



Electronic Products and Relays Selection tables

Electronic products and relays

The product range



1 Time relays, CT range

Three ranges of electronic timers provide timing functions for all applications: the CT-D range with a width of just 17.5 mm; the CT-E range, the ideal solution for serial applications; and the CT-S range that has two different types of connection terminals and is ideally suited for universal use. The CT range has a wide variety of timing functions (from ON or OFF delay to star-delta changeover). The time relays are available with output relays, solid-state outputs and precise direct time adjustment.



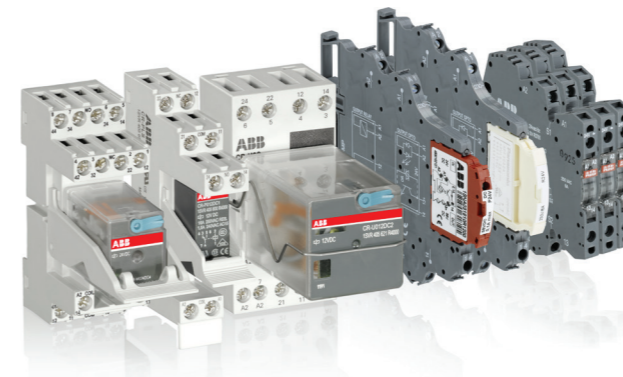
4 Signal converters, CC range and ILPH

The ABB serial data converters allow communication to be established between units with different communication standards. In order to assure process continuity, existing systems must be updated consistently or connected to new devices. Serial data enables communication to be established if the communication standard of the existing system and the connected device vary. As well as converting signals, analog signal converters and serial data converters can amplify, filter or separate signals.



2 Measuring and monitoring relays, CM range

State of the Art monitors for single and three-phase systems. Monitoring of: voltage, current, frequency, power factor (motor load), thermistors, temperature, liquid level, insulation resistance, and grid feeding. ABB has one of the world's widest product ranges of measuring and monitoring relays. The CM range is a key product line of the EPR range.



5 Interface relays and optocouplers, CR range and R600

Interface relays and optocouplers are widely used in various industrial applications. As an interface, they link the controller, e.g. PLC (programmable logic controller), PC or field bus systems to the sensor/actuator level. Here, they have various functions: switching AC or DC loads with different resistive, inductive and capacitive parts, switching voltages from a few mV up to 250 V, switching currents from a few mA up to 16 A, amplification of weak control signals, electrical isolation of control and load circuits, and signal multiplying.



3 Power supplies, CP range

Modern power supply units are a vital component in most areas of energy management and automation technology. As your global partner in this area, ABB pays close attention to corresponding requirements. Innovation is the key to the substantial enlargement of our power supply product range. ABB offers four different product lines for single and three-phase supplies, output voltages 5/12/24, and 48 VDC in plastic and metal enclosure, as well as various accessories.



6 Logic relays, CL range

CL range logic relays are suitable for small and medium-sized control tasks and can substitute logic wiring quickly and easily. Three different ranges are available: stand alone, expandable and the display systems.

Time Relays

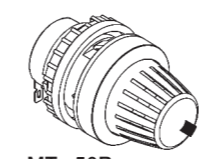
CT-D & CT-S Range

Time Relays

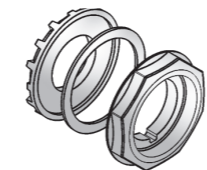
CT-D & CT-S Range - Accessories & Dimensions

Type	Order number																																			
	1SVR 500 020 R0000	1SVR 500 020 R1100	1SVR 500 100 R0000	1SVR 500 100 R0100	1SVR 500 110 R0000	1SVR 500 110 R0100	1SVR 500 130 R0000	1SVR 500 150 R0000	1SVR 500 160 R0000	1SVR 500 160 R0100	1SVR 500 211 R0100	1SVR 500 210 R0100	1SVR xxx 020 R0200	1SVR xxx 020 R3000	1SVR xxx 021 R2300	1SVR xxx 020 R3100	1SVR xxx 030 R3300	1SVR xxx 010 R0200	1SVR xxx 010 R3200	1SVR xxx 040 R3300	1SVR xxx 100 R0300	1SVR xxx 100 R3300	1SVR xxx 100 R3100	1SVR xxx 180 R0300	1SVR xxx 180 R3300	1SVR xxx 180 R3100	1SVR xxx 110 R3300	1SVR xxx 120 R3100	1SVR xxx 120 R3300	1SVR 430 261 R6000	1SVR 430 261 R5000	1SVR xxx 210 R3300	1SVR xxx 211 R2300			
Functions																																				
ON-delay	■	■	■	■									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
OFF-delay	■	■		■	■								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
ON- and OFF-delay																																				
Impulse-ON	■	■				■							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Impulse-OFF	■	■											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Impulse-ON and OFF																																				
Flasher starting with ON	■	■					■						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Flasher starting with OFF	■	■											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Flasher starting with ON or OFF																																				
Pulse generator starting with ON or OFF																																				
Pulse former	■	■											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Star-delta change-over																																				
Star-delta change-over with impulse																																				
Further functions																																				
Control Input	■	■											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
remote potentiometer	■	■											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Time range																																				
0.05 s - 100 h	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
0.05 s - 10 min																																				
0.05 s - 300 h																																				
Supply voltage																																				
24-48 V DC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
24-240 V AC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
12-240 V AC/DC		■																																		
24-240 V AC/DC																																				
100-127 V AC																																				
220-240 V AC																																				
380-440 V AC																																				
Output																																				
c/o contact	1	2	1	2	1	2	1	1	1	2		2	2	2	1	2	2	2	2	2	2	1	2	2	1	2	1	2								
n/o contact											2	2																						2	2	

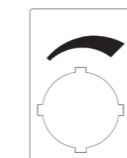
■ stock items



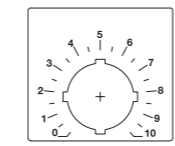
MT-x50B



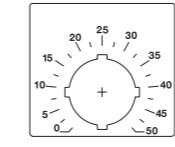
30 mm adapters



Marker label
29.6 x 44.5 mm



Marker label
with scale 0-10
48.5 x 44.5 mm



Marker label
with scale 0-50
48.5 x 44.5 mm

Remote potentiometer
50 kΩ ±20 % - 0,2 Ω, degree of protection IP66

Material	Diameter in mm	Type	Order code	Pack.- unit pieces	Weight 1 piece g / oz
Plastic, black	22.5	MT-150B	MT-150B	1	0.040
Metal, chrome	22.5	MT-350B	MT-350B	1	0.048

30 mm adapter for attaching the potentiometer 22 mm in 30 mm mounting hole

Material	Type	Order code	Pack.- unit pieces	Weight 1 piece g / oz
Plastic, black	KA1-8029	KA1-8029	1	
Metal, chrome	KA1-8030	KA1-8030	1	

Marker label

Caption	Type	Order code	Pack.- unit pieces	Weight 1 piece g / oz
Symbol (see illustration)	SK 615 562-87	SK 615 562-87	1	0.002
Scale 0 - 10	CBK-NPEPOT	CBK-NPEPOT	1	0.002
Scale 0 - 50		1SFA611930R1252	1	0.002

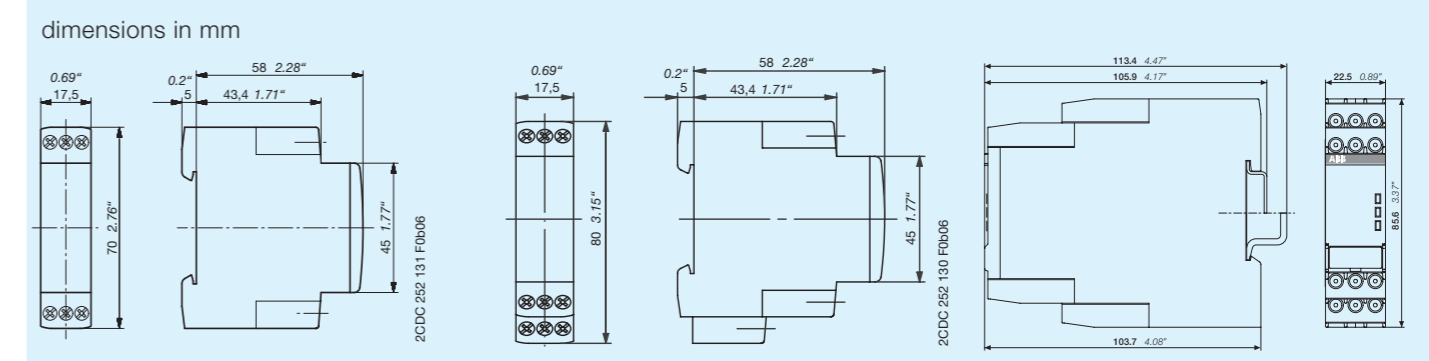
Accessories

Material	for devices	Type	Order code	Pack.- unit pieces	Weight 1 piece g / oz
Adapter for screw mounting	CT-S	ADP.01	1SVR430029R0100	1	18.4/0.65
Sealable transparent cover	22.5 mm	COV.01	1SVR430005R0100	1	5.2/0.18
Sealable transparent cover	CT-S.P/S 22.5 mm	COV.11	1SVR730005R0100	1	4 / 0.129

Marker label

Material	for devices	Type	Order code	Pack.- unit pieces	Weight 1 piece g / oz
Marker	CT-S without DIP switch	MAR.01	1SVR366017R0100	10	0.19/0.007
Marker	CT-S with DIP switch	MAR.02	1SVR430043R0000	10	0.13/0.005
Marker	CT-S.S/P with DIP switch	MAR.12	1SVR730006R0000	10	0.152/0.335

Dimensional drawings



1SVR500... with
1 c/o contact or 2 n/o contacts

1SVR500... with 2 c/o contacts

1SVR730... and 1SVR740...

Time Relays CT-E Range

Type	Order number
CT-MFE	1SVR50029R8100
	1SVR50107R1100
	1SVR50107R4100
	1SVR50107R2100
CT-ERE	1SVR50107R5100
	1SVR50100R1100
	1SVR50100R4100
	1SVR50100R2100
	1SVR50100R5100
	1SVR50118R1100
	1SVR50118R4100
	1SVR50118R2100
CT-AHE	1SVR50110R1100
	1SVR50110R4100
	1SVR50110R2100
	1SVR50111R1100
	1SVR50111R4100
	1SVR50111R2100
	1SVR50127R1100
CT-ARE	1SVR50127R4100
	1SVR50120R1100
	1SVR50120R4100
	1SVR50137R1100
CT-WWE	1SVR50137R4100
	1SVR50137R2100
	1SVR50130R1100
	1SVR50130R4100
	1SVR50130R2100
	1SVR50158R3100
	1SVR50150R3100
CT-AWE	1SVR50151R3100
	1SVR50148R1100
	1SVR50148R4100
	1SVR50148R2100
	1SVR50140R1100
	1SVR50140R4100
	1SVR50140R2100
	1SVR50141R1100
CT-AWE	1SVR50141R4100
	1SVR50141R2100
CT-EBE	1SVR50167R1100
	1SVR50160R1100
	1SVR50207R1100
	1SVR50207R4100
	1SVR50207R2100
CT-YDE	1SVR50200R1100
	1SVR50200R4100
	1SVR50200R2100
CT-SDE	1SVR50217R4100
	1SVR50210R4100
CT-MKE	1SVR50212R4100
	1SVR50019R0000
CT-EKE	1SVR50509R1000
	1SVR50509R4000
	1SVR50509R2000
CT-AKE	1SVR50519R1000
	1SVR50519R4000
	1SVR50519R2000

Functions	CT-MFE	CT-ERE	CT-AHE	CT-ARE	CT-WWE	CT-AWE	CT-AWE	CT-EBE	CT-YDE	CT-SDE	CT-MKE	CT-EKE	CT-AKE
ON-delay	■	■	■	■	■	■	■	■	■	■	■	■	■
OFF-delay	■			■	■	■	■				■	■	■
Impulse-ON	■					■	■	■			■		■
Impulse-OFF						■	■	■	■	■			
Flasher starting with ON	■										■		
Flasher starting with OFF											■		
Pulse former	■							■	■		■		
Star-delta change-over twice ON-delayed	■								■	■	■	■	■

Further functions	CT-MFE	CT-ERE	CT-AHE	CT-ARE	CT-WWE	CT-AWE	CT-AWE	CT-EBE	CT-YDE	CT-SDE	CT-MKE	CT-EKE	CT-AKE
Control Input without auxilliary voltage	■		■	■	■	■	■	■	■	■	■	■	■

