

CONTROL SECTION 8

Electronic relays and controls

Timers, power supplies, relays,
limit switches

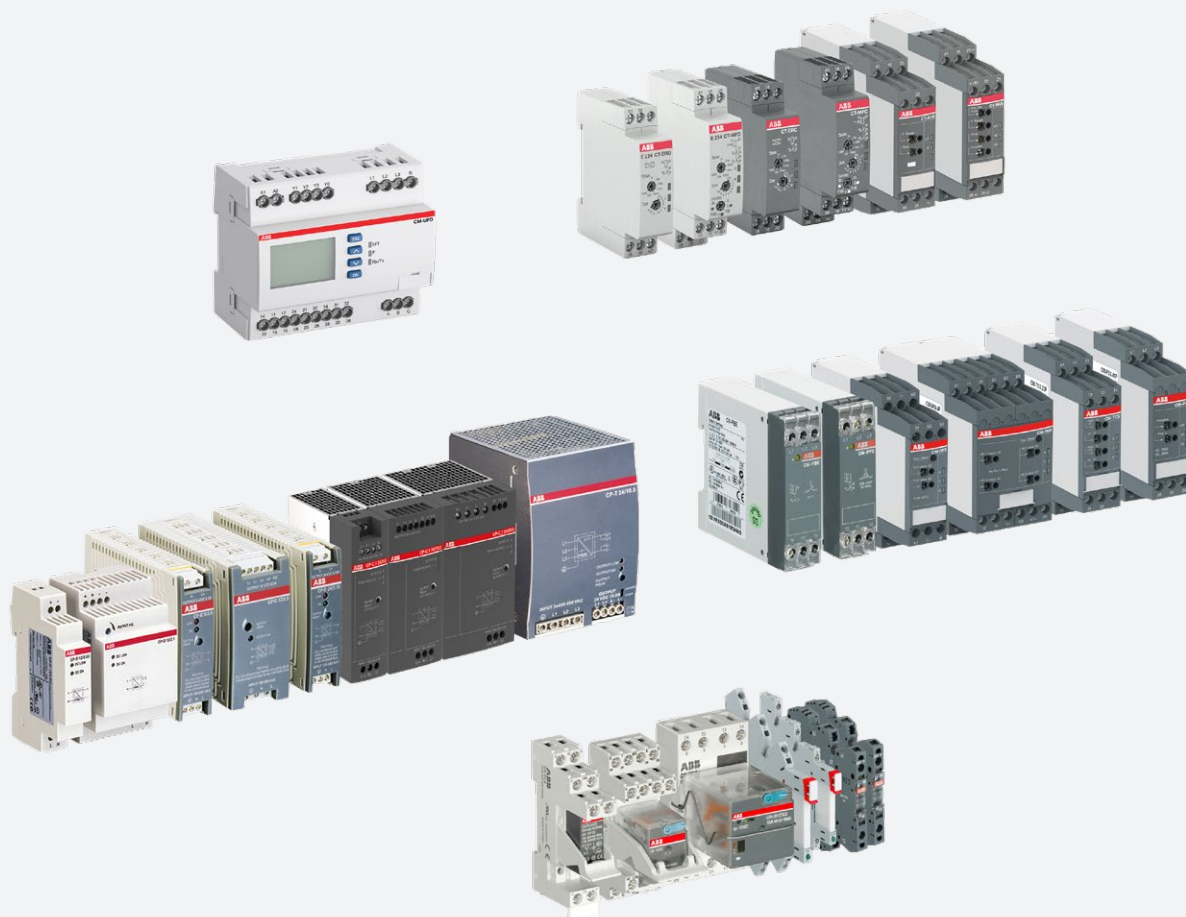




Table of contents

	Time relays		Electronic protection devices
8-4	CT-C range	8-24	EPD2
8-5	CT-S range		
	Monitoring relays		Pluggable interface relays
8-7	Single-phase current	8-25	CR-S range
8-8	Single-phase voltage		
8-9	Three-phase single functional		Pluggable interface relays and optocouplers
8-10	Three-phase multi-functional	8-28	CR-P range
8-11	Grid feeding	8-31	CR-M range
8-12	Insulation	8-38	CR-P/M range
		8-39	CR-U range
	Motor protection relays		Boxed interface relays
8-14	Thermistor	8-42	R600 range
	Monitoring relays		Boxed optocouplers
8-16	Temperature	8-44	R600 range
8-17	Liquid level		
8-18	Accessories		Limit switches
	Primary switch mode power supplies		This represents an overview of ABB's limit switches offering. Please reference the Limit Switches catalog for the complete portfolio.
8-20	Single-phase	8-45	Overview
8-23	Three-phase	8-48	Stocked switches

