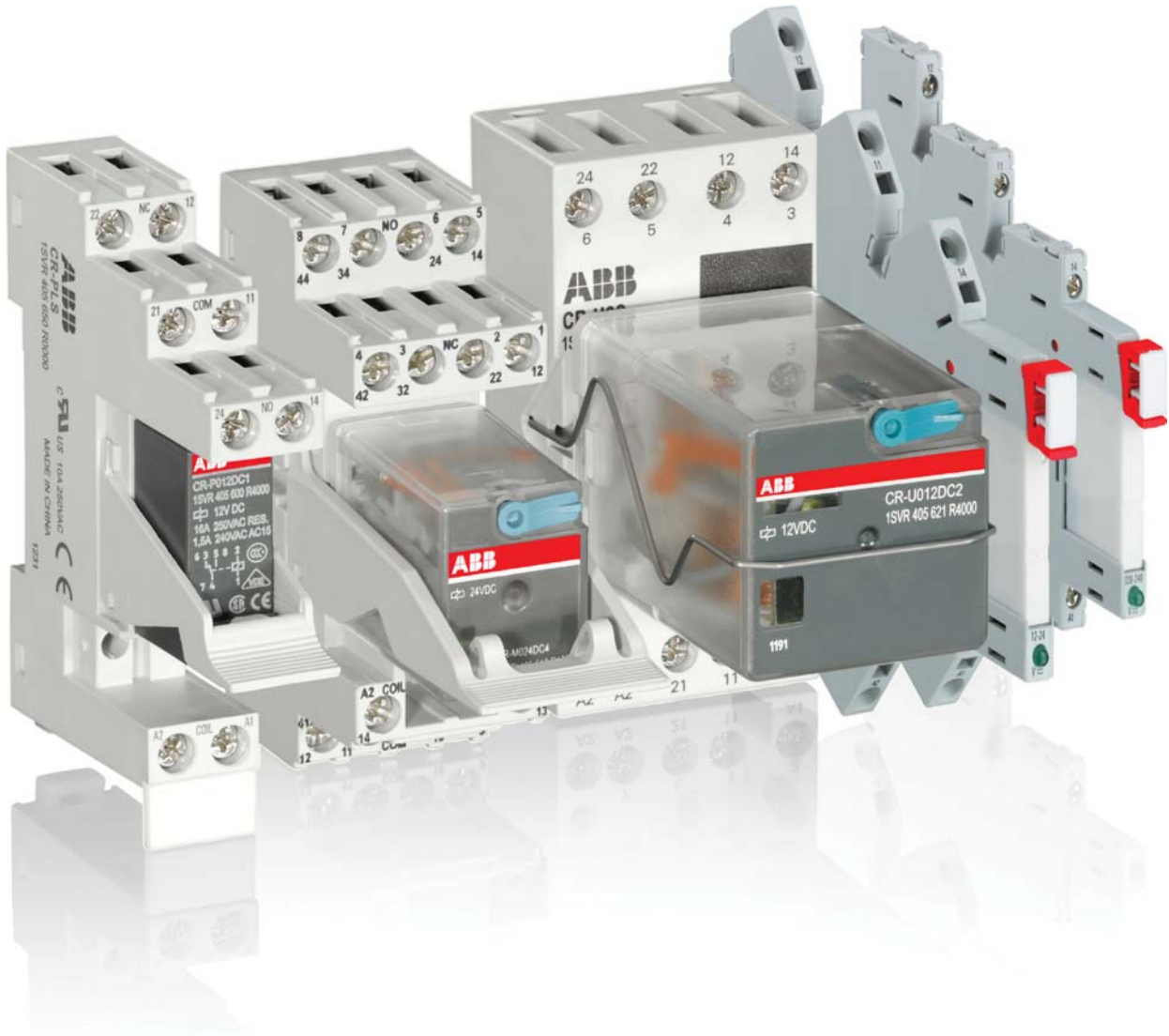


Pluggable interface relays

Product group picture

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Pluggable interface relays

Benefits and advantages

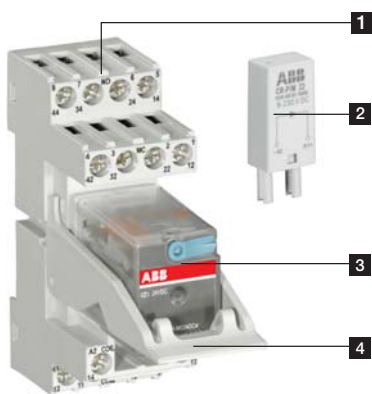
Pluggable miniature relays CR-M

- 2 different coil voltages
 - DC versions: 12 V, 24 V, 48 V, 60 V, 110 V, 125 V, 220 V
 - AC versions: 24 V, 48 V, 110 V, 120 V, 230 V
- Output contacts
 - 2 c/o contacts (12 A) or
 - 3 c/o contacts (10 A) or
 - 4 c/o contacts (6 A)
 - optionally equipped with gold contacts, LED and free wheeling diode
- Integrated test button for manual actuation and locking of the output contacts (blue = DC, orange = AC) that can be removed if necessary
- With or without integrated LED
- Logical or standard sockets
- Cadmium-free contact material
- Width on socket: 27 mm
- Pluggable function modules
 - Reverse polarity protection/Free wheeling diode
 - LED indication
 - RC elements
 - Overvoltage protection

Pluggable universal relays CR-U

- 12 different coil voltages
 - DC versions: 12 V, 24 V, 48 V, 110 V, 125 V, 220 V
 - AC versions: 24 V, 48 V, 60 V, 110 V, 120 V, 230 V
- Output contacts
 - 2 c/o contacts (10 A) or
 - 3 c/o contacts (10 A)
- Integrated test button for manual actuation and locking of the output contacts (blue = DC, orange = AC) that can be removed if necessary
- With or without integrated LED
- Cadmium-free contact material
- Width on socket: 38 mm
- Pluggable function modules
 - Reverse polarity protection/Free wheeling diode
 - LED indication
 - RC elements
 - Overvoltage protection
 - Multifunction time module

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



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

Pluggable interface relays

Approvals and marks

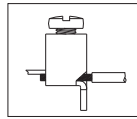
Kind of connecting terminals

Kinds of sockets

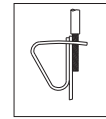
Standard sockets - Position of connecting terminals:
Coil connection (A1-A2) on lower socket side, contact connections (n/o and n/c contacts) on the lower and upper socket side.

Logical sockets - Position of connecting terminals:
Coil connection (A1-A2) on lower socket side, all contact connections (common contacts, n/o and n/c contacts) on upper socket side.