Time range	CT-MFE	CT-ERE	CT-AHE	CT-ARE	CT-WWE	CT-AWE	CT-AWE	CT-EBE	CT-YDE	CT-SDE	CT-MKE	CT-EKE	CT-AKE
0.05 s - 100 h	■												
0.05 s - 1 s													
0.1 s - 10 s	■	■	■	■	■	■	■	■	■	■	■	■	■
0.3 s - 30 s		■	■	■	■	■	■	■	■	■	■	■	■
3 s - 300 s		■	■	■	■	■	■	■	■	■	■	■	■
0.3 min - 300 min		■											

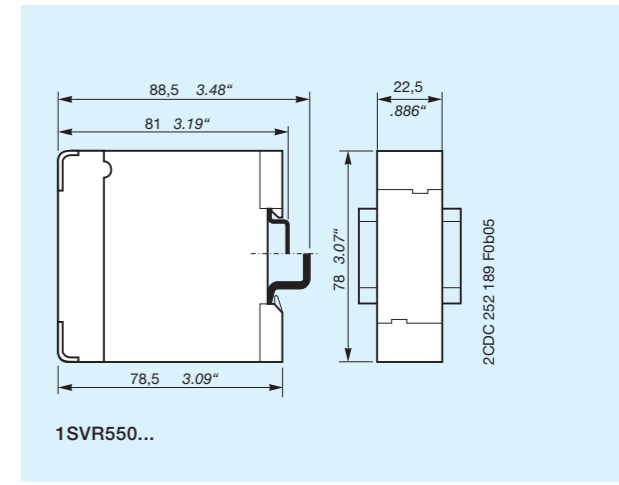
Supply voltage	CT-MFE	CT-ERE	CT-AHE	CT-ARE	CT-WWE	CT-AWE	CT-AWE	CT-EBE	CT-YDE	CT-SDE	CT-MKE	CT-EKE	CT-AKE
24-240 V AC	■											■	■
24-240 V AC/DC	■											■	■
110-130 V AC		■	■	■	■	■	■	■	■	■	■	■	■
24 V AC/DC	■	■	■	■	■	■	■	■	■	■	■	■	■
220-240 V AC	■	■	■	■	■	■	■	■	■	■	■	■	■
380-415 V AC											■		

Output	CT-MFE	CT-ERE	CT-AHE	CT-ARE	CT-WWE	CT-AWE	CT-AWE	CT-EBE	CT-YDE	CT-SDE	CT-MKE	CT-EKE	CT-AKE
c/o contact	1	1	1	1	1	1	1	1	1	1	1	1	1
n/o contact												1	1
n/c contact											1	1	1
Solid-state											■	■	■

■ stock items

Dimensional drawings

dimensions in mm



Measuring and Monitoring Relays

Single-phase current monitoring relays

Type	Order number	CM-SRS.11S	CM-SRS.11P	CM-SRS.11S	CM-SRS.11P	CM-SRS.11S	CM-SRS.11P	CM-SRS.12S	CM-SRS.12S	CM-SRS.12S	CM-SRS.21S	CM-SRS.21P	CM-SRS.21S	CM-SRS.21P	CM-SRS.21S	CM-SRS.21P	CM-SRS.22S	CM-SRS.22S	CM-SRS.22S	CM-SRS.22S	CM-SRS.M1S	CM-SRS.M1P	CM-SRS.M2S	CM-SRS.M2S	CM-SFS.21S	CM-SFS.21P	CM-SFS.22S		
Rated control supply voltage U_c																													
24 - 240 V AC/DC		■	■					■			■	■					■				■	■	■	■	■	■	■	■	
110 - 130 V AC				■	■																								
220 - 240 V AC																													
Measuring ranges AC/DC																													
3 - 30 mA		■	■	■	■	■	■				■	■	■	■	■	■					■	■	■	■	■	■	■	■	
10 - 100 mA		■	■	■	■	■	■				■	■	■	■	■	■					■	■	■	■	■	■	■	■	
0.1 - 1 A		■	■	■	■	■	■				■	■	■	■	■	■					■	■	■	■	■	■	■	■	
0.3 - 1.5 A								■	■	■							■	■	■	■									
1 - 5 A								■	■	■							■	■	■	■									
3 - 15 A								■	■	■							■	■	■	■									
Monitoring function																													
Over- or undercurrent		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Windows current monitoring																									■	■	■	■	
Latching																													
Open circuit or closed circuit principle																													
Timing functions for tripping delay																													
ON delay, 0 or 0.1 - 30 s																													
ON or OFF delay																													
Output																													
c/o contact		1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Connection type																													
Push-in terminals		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Double-chamber cage connection terminals		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

■ stock items adj: adjustable sel: selectable

Measuring and Monitoring Relays

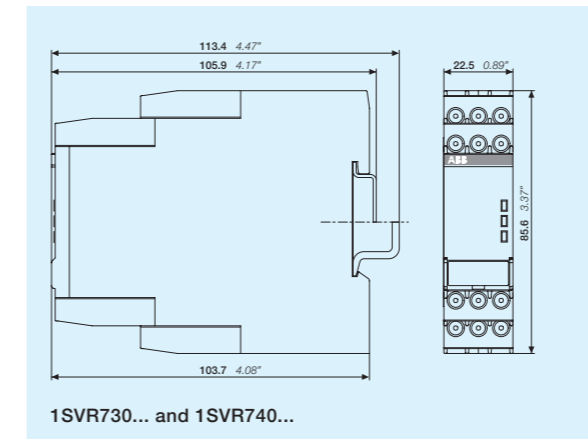
Single-phase voltage monitoring relays

Type	Order number	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-EFS.2S	CM-EFS.2S	CM-EFS.2S	CM-EFS.2P	
Rated control supply voltage U_c																												
24 - 240 V AC/DC		■	■																									
110 - 130 V AC				■	■																							
220 - 240 V AC																												
Measuring ranges AC/DC																												
3 - 30 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6 - 60 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
30 - 300 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
60 - 600 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitoring function																												
Over- or undervoltage		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Windows voltage monitoring																												
Latching																												
Open circuit or closed circuit principle																												
Timing functions for tripping delay																												
ON delay, 0 or 0.1 - 30 s																												
ON or OFF delay																												
Output																												
c/o contact		1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Connection type																												
Push-in terminals		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Double-chamber cage connection terminals		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

■ stock items adj: adjustable sel: selectable

Dimensional drawings

dimensions in mm



Measuring and Monitoring Relays

Insulation Monitoring Relays

Measuring and Monitoring Relays

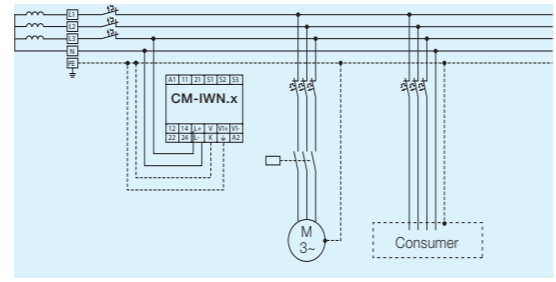
Motor Load Monitoring Relays

Type	Order number	CM-IWS.2S	CM-IWS.2P	CM-IWS.1S	CM-IWS.1P	CM-IVN.1S	CM-IVN.1P	CM-IVN.4S	CM-IVN.4P	CM-IVN.5S	CM-IVN.5P	CM-IVN.6S	CM-IVN.6P
Rated control supply voltage U_c		■	■	■	■	■	■	■	■	■	■	■	■
24 - 240 V AC/DC		■	■	■	■	■	■	■	■	■	■	■	■
Measuring voltages													
250 V AC (L-PE)			■	■	■	■	■	■	■	■	■	■	■
400 V AC (L-PE)		■	■			■	■	■	■	■	■	■	■
690 V AC (L-PE)						1)	1)	1)	1)	1)	1)	1)	1)
300 V DC (L-PE)				■	■								
600 V DC (L-PE)						■	■	■	■	■	■	■	■
1000 V DC (L-PE)						1)	1)	1)	1)	1)	1)	1)	1)
Measuring range													
1 - 100 k Ω		■	■	■	■	■	■	■	■	■	■	■	■
2 - 200 k Ω						■	■	■	■	■	■	■	■
System leakage capacitance, max.													
10 μ F		■	■	■	■	■	■	■	■	■	■	■	■
20 μ F						■	■	■	■	■	■	■	■
500 μ F							■	■	■	■	■	■	■
1000 μ F								■	■	■	■	■	■
2000 μ F										■	■	■	■
Output													
1 c/o		■	■	■	■	■	■	■	■	■	■	■	■
1 x 2 c/o or 2 x 1 c/o						■	■	■	■	■	■	■	■
Operating principle													
Open-circuit principle		■	■	■	■	■	■	■	■	■	■	■	■
Open- or closed-circuit principle adjustable						■	■	■	■	■	■	■	■
Test													
Front face button or control input		■	■	■	■	■	■	■	■	■	■	■	■
Reset													
Front-face button or control input		■	■	■	■	■	■	■	■	■	■	■	■
Fault storage / latching configurable		■	■	■	■	■	■	■	■	■	■	■	■
Non volatile storage configurable		■	■	■	■	■	■	■	■	■	■	■	■
Interrupted wire detection						■	■	■	■	■	■	■	■
Threshold values configurable		1	1	1	1	2	2	2	2	2	2	2	2

1) With coupling unit CM-IVN screw version CM-IVN.S: 1SVR750669R9400
push-in version CM-IVN.P: 1SVR760669R9400

■ stock item

Insulation monitors for unearthed supply systems (IT-Systems)



Type	Order number	CM-LWN	CM-LWN	CM-LWN	CM-LWN	CM-LWN	CM-LWN	CM-LWN	CM-LWN	CM-LWN	CM-LWN
Rated control supply voltage U_c											
24 - 240 VAC/DC		■									
110 - 130 V AC			■								
220 - 240 V AC				■							
380 - 440 V AC					■						
480 - 500 V AC						■					
Voltage range (Phase to phase)											
110 - 500 V		■	■	■	■	■	■	■	■	■	■
Current range											
0.5 - 5 A		■	■	■	■	■	■	■	■	■	■
2 - 20 A											
Frequency range											
50/60 Hz			■	■	■	■	■	■	■	■	■
DC or 15 - 400 Hz			■								
Suitable for monitoring											
Single-phase mains		■	■	■	■	■	■	■	■	■	■
Three-phase mains		■	■	■	■	■	■	■	■	■	■
Monitoring function											
Motor load // cos Phi		■	■	■	■	■	■	■	■	■	■
Timing functions											
Start up delay (on delay)		adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Response delay		adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Output contacts											
2 x 1 c/o		■	■	■	■	■	■	■	■	■	■



Measuring and Monitoring Relays

Thermistor Relays

Measuring and Monitoring Relays

Temperature Monitoring Relays

	Type	Order code
	CM-MSS.11P	1SVR740720R1400
	CM-MSS.11S	1SVR730720R1400
	CM-MSS.12P	1SVR740700R0100
	CM-MSS.12S	1SVR730700R0100
	CM-MSS.13P	1SVR740700R2100
	CM-MSS.13S	1SVR730700R2100
	CM-MSS.21P	1SVR740722R1400
	CM-MSS.21S	1SVR730722R1400
	CM-MSS.22P	1SVR740700R0200
	CM-MSS.22S	1SVR730700R0200
	CM-MSS.23P	1SVR740700R2200
	CM-MSS.23S	1SVR730700R2200
	CM-MSS.31P	1SVR740712R1400
	CM-MSS.31S	1SVR730712R1400
	CM-MSS.32P	1SVR740712R0200
	CM-MSS.32S	1SVR730712R0200
	CM-MSS.33P	1SVR740712R2200
	CM-MSS.33S	1SVR730712R2200
	CM-MSS.41P	1SVR740712R1200
	CM-MSS.41S	1SVR730712R1200
	CM-MSS.51P	1SVR740712R1300
	CM-MSS.51S	1SVR730712R1300

Characteristics																				
ATEX approval	■	■																		
Number of sensor circuits	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	
Single or accumulative evaluation																				
Number of LEDs	3	3	2	2	2	2	3	3	2	2	2	2	3	3	3	3	3	3	3	3

Contacts																				
1 c/o (SPDT) contact			■	■	■	■														
2 c/o (SPDT) contacts																				
1 n/c and 1 n/o	■	■																		
2 x 1 c/o or 1 x 2 c/o contacts, configurable																				

Reset																				
Manual																				
Remote																				
Auto	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Functions																				
Short-circuit detection																				
Short-circuit detection, configurable																				
Dynamic interrupted wire detection	■	■																		
Non-volatile fault storage	■	■																		
Non-volatile fault storage, configurable																				

Rated control supply voltage U _s																				
24-240 V AC/DC	■	■																		
24 V AC/DC			■	■																
110-130 V AC, 220-240 V AC																				

¹⁾ For automatic reset, jumper terminals S1-T2. ■ stock items
²⁾ For automatic reset, jumper terminals S1-1T2/2T2.