A black plastic terminal block with a red label that reads "ABB CT-MC". It features two rows of screw terminals. The top row is labeled "A1", "15", and "Y110". The bottom row is labeled "A2", "16", and "Y110". There are also two larger terminals on the side labeled "1" and "2".

CT-MFC.12



CT-ERC.22

Type	Order number
CT-MKC.31	15VR508010R1300
CT-MFC.12	15VR508020R0000
CT-MFC.21	15VR508020R1100
CT-ARC.12	15VR508120R0000
CT-ERC.12	15VR508100R0000
CT-ERC.22	15VR508100R0100
CT-AHC.12	15VR508110R0000
CT-AHC.22	15VR508110R0100
CT-VWC.12	15VR508130R0000
CT-EBC.12	15VR508150R0000
CT-TGC.12	15VR508160R0000
CT-TGC.22	15VR508160R0100
CT-SAC.22	15VR508210R0100
CT-SDC.22	15VR508211R0100

ON-delay		
OFF-delay with aux. voltage		
OFF-delay w/o aux. voltage		
Impulse-ON		
Impulse-OFF with aux. voltage		
Impulse-OFF w/o aux. voltage		
Flasher starting with ON		
Flasher starting with OFF		
Pulse generator starting with ON or OFF		
Pulse former		
Star-delta change-over		

Control input, voltage-related triggering	■	■				■	■			■	■	
---	---	---	--	--	--	---	---	--	--	---	---	--

[illegible][illegible][illegible]

A photograph of an ABB 1600V 1000A circuit breaker. The device is a large, industrial-grade electrical component with a grey and black finish. It features a prominent red label with the ABB logo and technical specifications. The breaker is shown from a side-on perspective, highlighting its robust construction and multiple connection points.

CT-MVS.21P



CT-MBS.22P



CT-ERS.21P



CT-AHS.22P



CT-SDS.23P

All devices are available either with push-in terminals (P-type) or double-chamber cage connection terminals (S-type).

Terminal	Type	Order number
Push-in	● = P	■ = 4
Screw	● = S	■ = 3

Type*	Order number*
CT-MVS.21●	1SVR7■0020R0200
CT-MVS.22●	1SVR7■0020R3300
CT-MVS.23●	1SVR7■0021R2300
CT-MVS.12●	1SVR7■0020R3100
CT-MXS.22●	1SVR7■0030R3300
CT-MFS.21●	1SVR7■0010R0200
CT-MBS.22●	1SVR7■0010R3200
CT-WBS.22●	1SVR7■0040R3300
CT-ERS.21●	1SVR7■0100R0300
CT-ERS.22●	1SVR7■0100R3300
CT-ERS.12●	1SVR7■0100R3100
CT-APS.21●	1SVR7■0180R0300
CT-APS.22●	1SVR7■0180R3300
CT-APS.12●	1SVR7■0180R3100
CT-AHS.22●	1SVR7■0110R3300
CT-ABS.11●	1SVR7■0120R3100
CT-ABS.21●	1SVR7■0120R3300
CT-SPS.22●	1SVR7■0210R3300
CT-SPS.23●	1SVR7■0211R2300

[illegible][illegible]

(Table continued on next page)

Time relays

CT-S range



CT-MVS.21P



CT-MBS.22P



CT-ERS.21P



CT-AHS.22P



CT-SDS.23P

Selection table (continued)

[illegible]

* Order number and type

All devices are available either with push-in terminals (P-type) or double-chamber cage connection terminals (S-type).

