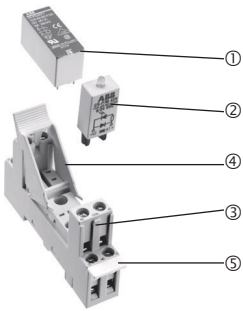


Pluggable interface relays CR-P

Pcb relays

Data sheet

2CDC 293 034 F0004



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 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



Order data

| Type | Rated control supply voltage U_s | 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.

Pluggable interface relays CR-P

Pcb relays

Data sheet

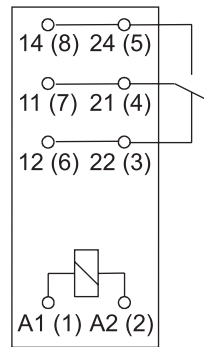
Application

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

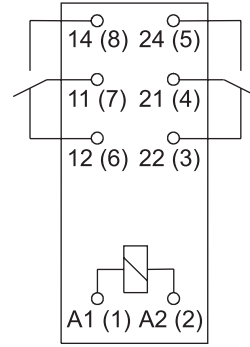
Operating mode

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

Position of connecting terminals



2CDC 292 001 F0004



2CDC 292 008 F0004

CR-P with 1 c/o contact

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

CR-P with 2 c/o contacts

A1-A2 Rated control supply voltage U_s
11-12/14 Relay outputs
21-22/24

Technical data

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

| | Rated control supply voltage U_s | Rated frequency | Make voltage (at 20 °C) | Maxium voltage (at 20 °C) | Break voltage | Rated power consumption | 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 | $\pm 10\%$ |

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 operational voltage U_e | 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 | |
| Conventional free-air thermal current I_{th} | | 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 | 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 | |
| Max. 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 | see curve „Reduction factor“ | |
| 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} | | 4 kV AC | |
| Overvoltage category | (IEC/EN 61810-5) | III | |
| Polution degree | | 3 | |
| Dielectric strength between (sinusoidal) | coil and contacts | 5 kV AC | |
| | contacts | 1 kV AC | |
| | c/o contacts | - | 2.5 kV AC |
| Clearance / creepage distance | between coil and contacts | $\geq 10 \text{ mm} / \geq 10 \text{ mm}$ | |
| 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 | |

Pluggable interface relays CR-P

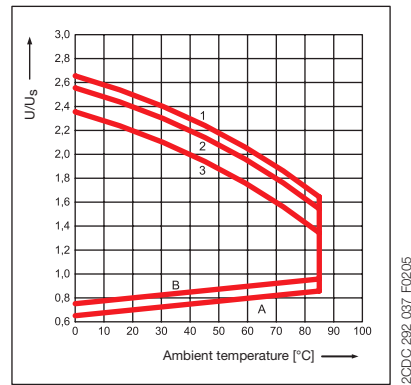
Pcb relays

Data sheet

Technical data (continued)

| 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 | | |

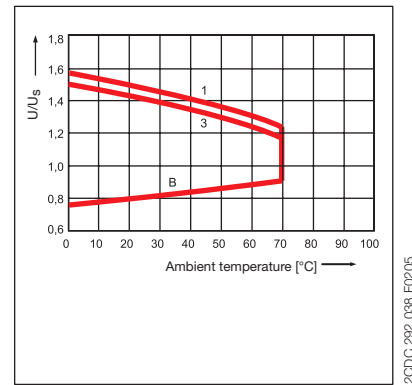
Operating range of DC coil



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, coil heated with $1,1 \times U_s$

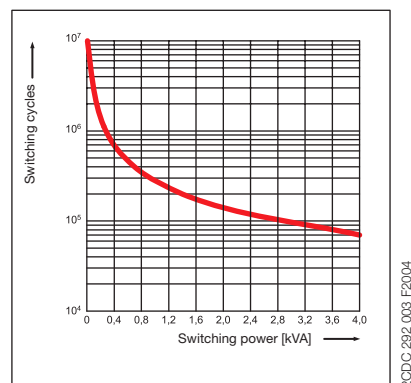
Operating range of AC coil



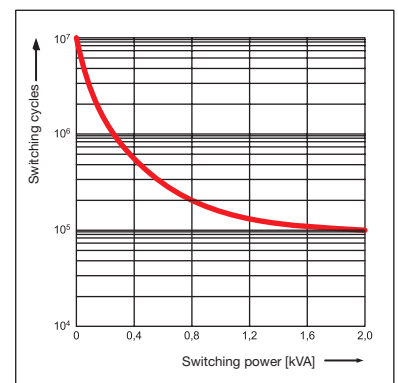
Permitted overload on coil:

- 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)



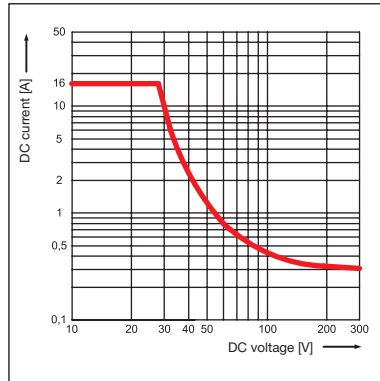
Versions with 2 c/o contacts (CR-P ... 2)

Pluggable interface relays CR-P

Pcb relays

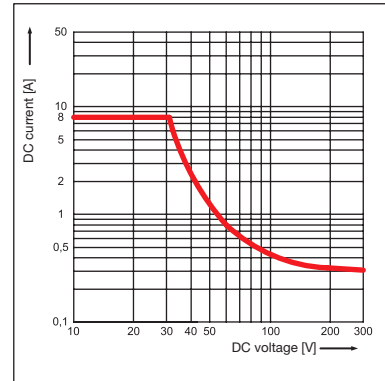
Data sheet

Maximum switching power
at resistive DC load



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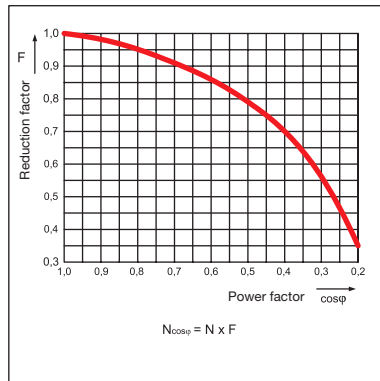
Versions with 1 c/o contact (CR-P ... 1)



2CDC 292 010 F2004

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

Reduction factor F at inductive AC load

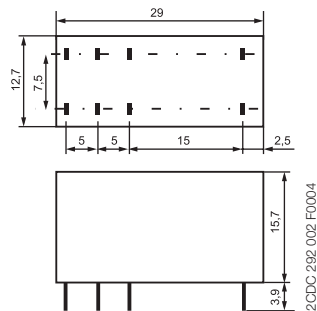


2CDC 292 004 F2004

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

Dimensions

in mm



2CDC 292 002 F0004

Accessories

Sockets:

see data sheet 2CDC 117 004 D02xx

Pluggable function modules:

see data sheet 2CDC 117 007 D02xx

Pluggable interface relays CR-P

Pcb relays

Data sheet



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