Temperature sensor C011, standard version acc. to DIN 44081

Type	Rated response temperature T _{NF}	Color coding	Order code	Pack.-unit set
C011-70	70 °C	white-brown	GHC0110003R0001	1
C011-80	80 °C	white-white	GHC0110003R0002	1
C011-90	90 °C	green-green	GHC0110003R0003	1
C011-100	100 °C	red-red	GHC0110003R0004	1
C011-110	110 °C	brown-brown	GHC0110003R0005	1
C011-120	120 °C	gray-gray	GHC0110003R0006	1
C011-130	130 °C	blue-blue	GHC0110003R0007	1
C011-140	140 °C	white-blue	GHC0110003R0011	1
C011-150	150 °C	black-black	GHC0110003R0008	1
C011-160	160 °C	blue-red	GHC0110003R0009	1
C011-170	170 °C	white-green	GHC0110003R0010	1

Triple temperature sensor C011-3

Type	Rated response temperature T _{NF}	Color coding	Order code	Pack.-unit pieces
C011-3-150	150 °C	black-black	GHC0110033R0008	1

	Type	Order number
	CM-TCS.21S	1SVR730740R9100
	CM-TCS.21P	1SVR740740R9100
	CM-TCS.11S	1SVR730740R0100
	CM-TCS.11P	1SVR740740R0100
	CM-TCS.22S	1SVR730740R9200
	CM-TCS.22P	1SVR740740R9200
	CM-TCS.12S	1SVR730740R0200
	CM-TCS.12P	1SVR740740R0200
	CM-TCS.23S	1SVR730740R9300
	CM-TCS.23P	1SVR740740R9300
	CM-TCS.13S	1SVR730740R0300
	CM-TCS.13P	1SVR740740R0300
	C512-24	1SAR700016R0005
	C512-W	1SAR700016R0010
	C513-W	1SAR700016R0010

Rated control supply voltage U _s												
24 V AC/DC	■	■										
24-240 V AC/DC			■	■								

Technology												
Analogue	■	■	■	■	■	■	■	■	■	■	■	■
Digital												

Sensor circuits (2 or 3 wire)												
No of temperature sensors	1	1	1	1	1	1	1	1	1	1	1	3
No of thresholds	2	2	2	2	2	2	2	2	2	2	2	3

Sensor type												
PT100	■	■	■	■	■	■	■	■	■	■	■	■
PT100, KTY83, KTY84, NTC												

Measuring temperature range												
-50...+50 °C	■	■	■	■								
0...+100 °C					■	■	■	■				
0...+200 °C									■	■	■	■
-50...+500 °C												■

Monitoring function												
Overtemperature	■	■	■	■	■	■	■	■	■	■	■	■
Undertemperature	■	■	■	■	■	■	■	■	■	■	■	■
Window temperature	■	■	■	■	■	■	■	■	■	■	■	■

Operating principle												
Open or closed principle	■	■	■	■	■	■	■	■	■	■	■	■

Output contacts												
n/o												1
c/o	2	2	2	2	2	2	2	2	2	2	2	2

■ stock item

Measuring and Monitoring Relays

Liquid Level Monitoring Relays

Measuring and Monitoring Relays

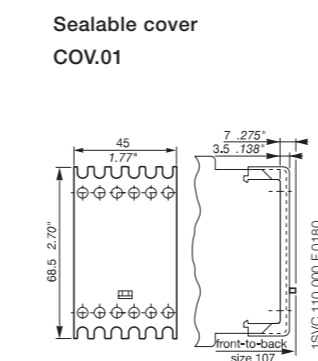
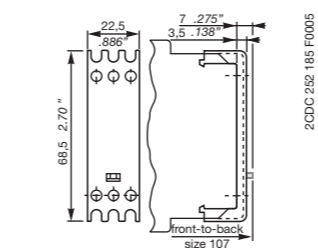
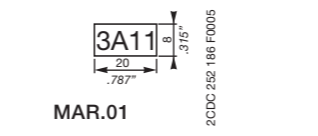
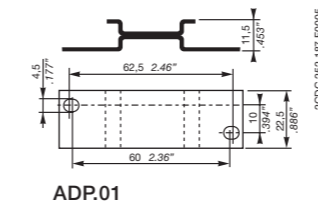
Accessories

Type	Order number	CM-ENE MIN	CM-ENE MIN	CM-ENE MIN	CM-ENE MAX	CM-ENE MAX	CM-ENE MAX	CM-ENS	CM-ENS	CM-ENS	CM-ENS	CM-ENS UP/DOWN	CM-ENS UP/DOWN	CM-ENN	CM-ENN	CM-ENN	CM-ENN	CM-ENS UP/DOWN	CM-ENS UP/DOWN	CM-ENS UP/DOWN		
		1SVR550855R9500	1SVR550850R9500	1SVR550851R9500	1SVR550855R9400	1SVR550850R9400	1SVR550851R9400	1SVR430811R9300	1SVR430851R0100	1SVR430851R1100	1SVR430851R1300	1SVR430851R9200	1SVR430851R0200	1SVR450055R0000	1SVR450059R0000	1SVR450050R0000	1SVR450051R0000	1SVR450059R0100	1SVR450050R0100	1SVR450051R0100	1SVR450051R0100	
Rated control supply voltage U_c																						
24 - 240 V AC/DC																						
24 V AC		■			■			■				■		■				■				
110 - 130 V AC			■			■							■							■		
220 - 240 V AC				■																	■	
Sensor circuits																						
No of electrodes (including ground reference)		2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	5	5	5	
Response sensitivity																						
0 - 100 kOhm		■	■	■	■	■																
5 - 100 kOhm								adj	adj	adj	adj	adj	adj							adj	adj	adj
250 Ohm - 5 kOhm														adj	adj	adj	adj					
2,5 - 50 KOhm														adj	adj	adj	adj					
25 - 500 kOhm														adj	adj	adj	adj					
Monitoring function																						
Dry-running protection		■	■	■																		
Overflow protection					■	■	■															
Liquide level control								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Operating principle																						
Open circuit principle		■	■	■				■	■	■	■	■	■									
Closed circuit principle					■	■	■															
Open or closed circuit principle												sel	sel						sel	sel	sel	
Output contacts																						
n/o		1	1	1	1	1					1											
n/c											1								2	2	2	
c/o								1	1	1		1	1	2	2	2	2		1	1	1	

■ stock item adj: adjustable sel: selectable

Accessories – electrodes

Type	Description	Order code	Pack. unit pieces
CM-KH-3	Compact support for 3 bar electrodes	1SVR450056R6000	1
CM-AH-3	Distance plate for 3 bar electrodes	1SVR450056R7000	1
CM-GM-1	Counter nut for 1" thread	1SVR450056R8000	1
Screw-in bar electrodes / Suspension electrode			
CM-SE-300	300 mm	1SVR450056R0000	1
CM-SE-600	600 mm	1SVR450056R0100	1
CM-SE-1000	1000 mm	1SVR450056R0200	1
CM-HE	-	1SVR402902R0000	1



Ordering details							
Description	For type	Width in mm	for devices	Type	Order code	Pkg qty	Weight (1 pce) g (oz)
Adapter for screw mounting	CM-S	22.5		ADP.01	1SVR430029R0100	1	18.4 (0.65)
	CM-N	45		ADP.02	1SVR440029R0100	1	36.7 (1.30)
Marker label	CM-S, CM-N	20	without DIP switches	MAR.01	1SVR366017R0100	10	0.19 (0.007)
	CM-S, CM-N	20	with DIP switches	MAR.02	1SVR430043R0000	10	0.13 (0.005)
Sealable transparent cover	CM-S	22.5		COV.01	1SVR430005R0100	1	5.2 (0.18)
	CM-S.S/P	22.5		COV.11	1SVR730005R0100	1	4.0 (0.129)
	CM-N.S/P	45		COV.12	1SVR750005R0100	1	7 (0.247)

Switch Mode Power Supplies Accessories

CP-Range

Type		Order number
CP-A RU	Redundancy module ≤ 40 V; ≥ 5A	1SVR427071R0000
CP-A CM	Control module for CP-A	1SVR427075R0000

Buffer modules CP-B range

Selection table

Type	CP-B 24/3.0	CP-B 24/10.0	CP-B 24/20.0	CP-B EXT.2
Order code	1SVR427060R0300	1SVR427060R1000	1SVR427060R2000	1SVR427065R0000
Rated input voltage	24 V DC	24 V DC	24 V DC	-
Rated current	3 A DC	10 A DC	20 A DC	-
Energy storage (min.)	1000 Ws	10000 Ws	8000 Ws	2000 Ws
Typical charging time 100 %	65 s	120 s	68 s	
at load current 0 %	56 s	82 s	62 s	
Typical buffer time¹⁾				
at load current 100 %	14 s	40 s	15 s	
50 %	28 s	80 s	30 s	
25 %	74 s	140 s	60 s	
10 %	148 s	380 s	150 s	

¹⁾ buffer time = $\frac{\text{energy storage} \times 0.9}{\text{current} \times 23 \text{ V}}$

Switch Mode Power Supplies Accessories

Electronic Protection Devices EPD24

Selection table

Rated current I _n in (A)	Type code	Order number	bbn 40 16779 EAN	Weight 1 piece (kg)	Pack unit pc.
0.5	EPD24-TB-101-0.5A	2CDE601101R2905	829960	0.065	4
1	EPD24-TB-101-1A	2CDE601101R2001	829984	0.065	4
2	EPD24-TB-101-2A	2CDE601101R2002	830003	0.065	4
3	EPD24-TB-101-3A	2CDE601101R2003	830027	0.065	4
4	EPD24-TB-101-4A	2CDE601101R2004	830041	0.065	4
6	EPD24-TB-101-6A	2CDE601101R2006	830065	0.065	4
8	EPD24-TB-101-8A	2CDE601101R2008	830089	0.065	4
10	EPD24-TB-101-10A	2CDE601101R2010	830102	0.065	4
12	EPD24-TB-101-12A	2CDE601101R2012	830126	0.065	4

Selection table accessories EPD24

	Type code	Order number	bbn 40 16779 EAN	Weight 1 piece (kg)	Pack unit pc.
Busbars for LINE+ and 0 V, grey insulation, length 500 mm ¹⁾	EPD-BB500	2CDE605100R0500	830140	0.20	10
Signal Bars for aux. contacts, grey insulation, length 21 mm	EPD-SB21	2CDE605200R0021	830164	0.04	10

¹⁾ Max. load with one line entry I_{max} = 50 A (recommended: center-feeding)

Max. load with two line entries I_{max} = 63 A

Analogue Signal Converters CC Range

Standard Signal Converters

Type	Order number	Supply voltage U _s	Input signal	Output signal
CC-E/STD	1SVR011700R0000	24 V DC	Potentiometer	0 - 5 V
CC-E V/V	1SVR011710R2100	110 - 240 V AC	0 - 0 V	0 - 10 V
CC-E V/I	1SVR011711R1600	24 - 48 V DC	0 - 50 mV	1 - 5 V
CC-E V/I	1SVR011712R1700	24 V AC	0 - 100 mV	2 - 10 V
CC-E I/V	1SVR011713R1000	100 - 300 V DC	0 - 125 mV	-10 - +10 V
CC-E I/I	1SVR011714R1100		0 - 250 mV	-5 - +5 V
CC-E I/I	1SVR011715R1200		0 - 500 mV	-10 - 0 V
CC-E I/V	1SVR011716R1300		0 - 1 V	-5 - 0 V
CC-E I/I	1SVR011717R1400		0 - 2.5 V	0 - 6.666 V
CC-E I/I	1SVR011718R2500		0 - 5 V	-10 - +3.33 V
CC-E V/V	1SVR011719R2600		0 - 8 V	-5 - +1.66 V
CC-E/STD	1SVR011705R2100		0 - 10 V	0 - 8 V
CC-E V/V	1SVR011720R2300		1 - 5 V	0 - 4 V
CC-E V/I	1SVR011721R1000		2 - 10 V	-10 - -2 V
CC-E V/I	1SVR011722R1100		-10 - +10 V	-5 - -1 V
CC-E I/V	1SVR011723R1200		-22.5 - +22.5 mV	1.25 - 6.25 V
CC-E I/I	1SVR011724R1300		-11 - +11 V	-7.5 - +2.5 V
CC-E I/I	1SVR011725R1400		2.5 - 7.5 V	-3.75 - +1.25 V
CC-E I/V	1SVR011726R1500		3.33 - 9.99 V	1.66 - 8.33 V
CC-E I/I	1SVR011727R1600		10 - 0 V	-6.66 - +6.66 V
CC-E I/I	1SVR011728R2700		100 - 0 mV	-3.33 - +3.33 V
CC-E V/V	1SVR011729R2000		0 - 1 mA	-8 - 0 V
CC-E/I-1	1SVR010200R1600		0 - 20 mA	0 - 1 mA
CC-E/I-2	1SVR010201R0300		4 - 20 mA	0 - 20 mA
CC-U/STD	1SVR040000R1700		10 - 50 mA	4 - 20 mA
CC-U/STD	1SVR040001R0400		20 - 4 mA	0 - 10 mA
CC-U/STDR	1SVR040010R0000		20 - 0 mA	0 - 5 mA
CC-U/STDR	1SVR040011R2500		-0.45 - +0.45 mA	0 - 10 mA
			-55 - +55 mA	0 - 10 mA
			Relay output	Relay output