Terminal	Type	Order number
Push-in	● = P	■ = 4
Screw	● = S	■ = 3

Monitoring relays

Single-phase current



CM-SRS.22S



CM-SFS.22P

Selection table

	Order number	Type
	1SVR730840R0200	CM-SRS.11S
	1SVR740840R0200	CM-SRS.11P
	1SVR730841R0200	CM-SRS.11S
	1SVR740841R0200	CM-SRS.11P
	1SVR730841R1200	CM-SRS.11S
	1SVR740841R1200	CM-SRS.11P
	1SVR730840R0300	CM-SRS.12S
	1SVR730841R0300	CM-SRS.12S
	1SVR730841R1300	CM-SRS.12S
	1SVR730840R0400	CM-SRS.21S
	1SVR740840R0400	CM-SRS.21P
	1SVR730841R0400	CM-SRS.21S
	1SVR740841R0400	CM-SRS.21P
	1SVR730841R1400	CM-SRS.21S
	1SVR740841R1400	CM-SRS.21P
	1SVR730840R0500	CM-SRS.22S
	1SVR730841R0500	CM-SRS.22S
	1SVR730841R1500	CM-SRS.22S
	1SVR730840R0600	CM-SRS.M1S
	1SVR740840R0600	CM-SRS.M1P
	1SVR730840R0700	CM-SRS.M2S
	1SVR730760R0400	CM-SFS.21S
	1SVR740760R0400	CM-SFS.21P
	1SVR730760R0500	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	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
Window current monitoring																				■	■	■	
Latching																		sel	sel	sel	sel	sel	sel
Open-circuit or closed-circuit principle																		sel	sel	sel	sel	sel	sel

Timing functions for tripping delay

ON-delay, 0.1 - 30 s										adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj			
ON- or OFF-delay, 0.1 - 30 s																					sel	sel	sel

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
-------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Connection type

Push-in terminals		■		■		■					■		■		■				■			■		
Double-chamber cage connection terminals	■		■		■		■	■	■	■		■		■		■	■	■	■		■	■		■

adj: adjustable

sel: selectable

A close-up photograph of an ABB CP-ES5 terminal block. It is a grey, rectangular component with multiple screw terminals on top and bottom. The top terminals are labeled A1, 21a, and 21b. The bottom terminals are labeled 21c, 21d, 21e, and 21f. The ABB logo and model number CP-ES5 are printed on the side.

CM-ESS.MP



CM-EFS.2

	Type		Order number	
	CM-ESS,1S	CM-ESS,1P	CM-ESS,1S	CM-ESS,1P
24 - 240 V AC/DC	■	■		
110 - 130 V AC			■	■
220 - 240 V AC				■
3 - 30 V	■	■	■	■
6 - 60 V	■	■	■	■
30 - 300 V	■	■	■	■
60 - 600 V	■	■	■	■
Over- or undervoltage	■	■	■	■
Windows voltage monitoring				
Latching				
Open-circuit or closed-circuit principle				
ON-delay, 0.1 - 30 s				
ON- or OFF-delay, 0.1 - 30 s				
Output	1	1	1	1
c/o contact	1	1	1	1
Push-in terminals	■	■	■	■
Double-chamber cage connection terminals	■	■	■	■

adj: adjustable
sel: selectable

Three-phase single functional



CM-PBE



CM-PSS.41P



CM-PAS.31P

Type	Order number
CM-PBE	1SVR550881R9400
CM-PBE	1SVR550882R9500
CM-PVE	1SVR550870R9400
CM-PVE	1SVR550871R9500
CM-PFE	1SVR550824R9100
CM-PFE.2	1SVR550826R9100
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	1SVR740794R1300
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

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								■	■			

[illegible]

50/60 Hz

[illegible][illegible]

adjustable (adj) or fixed (fix)	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	adj	adj	adj	adj	adj	adj	adj	adj
------------------------------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

[illegible][illegible]

¹ The external conductor voltage towards the neutral conductor is measured.

adj: adjustable
sel: selectable
fix: fixed

Monitoring relays

Three-phase multi-functional



CM-MPS.23P



CM-MPN.52P

Selection table

	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_c																			
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																			
Mains with harmonic content																			
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	adj
Automatic phase sequence correction									adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Overvoltage																			
Undervoltage																			
Unbalance																			
Interrupted neutral monitoring ¹																			
Thresholds																			
Adjustable (adj)	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj	adj
Timing functions for tripping delay																			
On- or OFF delay	adj	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																			

