



# Electronic relays and controls 2016

## All I need - Selection tables

# Electronic relays and controls

## 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.



### 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.



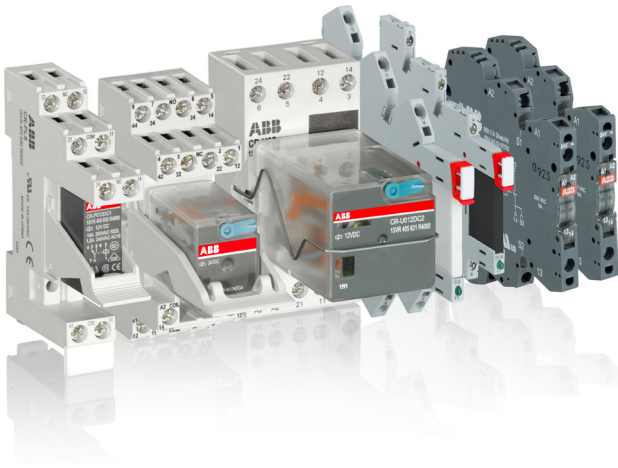
### 3 Primary switch mode power supplies, CP range

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.



#### 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.



#### 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.



#### 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.

# Electronic timers

## CT-D & CT-S Range

	Type	Order number	Screw		Push-in	
	CT-MFD.12	1SVR 500 020 R0000				
	CT-MFD.21	1SVR 500 020 R1100				
	CT-ERD.12	1SVR 500 100 R0000				
	CT-ERD.22	1SVR 500 100 R0100				
	CT-AHD.12	1SVR 500 110 R0000				
	CT-AHD.22	1SVR 500 110 R0100				
	CT-VWD.12	1SVR 500 130 R0000				
	CT-EBD.12	1SVR 500 150 R0000				
	CT-TGD.12	1SVR 500 160 R0000				
	CT-TGD.22	1SVR 500 160 R0100				
	CT-SDD.22	1SVR 500 211 R0100				
	CT-SAD.22	1SVR 500 210 R0100				
	CT-MVS.21	1SVR xxx 020 R0200				
	CT-MVS.22	1SVR xxx 020 R3300				
	CT-MVS.23	1SVR xxx 021 R2300				
	CT-MVS.12	1SVR xxx 020 R3100				
	CT-MVS.22	1SVR xxx 030 R3300				
	CT-MFS.21	1SVR xxx 010 R0200				
	CT-MBS.21	1SVR xxx 010 R3200				
	CT-WBS.22	1SVR xxx 040 R3300				
	CT-EFS.21	1SVR xxx 100 R0300				
	CT-EFS.22	1SVR xxx 100 R3300				
	CT-EFS.12	1SVR xxx 100 R3100				
	CT-APS.21	1SVR xxx 180 R0300				
	CT-APS.22	1SVR xxx 180 R3300				
	CT-APS.12	1SVR xxx 180 R3100				
	CT-AHS.22	1SVR xxx 110 R3300				
	CT-ARS.11	1SVR xxx 120 R3100				
	CT-ARS.21	1SVR xxx 120 R3300				
	CT-VBS.17	1SVR 430 261 R6000				
	CT-VBS.18	1SVR 430 261 R5000				
	CT-SDS.22	1SVR xxx 210 R3300				
	CT-SDS.23	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	2
n/o contact													2	2									

# Electronic timers

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



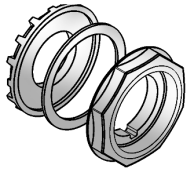
MT-x50B

1SFC 161 130 V0001

### Remote potentiometer

50 k $\Omega$   $\pm$ 20 % - 0,2  $\Omega$ , 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	1SFA611410R1506	1	0.040
Plastic, chrome	22.5	MT-250B	1SFA611410R2506	1	0.040
Metal, chrome	22.5	MT-350B	1SFA611410R3506	1	0.048

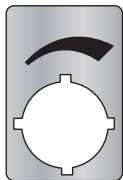


30 mm adapters

2CDC 252 042 F0009

### 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	1SFA616920R8029	1	
Metal, chrome	KA1-8030	1SFA616920R8030	1	

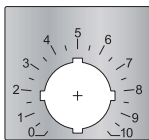


Marker label 29.6 x 44.5 mm

2CDC 252 043 F0209

### Marker label

Caption	Type	Order code	Pack.- unit pieces	Weight 1 piece g / oz
Symbol (see illustration)	SK 615 562-87	GJD6155620R0087	1	0.002
Scale 0 - 10	SK 615 562-88	GJD6155620R0088	1	0.002
Scale 0 - 30	MA16-1060	1SFA611940R1060	1	0.002

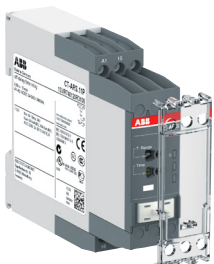


Marker label with scale 0-10  
48.5 x 44.5 mm

2CDC 252 044 F0209

### 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	COV.11	1SVR730005R0100	1	4 / 0.129
Sealable transparent cover	22.5 mm	COV.11	1SVR730005R0100	1	4 / 0.129



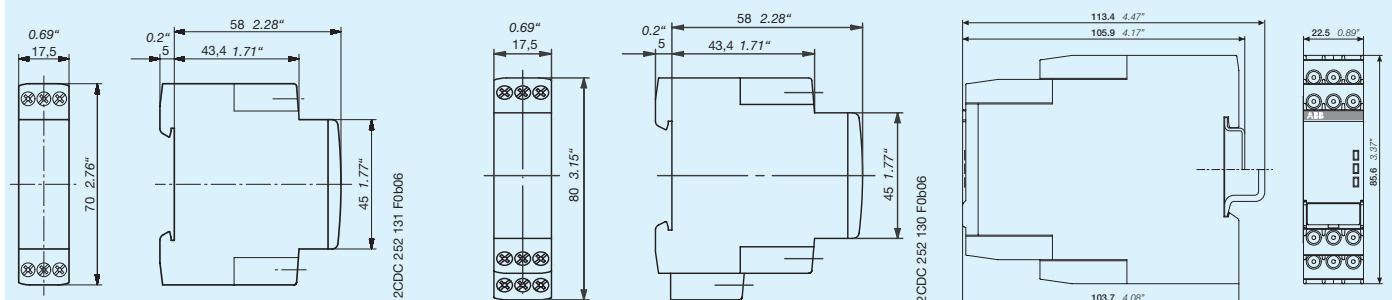
Sealable transparent cover for CT-S in new housing