stock items

Temperature Signal Converters

CC Range

RTD Converters

Type	Order number	Supply voltage U _s	Input signal	Output signal	Relay output
CC-E/RTD	1SVR011701R2500	24 V DC	PT100	0 - 5 V	
CC-E RTD/V	1SVR011730R2500	110 - 240 V AC	0 - 50 °C	0 - 10 V	
CC-E RTD/I	1SVR011731R1200	24 - 48 V DC	0 - 70 °C	1 - 5 V	
CC-E RTD/I	1SVR011732R1300	24 V AC	0 - 80 °C	2 - 10 V	
CC-E RTD/V	1SVR011733R1400	100 - 300 V DC	0 - 90 °C	-10 - +10 V	
CC-E RTD/I	1SVR011734R1500		0 - 100 °C	-5 - +5 V	
CC-E RTD/I	1SVR011735R1600		0 - 200 °C	-10 - 0 V	
CC-E RTD/V	1SVR011736R1700		0 - 300 °C	-5 - 0 V	
CC-E RTD/I	1SVR011737R1000		0 - 400 °C	0 - 6.666 V	
CC-E RTD/I	1SVR011738R2100		0 - 500 °C	-10 - +3.33 V	
CC-E RTD/V	1SVR011739R2200		0 - 600 °C	-5 - +1.66 V	
CC-E RTD/I	1SVR011740R0700		0 - 800 °C	0 - 8 V	
CC-E RTD/I	1SVR011741R2400		-50 °C - +50 °C	0 - 4 V	
CC-E/RTD	1SVR011706R2200		-50 °C - +450 °C	-10 - -2 V	
CC-E RTD/V	1SVR011788R2400		-50 °C - +250 °C	-5 - -1 V	
CC-E RTD/I	1SVR011789R2500		0 - 500 °C	1.25 - 6.25 V	
CC-E RTD/I	1SVR011790R2200		0 - 550 °C	-7.5 - +2.5 V	
CC-E RTD/V	1SVR011791R1700		0 - 600 °C	-3.75 - +1.25 V	
CC-E RTD/I	1SVR011792R1000		0 - 650 °C	1.66 - 8.33 V	
CC-E RTD/I	1SVR011793R1100		0 - 700 °C	-6.66 - +6.66 V	
CC-E RTD/V	1SVR011794R1200		0 - 750 °C	-3.33 - +3.33 V	
CC-E RTD/I	1SVR011795R1300		0 - 800 °C	-8 - 0 V	
CC-E RTD/I	1SVR011796R1400		0 - 850 °C	-4 - 0 V	
CC-E RTD/V	1SVR011797R1500		0 - 10 °C	0 - 1 mA	
CC-E RTD/I	1SVR011798R2600		0 - 20 °C	0 - 20 mA	
CC-E RTD/I	1SVR011799R2700		0 - 30 °C	4 - 20 mA	
CC-U/RTD	1SVR040002R0500		0 - 40 °C	0 - 10 mA	
CC-U/RTD	1SVR040003R0600		0 - 50 °C	0 - 0.5 mA	
CC-U/RTDR	1SVR040012R2600		0 - 60 °C	0 - 13.33 mA	2
CC-U/RTDR	1SVR040013R2700			0 - 666 µA	2
				0 - 16 mA	
				0 - 800 µA	
				0 - 8 mA	
				0 - 400 µA	
				2.5 - 12.5 mA	
				125 - 625 µA	
				3.33 - 16.66 mA	
				166 - 833 µA	
				0.2 - 1 mA	
				2 - 10 mA	
				100 - 500 µA	
				Relay output	

stock items

Thermocouple Signal Converters

CC Range

Thermocouple Converters

Type	Order number	Supply voltage U _s	Input signal	Output signal	Relay output
CC-E/TC	1SVR011702R2600	24 V DC	0..1000 °C type K	0 - 5 V	
CC-E TC/V	1SVR011750R0100	110 - 240 V AC	0 - 100 - 900 °C type K	0 - 10 V	
CC-E TC/I	1SVR011751R2600	24 - 48 V DC	0 - 250 - 1350 °C type K	1 - 5 V	
CC-E TC/I	1SVR011752R2700	24 V AC	0 - 600 °C type J	2 - 10 V	
CC-E TC/V	1SVR011753R2000	100 - 300 V DC	0 - 100 - 750 °C type J	-10 - +10V	
CC-E TC/I	1SVR011754R2100		0 - 100 - 400 °C type T	-5 - +5 V	
CC-E TC/I	1SVR011755R2200		-150 - 0 - 400 °C type T	-10 - 0 V	
CC-E/TC	1SVR011707R2300		0 - 250 - 1550 °C type S	-5 - 0 V	
CC-E TC/V	1SVR011760R0300		0 - 100 - 700 °C type E	0 - 6.666 V	
CC-E TC/I	1SVR011761R2000		0 - 200 - 1000 °C type E	-10 - +3.33 V	
CC-E TC/I	1SVR011762R2100		0 - 100 - 650 °C type N	-5 - +1.66 V	
CC-E TC/V	1SVR011763R2200		0 - 200 - 1300 °C type N	0 - 8 V	
CC-E TC/I	1SVR011764R2300		0 - 250 - 1350 °C type R	0 - 4 V	
CC-E TC/I	1SVR011765R2400		0 - 450 - 1700 °C type R	-10 - -2 V	
CC-U/TC	1SVR040004R0700		0 - 700 - 1750 °C type B	-5 - -1 V	
CC-U/TC	1SVR040005R0000		0 - 2 - 10 mV mV	1.25 - 6.25 V	
CC-U/TC	1SVR040005R0000		0 - 10 - 50 mV mV	-7.5 - +2.5 V	
CC-U/TC	1SVR040005R0000		0 - 240 °C type J	-3.75 - +1.25 V	
CC-U/TC	1SVR040005R0000		0 - 480 °C type J	1.66 - 8.33 V	
CC-U/TC	1SVR040005R0000		0 - 1200 °C type J	-6.66 - +6.66 V	
CC-U/TC	1SVR040005R0000		0 - 250 °C type K	-3.33 - +3.33 V	
CC-U/TC	1SVR040005R0000		0 - 500 °C type K	-8 - 0 V	
CC-U/TC	1SVR040005R0000		0 - 1350 °C type K	0 - 1 mA	
CC-U/TC	1SVR040005R0000		-150 - +120 °C type T	0 - 20 mA	
CC-U/TC	1SVR040005R0000		0 - 220 °C type T	4 - 20 mA	
CC-U/TC	1SVR040005R0000		0 - 400 °C type T	0 - 10 mA	
CC-U/TC	1SVR040005R0000		0 - 210 °C type S	0 - 0.5 mA	
CC-U/TC	1SVR040005R0000		0 - 380 °C type S	0 - 13.33 mA	
CC-U/TCR	1SVR040014R2000			0 - 666 μA	0 - 16 mA
CC-U/TCR	1SVR040015R2100			0 - 800 μA	0 - 8 mA
				0 - 400 μA	0 - 400 μA
				2.5 - 12.5 mA	2.5 - 12.5 mA
				125 - 625 μA	125 - 625 μA
				3.33 - 16.66 mA	3.33 - 16.66 mA
				166 - 833 μA	166 - 833 μA
				0.2 - 1 mA	0.2 - 1 mA
				2 - 10 mA	2 - 10 mA
				100 - 500 μA	100 - 500 μA
				Relay output	Relay output

stock item

Measuring Converters CC Range

Type	Order number	Supply voltage U_s	Input signal	Output signal
CC-E/I	1SVR011703R2700	24 V DC	0 - 1 A, AC	0 - 5 V
CC-E I_{AC}/V	1SVR011770R0500	110 - 240 V AC	0 - 5 A, AC	0 - 10 V
CC-E I_{AC}/I	1SVR011771R2200	24 - 48 V DC	0 - 20 A, AC	1 - 5 V
CC-E I_{AC}/I	1SVR011772R2300	24 V AC	0 - 5 A, DC	2 - 10 V
CC-E I_{DC}/V	1SVR011773R2400	100 - 300 V DC	0 - 20 A, DC	-10 - +10 V
CC-E I_{DC}/I	1SVR011774R2500		0 - 100 V	-5 - +5 V
CC-E I_{DC}/I	1SVR011775R2600		0 - 150 V	-10 - 0 V
CC-E/I	1SVR011708R0400		0 - 250 V	-5 - 0 V
CC-E I_{AC}/V	1SVR011780R1100		0 - 300 V	0 - 0.666 V
CC-E I_{AC}/I	1SVR011781R0600		0 - 400 V	-10 - +3.33 V
CC-E I_{AC}/I	1SVR011782R0700		0 - 450 V	-5 - +1.66 V
CC-E I_{DC}/V	1SVR011783R0000		0 - 550 V	0 - 8 V
CC-E I_{DC}/I	1SVR011784R0100		0 - 600 V	0 - 4 V
CC-E I_{DC}/I	1SVR011785R1100		loop powered	-10 - -2 V
CC-E $I_{AC}/ILPO$	1SVR010203R0500		any wave form 0-600Hz	-5 - -1 V
CC-U/I	1SVR040006R0100			1.25 - 6.25 V
CC-U/I	1SVR040007R0200			-7.5 - +2.5 V
CC-U/V	1SVR040008R1300			-3.75 - +1.25 V
CC-U/V	1SVR040009R1400			1.66 - 8.33 V
				-6.66 - +6.66 V
				-3.33 - +3.33 V
				-8 - 0 V
				-4 - 0 V
				0 - 1 mA
				0 - 20 mA
				4 - 20 mA
				0 - 10 mA
				0 - 0.5 mA
				0 - 13.33 mA
				0 - 666 μ A
				0 - 16 mA
				0 - 800 μ A
				0 - 8 mA
				0 - 400 μ A
				2.5 - 12.5 mA
				125 - 625 μ A
				3.33 - 16.66 mA
				166 - 833 μ A
				0.2 - 1 mA
				2 - 10 mA
				100 - 500 μ A

4

4

	Order code	Type
	1SNA684252R0200	ILPH RS 232-RS 485 / Ethernet
	1SNA684231R2500	ILPH RS 232 / RS 422-485
	1SNA684233R2700	ILPH RS 232 / RS 422-485
	1SNA684333R2300	ILPH RS 232 / RS 422-485
	1SNA684334R2400	ILPH RS 232 / RS 422-485
	1SNA684234R2000	ILPH RS 232 / RS 232
	1SNA684212R2200	ILPH RS 422 - 485 / RS 422 - 485
	1SNA684236R2200	ILPH RS 232 / FO-S
	1SNA684264R0400	ILPH RS 485 / FO-S
	1SNA681232R2600	ILPH BdC / RS 422 - 485
	1SNA684202R0100	ILPH RS 232 / BdC

Rated supply voltage u_n	1SNA684252R0200	1SNA684231R2500	1SNA684233R2700	1SNA684333R2300	1SNA684334R2400	1SNA684234R2000	1SNA684212R2200	1SNA684236R2200	1SNA684264R0400	1SNA681232R2600	1SNA684202R0100
24 V DC		■	■				■				■
115 - 230 V AC					■		■		■		
24 - 42 V AC/DC									■	■	
10 - 34 V DC	■										
10 - 24 V AC	■										

Input signal	1SNA684252R0200	1SNA684231R2500	1SNA684233R2700	1SNA684333R2300	1SNA684334R2400	1SNA684234R2000	1SNA684212R2200	1SNA684236R2200	1SNA684264R0400	1SNA681232R2600	1SNA684202R0100
RS 232	■	■	■	■	■	■	■	■			■
RS 422											
RS 485	■								■		
Current loop										■	

Output signal	1SNA684252R0200	1SNA684231R2500	1SNA684233R2700	1SNA684333R2300	1SNA684334R2400	1SNA684234R2000	1SNA684212R2200	1SNA684236R2200	1SNA684264R0400	1SNA681232R2600	1SNA684202R0100
RS 232	■						■				
RS422		■	■	■	■		■				■
RS 485		■	■	■	■		■			■	
Current loop											■
Fiber optic glass									■		
Ethernet	■										

Galvanic isolation	1SNA684252R0200	1SNA684231R2500	1SNA684233R2700	1SNA684333R2300	1SNA684334R2400	1SNA684234R2000	1SNA684212R2200	1SNA684236R2200	1SNA684264R0400	1SNA681232R2600	1SNA684202R0100
3 way isolation	■	■	■	■	■	■	■	■	■	■	■
No isolation		■									

■ stock items

Applications for analog signal processing and correct solution using CC-E and CC-U converters

Nearly every process includes a control system that receives data by means of analog signals and then evaluates the data and sets the respective parameters correspondingly. When transmitting analog signals numerous problems may arise which can disturb or even block an ideal behavior of the process. Below we have listed some processing problems together with the respective solutions to solve these problems:

Signal conversion

Sometimes the available signal cannot be processed by the controller or the actuator. In this case, signal converters are required to convert the input signal to the desired output signal.