¹ The relay detects by means of a phase unbalance the interruption of the neutral conductor. The external conductor voltage towards the neutral conductor is measured too.

adj: adjustable
sel: selectable

Monitoring relays

Grid feeding



CM-UFD.M*M

Selection table

Type	Order number					
CM-UFD.M22M	1SVR560731R3700					
CM-UFD.M31	1SVR560730R3401					
CM-UFD.M31M	1SVR560731R3701					
CM-UFD.M33	1SVR560730R3402					
CM-UFD.M33M	1SVR560731R3702					
CM-UFD.M34M	1SVR560731R3703					
Rated control supply voltage U_c						
24-240 V AC/DC		■	■	■	■	■
Standard						
CEI 0-21		■				
VDE AR-N 4105, VDE AR-N 4110			■	■		
ENA G98, G99					■	■
DRRG standard of DEWA						■
Rated frequency						
DC or 50 Hz		■	■	■		
DC or 50/60 Hz					■	■
Modbus RTU						
		■		■		■
Suitable for monitoring						
Single-phase mains		■	■	■	■	■
Three-phase mains		■	■	■	■	■
Monitoring function						
Over-/undervoltage		■	■	■	■	■
Over-/underfrequency		■	■	■	■	■
ROCOF (rate of change of frequency)		■	■	■	■	■
10 minutes average value		■	■	■	■	■
Vector shift			■	■	■	■
Thresholds						
		adj	adj	adj	adj	adj

Monitoring relays

Insulation



CM-IWS.1



CM-IWS.2



CM-IWN.1

Selection table

	Type	Order number							
	CM-IWS.2S	1SVR730670R0200							
	CM-IWS.2P	1SVR740670R0200							
	CM-IWS.1S	1SVR730660R0100							
	CM-IWS.1P	1SVR740660R0100							
	CM-IWN.1S	1SVR750660R0200							
	CM-IWN.1P	1SVR760660R0200							
	CM-IWM.10	1SVR470670R1000							
	CM-IWM.11	1SVR470670R1100							
Rated control supply voltage U_c									
24 - 240 V AC/DC									
24 V DC									
Measuring voltages									
250 V AC (L-PE)									
400 V AC (L-PE)									
690 V AC (L-PE)									
1000 V AC (L-PE)									
300 V DC (L-PE)									
600 V DC (L-PE)									
690 V DC (L-PE)									
1000 V DC (L-PE)									
Measuring range									
1 - 100 kΩ									
2 - 200 kΩ									
2 - 250 kΩ									
System leakage capacitance, max.									
10 μF									
20 μF									
1000 μF									
3000 μF									
Output									
1 c/o									
1 x 2 c/o or 2 x 1 c/o									
2 c/o									
Operating principle									
Open-circuit principle									
Open- or closed-circuit principle adjustable									

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

² Allowed voltage range of the supervised network: 0-760 V AC / 0-1000 V

³ Allowed voltage range of the supervised network: 0-1100 V AC / 0-1500 V DC

(Table continued on next page)

Insulation



CM-IWS.1



CM-IWS.2



CM-IWN.1

Selection table (continued)

		Type	Order number					
		CM-IWS.2S	1SVR730670R0200					
		CM-IWS.2P	1SVR740670R0200					
		CM-IWS.1S	1SVR730660R0100					
		CM-IWS.1P	1SVR740660R0100					
		CM-IWN.1S	1SVR750660R0200					
		CM-IWN.1P	1SVR760660R0200					
		CM-IWM.10	1SVR470670R1000					
		CM-IWM.11	1SVR470670R1100					
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
Control input (measuring input deactivation)								■
Connection type								
Push-in terminals			■		■		■	
Double-chamber cage connection terminals		■		■		■		
Screw terminals							■	■