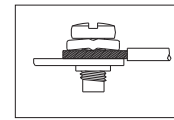
Details see connection diagrams



Screw type



Spring type



Fork type

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Approvals and marks

- existing
- pending

		Relays				Sockets								Modules	
		CR-S	CR-P	CR-M	CR-U	CR-S sockets	CR-PLS CR-PSS	CR-PLC	CR-M..L.. CR-M..SS	CR-M..SF	CR-U..S CR-U..E	CR-U..SM		CR-P/M	CR-U
Approvals															
	ANSI/UL 508	■	■	■	■	■	■	■	■	■	■	■		■	■ ⁶⁾
	CAN/CSA C22.2 No.14	■	■	■		■	■ ¹⁾	■	■ ²⁾	■	■ ³⁾	■		■	■ ⁶⁾
	CAN/CSA C22.2 No.14	■	■	■	■	■									
	VDE	■ ⁸⁾	■	■ ⁴⁾	■	■ ⁸⁾									
	EAC	■	■	■	■	■	■	■	■	■	■	■		■	■
	Lloyds Register			■ ⁵⁾	■										
	CCC		■	■	■										
	CQC	■													
	RMRS		■	■ ⁷⁾	■ ⁷⁾	■	■	■	■	■	■	■			
Marks															
	CE	■	■	■	■	■	■	■	■	■	■	■		■	■

- ¹⁾ except CR-PLSx
- ²⁾ except CR-M...LC
- ³⁾ except CR-U3E
- ⁴⁾ except 125 V DC devices
- ⁵⁾ only devices with 4 c/o contacts
- ⁶⁾ except CR-U61D, CR-U61DV
- ⁷⁾ except 60 V and 125 V devices
- ⁸⁾ only relays and sockets with screw terminals

Pluggable interface relays

Ordering details - CR-M range



CR-M

2CDC 291 00Z F0015

Ordering details - CR-M range without LED

Rated control supply voltage	Outputs	Contact ratings	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)				
12 V DC	2 c/o (SPDT)	250 V, 12 A	CR-M012DC2	1SVR405611R4000		10	0.033 (0.073)				
24 V DC			CR-M024DC2	1SVR405611R1000							
48 V DC			CR-M048DC2	1SVR405611R6000							
60 V DC			CR-M060DC2	1SVR405611R4200							
110 V DC			CR-M110DC2	1SVR405611R8000							
125 V DC			CR-M125DC2	1SVR405611R8200							
220 V DC			CR-M220DC2	1SVR405611R9000							
24 V AC			CR-M024AC2	1SVR405611R0000							
48 V AC			CR-M048AC2	1SVR405611R5000							
110 V AC			CR-M110AC2	1SVR405611R7000							
120 V AC			CR-M120AC2	1SVR405611R2000							
230 V AC			CR-M230AC2	1SVR405611R3000							
12 V DC			3 c/o (SPDT)	250 V, 10 A	CR-M012DC3			1SVR405612R4000		10	0.033 (0.073)
24 V DC					CR-M024DC3			1SVR405612R1000			
48 V DC	CR-M048DC3	1SVR405612R6000									
60 V DC	CR-M060DC3	1SVR405612R4200									
110 V DC	CR-M110DC3	1SVR405612R8000									
125 V DC	CR-M125DC3	1SVR405612R8200									
220 V DC	CR-M220DC3	1SVR405612R9000									
24 V AC	CR-M024AC3	1SVR405612R0000									
48 V AC	CR-M048AC3	1SVR405612R5000									
60 V AC	CR-M060AC3	1SVR405612R5200									
110 V AC	CR-M110AC3	1SVR405612R7000									
120 V AC	CR-M120AC3	1SVR405612R2000									
230 V AC	CR-M230AC3	1SVR405612R3000									
12 V DC	4 c/o (SPDT)	250 V, 6 A			CR-M012DC4	1SVR405613R4000		10	0.033 (0.073)		
24 V DC			CR-M024DC4	1SVR405613R1000							
48 V DC			CR-M048DC4	1SVR405613R6000							
60 V DC			CR-M060DC4	1SVR405613R4200							
110 V DC			CR-M110DC4	1SVR405613R8000							
125 V DC			CR-M125DC4	1SVR405613R8200							
220 V DC			CR-M220DC4	1SVR405613R9000							
24 V AC			CR-M024AC4	1SVR405613R0000							
48 V AC			CR-M048AC4	1SVR405613R5000							
110 V AC			CR-M110AC4	1SVR405613R7000							
120 V AC			CR-M120AC4	1SVR405613R2000							
230 V AC			CR-M230AC4	1SVR405613R3000							

Pluggable interface relays

Ordering details - CR-M range



2CDC 291 002 F0015

CR-M

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Ordering details - CR-M range with LED

Rated control supply voltage	Outputs	Contact ratings	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
12 V DC	2 c/o (SPDT)	250 V, 12 A	CR-M012DC2L	1SVR405611R4100		10	0.033 (0.073)
24 V DC			CR-M024DC2L	1SVR405611R1100			
48 V DC			CR-M048DC2L	1SVR405611R6100			
60 V DC			CR-M060DC2L	1SVR405611R4300			
110 V DC			CR-M110DC2L	1SVR405611R8100			
125 V DC			CR-M125DC2L	1SVR405611R8300			
220 V DC			CR-M220DC2L	1SVR405611R9100			
24 V AC			CR-M024AC2L	1SVR405611R0100			
48 V AC			CR-M048AC2L	1SVR405611R5100			
110 V AC			CR-M110AC2L	1SVR405611R7100			
120 V AC	CR-M120AC2L	1SVR405611R2100					
230 V AC	CR-M230AC2L	1SVR405611R3100					
12 V DC	3 c/o (SPDT)	250 V, 10 A	CR-M012DC3L	1SVR405612R4100		10	0.033 (0.073)
24 V DC			CR-M024DC3L	1SVR405612R1100			
48 V DC			CR-M048DC3L	1SVR405612R6100			
60 V DC			CR-M060DC3L	1SVR405612R4300			
110 V DC			CR-M110DC3L	1SVR405612R8100			
125 V DC			CR-M125DC3L	1SVR405612R8300			
220 V DC			CR-M220DC3L	1SVR405612R9100			
24 V AC			CR-M024AC3L	1SVR405612R0100			
48 V AC			CR-M048AC3L	1SVR405612R5100			
110 V AC			CR-M110AC3L	1SVR405612R7100			
120 V AC	CR-M120AC3L	1SVR405612R2100					
230 V AC	CR-M230AC3L	1SVR405612R3100					
12 V DC	4 c/o (SPDT)	250 V, 6 A	CR-M012DC4L	1SVR405613R4100		10	0.033 (0.073)
24 V DC			CR-M024DC4L	1SVR405613R1100			
48 V DC			CR-M048DC4L	1SVR405613R6100			
60 V DC			CR-M060DC4L	1SVR405613R4300			
110 V DC			CR-M110DC4L	1SVR405613R8100			
125 V DC			CR-M125DC4L	1SVR405613R8300			
220 V DC			CR-M220DC4L	1SVR405613R9100			
24 V AC			CR-M024AC4L	1SVR405613R0100			
48 V AC			CR-M048AC4L	1SVR405613R5100			
110 V AC			CR-M110AC4L	1SVR405613R7100			
120 V AC	CR-M120AC4L	1SVR405613R2100					
230 V AC	CR-M230AC4L	1SVR405613R3100					

