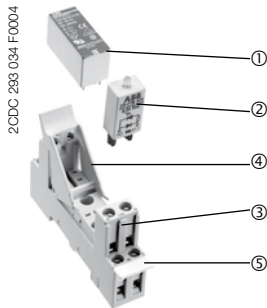


# Pluggable interface relays CR-P

## 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
<b>CR-P024DC1</b>	<b>24 V DC</b>	<b>1SVR 405 600 R1000</b>
CR-P048DC1	48 V DC	1SVR 405 600 R6000
CR-P110DC1	110 V DC	1SVR 405 600 R8000
<b>CR-P024AC1</b>	<b>24 V AC</b>	<b>1SVR 405 600 R0000</b>
CR-P048AC1	48 V AC	1SVR 405 600 R5000
<b>CR-P110AC1</b>	<b>110 V AC</b>	<b>1SVR 405 600 R7000</b>
CR-P120AC1	120 V AC	1SVR 405 600 R2000
<b>CR-P230AC1</b>	<b>230 V AC</b>	<b>1SVR 405 600 R3000</b>
2 c/o (SPDT) contacts: 250 V, 8 A		
CR-P012DC2	12 V DC	1SVR 405 601 R4000
<b>CR-P024DC2</b>	<b>24 V DC</b>	<b>1SVR 405 601 R1000</b>
CR-P048DC2	48 V DC	1SVR 405 601 R6000
CR-P110DC2	110 V DC	1SVR 405 601 R8000
<b>CR-P024AC2</b>	<b>24 V AC</b>	<b>1SVR 405 601 R0000</b>
CR-P048AC2	48 V AC	1SVR 405 601 R5000
<b>CR-P110AC2</b>	<b>110 V AC</b>	<b>1SVR 405 601 R7000</b>
CR-P120AC2	120 V AC	1SVR 405 601 R2000
<b>CR-P230AC2</b>	<b>230 V AC</b>	<b>1SVR 405 601 R3000</b>

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

#### Time modules

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

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			
<b>CR-PLS</b>	<b>with safety isolation</b>	<b>screw</b>	<b>1SVR 405 650 R0000</b>
<b>CR-PLSx</b>		<b>screw</b>	<b>1SVR 405 650 R0100</b>
<b>CR-PLC</b>		<b>spring</b>	<b>1SVR 405 650 R0200</b>
Standard socket			
<b>CR-PSS</b>		<b>screw</b>	<b>1SVR 405 650 R1000</b>
Accessories for CR-P sockets			
<b>CR-PH</b>	<b>Plastic holder</b>		<b>1SVR 405 659 R0000</b>
<b>CR-PJ</b>	<b>Jumper bar</b>		<b>1SVR 405 658 R5000</b>

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

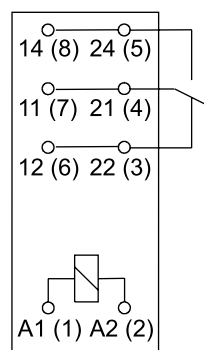
#### Application

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

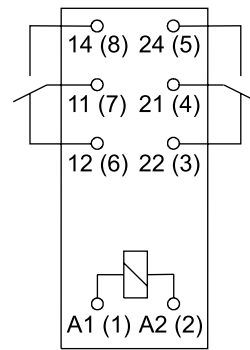
When power supply is applied, the output contacts get closed. When control supply voltage is switched off, the contacts fall back into their starting position.

#### 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 Relay outputs  
21-22/24

# 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
<b>DC coils</b>	12 V DC	-	8.4 V DC	30.6 V DC	$\geq 0.1 U_s$	0.4-0.48 W	360 $\Omega$	$\pm 10\%$
	24 V DC	-	16.8 V DC	61.2 V DC	$\geq 0.1 U_s$	0.4-0.48 W	1440 $\Omega$	$\pm 10\%$
	48 V DC	-	33.6 V DC	122.4 V DC	$\geq 0.1 U_s$	0.4-0.48 W	5700 $\Omega$	$\pm 10\%$
	110 V DC	-	77 V DC	280 V DC	$\geq 0.1 U_s$	0.4-0.48 W	25200 $\Omega$	$\pm 10\%$
<b>AC coils</b>	24 V AC	50 / 60 Hz	19.2 V AC	28.8 V AC	$\geq 0.15 U_s$	0.75 VA	400 $\Omega$	$\pm 10\%$
	48 V AC	50 / 60 Hz	38.4 V AC	57.6 V AC	$\geq 0.15 U_s$	0.75 VA	1550 $\Omega$	$\pm 10\%$
	110 V AC	50 / 60 Hz	88 V AC	132 V AC	$\geq 0.15 U_s$	0.75 VA	8900 $\Omega$	$\pm 10\%$
	120 V AC	50 / 60 Hz	96 V AC	144 V AC	$\geq 0.15 U_s$	0.75 VA	10200 $\Omega$	$\pm 10\%$
	230 V AC	50 / 60 Hz	184 V AC	276 V AC	$\geq 0.15 U_s$	0.75 VA	38500 $\Omega$	$\pm 10\%$