Motor protection relays

Thermistor



CM-MSS.12S



CM-MSS.41S



CM-MSS.51S

Selection table

Type	Order code																			
	CM-MSE	CM-MSE	CM-MSE	CM-MSS.11P	CM-MSS.11S	CM-MSS.12P	CM-MSS.12S	CM-MSS.13P	CM-MSS.13S	CM-MSS.21P	CM-MSS.21S	CM-MSS.22P	CM-MSS.22S	CM-MSS.23P	CM-MSS.23S	CM-MSS.31P	CM-MSS.31S	CM-MSS.32P	CM-MSS.32S	CM-MSS.33P
	15VR550805R9300	15VR550800R9300	15VR550801R9300	15VR740720R1400	15VR730720R1400	15VR740700R0100	15VR730700R0100	15VR740700R2100	15VR730700R2100	15VR740722R1400	15VR730722R1400	15VR740700R0200	15VR730700R0200	15VR740700R2200	15VR730700R2200	15VR740712R1400	15VR730712R1400	15VR740712R0200	15VR730712R0200	15VR740712R2200

Characteristics

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
Single or accumulative evaluation																				
Number of LEDs				3	3	2	2	2	2	3	3	2	2	2	2	3	3	3	3	3

Contacts

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																				

Reset

Manual												■	■	■	■	■	■	■	■	■
Remote												■	■	■	■	■	■	■	■	■
Auto	■	■	■	■	■	■	■	■	■	■	■	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ²
Test button																■	■	■	■	■

Functions

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

¹ For automatic reset, connect terminals S1 to T2.
² For automatic reset, connect terminals S1 to 1T2/2T2.

(Table continued on next page)

Thermistor



CM-MSS.12S



CM-MSS.41S



CM-MSS.51S

Type	Order code
CM-MSE	1SVR550805R9300
CM-MSE	1SVR550800R9300
CM-MSE	1SVR550801R9300
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

[illegible][illegible]

Temperature

[illegible]

Monitoring relays

Liquid level



CM-ENE MIN



CM-ENS.3x

Selection table

	Type	Order code															
	CM-ENE MIN	1SVR 550 855 R9500															
	CM-ENE MIN	1SVR 550 850 R9500															
	CM-ENE MIN	1SVR 550 851 R9500															
	CM-ENE MAX	1SVR 550 855 R9400															
	CM-ENE MAX	1SVR 550 850 R9400															
	CM-ENE MAX	1SVR 550 851 R9400															
	CM-ENS.11S	1SVR 730 850 R0100															
	CM-ENS.11P	1SVR 740 850 R0100															
	CM-ENS.13S	1SVR 730 850 R2100															
	CM-ENS.13P	1SVR 740 850 R2100															
	CM-ENS.21S	1SVR 730 850 R0200															
	CM-ENS.21P	1SVR 740 850 R0200															
	CM-ENS.23S	1SVR 730 850 R2200															
	CM-ENS.23P	1SVR 740 850 R2200															
	CM-ENS.31S	1SVR 730 850 R0300															
	CM-ENS.31P	1SVR 740 850 R0300															

Rated control supply voltage U_c																	
24-240 V AC/DC																	
24 V AC																	
110-130 V AC																	
220-240 V AC																	

Sensor circuit																	
Number of electrodes (including ground reference)	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3

Response sensitivity range																	
0-100 kOhm																	
5-100 kOhm																	
0.1-1000 kOhm																	

Monitoring function																	
Dry running protection																	
Overflow protection																	
Liquid level control																	

Operating principle																	
Open-circuit principle																	
Closed-circuit principle																	
Open- or closed-circuit principle																	

Adjustable ON-/OFF-delay																	
0.1-10 s																	

Output contacts																	
n/o	1	1	1	1	1	1											
c/o (SPDT)							1	1	1	1	1	1	1	1	1	2	2

Connection type																	
Push-in terminals																	
Double-chamber cage connection terminals																	
Screw																	

adj: adjustable
sel: selectable

Monitoring relays

Accessories



Bar electrode



Suspension electrode

Ordering details

Accessories

Description	For type	Width in mm	For devices	Type	Order code	Pkg qty	Weight (1 pc) g (oz)
Adapter for screw mounting	CM-S	22.5	–	ADP.01	1SVR430029R0100	1	18.4 (0.65)
	CM-S.S/P						
	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.S/P						
	CM-N.S/P						
	CM-S, CM-N	–	with DIP switches	MAR.02	1SVR430043R0000	10	0.13 (0.005)
	CM-S.S/P						
	CM-N.S/P						
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)

Bar electrodes

Description	Material no.	Type	Order code	Weight (1 pc) 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)