Ordering details - CR-M range with LED and free-wheeling diode

Rated control supply voltage	Outputs	Contact ratings	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
24 V DC	4 c/o (SPDT)	250 V, 6 A	CR-M024DC4LD	1SVR405614R1100		10	0.033 (0.073)

Ordering details - CR-M range with gold contacts

Rated control supply voltage	Outputs	Contact ratings	Type	Order code	Price	Pkg qty	Weight (1 pce) kg (lb)
24 V DC	4 c/o (SPDT)	250 V, 6 A	CR-M024DC4G	1SVR405618R1000		10	0.033 (0.073)
24 V AC			CR-M024AC4G	1SVR405618R0000			
110 V AC			CR-M110AC4G	1SVR405618R7000			
230 V AC			CR-M230AC4G	1SVR405618R3000			

Pluggable interface relays

Ordering details - CR-M range



2CDC 291 002 F0015

CR-M

Ordering details – CR-M range with gold contacts and LED

Rated control supply voltage	Outputs	Contact ratings	Type	Order code	Price	Pkg	Weight (1 pce)
						qty	kg (lb)
12 V DC	4 c/o (SPDT)	250 V / 6 A	CR-M012DC4LG	1SVR405618R4100		10	0.033 (0.073)
24 V DC			CR-M024DC4LG	1SVR405618R1100			
48 V DC			CR-M048DC4LG	1SVR405618R6100			
60 V DC			CR-M060DC4LG	1SVR405618R4300			
110 V DC			CR-M110DC4LG	1SVR405618R8100			
125 V DC			CR-M125DC4LG	1SVR405618R8300			
220 V DC			CR-M220DC4LG	1SVR405618R9100			
24 V AC			CR-M024AC4LG	1SVR405618R0100			
48 V AC			CR-M048AC4LG	1SVR405618R5100			
110 V AC			CR-M110AC4LG	1SVR405618R7100			
120 V AC	CR-M120AC4LG	1SVR405618R2100					
230 V AC	CR-M230AC4LG	1SVR405618R3100					

Ordering details – CR-M range with gold contacts, LED and free-wheeling diode

Rated control supply voltage	Outputs	Contact ratings	Type	Order code	Price	Pkg	Weight (1 pce)
						qty	kg (lb)
12 V DC	4 c/o (SPDT)		CR-M012DC4LDG	1SVR405618R4400		10	0.033 (0.073)
24 V DC			CR-M024DC4LDG	1SVR405618R1400			

Ordering details - Accessories

Version	Connection terminal	Type	Order code	Price	Pkg	Weight (1 pce)
					qty	kg (lb)
Logical socket for 2 c/o	screw	CR-M2LS	1SVR405651R1100		10	0.055 (0.121)
Logical socket for 3 c/o		CR-M3LS	1SVR405651R2100			0.062 (0.137)
Logical socket for 2/4 c/o		CR-M4LS	1SVR405651R3100			0.066 (0.146)
Logical socket for 2 c/o	spring	CR-M2LC	1SVR405651R1200		10	0.065 (0.143)
Logical socket for 2/4 c/o		CR-M4LC	1SVR405651R3200			0.066 (0.146)
Standard socket for 2 c/o	screw	CR-M2SS	1SVR405651R1000		10	0.066 (0.146)
Standard socket for 3 c/o		CR-M3SS	1SVR405651R2000			0.068 (0.150)
Standard socket for 2/4 c/o		CR-M4SS	1SVR405651R3000			0.070 (0.154)
Standard socket for 2 c/o	fork type	CR-M2SF	1SVR405651R1300		10	0.040 (0.088)
Standard socket for 2/4 c/o		CR-M4SF	1SVR405651R3300			0.048 (0.106)
Plastic holder		CR-MH	1SVR405659R1000		10	0.003 (0.007)
Metal holder		CR-MH1	1SVR405659R1100		10	0.0005 (0.001)
Jumper bar for sockets with screw connection		CR-MJ	1SVR405658R6000		10	0.029 (0.064)
Marker		CR-MM	1SVR405658R1000		10	0.0005 (0.001)



2CDC 291 009 F0011

CR-M4SS



2CDC 291 005 F0007

CR-MJ

Pluggable interface relays

Ordering details CR-P/M functional modules



2CDC 291 005 50011

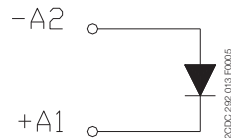
CR-P/M ...

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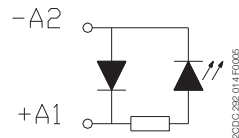
Ordering details - CR-P/M range (all products stocked)

Rated control supply voltage	Description	Version	Type	Order code	Price	Pkg qty	Weight			
							(1 pce)			
							kg (lb)			
6-220 V DC	Diode - Reverse polarity protection/free wheeling diode	A1+, A2-	CR-P/M 22	1SVR405651R0000		10	0.003 (0.007)			
6-24 V DC	Diode and LED - Reverse polarity protection/free wheeling diode	red, A1+, A2-	CR-P/M 42	1SVR405652R0000		10	0.003 (0.007)			
24-60 V DC		green, A1+, A2-	CR-P/M 42V	1SVR405652R1000						
		red, A1+, A2-	CR-P/M 42B	1SVR405652R4000						
		green, A1+, A2-	CR-P/M 42BV	1SVR405652R4100						
110-230 V DC		red, A1+, A2-	CR-P/M 42C	1SVR405652R9000		10	0.003 (0.007)			
6-24 V AC/DC		green, A1+, A2-	CR-P/M 42CV	1SVR405652R9100						
24-60 V AC/DC			CR-P/M 52B	1SVR405653R0000						
110-230 V AC/DC	Spark quenching		CR-P/M 52D	1SVR405653R4000		10	0.003 (0.007)			
			CR-P/M 52C	1SVR405653R1000						
6-24 V AC/DC	Diode, LED and reverse polarity protection	red, for DC A1+, A2-	CR-P/M 62	1SVR405654R0000		10	0.003 (0.007)			
		green, for DC A1+, A2-	CR-P/M 62V	1SVR405654R1000						
24-60 V AC/DC		red, for DC A1+, A2-	CR-P/M 62E	1SVR405654R4000						
		green, for DC A1+, A2-	CR-P/M 62EV	1SVR405654R4100						
110 V DC		red, for DC A1+, A2-	CR-P/M 92	1SVR405654R0100						
110-230 V AC		green, for DC A1+, A2-	CR-P/M 92V	1SVR405654R1100						
6-24 V AC/DC		Varistor and LED Overvoltage protection	red, for DC A1+, A2-	CR-P/M 62C	1SVR405655R0000				10	0.003 (0.007)
			green, for DC A1+, A2-	CR-P/M 62CV	1SVR405655R1000					
24-60 V AC/DC	red, for DC A1+, A2-		CR-P/M 62D	1SVR405655R4000						
	green, for DC A1+, A2-		CR-P/M 62DV	1SVR405655R4100						
110 V DC		red, for DC A1+, A2-	CR-P/M 92C	1SVR405655R0100		10	0.002 (0.004)			
110-230 V AC		green, for DC A1+, A2-	CR-P/M 92CV	1SVR405655R1100						
24 V AC	Overvoltage protection		CR-P/M 72	1SVR405656R0000		10	0.002 (0.004)			
115 V AC			CR-P/M 72A	1SVR405656R1000						
230 V AC			CR-P/M 82	1SVR405656R2000						

