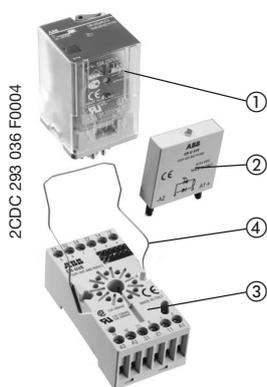


# Pluggable interface relays CR-U

## Universal relays

### Data sheet



CR-U

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

#### Features

- Standard universal relays with mechanical state indication
- 10 different supply voltages:  
DC versions: 12 V, 24 V, 48 V, 110 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
- Integrated test button for manual operation and locking of output contacts (blue = DC, orange = AC)
- Cadmium-free contact material
- Width on socket: 38 mm
- Pluggable function modules: reverse polarity protection, LED indication, RC element, overvoltage protection

#### Approvals



#### Marks



#### Ordering data

Type	Supply voltage	Order code
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##### Interface relays without LED

##### 2 c/o contacts: 250 V, 10 A

CR-U012DC2	12 V DC	1SVR 405 621 R4000
<b>CR-U024DC2</b>	<b>24 V DC</b>	<b>1SVR 405 621 R1000</b>
CR-U048DC2	48 V DC	1SVR 405 621 R6000
CR-U110DC2	110 V DC	1SVR 405 621 R8000
CR-U220DC2	220 V DC	1SVR 405 621 R9000
<b>CR-U024AC2</b>	<b>24 V AC</b>	<b>1SVR 405 621 R0000</b>
CR-U048AC2	48 V AC	1SVR 405 621 R5000
<b>CR-U110AC2</b>	<b>110 V AC</b>	<b>1SVR 405 621 R7000</b>
CR-U120AC2	120 V AC	1SVR 405 621 R2000
<b>CR-U230AC2</b>	<b>230 V AC</b>	<b>1SVR 405 621 R3000</b>

##### 3 c/o contacts: 250 V, 10 A

CR-U012DC3	12 V DC	1SVR 405 622 R4000
<b>CR-U024DC3</b>	<b>24 V DC</b>	<b>1SVR 405 622 R1000</b>
CR-U048DC3	48 V DC	1SVR 405 622 R6000
CR-U110DC3	110 V DC	1SVR 405 622 R8000
CR-U220DC3	220 V DC	1SVR 405 622 R9000
<b>CR-U024AC3</b>	<b>24 V AC</b>	<b>1SVR 405 622 R0000</b>
CR-U048AC3	48 V AC	1SVR 405 622 R5000
<b>CR-U110AC3</b>	<b>110 V AC</b>	<b>1SVR 405 622 R7000</b>
CR-U120AC3	120 V AC	1SVR 405 622 R2000
<b>CR-U230AC3</b>	<b>230 V AC</b>	<b>1SVR 405 622 R3000</b>

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

# Pluggable interface relays CR-U

## Universal relays

### Data sheet

#### Ordering data (continued)

Type	Supply voltage	Order code
<b>Interface relays with LED</b>		
<b>2 c/o contacts: 250 V, 10 A</b>		
CR-U012DC2L	12 V DC	1SVR 405 621 R4100
<b>CR-U024DC2L</b>	<b>24 V DC</b>	<b>1SVR 405 621 R1100</b>
CR-U048DC2L	48 V DC	1SVR 405 621 R6100
CR-U110DC2L	110 V DC	1SVR 405 621 R8100
CR-U220DC2L	220 V DC	1SVR 405 621 R9100
<b>CR-U024AC2L</b>	<b>24 V AC</b>	<b>1SVR 405 621 R0100</b>
CR-U048AC2L	48 V AC	1SVR 405 621 R5100
<b>CR-U110AC2L</b>	<b>110 V AC</b>	<b>1SVR 405 621 R7100</b>
CR-U120AC2L	120 V AC	1SVR 405 621 R2100
<b>CR-U230AC2L</b>	<b>230 V AC</b>	<b>1SVR 405 621 R3100</b>

#### **3 c/o contacts: 250 V, 10 A**

CR-U012DC3L	12 V DC	1SVR 405 622 R4100
<b>CR-U024DC3L</b>	<b>24 V DC</b>	<b>1SVR 405 622 R1100</b>
CR-U048DC3L	48 V DC	1SVR 405 622 R6100
CR-U110DC3L	110 V DC	1SVR 405 622 R8100
CR-U220DC3L	220 V DC	2SVR 405 622 R9100
<b>CR-U024AC3L</b>	<b>24 V AC</b>	<b>1SVR 405 622 R0100</b>
CR-U048AC3L	48 V AC	1SVR 405 622 R5100
<b>CR-U110AC3L</b>	<b>110 V AC</b>	<b>1SVR 405 622 R7100</b>
CR-U120AC3L	120 V AC	1SVR 405 622 R2100
<b>CR-U230AC3L</b>	<b>230 V AC</b>	<b>1SVR 405 622 R3100</b>

