break voltage	Rated power	Coil resistance (at 20 °C)	Tolerance of coil resistance
DC coils	12 V DC	-	8.4 V DC	30.6 V DC	≥ 0.1 U_n	0.4-0.48 W	360 Ω	± 10%
	24 V DC	-	16.8 V DC	61.2 V DC	≥ 0.1 U_n	0.4-0.48 W	1440 Ω	± 10%
	48 V DC	-	33.6 V DC	122.4 V DC	≥ 0.1 U_n	0.4-0.48 W	5700 Ω	± 10%
	110 V DC	-	77 V DC	280 V DC	≥ 0.1 U_n	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_n	0.75 VA	400 Ω	± 10%
	48 V AC	50 / 60 Hz	38.4 V AC	57.6 V AC	≥ 0.15 U_n	0.75 VA	1550 Ω	± 10%
	110 V AC	50 / 60 Hz	88 V AC	132 V AC	≥ 0.15 U_n	0.75 VA	8900 Ω	± 10%
	120 V AC	50 / 60 Hz	96 V AC	144 V AC	≥ 0.15 U_n	0.75 VA	10200 Ω	± 10%
	230 V AC	50 / 60 Hz	184 V AC	276 V AC	≥ 0.15 U_n	0.75 VA	38500 Ω	± 10%

Pluggable interface relays CR-P
Pcb relays
Data sheet

Technical data

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 contact	2 c/o contacts
Contact material			AgNi	
Rated voltage	acc. to 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	
Rated current			16 A	8 A
Rated operating current acc. to IEC 60947-5-1	AC12 (resistive)	230 V	16 A	8 A
	AC15 (inductive)	230 V	6 A	3 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			≤ 100 mΩ	
Max. switching capacity		rated load AC1	600 switching cycles / h	
		without load	72000 switching cycles / h	
Max. lifetime		mechanical	> 3 x 10^7 switching cycles	
		electrical AC1 (resistive)	> 0,7 x 10^5 switching cycles (16 A, 250 V)	> 10^5 switching cycles (8 A, 250 V)
		cos φ	see curve on page 4	
Response time			typ. 7 ms	
Release time			typ. 3 ms	
Isolation data				
Rated insulation voltage			400 V AC	
Insulation class			C250 / B400	
Rated impulse withstand voltage U_{imp} between		coil and contacts	5 kV AC	
		contacts	1 kV AC	
		c/o contacts	-	2.5 kV AC
Clearence / creepage distance		between coil and contacts	≥ 10 mm / ≥ 10 mm	
General data				
Dimensions		(L x W x H)	29 x 12.7 x 15.7 mm	
Weight			14 g (0.031 lb)	
Mounting position			any	
Degree of protection			IP 67	
Temperature range	operation	DC	-40...+85 °C	
		AC	-40...+70 °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			30 g	20 g
Standards				
Product standard			EN 61810-1, EN 60255-23, IEC 60664-1	
Low Voltage Directive			73/23/EEC	

Operating range of DC coil

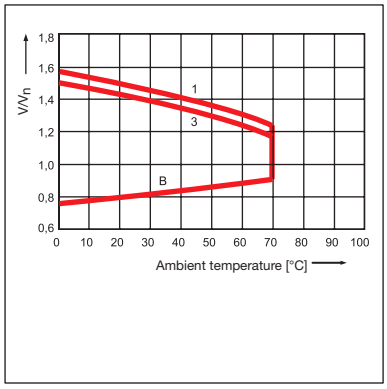


Relation between switching voltage and ambient temperature:

A unloaded contacts, coil temperature = ambient temperature

B continued with I_n (16 A at CR-P ... 1 / 8 A at CR-P ... 2) loaded contacts, coil heated with 1,1 x V_n

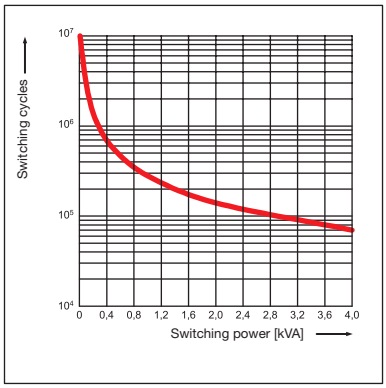
Operating range of AC coil



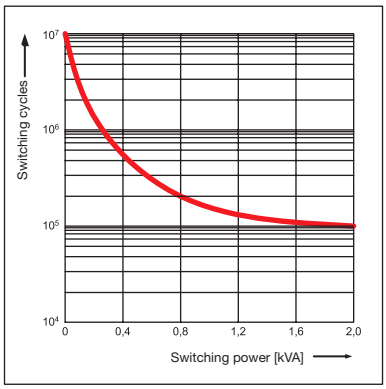
Permitted overload on coil:

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

Electrical lifetime at resistive AC load

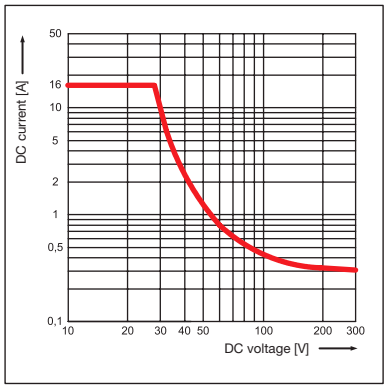


Versions with 1 c/o contact (CR-P ... 1)

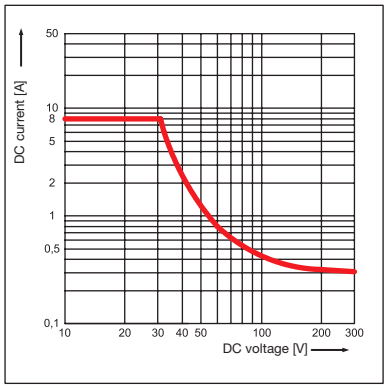


Versions with 2 c/o contacts (CR-P ... 2)

Maxmum switching power at resistive DC load

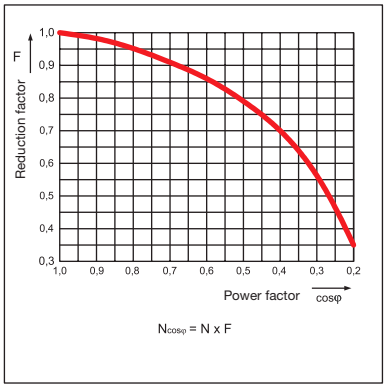


Versions with 1 c/o contact (CR-P ... 1)



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

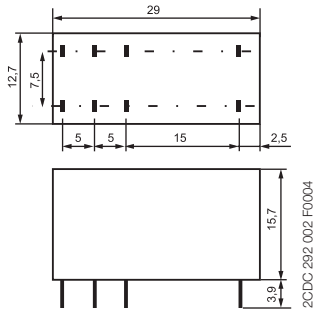
Reduction factor F at inductive AC load



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

Dimensions

in mm



Accessories

Sockets:	see data sheet 2CDC 117 004 D02xx
Pluggable function modules:	see data sheet 2CDC 117 007 D02xx

Druckschrift-Nummer. 2CDC 117 001 D0202 (10/05)



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