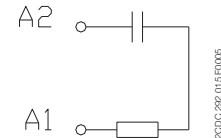
Connection diagrams



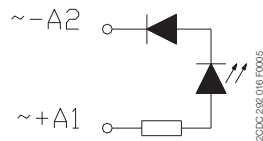
CR-P/M 22



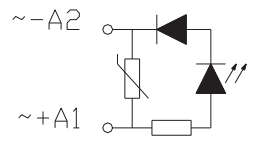
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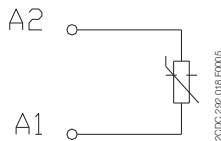
CR-P/M 52B, CR-P/M 52C, CR-P/M 52D,



CR-P/M 62, CR-P/M 62E, CR-P/M 92, CR-P/M 62V, CR-P/M 62EV, CR-P/M 92V



CR-P/M 62C, CR-P/M 62D, CR-P/M 62C, CR-P/M 62CV, CR-P/M 72, CR-P/M 82, CR-P/M 62DV, CR-P/M 92CV



CR-P/M 72, CR-P/M 82

Pluggable interface relays

Technical data - CR-P, CR-M, CR-U

Input circuit - coil data CR-P range



	Rated control supply voltage U_s	Rated frequency	Make voltage (at 20 °C)	Maximum-voltage (at 55 °C)	Break voltage	Rated power	Coil re-sistance (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	$\pm 10\%$

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CR-M range



	Rated control supply voltage U_s	Rated frequency	Make voltage (at 20 °C)	Maximum voltage (at 55 °C)	Break voltage	Rated power	Coil re-sistance (at 20 °C)	Tolerance of coil resistance
DC coils	12 V DC	-	9.6 V DC	13.2 V DC	$\geq 0.1 U_s$	0.9 W	160 Ω	$\pm 10\%$
	24 V DC	-	19.2 DC	26.4 V DC	$\geq 0.1 U_s$	0.9 W	640 Ω	$\pm 10\%$
	48 V DC	-	38.4 V DC	52.8 V DC	$\geq 0.1 U_s$	0.9 W	2600 Ω	$\pm 10\%$
	60 V DC	-	48 V DC	66 V DC	$\geq 0.1 U_s$	0.9 W	4000 Ω	$\pm 10\%$
	110 V DC	-	88 V DC	121 V DC	$\geq 0.1 U_s$	0.9 W	13600 Ω	$\pm 10\%$
	125 V DC	-	100 V DC	137.5 V DC	$\geq 0.1 U_s$	0.9 W	16000 Ω	$\pm 10\%$
	220 V DC	-	176 V DC	242 V DC	$\geq 0.1 U_s$	0.9 W	54000 Ω	$\pm 10\%$
	AC coils	24 V AC	50 / 60 Hz	19.2 V AC	26.4 V AC	$\geq 0.2 U_s$	1.6 VA	158 Ω
48 V AC		50 / 60 Hz	38.4 V AC	52.8 V AC	$\geq 0.2 U_s$	1.6 VA	640 Ω	$\pm 10\%$
60 V AC		50 / 60 Hz	48 V AC	66 V AC	$\geq 0.2 U_s$	1.6 VA	930 Ω	$\pm 10\%$
110 V AC		50 / 60 Hz	88 V AC	121 V AC	$\geq 0.2 U_s$	1.6 VA	3450 Ω	$\pm 10\%$
120 V AC		50 / 60 Hz	96 V AC	132 V AC	$\geq 0.2 U_s$	1.6 VA	3770 Ω	$\pm 10\%$
230 V AC		50 / 60 Hz	184 V AC	253 V AC	$\geq 0.2 U_s$	1.6 VA	16100 Ω	$\pm 10\%$

CR-U range



	Rated control supply voltage U_s	Rated frequency	Make voltage (at 20 °C)	Maximum voltage (at 55 °C)	Break voltage	Rated power	Coil re-sistance (at 20 °C)	Tolerance of coil resistance
DC coils	12 V DC	-	9.6 V DC	13.2 V DC	$\geq 0.1 U_s$	1.5 W	110 Ω	$\pm 10\%$
	24 V DC	-	19.2 V DC	26.4 V DC	$\geq 0.1 U_s$	1.5 W	430 Ω	$\pm 10\%$
	48 V DC	-	38.4 V DC	52.8 V DC	$\geq 0.1 U_s$	1.5 W	1750 Ω	$\pm 10\%$
	110 V DC	-	88.0 V DC	121.0 V DC	$\geq 0.1 U_s$	1.5 W	9200 Ω	$\pm 10\%$
	125 V DC	-	100 V DC	137.5 V DC	$\geq 0.1 U_s$	1.5 W	11000 Ω	$\pm 10\%$
	220 V DC	-	176.0 V DC	242.0 V DC	$\geq 0.1 U_s$	1.5 W	37000 Ω	$\pm 10\%$
AC coils	24 V AC	50 / 60 Hz	19.2 V AC	26.4 V AC	$\geq 0.15 U_s$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	75 Ω	$\pm 10\%$
	48 V AC	50 / 60 Hz	38.4 V AC	52.8 V AC	$\geq 0.15 U_s$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	305 Ω	$\pm 10\%$
	60 V AC	50 / 60 Hz	48.0 V AC	66.0 V AC	$\geq 0.15 U_s$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	475 Ω	$\pm 10\%$
	110 V AC	50 / 60 Hz	88.0 V AC	121.0 V AC	$\geq 0.15 U_s$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	1700 Ω	$\pm 10\%$
	120 V AC	50 / 60 Hz	96.0 V AC	132.0 V AC	$\geq 0.15 U_s$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	1910 Ω	$\pm 10\%$
	230 V AC	50 / 60 Hz	184.0 V AC	253.0 V AC	$\geq 0.15 U_s$	2.8 VA (50 Hz) 2.5 VA (60 Hz)	7080 Ω	$\pm 10\%$