2CDC 255 006 S0011

### 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 in mm



CT-D devices with 1 c/o contact or 2 n/o contacts

CT-D devices with 2 c/o contacts

1SVR 730 xxx xxx, 1SVR 740 xxx xxx



# Electronic timers

## CT-E Range

	Type	Order number
	CT-MFE	1SVR55029R8100
		1SVR550107R1100
	CT-ERE	1SVR550107R4100
		1SVR550107R2100
		1SVR550107R5100
		1SVR550100R1100
		1SVR550100R4100
	CT-AHE	1SVR550100R2100
		1SVR550100R5100
		1SVR550118R1100
		1SVR550118R4100
		1SVR550118R2100
		1SVR550110R1100
		1SVR550110R4100
		1SVR550110R2100
		1SVR550111R1100
		1SVR550111R4100
	CT-ARE	1SVR550111R2100
		1SVR550127R1100
		1SVR550127R4100
		1SVR550120R1100
	CT-VWE	1SVR550120R4100
		1SVR550137R1100
		1SVR550137R4100
		1SVR550137R2100
		1SVR550130R1100
	CT-AWE	1SVR550130R4100
		1SVR550130R2100
		1SVR550158R3100
		1SVR550150R3100
		1SVR550151R3100
	1SVR550148R1100	
	1SVR550148R4100	
	1SVR550148R2100	
	1SVR550140R1100	

Functions																				
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																				
Control Input without auxilliary voltage	■																			

Time range																				
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																				
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																				
c/o contact	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
n/o contact																				
n/c contact																				
solidstate																				



# Measuring and monitoring relays

## Single-phase current monitoring relays

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

adj: adjustable  
sel: selectable



# Measuring and monitoring relays

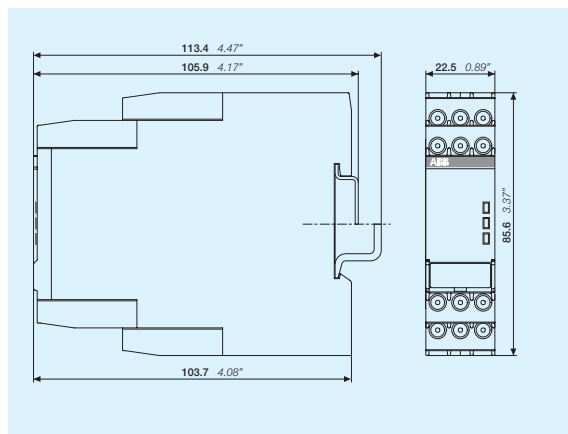
## Single-phase voltage monitoring relays

Type	Order number	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.1S	CM-ESS.1P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.2S	CM-ESS.2P	CM-ESS.MS	CM-ESS.MP	CM-EFS.2S	CM-EFS.2P
		1SVR730830R0300	1SVR740830R0300	1SVR730831R0300	1SVR740831R0300	1SVR730830R0400	1SVR740830R0400	1SVR730831R0400	1SVR740831R0400	1SVR730830R0500	1SVR740830R0500	1SVR730750R0400	1SVR740750R0400				
<b>Rated control supply voltage <math>U_s</math></b>																	
24 - 240 V AC/DC		■	■					■	■					■	■	■	■
110 - 130 V AC				■	■					■	■						
220 - 240 V AC						■	■					■	■				
<b>Measuring ranges AC/DC</b>																	
3 - 30 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6 - 60 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
30 - 300 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
60 - 600 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Monitoring function</b>																	
Over- or undervoltage		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Windows voltage monitoring																■	■
Latching														sel	sel	sel	sel
Open circuit or closed circuit principle														sel	sel	sel	sel
<b>Timing functions for tripping delay</b>																	
ON delay, 0.1 - 30 s								adj	adj	adj	adj	adj	adj	adj	adj		
ON or OFF delay, 0.1 - 30 s																sel	sel
<b>Output</b>																	
c/o contact		1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
<b>Connection type</b>																	
Push-in terminals			■		■		■		■		■		■		■		■
Double-chamber cage connection terminals		■		■		■		■		■		■		■		■	

adj: adjustable  
sel: selectable

### Dimensional drawings

dimensions in mm



# Measuring and monitoring relays

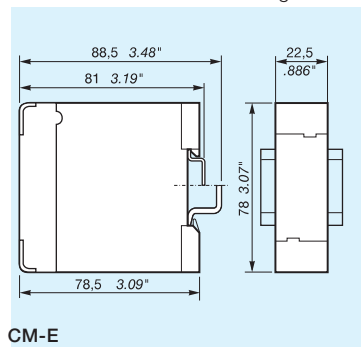
## Three phase monitors - Singlefunctional

Type	Order number
CM-PBE	1SVR550881R9400
CM-PBE	1SVR550882R9500
CM-PVE	1SVR550870R9400
CM-PVE	1SVR550871R9500
CM-PFE	1SVR550824R9100
CM-PFS.S	1SVR730824R9300
CM-PFS.P	1SVR740824R9300
CM-PSS.31S	1SVR730784R2300
CM-PSS.31P	1SVR740784R2300
CM-PSS.41S	1SVR730784R3300
CM-PSS.41P	1SVR740784R3300
CM-PVS.31S	1SVR730794R1300
CM-PVS.31P	1SVR730794R1300
CM-PVS.41S	1SVR730794R3300
CM-PVS.41P	1SVR740794R3300
CM-PVS.81S	1SVR730794R2300
CM-PVS.81P	1SVR740794R2300
CM-PAS.31S	1SVR730774R1300
CM-PAS.31P	1SVR740774R1300
CM-PAS.41S	1SVR730774R3300
CM-PAS.41P	1SVR740774R3300