Suspension electrodes

Description	Connection	Material no.	Type	Order code	Weight (1 pc) kg (lb)
CM-HE suspension electrode high-alloy steel, material no. 1.4104 (according to EN 10088-1)	Screw	1.4104	CM-HE	1SVR402902R0000	0.074 (0.163)
CM-HC suspension electrode high-alloy steel, material no. 1.4104 (according to EN 10088-1)	Crimp	1.4104	CM-HC	1SVR402902R1000	0.09 (0.198)
CM-HCT suspension electrode suitable for drink water high-alloy steel, material no. 1.4301 (according to EN 10088-1)	Crimp	1.4301	CM-HCT	1SVR402902R2000	0.09 (0.198)

Monitoring relays

Accessories



CM-CT

CM-CT
with mounted accessoriesCM-CT-A
mounted on DIN rail

Plug-in current transformers CM-CT

- Without primary conductor though with foot angle, insulating protective cap and bar fastening screws
- Primary / rated current from 50 A to 600 A
- Secondary current of 1 A or 5 A
- Class 1

Ordering details

Rated primary current	Secondary current	Burden class	Type	Order code	Weight (1 pc) g (oz)
50 A	1 A	1 VA / 1	CM-CT 50/1	1SVR450116R1000	0.31 (0.683)
75 A		1.5 VA / 1	CM-CT 75/1	1SVR450116R1100	0.31 (0.683)
100 A		2.5 VA / 1	CM-CT 100/1	1SVR450116R1200	0.276 (0.608)
150 A		2.5 VA / 1	CM-CT 150/1	1SVR450116R1300	0.32 (0.705)
200 A		2.5 VA / 1	CM-CT 200/1	1SVR450116R1400	0.222 (0.489)
300 A		5 VA / 1	CM-CT 300/1	1SVR450117R1100	0.29 (0.639)
400 A		5 VA / 1	CM-CT 400/1	1SVR450117R1200	0.27 (0.595)
500 A		5 VA / 1	CM-CT 500/1	1SVR450117R1300	0.29 (0.639)
600 A	5 A	5 VA / 1	CM-CT 600/1	1SVR450117R1400	0.24 (0.529)
50 A		1 VA / 1	CM-CT 50/5	1SVR450116R5000	0.3 (0.661)
75 A		1.5 VA / 1	CM-CT 75/5	1SVR450116R5100	0.31 (0.683)
100 A		2.5 VA / 1	CM-CT 100/5	1SVR450116R5200	0.31 (0.683)
150 A		2.5 VA / 1	CM-CT 150/5	1SVR450116R5300	0.28 (0.617)
200 A		5 VA / 1	CM-CT 200/5	1SVR450116R5400	0.29 (0.639)
300 A		5 VA / 1	CM-CT 300/5	1SVR450117R5100	0.252 (0.556)
400 A		5 VA / 1	CM-CT 400/5	1SVR450117R5200	0.26 (0.573)
500 A		5 VA / 1	CM-CT 500/5	1SVR450117R5300	0.208 (0.459)
600 A		5 VA / 1	CM-CT 600/5	1SVR450117R5400	0.21 (0.463)

Accessories

Description	Type	Order code	Weight (1 pc) g (oz)
Snap-on fastener for DIN rail mounting of CM-CT	CM-CT A	1SVR450118R1000	0.009 (0.02)