Pluggable interface relays

Technical data - CR-P, CR-M, CR-U

Type		CR-P...1	CR-P...2	CR-M...2	CR-M...3	CR-M...4	CR-U...2	CR-U...3		
Output circuit(s)		11-12/14	11-12/14 21-22/24	11-12/14 21-22/24	11-12/14 21-22/24 31-32/34	11-12/14 21-22/24 31-32/34 41-42/44	11-12/14 31-32/34	11-12/14 21-22/24 31-32/34		
Kind of output		Relay, 1 c/o	Relay, 2 c/o	Relay, 2 c/o	Relay, 3 c/o	Relay, 4 c/o	Relay, 2 c/o	Relay, 3 c/o		
Contact material		AgNi	AgNi AgNi/Au 5 µm	AgNi	AgNi	AgNi AgNi/Au 5 µm	AgNi			
Rated operational voltage U _e (VDE 0110, IEC 60947-1)		250 V								
Minimum switching voltage		5 V			10 V (AgNi); 5 V (AgNi/Au)		10 V			
Maximum switching voltage	DC	300 V DC			250 V DC					
	AC	440 V AC			250 V AC		440 V AC			
Minimum switching current		5 mA (AgNi), 2 mA (AgNi/Au)		5 mA (AgNi)	5 mA (AgNi)	2 mA (AgNi/Au)	5 mA			
Rated free air thermal current I _{th}		16 A	8 A	12 A	10 A	6 A	10 A			
Rated operational current (IEC 60947-5-1)	AC-12 (resistive) 230 V	16 A	8 A	12 A	10 A	6 A	10 A			
	AC-15 (inductive) 230 V	1.5 A	1.5 A	1.5 A	1.5 A	1 A	1.5 A			
	AC-15 (inductive) 120 V	3 A				1.5 A	3 A			
	DC-12 (resistive) 24 V	16 A	8 A	12 A	10 A	6 A	10 A			
	DC-13 (inductive) 24 V	2.5 A	2 A	2.5 A	2.5 A	2 A	2 A			
	DC-13 (inductive) 120 V	0.22 A								
DC-13 (inductive) 250 V	0.1 A									
AC rating (UL 508)	Utilization category (pilot duty) (Contact rating code designation)	B300		B300		B300				
	max. rated operational voltage	300 V AC			300 V AC		300 V AC			
	Max. continuous thermal current at utilization category	5 A		5 A	5 A	2.5 A	5 A			
	Max. making / breaking apparent power at utilization category	3600 / 360 VA			3600 / 360 VA		1800 / 180 VA	3600/360 VA		
	Utilization category (resistive) (CSA22.2 No.14...)	16 A, 250 V AC	8 A, 250 V AC	10 A, 250 V AC	6 A, 250 V AC	5 A, 250 V AC	10 A, 250 V AC	10 A, 250 V AC (resistive + single-phase)		
DC rating * (UL 508; NEMA ICS-5)	Utilization category (pilot duty) (Contact rating code designation)	R300								
	Max. rated operational voltage	300 V DC								
	Max. continuous thermal current at utilization category	1 A								
	Max. making / breaking apparent power at utilization category	28 VA								
	Utilization category (resistive) (CSA22.2 No.14...)	-	10 A, 24 V DC	-				10 A, 28 V DC		
Maximum making (inrush) current		30 A	15 A	24 A	20 A	12 A	20 A			
Minimum switching power		0.3 W (AgNi), 0.05 W (AgNi/Au)			0.3 W (AgNi), 0.1 W (AgNi/Au)		0.3 W			
Maximum switching (breaking) power	AC1 (resistive)	4000 VA	2000 VA	3000 VA	2500 VA	1500 VA	2500 VA			
	Contact resistance	≤ 100 mΩ								
Maximum operating frequency	rated load AC-1	600 switching cycles/h			1200 switching cycles/h					
	without load	72000 switching cycles/h			18000 switching cycles/h		12000 switching cycles/h			
Mechanical lifetime		> 3 x 10 ⁷ switching cycles			> 2 x 10 ⁷ switching cycles					
Electrical lifetime	electrical AC1 (resistive)	> 0.7 x 10 ⁵ switching cycles (16 A, 250 V)	> 10 ⁵ switching cycles (8 A, 250 V)	> 10 ⁵ switching cycles (12 A, 250 V) (10 A, 250 V)		(6 A, 250 V)	> 10 ⁵ switching cycles (12 A, 250 V)			
	cos φ	see reduction factor F								
Response time		typ. 7 ms			typ. 13 ms (DC), 10 ms (AC)		typ. 18 ms (DC), 12 ms (AC)			
Release time		typ. 3 ms			typ. 3 ms (DC), 8 ms (AC)		typ. 7 ms (DC), 10 ms (AC)			
Isolation data										
Rated insulation voltage		400 V AC			250 V AC					
Insulation class		C250 / B400			C250 / B250		C250			
Rated impulse withstand voltage U _{imp}	between coil and contacts	5 kV AC			2.5 kV AC					
	between open contacts	1 kV AC			1.5 kV AC					
	between c/o (SPDT) contacts	-	2.5 kV AC	2.5 kV AC		≥ 2 kV AC	2 kV AC			
Clearance between coil and contacts		≥ 10 mm			≥ 2.5 mm		≥ 1.6 mm	≥ 3 mm		
Creepage distance between coil and contacts		≥ 10 mm			≥ 4 mm		≥ 3.2 mm	≥ 4.2 mm		
Overvoltage category		III			III		II	III		
Pollution degree		3			3		2	3		

* Those ratings are based on different type tests but they are not covered by the cULus or CSA approvals.

Pluggable interface relays

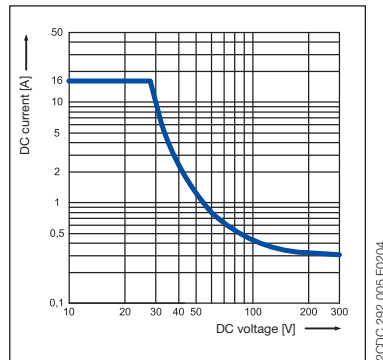
Technical data, load limit curves - CR-P, CR-M, CR-U