Rated control supply voltage U <sub>c</sub>																				
Phase to phase																				
160-300 V AC																				
200-400 V AC																				
200-500 V AC																				
208-440 V AC																				
300-500 V AC																				
320-460 V AC																				
380 V AC																				
380-440 V AC																				
400 V AC																				
Phase to neutral																				
185-265 V AC																				
220-240 V AC																				
Rated frequency																				
50/60 Hz																				
Suitable for monitoring																				
Single-phase mains																				
Three-phase mains																				
Monitoring function																				
Phase failure																				
Phase sequence																				
Automatic phase sequence correction																				
Overvoltage																				
Undervoltage																				
Unbalance																				
Neutral <sup>1)</sup>																				
Thresholds	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	adj	adj	adj	adj	adj	adj	adj
Timing functions for tripping delay																				
ON delay																				
On and OFF delay	fix	fix	fix	fix	fix															
Connection type																				
Push-in terminals																				
Double-chamber cage connection terminals																				

<sup>1)</sup> The external conductor voltage towards the neutral conductor is measured.



adj: adjustable  
 sel: selectable  
 fix: fixed

# Measuring and monitoring relays

## Three phase monitors - Multifunctional

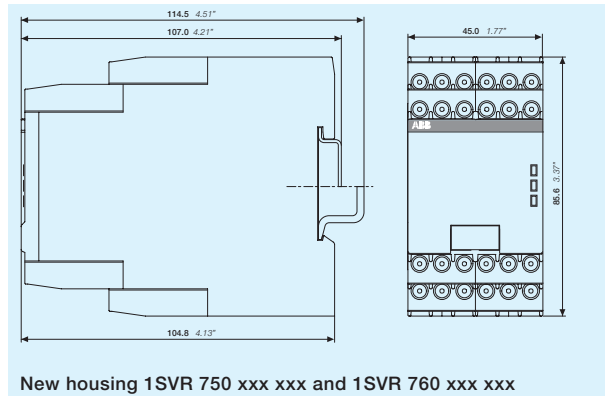
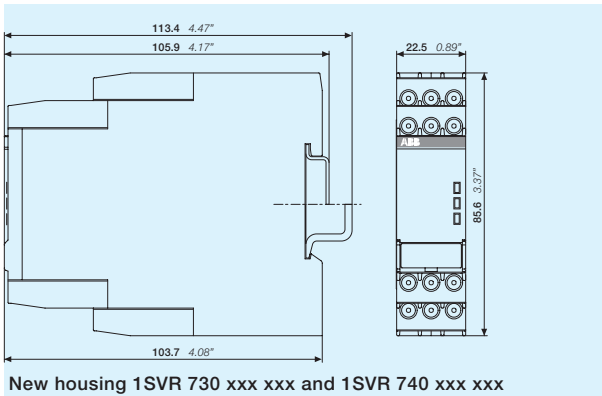
	Type	Order number
	CM-MPS.11S	1SVR730885R1300
	CM-MPS.11P	1SVR740885R1300
	CM-MPS.21S	1SVR730885R3300
	CM-MPS.21P	1SVR740885R3300
	CM-MPS.31S	1SVR730884R1300
	CM-MPS.31P	1SVR740884R1300
	CM-MPS.41S	1SVR730884R3300
	CM-MPS.41P	1SVR740884R3300
	CM-MPS.23S	1SVR730885R4300
	CM-MPS.23P	1SVR740885R4300
	CM-MPS.43S	1SVR730884R4300
	CM-MPS.43P	1SVR740884R4300
	CM-MPN.52S	1SVR750487R8300
	CM-MPN.52P	1SVR760487R8300
	CM-MPN.62S	1SVR750488R8300
	CM-MPN.62P	1SVR760488R8300
	CM-MPN.72S	1SVR750489R8300
	CM-MPN.72P	1SVR760489R8300

Rated control supply voltage U <sub>c</sub>																		
Phase to phase																		
160-300 V AC																		
300-500 V AC																		
350-580 V AC																		
450-720 V AC																		
530-820 V AC																		
Phase to neutral																		
90-170 V AC																		
180-280 V AC																		
Rated frequency																		
50/60 Hz																		
50/60/400 Hz																		
Suitable for monitoring																		
Single-phase mains																		
Three-phase mains																		
Monitoring function																		
Phase failure																		
Phase sequence	sel	sel	sel	sel	sel	sel	sel	sel	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Automatic phase sequence correction									adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Overvoltage																		
Undervoltage																		
Unbalance																		
Neutral <sup>1)</sup>	■ <sup>2)</sup>	■ <sup>2)</sup>	■ <sup>2)</sup>	■ <sup>2)</sup>					■ <sup>2)</sup>	■ <sup>2)</sup>								
Thresholds	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Timing functions for tripping delay																		
On and OFF delay	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Connection type																		
Push-in terminals																		
Double-chamber cage connection terminals																		

<sup>1)</sup> The external conductor voltage towards the neutral conductor is measured.  
<sup>2)</sup> Interrupted neutral monitoring

adj: adjustable  
 sel: selectable



# Measuring and monitoring relays

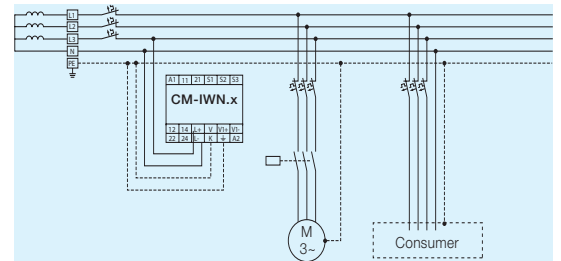
## Insulation monitoring relays & Grid feeding monitoring relays