Primary switch mode

Single-phase



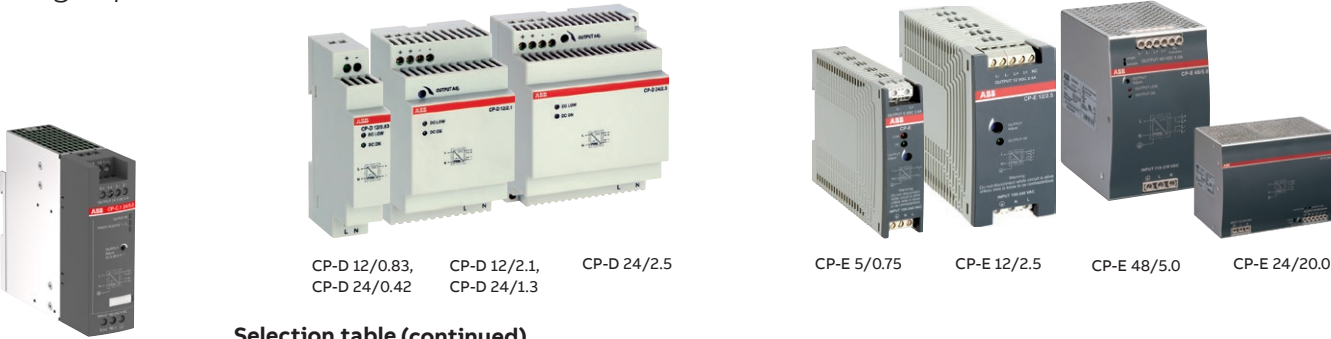
CP-S.1

Selection table

		Order number	1SVR320361R1000	1SVR320561R1000	1SVR320661R1000	1SVR320761R1000	1SVR320861R1000
			CP-S.1				
Rated output current	3 A		■				
	5 A			■			
	10 A				■		
	20 A					■	
	40 A						■
Rated output power	72 W		■				
	120 W			■			
	240 W				■		
	480 W					■	
	960 W						■
Rated input voltage	100-240 V AC		■	■	■	■	
	100-250 V DC		■	■	■	■	
	110-240 V AC						■
	110-250 V DC						■
Features	Power reserve design		■	■	■	■	■
	Adjustable output voltage		■	■	■	■	■
	Integrated input fuse		■	■	■	■	■
	Short-circuit stable		■	■	■	■	■
	Fold-forward behavior (U/I)		■	■	■	■	■
	Power factor correction		no	act	act	act	act
	Signalling contact		■	■	■	■	■
	Parallel connection		3	3	3	3	3
	Serial connection		2	2	2	2	2
	Coated PCBA		■	■	■	■	■

pas = passive, act = active

Primary switch mode power supplies
Single-phase



CP-C.1 24/5.0
CP-C.1 24/5.0-C



CP-C.1 24/10.0
CP-C.1 24/10.0-C



CP-C.1 24/20.0
CP-C.1 24/20.0-C



CP-C.1 24/5.0
light grey



CP-C.1 24/10.0
light grey

Selection table (continued)

Order number	Single-phase																			
	CP-D					CP-E					CP-C.1									
1SVR427041R1000																				
1SVR427043R1200																				
1SVR427041R0000																				
1SVR427043R0100																				
1SVR427044R0200																				
1SVR427045R0400																				
1SVR427033R3000																				
1SVR427032R1000																				
1SVR427035R1000																				
1SVR427030R0000																				
1SVR427031R0000																				
1SVR427032R0000																				
1SVR427034R0000																				
1SVR427035R0000																				
1SVR427036R0000																				
1SVR427030R2000																				
1SVR427031R2000																				
1SVR427034R0000																				
1SVR427035R2000																				
1SVR360563R1001																				
1SVR360663R1001																				
1SVR360763R1001																				
1SVR360563R2001																				
1SVR360663R2001																				
1SVR360763R2001																				
1SVR361563R1001																				
1SVR361663R1001																				
1SVR361763R1001																				

pas: passive
act: active

Primary switch mode power supplies

Three-phase



CP-T 24/5.0



CP-T 24/10.0, CP-T 48/5.0



CP-T 24/20.0, CP-T 48/10.0

Selection table

	Order number	15VR427054R0000	15VR427055R0000	15VR427056R0000	15VR427057R0000	15VR427054R2000	15VR427055R2000	15VR427056R2000
Three-phase								
CP-T								
Rated output voltage								
24 V DC		■	■	■	■			
48 V DC						■	■	■
Rated output current								
5 A		■				■		
10 A			■				■	
20 A				■				■
40 A					■			
Rated output power								
120 W		■						
240 W			■			■		
480 W				■			■	
960 W					■			■
Rated input voltage								
3 x 400-500 V AC		■	■	■	■	■	■	■
DC input voltage range								
480-820 V DC		■	■	■	■	■	■	■
Features								
Adjustable output voltage		■	■	■	■	■	■	■
Integrated input fuse		■	■	■	■	■	■	■
Short-circuit stable		■	■	■	■	■	■	■
Fold forward behavior (U/I)		■	■	■		■	■	
Fold back behavior (hiccup)		■	■	■	■	■	■	■
Extended temp. range		■	■	■	■			■
Signalling contact		■	■	■	■			
Parallel connection		2	2	2	2	2	2	2
Serial connection		2	2	2	2	2	2	2

Electronic protection devices

EPD24



EPD24-TB-101-3A

Description

The protection devices EPD24 extend the ABB product range of modular DIN rail components by electronic overcurrent protection modules for selective protection of 24 V DC load circuits. This protection is achieved by a combination of active electronic current limitation in the case of a short circuit and an overload deactivation from $1.1 \times I_n$ upwards.