#### Accessories - Sockets

Type	Version	Order code
<b>Sockets</b>		
<b>CR-U2S</b>	<b>Socket for 2 c/o + module</b>	<b>1SVR 405 670 R0000</b>
<b>CR-U3S</b>	<b>Socket for 3 c/o + module</b>	<b>1SVR 405 660 R0000</b>
<b>CR-U3E</b>	<b>Socket for 3 c/o</b>	<b>1SVR 405 660 R0100</b>
<b>Socket accessories</b>		
<b>CR-UH</b>	<b>Holder for CR-U socket</b>	<b>1SVR 405 669 R0000</b>

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

#### 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

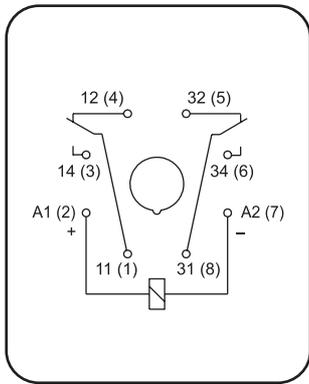
When power supply is applied, the output contacts get closed. When power supply is switched off, the contacts fall back into their starting position. Manual operation and locking of the outputs relays is possible via the integrated test button.

# Pluggable interface relays CR-U

## Universal relays

### Data sheet

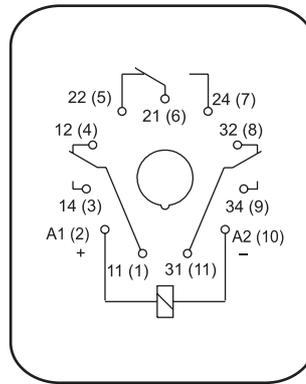
#### Position of connection terminals



2CDC 292 024 F0004

#### CR-U with 2 c/o contacts

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



2CDC 292 030 F0004

#### CR-U with 3 c/o contacts

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

#### Technical data

Type	CR-U ... 2	CR-U ... 3
Input circuit - coil data	A1-A2	

	Rated voltage	Rated voltage frequency	Make voltage (at 20 °C)	Maximum 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	$\geq 0.1 U_n$	1.5 W	110 $\Omega$	$\pm 10\%$
	24 V DC	-	19.2 DC	26.4 V DC	$\geq 0.1 U_n$	1.5 W	430 $\Omega$	$\pm 10\%$
	48 V DC	-	38.4 V DC	52.8 V DC	$\geq 0.1 U_n$	1.5 W	1750 $\Omega$	$\pm 10\%$
	110 V DC	-	88 V DC	121 V DC	$\geq 0.1 U_n$	1.5 W	9200 $\Omega$	$\pm 10\%$
	220 V DC	-	176 V DC	242 V DC	$\geq 0.1 U_n$	1.5 W	37000 $\Omega$	$\pm 10\%$
AC coils	24 V AC	50 / 60 Hz	19.2 V AC	26.4 V AC	$\geq 0.15 U_n$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	75 $\Omega$	$\pm 10\%$
	48 V AC	50 / 60 Hz	38.4 V AC	52.8 V AC	$\geq 0.15 U_n$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	305 $\Omega$	$\pm 10\%$
	110 V AC	50 / 60 Hz	88 V AC	121 V AC	$\geq 0.15 U_n$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	1700 $\Omega$	$\pm 10\%$
	120 V AC	50 / 60 Hz	96 V AC	132 V AC	$\geq 0.15 U_n$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	1910 $\Omega$	$\pm 10\%$
	230 V AC	50 / 60 Hz	184 V AC	253 V AC	$\geq 0.15 U_n$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	7080 $\Omega$	$\pm 10\%$

Output circuits - Relay contacts	11-12/14, 31-32/34	11-12/14, 21-22/24 31-32/34
Number of contacts	2 c/o contacts	3 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	250 V DC
	AC	250 V AC
Min. switching current	5 mA	
Rated current	10 A	
Rated operating current	AC-12 (resistive) 230 V	10 A
acc. to IEC 60947-5-1	AC-15 (inductive) 230 V	5 A (n/o) / 3 A (n/c)
	DC-12 (resistive) 24 V	10 A
	DC-13 (inductive) 24 V	2 A