Type	Order number
CM-IWS.2S	1SVR730670R0200
CM-IWS.2P	1SVR740670R0200
CM-IWS.1S	1SVR730660R0100
CM-IWS.1P	1SVR740660R0100
CM-IVN.1S	1SVR750660R0200
CM-IVN.1P	1SVR760660R0200
CM-IVN.4S	1SVR750660R0300
CM-IVN.4P	1SVR760660R0300
CM-IVN.5S	1SVR750660R0400
CM-IVN.5P	1SVR760660R0400
CM-IVN.6S	1SVR750660R0500
CM-IVN.6P	1SVR760660R0500

Rated control supply voltage $U_s$	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
24 - 240 VAC/DC	■	■	■	■	■	■	■	■	■	■	■	■
<b>Measuring voltages</b>												
250 V AC (L-PE)			■	■								
400 V AC (L-PE)	■	■			■	■	■	■	■	■	■	■
690 V AC (L-PE)					■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>
300 V DC (L-PE)			■	■								
600 V DC (L-PE)					■	■	■	■	■	■	■	■
1000 V DC (L-PE)					■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>
<b>Measuring range</b>												
1 - 100 k $\Omega$	■	■	■	■	■	■	■	■	■	■	■	■
2 - 200 k $\Omega$					■	■	■	■	■	■	■	■
<b>System leakage capacitance, max.</b>												
10 $\mu$ F	■	■	■	■								
20 $\mu$ F					■	■						
500 $\mu$ F							■	■				
1000 $\mu$ F									■	■		
2000 $\mu$ F											■	■
<b>Output</b>												
1 c/o	■	■	■	■								
1 x 2 c/o or 2 x 1 c/o					■	■	■	■	■	■	■	■
<b>Operating principle</b>												
Open-circuit principle	■	■	■	■								
Open- or closed-circuit principle adjustable					■	■	■	■	■	■	■	■
<b>Test</b>												
Front-face button or control input	■	■	■	■	■	■	■	■	■	■	■	■
<b>Reset</b>												
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
<b>Connection type</b>												
Push-in terminals		■		■		■		■		■		■
Double-chamber cage connection terminals	■		■		■		■		■		■	

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

Insulation monitors for unearthed supply systems (IT-Systems)



Type	Order number
CM-UFD.M22	1SVR560730R3400
CM-UFD.M31	1SVR560730R3401
CM-UFD.M33	1SVR560730R3402
CM-UFD.M34	1SVR560730R3403
<b>Rated control supply voltage <math>U_s</math></b>	
24-240 V AC/DC	■
<b>Standard</b>	
VDE AR-N 4105, BDEW	■
G59/3; G83/2	■
CEI 0-21	■
DRRG standard of DEWA	■
<b>Rated frequency</b>	
DC or 50 Hz	■
DC or 50/60 Hz	■
<b>Suitable for monitoring</b>	
Single-phase mains	■
Three-phase mains	■
<b>Monitoring function</b>	
Over-/undervoltage	■
Over-/underfrequency	■
ROCOF (rate of change of frequency)	■
10 minutes average value	■
Vector shift	■
<b>Thresholds</b>	adj : adj : adj : adj

# Measuring and monitoring relays

## Motor load monitoring relays

	Type	Order number																			
	CM-LWN	1SVR450335R0000																			
	CM-LWN	1SVR450330R0000																			
	CM-LWN	1SVR450331R0000																			
	CM-LWN	1SVR450332R0000																			
	CM-LWN	1SVR450334R0000																			
	CM-LWN	1SVR450335R0100																			
	CM-LWN	1SVR450330R0100																			
	CM-LWN	1SVR450331R0100																			
	CM-LWN	1SVR450332R0100																			
	CM-LWN	1SVR450334R0100																			
	CM-LWN	1SVR450335R0100																			
<b>Rated control supply voltage Us</b>																					
24 - 240 VAC/DC		■																			
110 - 130 V AC			■																		
220 - 240 V AC				■																	
380 - 440 V AC					■																
480 - 500 V AC							■														
<b>Voltage range (Phase to phase)</b>																					
110- 500 V		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Current range</b>																					
0.5 - 5 A		■	■	■	■	■															
2 - 20 A									■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Frequency range</b>																					
50/60 Hz			■	■	■	■					■	■	■	■	■	■	■	■	■	■	■
DC or 15 - 400 Hz			■								■										
<b>Suitable for monitoring</b>																					
Single-phase mains		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Three-phase mains		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Monitoring function</b>																					
Motor load // cos Phi		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Timing functions</b>																					
Start up delay (on delay)		adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Response delay		adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
<b>Output contacts</b>																					
2 x 1 c/o		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

# Measuring and monitoring relays

## Thermistor motor protection relays

Type	Order code	1SVR550805R9300	1SVR550800R9300	1SVR550801R9300	1SVR740720R1400	1SVR730720R1400	1SVR740700R0100	1SVR730700R0100	1SVR740700R2100	1SVR730700R2100	1SVR740722R1400	1SVR730722R1400	1SVR740700R0200	1SVR730700R0200	1SVR740700R2200	1SVR730700R2200	1SVR740712R1400	1SVR730712R1400	1SVR740712R0200	1SVR730712R0200	1SVR740712R2200	1SVR730712R2200	1SVR740712R1200	1SVR730712R1200	1SVR740712R1300	1SVR730712R1300	
<b>Characteristics</b>																											
ATEX approval				■	■					■	■						■	■	■	■	■	■	■	■	■	■	
Number of sensor circuits	1	1	1	1	1	1	1	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	3	3	3	
<b>Contacts</b>																											
1 c/o (SPDT) contact							■	■	■	■																	
2 c/o (SPDT) contacts													■	■	■	■			■	■	■	■	■	■			
1 n/o	■	■	■																								
1 n/c and 1 n/o				■	■					■	■						■	■									
2 x 1 c/o or 1 x 2 c/o contacts, configurable																								■	■		
<b>Reset</b>																											
Manual													■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Remote													■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Auto	■	■	■	■	■	■	■	■	■	■	■	■	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>2)</sup>	■ <sup>2)</sup>	
Test button																	■	■	■	■	■	■	■	■	■	■	
<b>Functions</b>																											
Short-circuit detection										■	■						■	■	■	■	■	■					
Short-circuit detection, configurable																							■	■	■	■	
Dynamic interrupted wire detection				■	■					■	■						■	■	■	■	■	■	■	■	■	■	
Non-volatile fault storage				■	■					■	■						■	■									
Non-volatile fault storage, configurable																							■	■	■	■	
<b>Rated control supply voltage U<sub>s</sub></b>																											
24 V AC	■																										
110-130 V AC		■																									
220-240 V AC			■																								
24-240 V AC/DC				■	■					■	■						■	■					■	■	■	■	
24 V AC/DC						■	■						■	■					■	■							
110-130 V AC, 220-240 V AC								■	■						■	■					■	■					
<b>Connection type</b>																											
Push-in terminals				■	■		■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Double-chamber cage connection terminals					■		■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