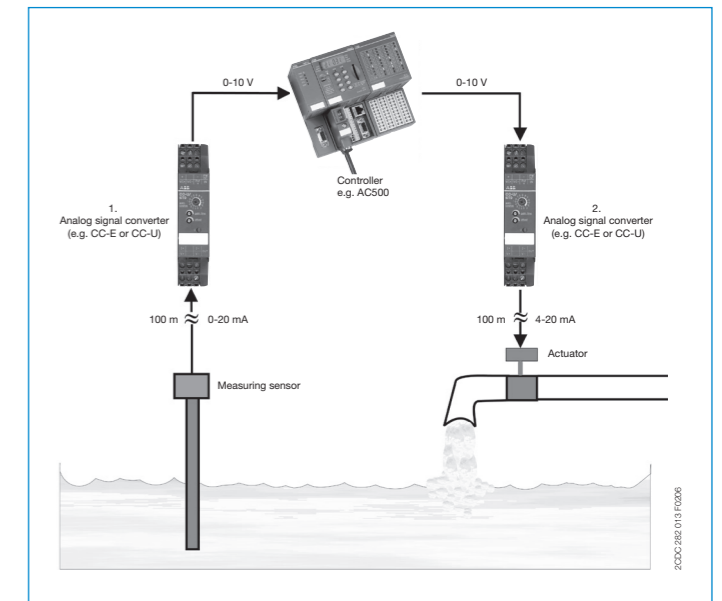
Signal amplification

If long lines or high burdens have to be operated, it may be necessary to amplify the signal. CC analog signal converters require only low input power and provide high output power. Thus, there are no restrictions for the converter's position on the line, i.e. it can be used

- for signal refreshing at the end of the line (low input power),
- for signal amplification at the beginning of the line (high output power).

Signal filtering

Particularly on long lines or in rough industrial environments the signals are exposed to high electromagnetic interferences. The frequency of the coupled interference signals may be in the range of the common mains frequency (50 Hz) or even much higher (in case of frequency converters). According to the specific requirements, analog signal converters are available which provide reliable suppression of those interferences by means of an input low-pass filter.



Signal separation

Protection against overvoltage

The increased use of micro-electronics make controls much more sensitive against overvoltages, resulting from lightning discharges or switching processes. Suppression diodes are incorporated in the input of the CC analog signal converters which enable the converters to arrest overvoltages with low energy level (resulting from switching processes) by themselves. The products furthermore provide electrical isolation between input, output and supply circuit for protection of the controller connected to the output.

Protection against ground loops

If components are used which refer to ground, the measuring signals can be falsified by a so-called ground loop. In this case, certain parts of the signal are transmitted via earth and not via the analog transmission line, thus causing incorrect evaluation of the signal. The electrical isolation between the input and the output disconnects these ground loops and thus enables correct signal transmission.

Approvals		CC-E/STD	CC-E/I	CC-U/STD	CC-U/STDR	CC-E/RTD	CC-U/RTD	CC-U/RTDR	CC-E/TC	CC-U/TC	CC-U/TCR	CC-E/I	CC-E I _{AC} /LPO	CC-U/I	CC-U/V
UL 508, CAN/CSA C22.2 No.14	UL	■	■	■	■	■	■	■	■	■	■	■	■	■	■
UL 1604 (Class I, Div 2, hazardous locations), CAN/CSA C22.2 No.213	UL	▲		■		▲	■		▲	■		▲		■	■
CB scheme	CB				■			■			■				
CCC	CCC				■			■			■				

Marks		CC-E/STD	CC-E/I	CC-U/STD	CC-U/STDR	CC-E/RTD	CC-U/RTD	CC-U/RTDR	CC-E/TC	CC-U/TC	CC-U/TCR	CC-E/I	CC-E I _{AC} /LPO	CC-U/I	CC-U/V
CE	CE	■	■	■	■	■	■	■	■	■	■	■	■	■	■
C-Tick	C-Tick	■	■	■	■	■	■	■	■	■	■	■	■	■	■

- existing
- ▲ existing for some devices

Pluggable Interface Relays

CR-M Range

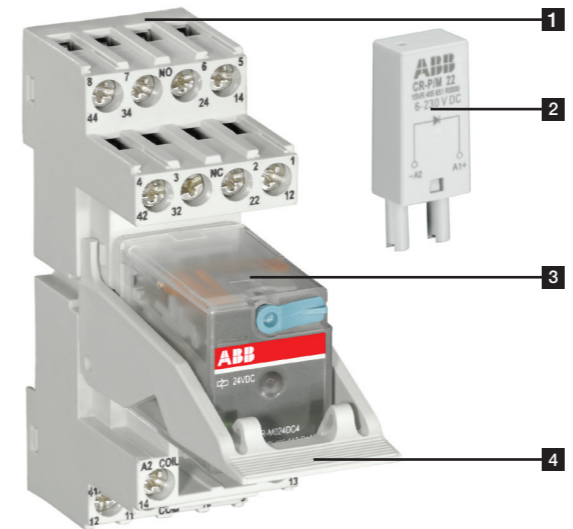
Type	Order code
CR-M012DC2	1SVR405611R4000
CR-M024DC2	1SVR405611R1000
CR-M048DC2	1SVR405611R6000
CR-M060DC2	1SVR405611R4200
CR-M110DC2	1SVR405611R8000
CR-M125DC2	1SVR405611R8200
CR-M220DC2	1SVR405611R9000
CR-M024AC2	1SVR405611R0000
CR-M048AC2	1SVR405611R5000
CR-M110AC2	1SVR405611R7000
CR-M120AC2	1SVR405611R2000
CR-M230AC2	1SVR405611R3000
CR-M012DC3	1SVR405612R4000
CR-M024DC3	1SVR405612R1000
CR-M048DC3	1SVR405612R6000
CR-M060DC3	1SVR405612R4200
CR-M110DC3	1SVR405612R8000
CR-M125DC3	1SVR405612R8200
CR-M220DC3	1SVR405612R9000
CR-M024AC3	1SVR405612R0000
CR-M048AC3	1SVR405612R5000
CR-M060AC3	1SVR405612R5200
CR-M110AC3	1SVR405612R7000
CR-M120AC3	1SVR405612R2000
CR-M230AC3	1SVR405612R3000
CR-M012DC4	1SVR405613R4000
CR-M024DC4	1SVR405613R1000
CR-M048DC4	1SVR405613R6000
CR-M060DC4	1SVR405613R4200
CR-M110DC4	1SVR405613R8000
CR-M125DC4	1SVR405613R8200
CR-M220DC4	1SVR405613R9000
CR-M024AC4	1SVR405613R0000
CR-M048AC4	1SVR405613R5000
CR-M110AC4	1SVR405613R7000
CR-M120AC4	1SVR405613R2000
CR-M230AC4	1SVR405613R3000
CR-M012DC2L	1SVR405611R4100
CR-M024DC2L	1SVR405611R1100
CR-M048DC2L	1SVR405611R6100
CR-M060DC2L	1SVR405611R4300
CR-M110DC2L	1SVR405611R8100
CR-M125DC2L	1SVR405611R8300
CR-M220DC2L	1SVR405611R9100
CR-M024AC2L	1SVR405611R0100
CR-M048AC2L	1SVR405611R5100
CR-M110AC2L	1SVR405611R7100
CR-M120AC2L	1SVR405611R2100
CR-M230AC2L	1SVR405611R3100
CR-M012DC3L	1SVR405612R4100
CR-M024DC3L	1SVR405612R1100
CR-M048DC3L	1SVR405612R6100
CR-M060DC3L	1SVR405612R4300
CR-M110DC3L	1SVR405612R8100
CR-M125DC3L	1SVR405612R8300
CR-M220DC3L	1SVR405612R9100
CR-M024AC3L	1SVR405612R0100
CR-M048AC3L	1SVR405612R5100
CR-M110AC3L	1SVR405612R7100
CR-M120AC3L	1SVR405612R2100
CR-M230AC3L	1SVR405612R3100
CR-M012DC4L	1SVR405613R4100
CR-M024DC4L	1SVR405613R1100
CR-M048DC4L	1SVR405613R6100
CR-M060DC4L	1SVR405613R4300
CR-M110DC4L	1SVR405613R8100
CR-M125DC4L	1SVR405613R8300
CR-M220DC4L	1SVR405613R9100
CR-M024AC4L	1SVR405613R0100
CR-M048AC4L	1SVR405613R5100
CR-M110AC4L	1SVR405613R7100
CR-M120AC4L	1SVR405613R2100
CR-M230AC4L	1SVR405613R3100
CR-M024DC4LD	1SVR405614R1100
CR-M024DC4G	1SVR405618R1000
CR-M024AC4G	1SVR405618R0000
CR-M110AC4G	1SVR405618R7000
CR-M230AC4G	1SVR405618R3000
CR-M012DC4LG	1SVR405618R4100
CR-M024DC4LG	1SVR405618R1100
CR-M048DC4LG	1SVR405618R6100
CR-M060DC4LG	1SVR405618R4300
CR-M110DC4LG	1SVR405618R8100
CR-M125DC4LG	1SVR405618R8300
CR-M220DC4LG	1SVR405618R9100
CR-M024AC4LG	1SVR405618R0100
CR-M048AC4LG	1SVR405618R5100
CR-M110AC4LG	1SVR405618R7100
CR-M120AC4LG	1SVR405618R2100
CR-M230AC4LG	1SVR405618R3100
CR-M012DC4LDG	1SVR405618R4400
CR-M024DC4LDG	1SVR405618R1400

Input voltage	Output rating	Output contacts
12 V DC	250 V 16 A	c/o
24 V DC	250 V 8 A	Gold contact
48 V DC	250 V 12 A	LED
60 V DC	250 V 10 A	Free-wheeling diode
110 V DC	250 V 6 A	
125 V DC		
220 V DC		
24 V AC		
48 V AC		
60 V AC		
110 V AC		
120 V AC		
230 V AC		

Accessories – CR-M Sockets

Type	Version	Connection terminals	Order code	Pack. unit pieces
Sockets				
CR-M2LS	Logical socket for 2 c/o	screw	1SVR405651R1100	10
CR-M3LS	Logical socket for 3 c/o	screw	1SVR405651R2100	10
CR-M4LS	Logical socket for 2/4 c/o	screw	1SVR405651R3100	10
CR-M2LC	Logical socket for 2 c/o	spring connection	1SVR405651R1200	10
CR-M4LC	Logical socket for 2/4 c/o	spring connection	1SVR405651R3200	10
CR-M2SS	Standard socket for 2 c/o	screw	1SVR405651R1000	10
CR-M3SS	Standard socket for 3 c/o	screw	1SVR405651R2000	10
CR-M4SS	Standard socket for 2/4 c/o	screw	1SVR405651R3000	10
CR-M2SF	Standard socket for 2 c/o	fork type	1SVR405651R1300	10
CR-M4SF	Standard socket for 2/4 c/o	fork type	1SVR405651R3300	10
Socket accessories				
CR-MH	Plastic holder		1SVR405659R1000	10
CR-MH1	Metal holder		1SVR405659R1100	25
CR-MJ	Jumper bar for sockets with screw connection		1SVR405658R6000	10
Markers				
CR-M	Marker		1SVR405658R1000	10

stock items

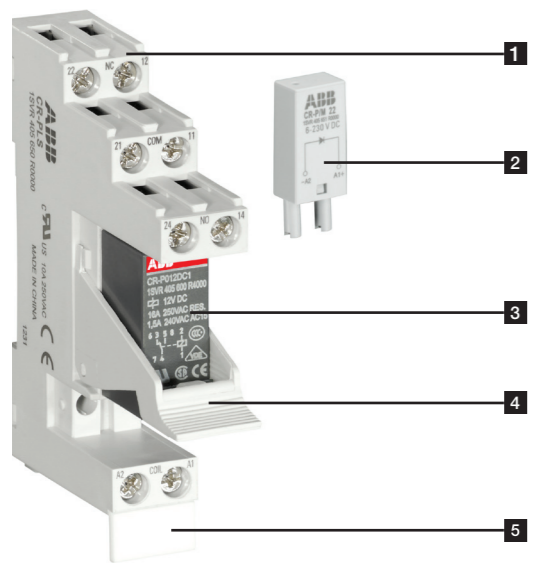


- 1 Socket
- 2 Pluggable function module
- 3 Interface relay
- 4 Holder

Pluggable Interface Relays CR-P Range

	Order number	Type	CR-P012DC1	CR-P024DC1	CR-P048DC1	CR-P110DC1	CR-P024AC1	CR-P048AC1	CR-P110AC1	CR-P120AC1	CR-P230AC1	CR-P012DC2	CR-P024DC2	CR-P048DC2	CR-P110DC2	CR-P024AC2	CR-P048AC2	CR-P110AC2	CR-P120AC2	CR-P230AC2	CR-P024DC2G	CR-P024AC2G	CR-P110AC2G	CR-P230AC2G
Input voltage			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
12 V DC	1SVR405600R4000	CR-P012DC1	■																					
24 V DC	1SVR405600R1000	CR-P024DC1		■																				
48 V DC	1SVR405600R6000	CR-P048DC1			■																			
110 V DC	1SVR405600R8000	CR-P110DC1				■																		
24 V AC	1SVR405600R0000	CR-P024AC1					■																	
48 V AC	1SVR405600R5000	CR-P048AC1						■																
110 V AC	1SVR405600R7000	CR-P110AC1							■															
120 V AC	1SVR405600R2000	CR-P120AC1								■														
230 V AC	1SVR405600R3000	CR-P230AC1									■													
Output rating			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 16 A			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 8 A			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Output contacts			1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
c/o			1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Gold contact																					■	■	■	■