# Pluggable interface relays CR-U

## Universal relays

### Data sheet

#### Technical data (continued)

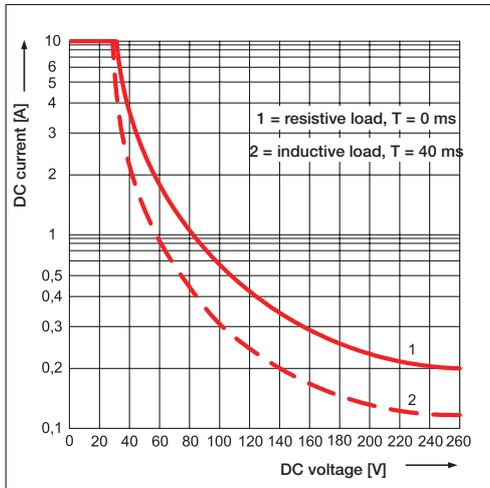
Type		CR-U ... 2	CR-U ... 3
Output circuits - Relay contacts		11-12/14, 31-32/34	11-12/14, 21-22/24 31-32/34
Max. making current		20 A	
Min. switching power		0.3 W	
Max. switching power	AC-1	2500 VA	
Contact resistance		≤ 100 mΩ	
Max. switching capacity	rated load AC-1	1200 switching cycles / h	
	without load	12000 switching cycles / h	
Max. lifetime	mechanical	≥ 2 x 10 <sup>7</sup> switching cycles	
	electrical AC-1 (resistive)	≥ 10 <sup>5</sup> switching cycles (10 A, 250 V)	
	cos φ	see curve on page 5	
Response time	DC	typ. 18 ms	
	AC	typ. 12 ms	
Release time	DC	typ. 7 ms	
	AC	typ. 10 ms	
<b>General data</b>			
Dimensions	(L x W x H)	35 x 35 x 54.4 mm	
Weight		83 g (0.18 lb)	
Mounting position		any	
Degree of protection		IP 40	
Temperature range	operation	DC	-40 °C ... +70 °C
		AC	-40 °C ... +55 °C
	storage		-40 °C ... +85 °C
Connection		by socket	
Mounting		on socket (see accessories)	
Shock resistance		10 g	
Vibration resistance	10-150 Hz	5 g	
<b>Isolation data</b>			
Rated insulation voltage		250 V AC	
Insulation class		C250	
Insulation resistance	between coil and contacts	2.5 kV AC	
	between contacts	1.5 kV AC	
	between c/o contacts	2 kV AC	
Clearance	between coil and contacts	≥ 3 mm	
Creepage distance	between coil and contacts	≥ 4.2 mm	
<b>Standards</b>			
Product standards		DIN IEC 255-1-00, EN 60255-1-00	
Low Voltage Directive		73/23/EEC	
<b>Approvals / marks</b>			
Approvals		RU(UL), CSA, VDE, GOST, Loyd Type Approval	
Marks		CE	

# Pluggable interface relays CR-U

## Universal relays

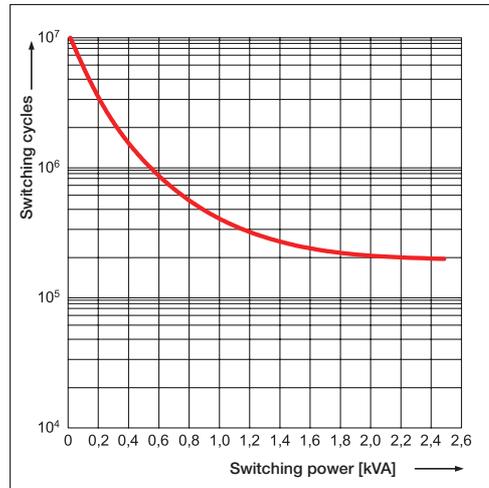
### Data sheet

#### Maximum switching power at resistive DC load



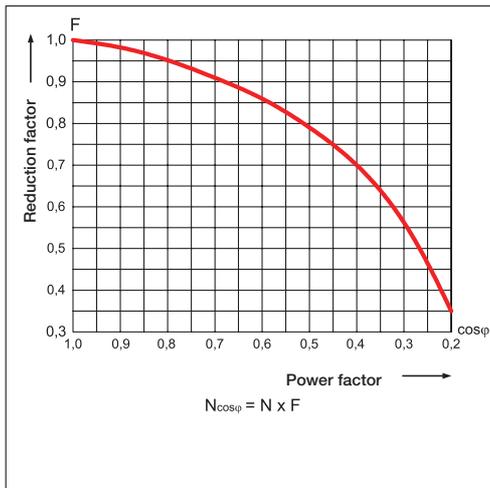
2CDC 292 028 F0004

#### Electrical lifetime at resistive AC load



2CDC 292 027 F0004

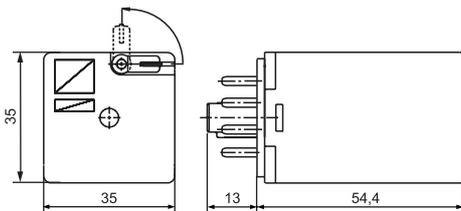
#### Reduction factor F at inductive AC load



2CDC 292 029 F0004

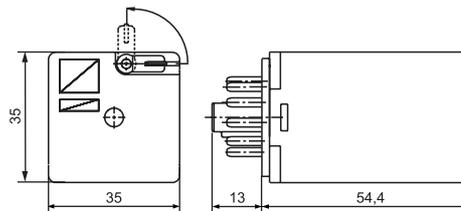
#### Dimensions

in mm



2CDC 292 025 F0004

Versions with 2 c/o contacts (CP-U ... 2)



2CDC 292 026 F0004

Versions with 3 c/o contacts (CP-U ... 3)

#### Accessories

Sockets: see data sheet 2CDC 117 006 D02xx  
 Pluggable function modules: see data sheet 2CDC 117 008 D02xx



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