<sup>1)</sup> For automatic reset, connect terminals S1 to T2.

<sup>2)</sup> For automatic reset, connect Terminals S1 to 1T2/2T2.



# Measuring and monitoring relays

## Temperature monitoring relays

	Type	Order number																
	CM-TCS.21S	1SVR 730 740 R9100																
	CM-TCS.21P	1SVR 740 740 R9100																
	CM-TCS.11S	1SVR 730 740 R0100																
	CM-TCS.11P	1SVR 740 740 R0100																
	CM-TCS.22S	1SVR 730 740 R9200																
	CM-TCS.22P	1SVR 740 740 R9200																
	CM-TCS.12S	1SVR 730 740 R0200																
	CM-TCS.12P	1SVR 740 740 R0200																
	CM-TCS.23S	1SVR 730 740 R9300																
	CM-TCS.23P	1SVR 740 740 R9300																
	CM-TCS.13S	1SVR 730 740 R0300																
	CM-TCS.13P	1SVR 740 740 R0300																
	C512-24	1SAR 700 100 R0005																
	C512-W	1SAR 700 100 R0010																
	C513-W	1SAR 700 110 R0010																
<b>Rated control supply voltage U<sub>s</sub></b>																		
24 V AC/DC			■	■				■	■							■		
24-240 V AC/DC					■	■				■							■	
<b>Technology</b>																		
analogue			■	■	■	■	■	■	■	■	■	■	■	■				
digital																■	■	
<b>Sensor circuits (2 or 3 wire)</b>																		
number of temperature sensors			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
number of thresholds			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
<b>Sensor type</b>																		
PT100			■	■	■	■	■	■	■	■	■	■	■	■		■	■	■
PT100, KTY83, KTY84, NTC, PT1000																■	■	■
<b>Measuring temperature range</b>																		
-50...+50 °C			■	■	■	■												
0...+100 °C							■	■	■	■								
0...+200 °C										■	■	■	■					
-50...+500 °C																■	■	■
<b>Monitoring function</b>																		
overtemperature			■	■	■	■	■	■	■	■	■	■	■	■		■	■	■
undertemperature			■	■	■	■	■	■	■	■	■	■	■	■		■	■	■
window temperature			■	■	■	■	■	■	■	■	■	■	■	■		■	■	■
<b>Operating principle</b>																		
open or closed principle			■	■	■	■	■	■	■	■	■	■	■	■		■	■	■
<b>Output contacts</b>																		
n/o																1	1	1
c/o			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

# Measuring and monitoring relays

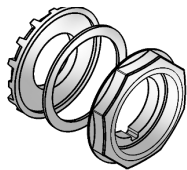
## Liquid level monitoring relays

	Order code															
Type	CM-ENE MIN	CM-ENE MIN	CM-ENE MIN	CM-ENE MAX	CM-ENE MAX	CM-ENE MAX	CM-ENS.11S	CM-ENS.11P	CM-ENS.13S	CM-ENS.13P	CM-ENS.21S	CM-ENS.21P	CM-ENS.23S	CM-ENS.23P	CM-ENS.31S	CM-ENS.31P
<b>Rated control supply voltage <math>U_s</math></b>																
24-240 V AC/DC							■	■			■	■			■	■
24 V AC	■			■												
110-130 V AC		■				■			■	■			■	■		
220-240 V AC			■			■			■	■			■	■		
<b>Sensor circuit</b>																
Number of electrodes (including ground reference)	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
<b>Response sensitivity range</b>																
0-100 kOhm	■	■	■	■	■	■										
5-100 kOhm							adj	adj	adj	adj						
0.1-1000 kOhm											adj	adj	adj	adj	adj	adj
<b>Monitoring function</b>																
Dry running protection	■	■	■				■	■	■	■	■	■	■	■	■	■
Overflow protection				■	■	■	■	■	■	■	■	■	■	■	■	■
Liquid level control				■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Operating principle</b>																
Open-circuit principle	■	■	■				■	■	■	■						
Closed-circuit principle				■	■	■										
Open- or closed-circuit principle											sel	sel	sel	sel	sel	sel
<b>Adjustable ON-/OFF-delay</b>																
0.1-10 s															■	■
<b>Output contacts</b>																
n/o	1	1	1	1	1	1										
c/o (SPTD)							1	1	1	1	1	1	1	1	2	2
<b>Connection type</b>																
Push-in terminals							■	■	■	■	■	■	■	■	■	■
Double-chamber cage connection terminals							■	■	■	■	■	■	■	■	■	■

adj: adjustable  
sel: selectable

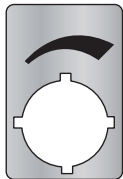
# Measuring and monitoring relays

## Accessories



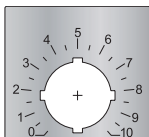
30 mm adapters

2CDC 252 042 F0009



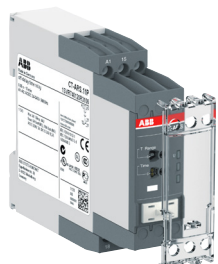
Marker label 29.6 x 44.5 mm

2CDC 252 043 F0209



Marker label with scale 0-10  
48.5 x 44.5 mm

2CDC 252 044 F0209



Sealable transparent cover for  
CT-S in new housing

2CDC 255 006 S0011



Bar electrode

1SVR 450 056 F6000



Suspension electrode

1SVC 110 000 F0478

### Ordering details

Description	For type	Width in mm	for devices	Type	Order code	Price	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		without DIP switches	MAR.01	1SVR366017R0100		10	0.19 (0.007)
	CM-S, CM-N		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-N	45		COV.02	1SVR440005R0100		1	7.7 (0.27)
	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)