Type	CR-P...1	CR-P...2	CR-M...2	CR-M...3	CR-M...4	CR-U...2	CR-U...3
General data							
Dimensions (W x H x D) when mounted	12.7 x 29 x 15.7 mm		21.2 x 27.5 x 35.6 mm			35 x 35 x 54.4 mm	
Weight	14 g (0.031 lb)		35 g (0.077 lb)			83 g (0.18 lb)	
Mounting	on socket (see accessories)						
Mounting position	any						
Degree of protection	IP 67			IP 40			
Electrical connection							
Connection	by socket						
Environmental data							
Ambient temperature range	operation	DC: -40...+85 °C; AC: -40...+70 °C			DC: -40...+70 °C; AC: -40...+55 °C		
	storage	-40 ... +85 °C					
Vibration resistance 10-150 Hz	n/o contact	10 g	5 g			5 g	
	n/c contact	10 g	5 g	5 g			5 g
Shock resistance	n/o contact	30 g	20 g	10 g			10 g
	n/c contact	30 g	20 g	5 g			10 g
Standards							
Product standard	IEC/EN 60255-23, IEC/EN 60664-1, IEC/EN 61810-1			IEC/EN 60255-23, IEC/EN 60810-1, IEC/EN 61810-7			IEC/EN 60255-1
Low Voltage Directive	2006/95/EC						

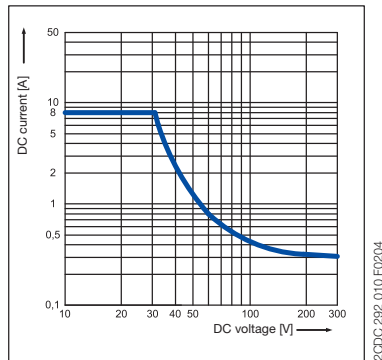
Approvals see page 5/6.

Load limit curves - Maximum switching power at resistive DC load

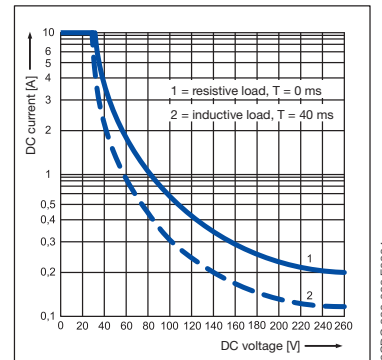
CR-P with 1 c/o contact



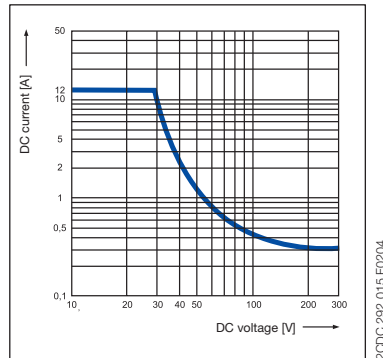
CR-P with 2 c/o contacts



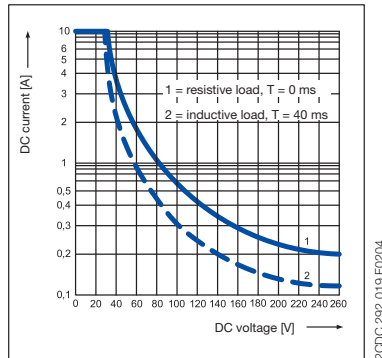
CR-U with 2 and 3 c/o contacts



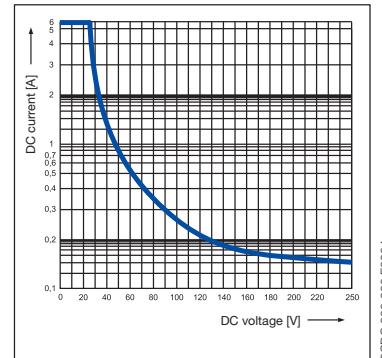
CR-M with 2 c/o contacts



CR-M with 3 c/o contacts



CR-M with 4 c/o contacts



Pluggable interface relays

Technical data - Sockets for CR-P and CR-M

Output circuits	CR-PLS	CR-PLS(x)	CR-PSS	CR-PLC	CR-MxLS	CR-MxSS	CR-MxSF	CR-MxLC
Output circuits	11-12/14, 21-22/24				11-12/14, 21-22/24, ...			
Number of poles	2				2, 3 or 4		2 or 4	
Rated voltage	250 V AC	300 V AC	250 V AC		250 V AC			300 V AC
Rated current	2 x 10 A ¹⁾	2 x 12 A ¹⁾	2 x 10 A ¹⁾		7 A			10 A
General data								
Dimensions without holder and module (L x W x H)	76 x 15.8 x 62 mm (2.992 x 0.622 x 2.441 in)	78.5 x 15.5 x 61 mm (3.011 x 0.610 x 2.402 in)	76 x 15.8 x 42.8 mm (2.992 x 0.622 x 1.685 in)	97.5 x 16.3 x 45.2 mm (3.839 x 0.642 x 1.780 in)	75 x 27.2 x 60.8 mm (2.952 x 1.071 x 2.394 in)	75.2 x 27.2 x 42.6 mm (2.961 x 1.071 x 1.677 in)	66.7 x 30.3 x 29 mm (2.626 x 1.193 x 1.142 in)	95 x 31 x 42.5 mm (3.74 x 1.22 x 1.67 in)
Degree of protection	IP 20 B (EN 60529)							
Temperature range	operation -40...+70 °C		-40...+85 °C		-40...+70 °C		-25...+85 °C	
	storage -40...+70 °C		-40...+85 °C		-40...+70 °C			
Connection type	screw connection			spring connection	screw connection		fork type screw	spring connection
Maximum number of wires per connecting terminal	2			2 (one per connection point)	2		-	2 (one per connection point)
Wire size	rigid				2 x 2.5 mm ² (2 x 14 AWG)		2 x 1.5 mm ² (2 x 16 AWG)	0.2 - 1.5 mm ² (24 x 16 AWG)
	fine-strand			0.2-1.5 mm ² (24-16 AWG)				
	with wire end ferrule				2 x 1.5 mm ² (2 x 16 AWG)			
Stripping length	-				7 mm (0.28 in)		-	-
Tightening torque	0.6 Nm		0.8 Nm	0.6 Nm	0.6 Nm (5.31 lb.in)		-	-
Maximum clamping force	with 0.2 mm ² -		-	-	10 N	-	-	10 N
	with 1.5 mm ² -		-	-	40 N	-	-	40 N
	with wire end ferrule -		-	-	-	-	-	> 40 N
Mounting	DIN rail (IEC/EN 60715)							
Material	socket PA 6+GF - V2				PA 6+GF - V2			
	contacts CuZn33				CuZn33			
	contact surface 5 μ Ni		5 μ tinned	5 μ Ni	5 μ Ni		6 μ Ni	5 μ tinned
	terminals 8 μ Ni		8 μ galvanized	8 μ Ni	XCrNi Steel		8 μ Ni	CCSC
	combi screw M3 8.8 Steel, 5μ Ni		-	-	8.8 Steel, 5μ Ni		-	-
Isolation data								
Insulation voltage	> 5 kV	> 3 kV	> 5 kV		> 3 kV		> 4 kV	
Isolation between coil and contacts	EN 61984			VDE 0106 / 101	EN 61984			DIN EN 61140, VDE 0140-1
Clearance and creepage distance	EN 61984			DIN EN 60664-1	EN 61984		DIN EN 60664-1	
Standards								
Products standard	EN 61984				EN 61984		-	-
Low Voltage Directive	2006/95/EC				2006/95/EC		-	-
EMC Directive	-				2004/108/EC		-	-