■ stock items



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

Accessories - Sockets CR-P

Type	Version	Connection terminals	Order code	Packaging quantity
Sockets				
CR-PLS	Logical socket with protective separation	screw	1SVR405650R0000	10
CR-PLSx	Logical socket	screw	1SVR405650R0100	10
CR-PLC	Logical socket	spring connection	1SVR405650R0200	10
CR-PSS	Standard socket	screw	1SVR405650R1000	10
Socket accessories				
CR-PH	Plastic Holder		1SVR405659R0000	10
CR-PJ	Jumper bar for sockets with screw connection		1SVR405658R5000	10
Markers				
CR-P	Marker		1SVR405658R0000	10

■ stock items

Pluggable Interface Relays CR-U Range

Input voltage

5

	Order number	Type
12 V DC	1SVR405621R4000	CR-U012DC2
24 V DC	1SVR405621R1000	CR-U024DC2
48 V DC	1SVR405621R6000	CR-U048DC2
110 V DC	1SVR405621R8000	CR-U110DC2
125 V DC	1SVR405621R9000	CR-U220DC2
220 V DC	1SVR405621R0000	CR-U024AC2
24 V AC	1SVR405621R5000	CR-U048AC2
48 V AC	1SVR405621R7000	CR-U110AC2
60 V AC	1SVR405621R2000	CR-U120AC2
110 V AC	1SVR405621R3000	CR-U230AC2
120 V AC	1SVR405622R4000	CR-U012DC3
230 V AC	1SVR405622R1000	CR-U024DC3
	1SVR405622R6000	CR-U048DC3
	1SVR405622R8000	CR-U110DC3
	1SVR405622R8200	CR-U125DC3
	1SVR405622R9000	CR-U220DC3
	1SVR405622R0000	CR-U024AC3
	1SVR405622R5000	CR-U048AC3
	1SVR405622R6200	CR-U060AC3
	1SVR405622R7000	CR-U110AC3
	1SVR405622R2000	CR-U120AC3
	1SVR405622R3000	CR-U230AC3
	1SVR405621R4100	CR-U012DC2L
	1SVR405621R1100	CR-U024DC2L
	1SVR405621R6100	CR-U048DC2L
	1SVR405621R8100	CR-U110DC2L
	1SVR405621R9100	CR-U220DC2L
	1SVR405621R0100	CR-U024AC2L
	1SVR405621R5100	CR-U048AC2L
	1SVR405621R7100	CR-U110AC2L
	1SVR405621R2100	CR-U120AC2L
	1SVR405621R3100	CR-U230AC2L
	1SVR405622R4100	CR-U012DC3L
	1SVR405622R1100	CR-U024DC3L
	1SVR405622R6100	CR-U048DC3L
	1SVR405622R8100	CR-U110DC3L
	1SVR405622R9100	CR-U220DC3L
	1SVR405622R0100	CR-U024AC3L
	1SVR405622R5100	CR-U048AC3L
	1SVR405622R7100	CR-U110AC3L
	1SVR405622R2100	CR-U120AC3L
	1SVR405622R3100	CR-U230AC3L

Input voltage	Output rating																																	
250 V 10 A	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

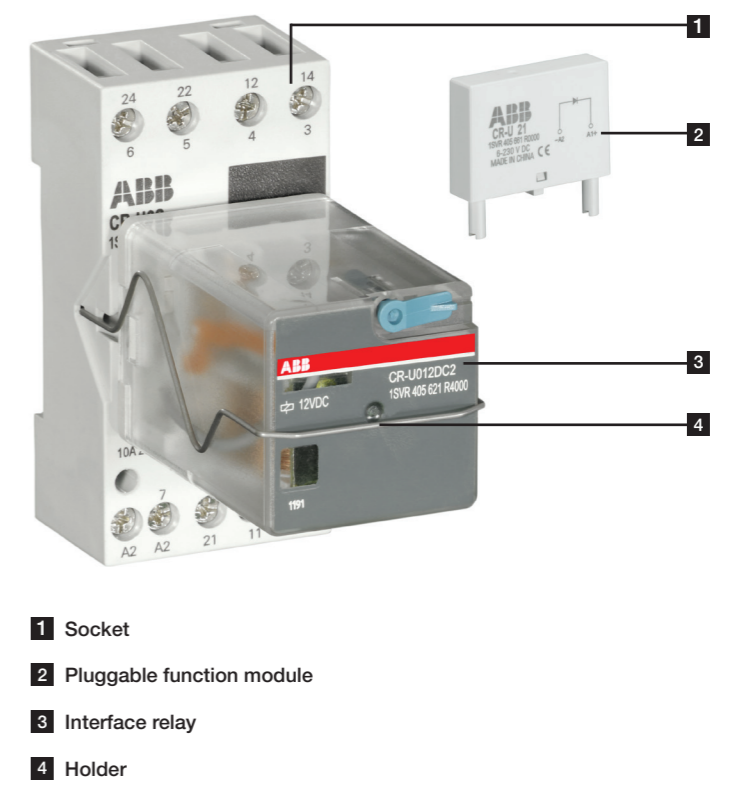
Output contacts	Output contacts																																					
c/o	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
LED																							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

■ stock items

Accessories - Sockets

Type	Version	Order code	Pack. unit pieces
Sockets			
CR-U2S	Socket for 2 c/o and module	1SVR405670R0000	10
CR-U3S	Socket for 3 c/o and module	1SVR405660R0000	10
CR-U3E	Socket for 3 c/o	1SVR405660R0100	10
CR-U2SM	Socket small for 2 c/o	1SVR405670R1100	10
CR-U3SM	Socket small for 3 c/o	1SVR405660R1100	10
Accessories Sockets			
CR-UH	Holder for CR-U socket	1SVR405669R0000	10

■ stock items



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

5

CR-P/M Range

CR-U Range

Rated control supply voltage

	Order number	Type
6 - 220 V DC	1SVR405651R0000	CR-P/M 22
6 - 24 V DC	1SVR405652R0000	CR-P/M 42
24 - 60 V DC	1SVR405652R1000	CR-P/M 42V
110 V DC	1SVR405652R4000	CR-P/M 42B
110 - 230 V DC	1SVR405652R4100	CR-P/M 42BV
6 - 24 V AC	1SVR405652R9000	CR-P/M 42C
24 - 60 V AC	1SVR405652R9100	CR-P/M 42CV
110 - 230 V AC	1SVR405653R0000	CR-P/M 62B
24 V AC	1SVR405653R4000	CR-P/M 62D
115 V AC	1SVR405653R1000	CR-P/M 62C
230 V AC	1SVR405654R0000	CR-P/M 62
24 - 240 V AC/DC	1SVR405654R1000	CR-P/M 62V
	1SVR405654R4000	CR-P/M 62E
	1SVR405654R4100	CR-P/M 62EV
	1SVR405654R0100	CR-P/M 92
	1SVR405654R1100	CR-P/M 92V
	1SVR405655R0000	CR-P/M 62C
	1SVR405655R1000	CR-P/M 62CV
	1SVR405655R4000	CR-P/M 62D
	1SVR405655R4100	CR-P/M 62DV
	1SVR405655R0100	CR-P/M 92C
	1SVR405655R1100	CR-P/M 92CV
	1SVR405656R0000	CR-P/M 72
	1SVR405656R1000	CR-P/M 72A
	1SVR405656R2000	CR-P/M 82
	1SVR405661R0000	CR-U 21
	1SVR405662R0000	CR-U 41
	1SVR405662R1000	CR-U 41V
	1SVR405662R4000	CR-U 41B
	1SVR405662R4100	CR-U 41BV
	1SVR405662R9000	CR-U 41C
	1SVR405662R9100	CR-U 41CV
	1SVR405663R0000	CR-U 51B
	1SVR405663R4000	CR-U 51D
	1SVR405663R1000	CR-U 51C
	1SVR405664R0000	CR-U 61
	1SVR405664R1000	CR-U 61V
	1SVR405664R4000	CR-U 61E
	1SVR405664R4100	CR-U 61EV
	1SVR405664R0100	CR-U 91 -
	1SVR405664R1100	CR-U 91V
	1SVR405665R0000	CR-U 61C
	1SVR405665R1000	CR-U 61CV
	1SVR405665R4000	CR-U 61D
	1SVR405665R4100	CR-U 61DV
	1SVR405665R0100	CR-U 91C
	1SVR405665R1100	CR-U 91CV 1
	1SVR405666R0000	CR-U 71
	1SVR405666R1000	CR-U 71A
	1SVR405666R2000	CR-U 81
	1SVR405667R0000	CR-U T

Function

	Order number	Type
Diode - reverse polarity protection / free wheeling diode	1SVR405651R0000	CR-P/M 22
Diode and LED - reverse polarity protection / free wheeling diode	1SVR405652R0000	CR-P/M 42
RC element - spark quenching	1SVR405652R1000	CR-P/M 42V
Diode and LED	1SVR405652R4000	CR-P/M 42B
Varistor and LED - overvoltage protection	1SVR405652R4100	CR-P/M 42BV
Diode and LED - overvoltage protection	1SVR405652R9000	CR-P/M 42C
Varistor - overvoltage protection	1SVR405652R9100	CR-P/M 42CV
Multifunctional time module	1SVR405653R0000	CR-P/M 62B
LED red	1SVR405653R4000	CR-P/M 62D
LED green	1SVR405653R1000	CR-P/M 62C
	1SVR405654R0000	CR-P/M 62
	1SVR405654R1000	CR-P/M 62V
	1SVR405654R4000	CR-P/M 62E
	1SVR405654R4100	CR-P/M 62EV
	1SVR405654R0100	CR-P/M 92
	1SVR405654R1100	CR-P/M 92V
	1SVR405655R0000	CR-P/M 62C
	1SVR405655R1000	CR-P/M 62CV
	1SVR405655R4000	CR-P/M 62D
	1SVR405655R4100	CR-P/M 62DV
	1SVR405655R0100	CR-P/M 92C
	1SVR405655R1100	CR-P/M 92CV
	1SVR405656R0000	CR-P/M 72
	1SVR405656R1000	CR-P/M 72A
	1SVR405656R2000	CR-P/M 82
	1SVR405661R0000	CR-U 21
	1SVR405662R0000	CR-U 41
	1SVR405662R1000	CR-U 41V
	1SVR405662R4000	CR-U 41B
	1SVR405662R4100	CR-U 41BV
	1SVR405662R9000	CR-U 41C
	1SVR405662R9100	CR-U 41CV
	1SVR405663R0000	CR-U 51B
	1SVR405663R4000	CR-U 51D
	1SVR405663R1000	CR-U 51C
	1SVR405664R0000	CR-U 61
	1SVR405664R1000	CR-U 61V
	1SVR405664R4000	CR-U 61E
	1SVR405664R4100	CR-U 61EV
	1SVR405664R0100	CR-U 91 -
	1SVR405664R1100	CR-U 91V
	1SVR405665R0000	CR-U 61C
	1SVR405665R1000	CR-U 61CV
	1SVR405665R4000	CR-U 61D
	1SVR405665R4100	CR-U 61DV
	1SVR405665R0100	CR-U 91C
	1SVR405665R1100	CR-U 91CV 1
	1SVR405666R0000	CR-U 71
	1SVR405666R1000	CR-U 71A
	1SVR405666R2000	CR-U 81
	1SVR405667R0000	CR-U T