### Ordering details - Bar electrodes

Description	Material no.	Type	Order code	Price 1 pce	Weight (1 pce) kg (lb)
Compact support for 3 bar electrodes	-	CM-KH-3	1SVR450056R6000		0.06 (0.132)
Distance plate for 3 bar electrodes	-	CM-AH-3	1SVR450056R7000		0.06 (0.132)
Counter nut for 1" thread	-	CM-GM-1	1SVR450056R8000		0.06 (0.132)
Length: 300 mm	1.4301	CM-SE-300	1SVR450056R0000		0.08 (0.176)
Length: 600 mm	1.4301	CM-SE-600	1SVR450056R0100		0.08 (0.176)
Length: 1000 mm	1.4301	CM-SE-1000	1SVR450056R0200		0.08 (0.176)

### Ordering details - Suspension electrodes

Description	Material no.	Type	Order code	Price	Weight (1 pce) kg (lb)
CM-HE suspension electrode	1.4104	CM-HE	1SVR402902R0000		0.074 (0.163)
CM-HC suspension electrode	1.4104	CM-HC	1SVR402902R1000		0.09 (0.198)
CM-HCT suspension electrode suitable for drink water	1.4301	CM-HCT	1SVR402902R2000		0.09 (0.198)



# Primary switch mode power supplies

## CP Range - Three phase

		Order number	1SVR427054R0000	1SVR427055R0000	1SVR427056R0000	1SVR427057R0000	1SVR427054R2000	1SVR427055R2000	1SVR427056R2000
			Three-phase						
			CP-T						
Rated output voltage	24 V DC		■	■	■	■			
	30.5 V DC								
	48 V DC						■	■	■
Rated output current	2.8 A								
	3 A								
	5 A		■				■		
	8 A								
	10 A			■				■	
	20 A				■				■
	40 A					■			
Rated output power	85 W								
	120 W		■						
	122 W								
	240 W			■			■		
	244 W								
	480 W				■			■	
960 W					■			■	
Rated input voltage	85-132 V AC, 184-264 V AC								
	3 x 400 - 800 V AC		■	■	■	■	■	■	■
DC input voltage range	18-32.4 V DC								
	480 - 820 V DC		■	■	■	■	■	■	■
Features	Adjustable output voltage		■	■	■	■	■	■	■
	Integrated input fuse		■	■	■	■	■	■	■
	Short circuit stable		■	■	■	■	■	■	■
	Fold forward behavior (U/I)		■	■	■	■	■	■	■
	Fold back behavior (hiccup)		■	■	■	■	■	■	■
	Power factor correction								
	Ambient temp. rating -25°C (-40°C) to 70°C		■	■	■	■	■	■	■
	Serial connection			2	2	2	2	2	2
	Suited for AS-Interfaces								

# Primary switch mode power supplies

## Accessories

### Accessories CP-Range

Typ		Order number
CP-D RU	Redundancy module for CP-D range	1SVR427049R0000
CP-RUD	Redundancy module ≤ 35 V; ≤ 5A	1SVR423418R9000
CP-A RU	Redundancy module ≤ 40 V; ≥ 5A	1SVR427071R0000
CP-A CM	Control module for CP-A	1SVR427075R0000
CP-C MM	Messaging module for CP-C	1SVR427081R0000

### Buffer modules CP-B range

#### Selection table

Typ	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	
<b>Typical buffer time<sup>1)</sup></b>				
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	

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



# Primary 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 <sup>1)</sup>	EPD-BB500	2CDE605100R0500	830140	0.20	10
Signal Bars for aux. contacts, grey insulation, length 21 mm	EPD-SB21	2CDE605200R0021	830164	0.04	10

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

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













	0 - 860 °C	type S
	0 - 1550 °C	type S
	Output signal	
■	0 - 5 V	
■	0 - 10 V	■
■	1 - 5 V	■
■	2 - 10 V	
■	-10 - +10V	
■	-5 - +5 V	
■	-10 - 0 V	
■	-5 - 0 V	
■	0 - 6.666 V	
■	-10 - +3.33 V	
■	-5 - +1.66 V	
■	0 - 8 V	
■	0 - 4 V	
■	-10 - -2 V	
■	-5 - -1 V	
■	1.25 - 6.25 V	
■	-7.5 - +2.5 V	
■	-3.75 - +1.25 V	
■	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 µA	
■	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	
■		2
■		2





# 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

Input voltage																				
12 V DC		■																		
24 V DC			■																	
48 V DC				■																
60 V DC					■															
110 V DC						■														
125 V DC							■													
220 V DC								■												
24 V AC									■											
48 V AC										■										
60 V AC											■									
110 V AC												■								
120 V AC													■							
230 V AC														■						

Output rating																				
250 V 16 A																				
250 V 8 A																				
250 V 12 A	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 10 A																				
250 V 6 A																				

Output contacts																				
c/o	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Gold contact																				
LED																				
Free-wheeling diode																				

## Accessories – Sockets CR-M

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







# Pluggable interface relays

## CR-S Range

### How to use the selection table

1. Choose the desired control supply voltage from the column "Control voltage" e.g. 5 V DC.
2. Choose the desired kind of connection terminal from the column "Connection Terminal" e.g. spring.
3. Choose the desired material of contact from the column "Contact Material" e.g. gold plated.