¹⁾ Loads >10 A (>12 A for CR-PLSx) require jumpering of terminal 11 with 21, 12 with 22, and 14 with 24

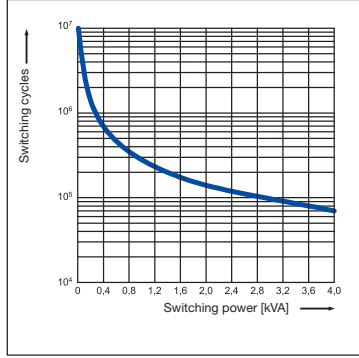
Pluggable interface relays

Load limit curves

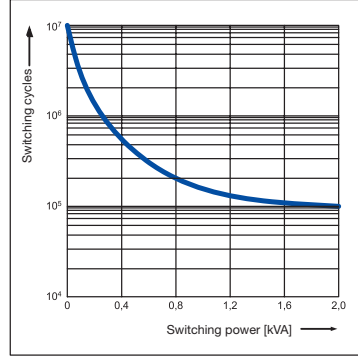
Load limit curves - Electrical lifetime at resistive AC load

5

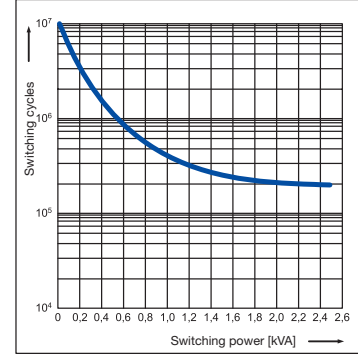
CR-P with 1 c/o contact



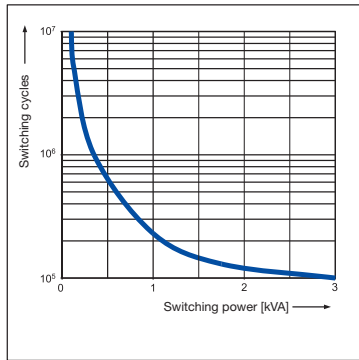
CR-P with 2 c/o contacts



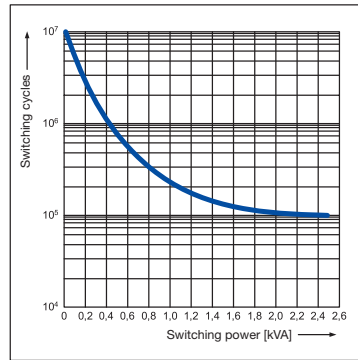
CR-U with 2 and 3 c/o contacts



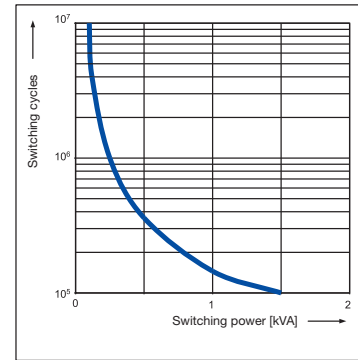
CR-M with 2 c/o contacts



CR-M with 3 c/o contacts

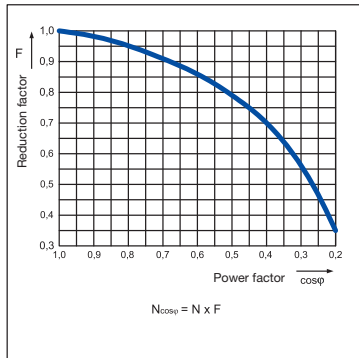


CR-M with 4 c/o contacts

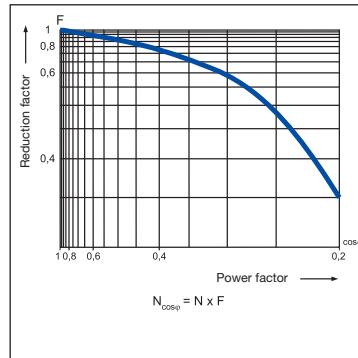


Reduction factor F at inductive AC load

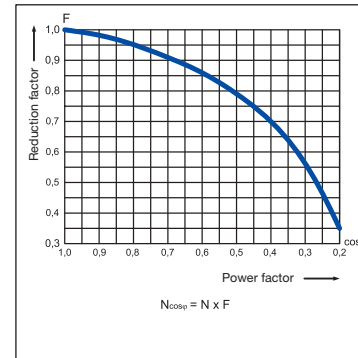
CR-P



CR-M



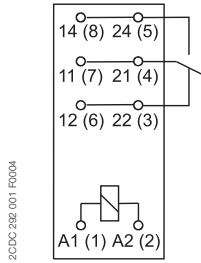
CR-U



Pluggable interface relays

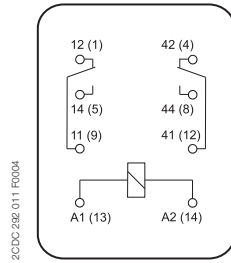
Connection diagrams

Connection diagrams



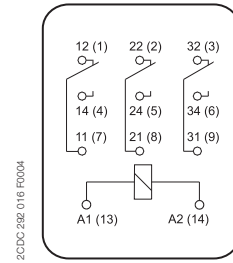
2CDC 292 001 F0004

CR-P with 1 c/o contact



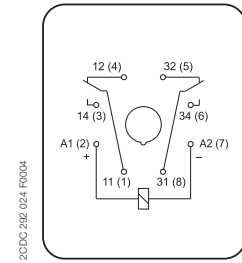
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CR-M with 2 c/o contacts



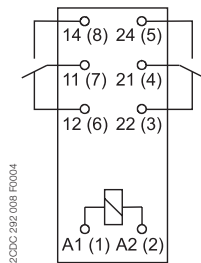
2CDC 292 016 F0004

CR-M with 3 c/o contacts



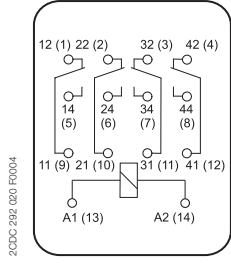
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CR-U with 2 c/o contacts



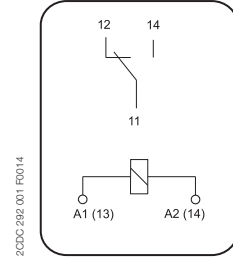
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CR-P with 2 c/o contacts



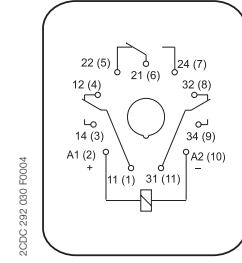
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CR-M with 4 c/o contacts