Accessories for PCB relays CR-P

Type Sockets	Version	Connection	Order number
CR-PLS	Logical socket with safety isolation	screw	1SVR405650R0000
CR-PLSx	Logical socket	screw	1SVR405650R0100
CR-PLC	Logical socket	spring	1SVR405650R0200
CR-PSS	Standard socket	screw	1SVR405650R1000

Socket accessories

CR-PH	Plastic holder	1SVR405659R0000
CR-PJ	Jumper bar for sockets with screw connection	1SVR405658R5000

■ stock items

Assessoris for miniature relays CR-M

Type Sockets	Version	Connection	Order number
CR-M2LS	Logical socket for 2 c/o contacts	screw	1SVR405651R1100
CR-M3LS	Logical socket for 3 c/o contacts	screw	1SVR405651R2100
CR-M4LS	Logical socket for 2/4 c/o contacts	screw	1SVR405651R3100
CR-M2LC	Logical socket for 2 c/o contacts	spring	1SVR405651R1200
CR-M4LC	Logical socket for 2/4 c/o contacts	spring	1SVR405651R3200
CR-M2SS	Standard socket for 2 c/o contacts	screw	1SVR405651R1000
CR-M3SS	Standard socket for 3 c/o contacts	screw	1SVR405651R2000
CR-M4SS	Standard socket for 2/4 c/o contacts	screw	1SVR405651R3000
CR-M2SF	Standard socket for 2 c/o contacts	fork type screw	1SVR405651R1300
CR-M4SF	Standard socket for 2/4 c/o contacts	fork type screw	1SVR405651R3300

Socket assessoris

CR-MH	Plastic holder	1SVR405659R1000
CR-MH1	Metal holder	1SVR405659R1100
CR-MJ	Jumper bar for sockets with screw connection	1SVR405658R6000

Accessories for universal relays CR-U

Type Sockets	Version	Order Number
CR-U2S	for 2 c/o contacts + module	1SVR405670R0000
CR-U3S	for 3 c/o contacts + module	1SVR405660R0000
CR-U3E	for 3 c/o contacts	1SVR405660R0100
CR-U2SM	for 2 c/o contacts (small version)	1SVR405670R1100
CR-U3SM	for 3 c/o contacts (small version)	1SVR405660R1100

Socket assessoris

CR-UH Metal holder	1SVR405669R0000
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Interface Relays and Optocouplers

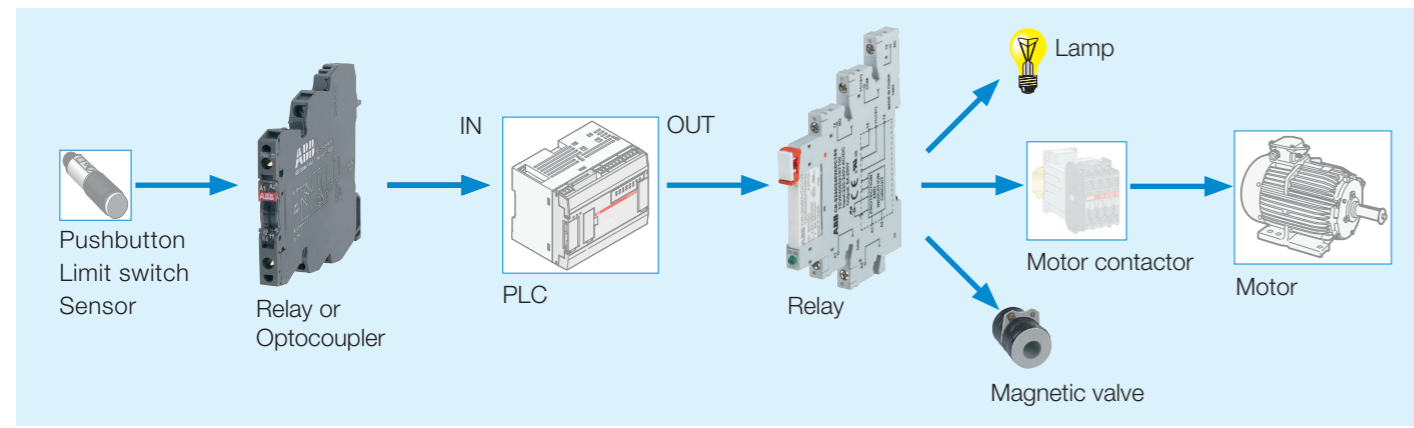
R600 Relays

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Input voltage	Type	Order number
5 V DC	RB 121-5VDC	1SNA645034R2300
12 V DC	RB 121-5VDC	1SNA645036R2500
24 V DC	RBR 121-5VDC	1SNA645534R2500
48 - 60 V DC	RBR 121-5VDC	1SNA645536R2700
110 - 115 V DC	RB 121-12VDC	1SNA645035R2400
230 V DC	RB 121-12VDC	1SNA645075R0000
60 - 230 V DC	RBR 121-12VDC	1SNA645535R2600
24 V AC	RBR 121-12VDC	1SNA645575R0000
48 - 60 V AC	RB 101AR-24VAC/DC	1SNA645019R0400
115 V AC	RBR 101AR-24VAC/DC	1SNA645519R0600
230 V AC	RB 111A-24VAC/DC	1SNA645014R2700
60 - 230 V AC	RBR 111AR-24VAC/DC	1SNA645018R0300
	RBR 111A-24VAC/DC	1SNA645514R2100
	RBR 111AR-24VAC/DC	1SNA645518R0500
	RB 121-24VDC	1SNA645064R0100
	RB 121-24VDC	1SNA645065R0200
	RB 121A-24VAC/DC	1SNA645001R0300
	RB 121A-24VAC/DC	1SNA645005R0700
	RBR 121-24VDC	1SNA645564R0300
	RBR 121-24VDC	1SNA645565R0400
	RBR 121A-24VAC/DC	1SNA645501R0500
	RBR 121A-24VAC/DC	1SNA645505R0100
	RB 122A-24VAC/DC	1SNA645012R2500
	RBR 122A-24VAC/DC	1SNA645512R2700
	RB 111A-48-60VAC/DC	1SNA645015R2000
	RBR 111A-48-60VAC/DC	1SNA645515R2200
	RB 121A-48-60VAC/DC	1SNA645002R0400
	RB 121A-48-60VAC/DC	1SNA645006R0000
	RBR 121A-48-60VAC/DC	1SNA645502R0600
	RBR 121A-48-60VAC/DC	1SNA645506R0200
	RB 122A-48-60VAC/DC	1SNA645040R1500
	RBR 122A-48-60VAC/DC	1SNA645540R1700
	RB 121A-115VAC/DC	1SNA645003R0500
	RB 121A-115VAC/DC	1SNA645007R0100
	RB 121AR-115VAC/DC	1SNA645046R0700
	RBR 121A-115VAC/DC	1SNA645503R0700
	RBR 121A-115VAC/DC	1SNA645507R0300
	RBR 121AR-115VAC/DC	1SNA645546R0100
	RB 122A-115VAC/DC	1SNA645041R0200
	RBR 122A-115VAC/DC	1SNA645541R0400
	RB 111A-115VAC/DC	1SNA645016R2100
	RBR 111A-115VAC/DC	1SNA645516R2300
	RB 111A-230VAC/DC	1SNA645017R2200
	RBR 111A-230VAC/DC	1SNA645517R2400
	RB 121A-230VAC/DC	1SNA645004R0400
	RB 121A-230VAC/DC	1SNA645008R1200
	RB 121AR-230VAC/DC	1SNA645011R2400
	RBR 121A-230VAC/DC	1SNA645504R0000
	RBR 121A-230VAC/DC	1SNA645508R1400
	RBR 121AR-230VAC/DC	1SNA645511R2600
	RB 122A-230VAC/DC	1SNA645013R2600
	RBR 122A-230VAC/DC	1SNA645513R2000
	RB 121A-60-230VAC/DC	1SNA645020R0100
	RBR 121A-60-230VAC/DC	1SNA645520R0300

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stock items



Characteristics

- R600 series**
 Standard range in screw clamp or spring clamp versions
- Spacing : 6 mm
 - Wire size : 2.5 mm² (4 mm² solid wire)
 - Contact type : 1 NO, 1 NC, 1 SPDT, 1 DPDT from 1 mA to 8 A / 250 V
 - Transistor : 100 mA
 - MOS : 1 A to 5 A
 - Triac : 1 A to 2 A

Accessories

Type	Description	Order number	Pack
BAZH1	End Section	1SNK900102R0000	50
BAZ1	End Section	1SNK900002R0000	50
BAM3	End Section	1SNK900001R0000	50
SC 612	Separator end section	1SNA290474R0200	10
BJ 612-10	Divisible shunt 10 poles	1SNA290488R0100	10
FC2	Test plug DIA. 2 mm	000786526	10

Interface Relays and Optocouplers R600 Optocouplers

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	Order number	Type
	1SNA645047R0000	OBIC 0100 5-12VDC
	1SNA64547R0200	OBIC 0100 5-12VDC
	1SNA645021R2600	OBIC 0100 24VDC
	1SNA645521R2000	OBIC 0100 24VDC
	1SNA645049R1200	OBIC 0100 48-60VAC/DC
	1SNA645549R1400	OBIC 0100 48-60VAC/DC
	1SNA645022R2700	OBIC 0100 115-230VAC/DC
	1SNA645522R2100	OBIC 0100 115-230VAC/DC
	1SNA645050R1700	OBOC 1000-5-12VDC
	1SNA645550R1100	OBROC 1000-5-12VDC
	1SNA645051R0400	OBOC 1000-24VDC
	1SNA645025R2200	OBOC 1500-24VAC/DC
	1SNA645024R2100	OBOC 5000-24VDC
	1SNA645551R0600	OBROC 1000-24VDC
	1SNA645525R2400	OBROC 1500-24VAC/DC
	1SNA645524R2300	OBROC 5000-24VDC
	1SNA645053R0600	OBOC 1000-48-60VAC/DC
	1SNA645553R0000	OBROC 1000-48-60VAC/DC
	1SNA645054R0700	OBOC 1000-115VAC/DC
	1SNA645058R1300	OBOC 5000-115VAC/DC
	1SNA645554R0100	OBROC 1000-115VAC/DC
	1SNA645558R1500	OBROC 5000-115VAC/DC
	1SNA645026R2300	OBOC 1000-230VAC/DC
	1SNA645059R1400	OBOC 5000-230VAC/DC
	1SNA645526R2500	OBROC 1000-230VAC/DC
	1SNA645559R1600	OBROC 5000-230VAC/DC
	1SNA645027R2400	OBOA 1000-24VDC
	1SNA645029R0600	OBOA 2000-24VDC
	1SNA645527R2600	OBROA 1000-24VDC
	1SNA645529R0000	OBROA 2000-24VDC
	1SNA645061R0600	OBOA 1000-48-60VAC/DC
	1SNA645561R0000	OBROA 1000-48-60VAC/DC
	1SNA645062R0700	OBOA 1000-115VAC/DC
	1SNA645562R0100	OBROA 1000-115VAC/DC
	1SNA645028R0500	OBOA 1000-230VAC/DC
	1SNA645528R0700	OBROA 1000-230VAC/DC

Input voltage																													
5 - 12 V DC	■	■																											
24 V DC			■	■																									
48 - 60 V DC					■	■																							
115 - 230 V DC							■	■																					
115 V DC																					■	■							
230 V DC																												■	■
24 V AC																													
48 - 60 V AC																													
115-230 V AC																													
115 V AC																													
230 V AC																													

Output rating																													
100 mA	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2 A																													
5 A																													
1 A																													

Output voltage																													
58 V DC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
400 V AC																													

Terminal type																													
Screw	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Spring		■		■		■		■		■		■		■		■		■		■		■		■		■		■	■

■ stock items

Accessories

Type	Description	Order number	Pack
BAZH1	End Section	1SNK900102R0000	50
BAZ1	End Section	1SNK900002R0000	50
BAM3	End Section	1SNK900001R0000	50
SC 612	Separator end section	1SNA290474R0200	10
BJ 612-10	Divisible shunt 10 poles	1SNA290488R0100	10
FC2	Test plug DIA. 2 mm	000786526	10



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Interface Relays and Optocouplers