Control voltage	Connection terminal	Contact material	Socket type	Socket order code	Relay type	Relay order code
5 V DC	screw	standard	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1RG	1SVR405501R1020
	spring	standard	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1RG	1SVR405501R1020
12 V AC	screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020

Example: When you have chosen **5 V DC** as Control supply voltage, **spring** connection as Connection Terminal and **gold plated** as Contact Material the following order codes and type designators are valid:

Socket: CR-S006/024VDC1SZ, 1SVR405521R1200 Relay: CR-S005VDC1RG, 1SVR405501R1020

### Relay assemblies

Control voltage	Connection terminal	Contact material	Socket type	Socket order code	Relay type	Relay order code
5 V DC	screw	standard	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1RG	1SVR405501R1020
	spring	standard	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1R	1SVR405501R1010
		gold plated	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1RG	1SVR405501R1020
12 V DC	screw	standard	CR-S006/024VDC1SS or CR-S012/024VADC1SS	1SVR405521R1100 or 1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S006/024VDC1SS or CR-S012/024VADC1SS	1SVR405521R1100 or 1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
	spring	standard	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020
12 V AC	screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020
24 V DC	screw	standard	CR-S006/024VDC1SS or CR-S012/024VADC1SS	1SVR405521R1100 or 1SVR405521R3100	CR-S024VDC1R	1SVR405501R3010
		gold plated	CR-S006/024VDC1SS or CR-S012/024VADC1SS	1SVR405521R1100 or 1SVR405521R3100	CR-S024VDC1RG	1SVR405501R3020
	spring	standard	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S024VDC1R	1SVR405501R3010
		gold plated	CR-S006/024VDC1SZ or CR-S012/024VADC1SZ	1SVR405521R1200 or 1SVR405521R3200	CR-S024VDC1RG	1SVR405501R3020
24 V AC	screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1R	1SVR405501R3010
		gold plated	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1RG	1SVR405501R3020
	spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1R	1SVR405501R3010
		gold plated	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1RG	1SVR405501R3020
48 V AC/DC	screw	standard	CR-S048/060VADC1SS	1SVR405521R5100	CR-S048VDC1R	1SVR405501R4010
		gold plated	CR-S048/060VADC1SS	1SVR405521R5100	CR-S048VDC1RG	1SVR405501R4020
	spring	standard	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S048VDC1R	1SVR405501R4010
		gold plated	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S048VDC1RG	1SVR405501R4020
60 V AC/DC	screw	standard	CR-S048/060VADC1SS	1SVR405521R5100	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S048/060VADC1SS	1SVR405521R5100	CR-S060VDC1RG	1SVR405501R5020
	spring	standard	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S060VDC1RG	1SVR405501R5020
110-125 V AC/DC	screw	standard	CR-S110/125VADC1SS	1SVR405521R6100	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S110/125VADC1SS	1SVR405521R6100	CR-S060VDC1RG	1SVR405501R5020
	spring	standard	CR-S110/125VADC1SZ	1SVR405521R6200	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S110/125VADC1SZ	1SVR405521R6200	CR-S060VDC1RG	1SVR405501R5020
220-240 V AC/DC	screw	standard	CR-S220/240VADC1SS	1SVR405521R7100	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S220/240VADC1SS	1SVR405521R7100	CR-S060VDC1RG	1SVR405501R5020
	spring	standard	CR-S220/240VADC1SZ	1SVR405521R7200	CR-S060VDC1R	1SVR405501R5010
		gold plated	CR-S220/240VADC1SZ	1SVR405521R7200	CR-S060VDC1RG	1SVR405501R5020

### Optocoupler assemblies

Control voltage	Connection terminal	Output characteristics	Socket type	Socket order code	Opto type	Opto order code
24 V DC	screw	Transistor	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1TRA	1SVR405510R3050
	spring	100 mA - 48 V DC	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1TRA	1SVR405510R3050
	screw	MOS-FET	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1MOS	1SVR405510R3060
	spring	2 A - 24 V DC	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1MOS	1SVR405510R3060
	screw	Triac	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1TRI	1SVR405510R3070
	spring	2 A - 240 V AC	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1TRI	1SVR405510R3070





# Pluggable interface relays

## CR-P/M range

	Type	Order number
	CR-P/M 22	1SVR405651R0000
	CR-P/M 42	1SVR405652R0000
	CR-P/M 42V	1SVR405652R1000
	CR-P/M 42B	1SVR405652R4000
	CR-P/M 42BV	1SVR405652R4100
	CR-P/M 42C	1SVR405652R9000
	CR-P/M 42CV	1SVR405652R9100
	CR-P/M 52B	1SVR405653R0000
	CR-P/M 52D	1SVR405653R4000
	CR-P/M 52C	1SVR405653R1000
	CR-P/M 62	1SVR405654R0000
	CR-P/M 62V	1SVR405654R1000
	CR-P/M 62E	1SVR405654R4000
	CR-P/M 62EV	1SVR405654R4100
	CR-P/M 92	1SVR405654R0100
	CR-P/M 92V	1SVR405654R1100
	CR-P/M 62C	1SVR405655R0000
	CR-P/M 62CV	1SVR405655R1000
	CR-P/M 62D	1SVR405655R4000
	CR-P/M 62DV	1SVR405655R4100
	CR-P/M 92C	1SVR405655R0100
	CR-P/M 92CV	1SVR405655R1100
	CR-P/M 72	1SVR405656R0000
	CR-P/M 72A	1SVR405656R1000
	CR-P/M 82	1SVR405656R2000
<b>Rated control supply voltage</b>		
6 - 220 V DC	■	
6 - 24 V DC	■	■
24 - 60 V DC		■
110 V DC		■
110 - 230 V DC		■
6 - 24 V AC		■
24 - 60 V AC		■
110 - 230 V AC		■
24 V AC		■
115 V AC		■
230 V AC		■
24 - 240 V AC/DC		■
<b>Function</b>		
Diode - reverse polarity protection / free wheeling diode	■	
Diode and LED - reverse polarity protection / free wheeling diode	■	■
RC element - spark quenching		■
Diode and LED		■
Varistor and LED - overvoltage protection		■
Diode and LED - overvoltage protection		■
Varistor - overvoltage protection		■
Multifunctional time module		■
LED red	■	■
LED green	■	■