2CDC 292 001 F0014

CR-S

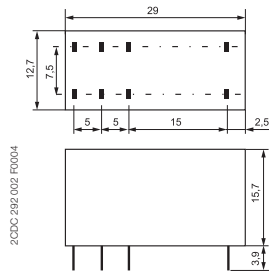


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CR-U with 3 c/o contacts

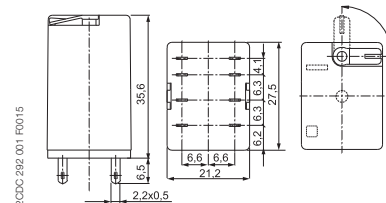
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Dimensional drawings Dimensions in mm and inches



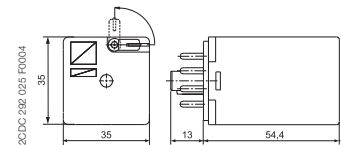
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CR-P



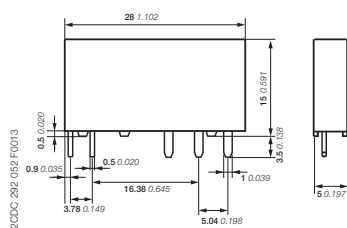
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CR-M with 2 c/o contacts



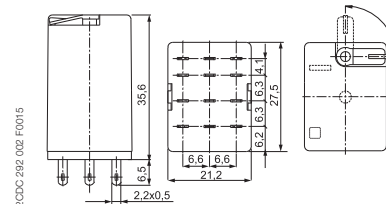
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CR-U with 2 c/o contacts



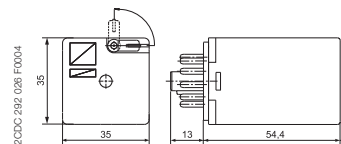
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CR-S



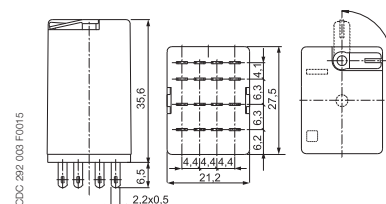
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CR-M with 3 c/o contacts



2CDC 292 008 F0004

CR-U with 3 c/o contacts



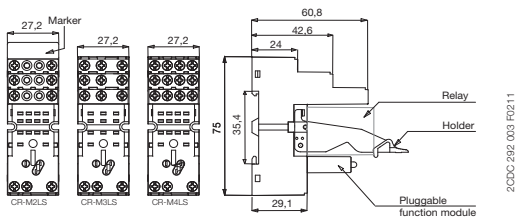
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CR-M with 4 c/o contacts

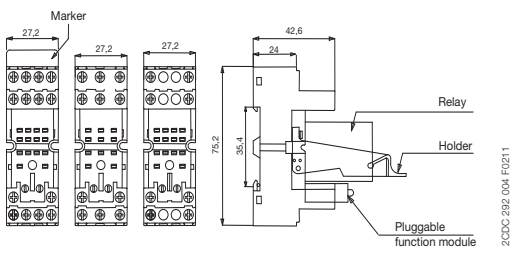
Pluggable interface relays

Dimensional drawings

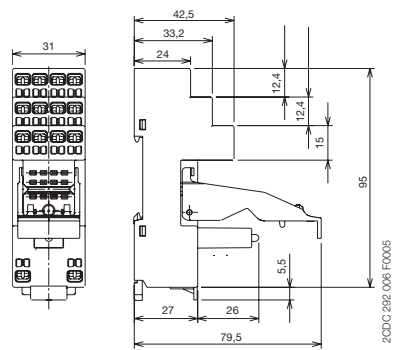
Dimensions in mm and inches



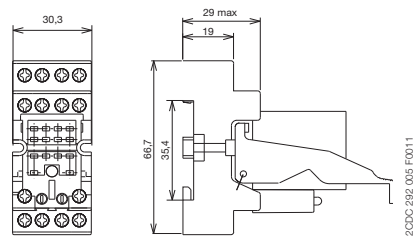
CR-M2LS - CR-M3LS - CR-M4LS - screw connection



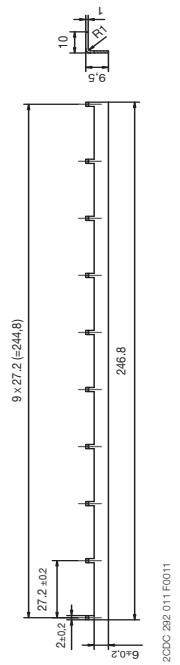
CR-M2SS - CR-M3SS - CR-M4SS - screw connection



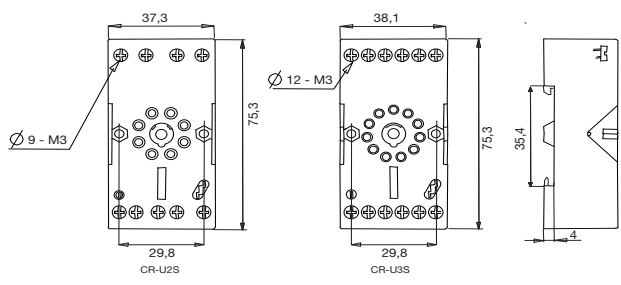
CR-M2LC, CR-M4LC - spring connection



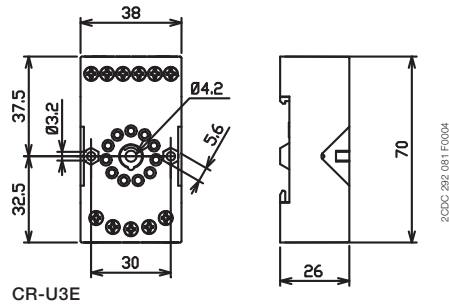
CR-MxSF - screw connection



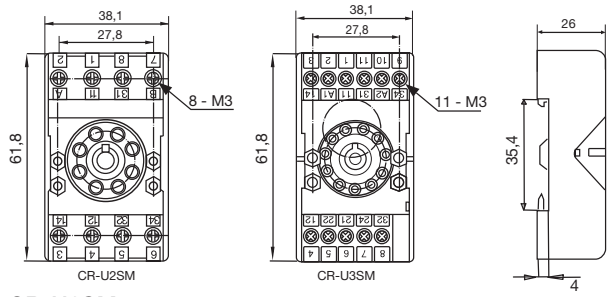
CR-MJ



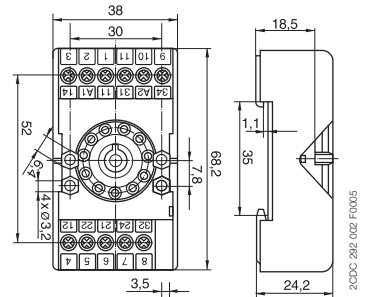
CR-U2S - CR-U3S



CR-U3E



CR-U2SM



CR-U3SM