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 $\varphi$	see curve „Reduction factor“		
Response time	typ. 7 ms			
Release time	typ. 3 ms			

# Pluggable interface relays CR-P

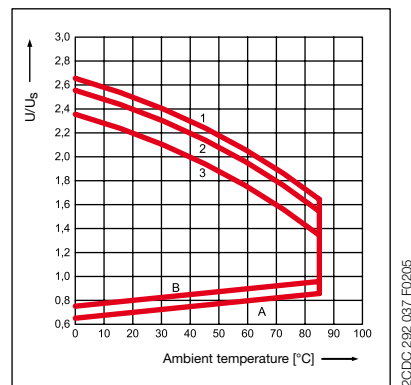
## Pcb relays

### 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	$\geq 10$ mm / $\geq 10$ 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

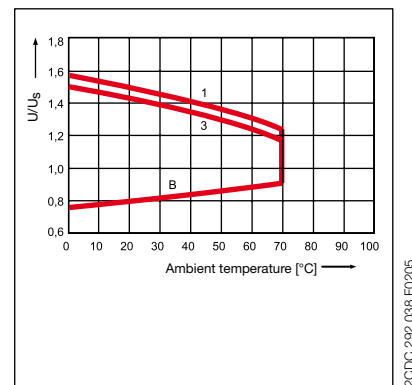
Operating range of DC coil



**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:**

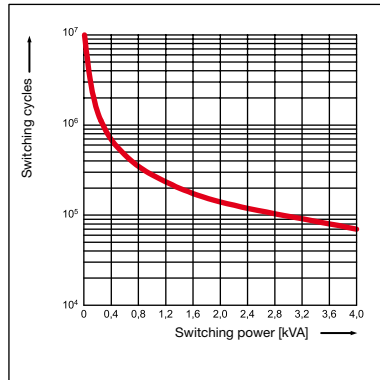
1 at unloaded contacts  
 2 at 50 % rated load  
 3 at rated load

# Pluggable interface relays CR-P

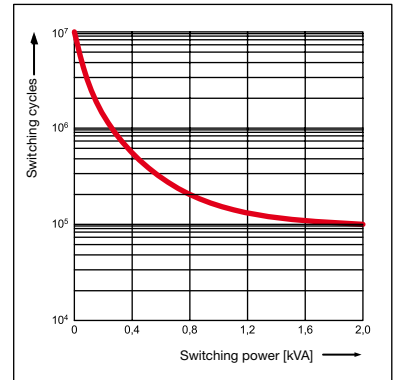
## Pcb relays

### Data sheet

#### Load limit curves - Electrical lifetime at resistive AC load

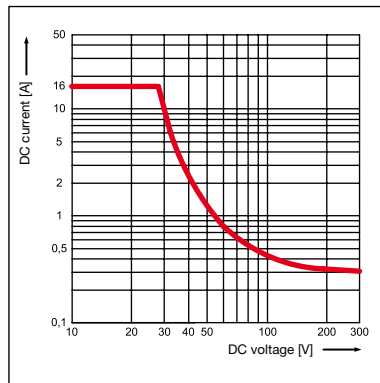


Versions with 1 c/o (SPDT) contact (CR-P ... 1)

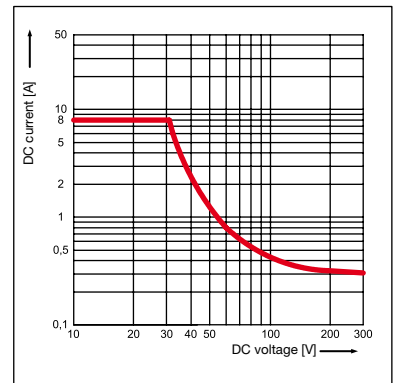


Versions with 2 c/o (SPDT) contacts (CR-P ... 2)

#### Load limit curves - Maximum switching power at resistive DC load

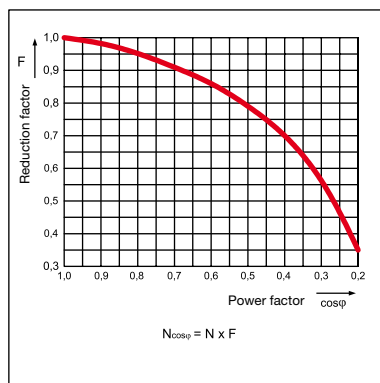


Versions with 1 c/o (SPDT) contact (CR-P ... 1)



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)

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# Pluggable interface relays CR-P

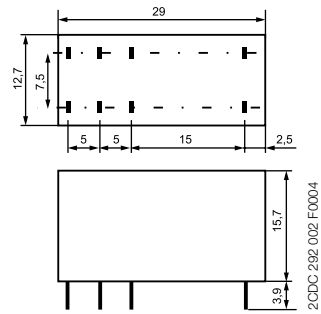
## Pcb relays

### Data sheet

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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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