### 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

### Accessories for miniature relays CR-M

Type Sockets	Version
CR-M2LS	Logical socket for 2 c/o contacts
CR-M3LS	Logical socket for 3 c/o contacts
CR-M4LS	Logical socket for 2/4 c/o contacts
CR-M2LC	Logical socket for 2 c/o contacts
CR-M4LC	Logical socket for 2/4 c/o contacts
CR-M2SS	Standard socket for 2 c/o contacts
CR-M3SS	Standard socket for 3 c/o contacts
CR-M4SS	Standard socket for 2/4 c/o contacts
CR-M2SF	Standard socket for 2 c/o contacts
CR-M4SF	Standard socket for 2/4 c/o contacts

#### Socket accessories

CR-MH	Plastic holder
CR-MH1	Metal holder
CR-MJ	Jumper bar for sockets with screw connection



# Boxed interface relays and optocouplers

## R600 relays

Type	Order number
RB121P-5VDC	1SNA645034R2300
RB121PG-5VDC	1SNA645036R2500
RBR121P-5VDC	1SNA645534R2500
RB121-12VDC	1SNA645073R0000
RB121P-12VDC	1SNA645035R2400
RB121G-12VDC	1SNA645075R0000
RBR121P-12VDC	1SNA645535R2600
RB101R-24VUC	1SNA645019R0400
RBR101R-24VUC	1SNA645519R0600
RB111-24VUC	1SNA645014R2700
RB111R-24VUC	1SNA645018R0300
RBR111R-24VUC	1SNA645518R0500
RBR111-24VUC	1SNA645514R2100
RB121-24VUC	1SNA645001R0300
RB121G-24VUC	1SNA645005R0700
RBR121-24VUC	1SNA645501R0500
RBR121G-24VUC	1SNA645505R0100
RB122G-24VUC	1SNA645012R2500
RBR122G-24VUC	1SNA645512R2700
RB121-24VDC	1SNA645071R0000
RBR121-24VDC	1SNA645571R0000
RB121G-24VDC	1SNA645072R0000
RBR121G-24VDC	1SNA645572R0000
RB121-48-60VUC	1SNA645002R0400
RBR121G-48-60VUC	1SNA645006R0000
RBR121-48-60VUC	1SNA645502R0600
RBR121G-48-60VUC	1SNA645506R0200

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

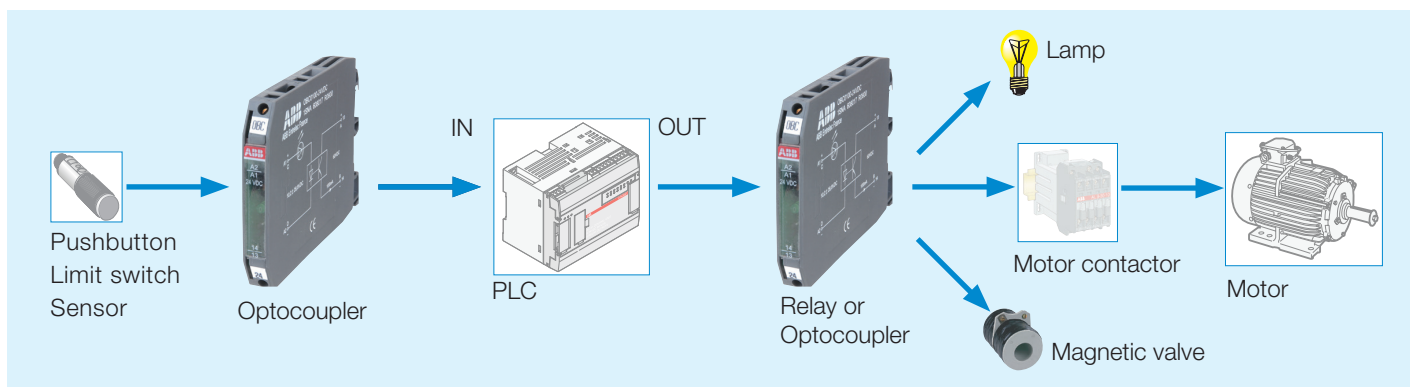
Output rating																				
10 mA - 6 A	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3 mA - 6 A		■			■														■	■
1 mA - 8 A																			■	■

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

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











## Accessories

Type	Description	Order number	Pack.
BADH V0	End Section	1SNA116900R2700	50
BADL V0	End Section	1SNA399903R0200	50
BAM2 V0	End Section	1SNA399967R0100	50
SC 612	Separator end section	1SNA290474R0200	10
BJ 612-10	Divisible shunt 10 poles	1SNA290488R0100	10
BJ 612-70	Divisible shunt 70 poles	1SNA290489R0200	10
D4/12-3-3	Screw clamp distribution block sp. 12 mm	1SNA645031R2000	5
D4/12-3R-3R	Screw clamp distribution block sp. 12 mm	1SNA645531R2200	5
FC2	Test plug DIA. 2 mm	1SNA007865R2600	10



# Accessories CL range

Type	For logic relay	For display system	Description	Order code
<b>Display modules</b>				
CL-LDD.XK	■	■	Graphic display, 132 x 64 pixels	1SVR440839R4500
CL-LDD.K	■	■	Graphic display, 132 x 64 pixels, with keypad	1SVR440839R4400
<b>Remote display connection modules</b>				
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
<b>Display base modules</b>				
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
<b>Accessories for logic relays and display system</b>				
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
<b>Power supplies</b>				
CL-D 24/0.42	■	-	24 V DC / 0.42 A; Input 100 - 240 V AC	1SVR427041R0000
CL-D 24/1.3	■	-	24 V DC / 1.3 A; Input 100 - 240 V AC	1SVR427043R0100

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