CR-S Relay

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	Relay Order code	Relay Type	Socket Order code	Socket Type
	1SVR405501R1010	CR-S005VDC1R	1SVR405521R1100	CR-S006/024VDC1SS
	1SVR405501R1010	CR-S005VDC1R	1SVR405521R1200	CR-S006/024VDC1SZ
	1SVR405501R2010	CR-S012VDC1R	1SVR405521R3100	CR-S012/024VDC1SS
	1SVR405501R2010	CR-S012VDC1R	1SVR405521R3200	CR-S012/024VDC1SZ
	1SVR405501R3010	CR-S024VDC1R	1SVR405521R3100	CR-S012/024VDC1SS
	1SVR405501R3010	CR-S024VDC1R	1SVR405521R3200	CR-S012/024VDC1SZ
	1SVR405501R4010	CR-S048VDC1R	1SVR405521R5100	CR-S048/060VADC1SS
	1SVR405501R4010	CR-S048VDC1R	1SVR405521R5200	CR-S048/060VADC1SZ
	1SVR405501R5010	CR-S060VDC1R	1SVR405521R5100	CR-S048/060VADC1SS
	1SVR405501R5010	CR-S060VDC1R	1SVR405521R5200	CR-S048/060VADC1SZ
	1SVR405501R1020	CR-S005VDC1RG	1SVR405521R1100	CR-S006/024VDC1SS
	1SVR405501R1020	CR-S005VDC1RG	1SVR405521R1200	CR-S006/024VDC1SZ
	1SVR405501R2020	CR-S012VDC1RG	1SVR405521R3100	CR-S012/024VADC1SS
	1SVR405501R2020	CR-S012VDC1RG	1SVR405521R3200	CR-S012/024VADC1SZ
	1SVR405501R3020	CR-S024VDC1RG	1SVR405521R3100	CR-S012/024VADC1SS
	1SVR405501R3020	CR-S024VDC1RG	1SVR405521R3200	CR-S012/024VADC1SZ
	1SVR405501R4020	CR-S048VDC1RG	1SVR405521R5100	CR-S048/060VADC1SS
	1SVR405501R4020	CR-S048VDC1RG	1SVR405521R5200	CR-S048/060VADC1SZ
	1SVR405501R5020	CR-S060VDC1RG	1SVR405521R5100	CR-S048/060VADC1SS
	1SVR405501R5020	CR-S060VDC1RG	1SVR405521R5200	CR-S048/060VADC1SZ
	1SVR405501R5020	CR-S060VDC1RG	1SVR405521R6100	CR-S110/125VADC1SS
	1SVR405501R5020	CR-S060VDC1RG	1SVR405521R6200	CR-S110/125VADC1SZ
	1SVR405501R5020	CR-S060VDC1RG	1SVR405521R7200	CR-S220/240VADC1SS
	1SVR405501R5020	CR-S060VDC1RG	1SVR405521R7200	CR-S220/240VADC1SZ

¹⁾ If specified maximum value is exceeded, the gold plating will be destroyed. Then, the output rating will be the same as the standard relay.

stock items

Accessories

Type	Description	Order number
CR-SJB20-BLUE	Jumper bar 20 pole, blue color	1SVR405598R0700
CR-SJB20-RED	Jumper bar 20 pole, red color	1SVR405598R0800
CR-SJB20-BLACK	Jumper bar 20 pole, black color	1SVR405598R0900
CR-SM	Marker block	1SNB041391R0610
CR-SSEP	Separator	1SVR405599R0000

Characteristics

CR-S series

- Standard slim relays (5 mm), sockets (6.2 mm) and accessories
- Combination of 9 different rated control supply voltages possible:
 - DC versions: 5 V, 12 V, 24 V
 - AC/DC versions: 12 V, 24 V, 48 V, 60 V, 110 V, 230 V
- Output: 1 c/o (SPDT) contacts (6 A), standard and goldplated contacts
- Cadmium-free contact material
- All sockets with LED
- Screw and spring connection terminals
- Jumper bar (red, black, blue), marker and separator available as accessories



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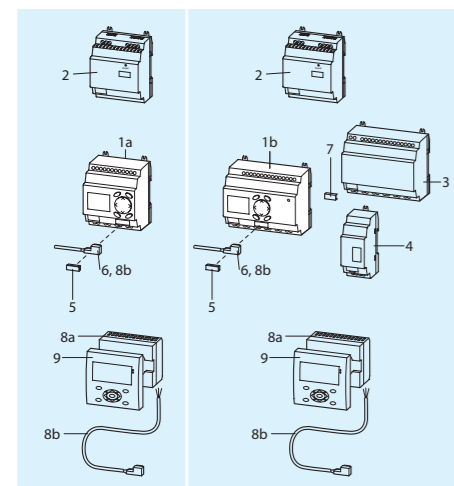
Stand Alone

Expandable

Expansions

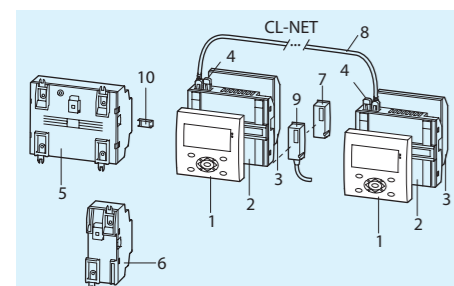
	Stand Alone								Expandable								Expansions										
	Order number								Type								Type										
Digital inputs	1SVR440712R0300	1SVR440712R0200	1SVR440713R0100	1SVR440713R0300	1SVR440713R0200	1SVR440710R0300	1SVR440710R0200	1SVR440711R0100	1SVR440711R0300	1SVR440711R0200	1SVR440722R0300	1SVR440722R0200	1SVR440723R0300	1SVR440723R0200	1SVR440720R0300	1SVR440720R0200	1SVR440721R0300	1SVR440721R0200	1SVR440709R5000	1SVR440723R0000	1SVR440721R0000	1SVR440721R1000	1SVR440709R0000				
Usable as Analogue inputs	CL-LSR.C12AC1	CL-LSR.CX12AC1	CL-LSR.12AC2	CL-LSR.C12AC2	CL-LSR.CX12AC2	CL-LSR.C12DC1	CL-LSR.CX12DC1	CL-LSR.12DC2	CL-LSR.C12DC2	CL-LSR.CX12DC2	CL-LST.C12DC2	CL-LST.CX12DC2	CL-LMR.C18AC1	CL-LMR.CX18AC1	CL-LMR.C18AC2	CL-LMR.CX18AC2	CL-LMR.C18DC1	CL-LMR.CX18DC1	CL-LMR.C18DC2	CL-LMR.CX18DC2	CL-LMT.C20DC2	CL-LMT.CX20DC2	CL-LER.20	CL-LER.18AC2	CL-LER.18DC2	CL-LET.20DC2	CL-LEC.C1000
Relay outputs	8	8	8	8	8	8	8	8	8	8	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Transistor outputs	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	6	6	6	8	8	2	6	6	8	
Display and keypad	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Realtime clock	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Expandable											1	1	1	1	1	1	1	1	1	1	1						
Rated supply voltage U _n																											
12 V DC					■	■																					
24 V DC									■	■	■	■	■	■	■	■	■	■	■	■	■	■					
24 V AC	■	■																									
110 - 240 V AC			■	■	■																			■			

Stand alone



- Logic relay CL-LS..
- Expandable logic relay CL-LM..
- Power supply CP-D...
- I/O expansion CL-LER..., CL-LET.. for logic relays CL-LM..
- Coupler unit CL-LEC.. for remote expansion of logic relays CL-LM..
- Memory module CL-LAS.MD003 for logic relays CL-LS..., CL-LM..
- Connecting cable CL-LAS.TK001, CL-LAS.TK002 to connect PC
- CL-LINK plug CL-LAS.TK011 to connect expansion to logic relays CL-LM..
- Remote display connection module CL-LDC.S..
- Connecting cable CL-LAD.TK007 to connect a remote displays to a logic relay
- Display module CL-LDD..

Display system Compact HMI logic relay



- Display module CL-LDD..
- Display base module CL-LDC.LN..
- Display I/O module CL-LDR..., CL-LDT..
- Termination resistor CL-LAD.TK009
- I/O expansion CL-LER..., CL-LET..
- Coupler unit CL-LEC.. for remote expansion
- Memory module CL-LAD.MD004 for display base module
- Connecting cable CL-LAD.TK002, CL-LAD.TK003, CL-LAD.TK004
- Connecting cable CL-LAD.TK001, CL-LAD.TK011 to connect PC
- CL-LINK plug CL-LAS.TK011 for expansion of logic relays CL-LM.. e.g. door of switchgear cabinet

DisplaySystems

	Order number				
	Type				
Digital inputs	12	12	12	12	12
Analogue inputs	4	4	4	4	4
Analog outputs			1		1
Relay outputs	4	4	4		
Transistor outputs				4	4
Rated supply voltage U _n					
24 V DC		■	■	■	■
110 - 240 V AC	■				

■ stock items

Accessories CL range

Type	For logic relay	For display system	Description	Order code
Display modules				
CL-LDD.XK	■	■	Graphic display, 132 x 64 pixels	1SVR440839R4500
CL-LDD.K	■	■	Graphic display, 132 x 64 pixels, with keypad	1SVR440839R4400
Remote display connection modules				
CL-LDC.SDC2	■	■	Module to displace display from the logic relay, 5 m, length adjustable, 24 V DC	1SVR440841R0000
CL-LDC.SAC2	■	■	Module to displace display from the logic relay, 5 m, length adjustable, 100-240 V AC	1SVR440843R0000
Display base modules				
CL-LDC.LDC2	-	■	CPU / power supply, 24 V DC	1SVR440821R0000
CL-LDC.LAC2	-	■	CPU / power supply, 100-240 V AC	1SVR440823R0000
CL-LDC.LNDC2	-	■	CPU / power supply, networking-compatible (CL-NET), 24 V DC	1SVR440821R1000
CL-LDC.LNAC2	-	■	CPU / power supply, networking-compatible (CL-NET), 100-240 V AC	1SVR440823R1000
Accessories for logic relays and display system				
CL-LAS.PS002	■	■	Software for programming and control of CL range devices	1SVR440799R8000
CL-LAS.MD003	■	-	Memory module for logic relays (32 kB)	1SVR440799R7000
CL-LAD.MD004	-	■	Memory module for display base modules (256 kB)	1SVR440899R7000
CL-LAS.TK001	■	-	Cable with serial interface to connect PC and logic relay (length 2m)	1SVR440799R6000
CL-LAD.TK001	-	■	Cable with serial interface to connect PC and display base module (length 2 m)	1SVR440899R6000
CL-LAS.TK002	■	-	Cable with USB interface to connect PC and logic relay	1SVR440799R6100
CL-LAD.TK011	-	■	Cable with USB interface to connect PC and display base module	1SVR440899R6700
CL-LAD.TK002	-	■	Network cable (CL-NET) to connect 2 display base modules (length 0.3 m)	1SVR440899R6100
CL-LAD.TK003	-	■	Network cable (CL-NET) to connect 2 display base modules (length 0.8 m)	1SVR440899R6200
CL-LAD.TK004	-	■	Network cable (CL-NET) to connect 2 display base modules (length 1.5 m)	1SVR440899R6300
CL-LAD.TK007	■	-	Cable for point-to-point connection of remote-display connection module and logic relay, length adaptable (length 2 m)	1SVR440899R6600
CL-LAD.TK005	-	■	Cable for point-to-point connection of remote display connection modules and display base module, length adaptable (length 5 m)	1SVR440899R6400
CL-LAD.TK006	-	■	Cable for point-to-point connection of 2 display base modules, length adaptable (length 5 m)	1SVR440899R6500
CL-LAS.TK011	■	■	Spare plug (CL-LINK) for connection of logic relay to expansion	1SVR440799R5100
CL-LAD.TK009	-	■	Termination resistor (2 pieces)	1SVR440899R6900
CL-LAS.FD001	■	-	Fixing brackets for screw mounting of logic relay, expansion, display base module (9 pieces)	1SVR440799R5000
CL-LAD.FD002	-	■	Tool for mounting of display modules	1SVR440899R3000
CL-LAS.TD001	■	-	Input-/ output simulator with wall power supply, fits to CL-LSR and CL-LST Rated input voltage 100-240 V AC, rated output voltage 24 V DC	1SVR440793R0000
CL-LAD.FD001	-	■	Protective cover, transparent, for harsh environmental conditions and application in the food industry	1SVR440899R1000
CL-LAD.FD011	-	■	Protective cover, transparent and sealable	1SVR440899R2000
Power supplies				
CP-D 24/0.42	■	-	24 V DC / 0.42 A; Input 100 - 240 V AC	1SVR427041R0000
CP-D 24/1.3	■	-	24 V DC / 1.3 A; Input 100 - 240 V AC	1SVR427043R0100

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