If a fault occurs in a load circuit, the protection device EPD24 will detect this rapidly and reliably, then disable the power output transistor and hence interrupt the current flow in the defective circuit. The maximum possible overcurrent is always limited to 1.3...1.8 times the selected rated current. An activation of capacitive loads up to 20,000 μF is possible, deactivation only occurring in the case of overloads or short circuits. Selective deactivation of the defective current circuit means undefined error states and a complete system stop are prevented.

Ordering details

Rated current I_n A	bbn 40 16779 EAN	Type	Order code	Pkg qty	Weight (1 pc.) kg (lb)
0.5	829960	EPD24-TB-101-0.5A	2CDE601101R2905	4	0.065 (1.433)
1	829984	EPD24-TB-101-1A	2CDE601101R2001	4	0.065 (1.433)
2	830003	EPD24-TB-101-2A	2CDE601101R2002	4	0.065 (1.433)
3	830027	EPD24-TB-101-3A	2CDE601101R2003	4	0.065 (1.433)
4	830041	EPD24-TB-101-4A	2CDE601101R2004	4	0.065 (1.433)
6	830065	EPD24-TB-101-6A	2CDE601101R2006	4	0.065 (1.433)
8	830089	EPD24-TB-101-8A	2CDE601101R2008	4	0.065 (1.433)
10	830102	EPD24-TB-101-10A	2CDE601101R2010	4	0.065 (1.433)
12	830126	EPD24-TB-101-12A	2CDE601101R2012	4	0.065 (1.433)

Description	bbn 40 16779 EAN	Type	Order code	Pkg qty	Weight (1 pc.) kg (lb)
Busbars for LINE+ and 0 V, grey insulation, length 500 mm ¹	830140	EPD-BB500	2CDE605100R0500	10	0.2 (0.441)
Signal bars for aux. contacts, grey insulation, length 21 mm	830164	EPD-SB21	2CDE605200R0021	10	0.4 (0.882)

¹ Max. load with one line entry $I_{\text{max}} = 50 \text{ A}$ (recommended: mid line entry)

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

Pluggable interface relays

CR-S range



How to use the selection table
Choose the desired control supply voltage from the column “Control voltage”, e.g. "5 V DC".
Choose the desired kind of connection terminal from the column “Connection terminal”, e.g. "spring".
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

Pluggable interface relays

CR-S range



CR-S socket



CR-S relay

CR-S range 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
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



CR-S optocoupler

CR-S optocoupler range relay assemblies

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

Pluggable interface relays

CR-S range



CR-S complete interface relay



The complete versions of the CR-S range comprise of a pluggable interface relay, socket and marker.

CR-S complete versions

Complete versions		Type	Order code	Relay				Socket					
				CR-S024VDC1R	CR-S024VDC1RG	CR-S060VDC1R	CR-S060VDC1RG	CR-S012/024VADC1SS	CR-S012/024VADC1SZ	CR-S110/125VADC1SS	CR-S110/125VADC1SZ	CR-S220/240VADC1SS	CR-S220/240VADC1SZ
Order code	Type												
1SVR405541R3110	CR-S024VADC1CRS	■					■						
1SVR405541R3120	CR-S024VADC1CRGS		■				■						
1SVR405541R3210	CR-S024VADC1CRZ	■						■					
1SVR405541R3220	CR-S024VADC1CRGZ			■				■					
1SVR405541R6110	CR-S110VADC1CRS				■					■			
1SVR405541R6120	CR-S110VADC1CRGS					■				■			
1SVR405541R6210	CR-S110VADC1CRZ				■						■		
1SVR405541R6220	CR-S110VADC1CRGZ					■					■		
1SVR405541R7110	CR-S230VADC1CRS				■								■
1SVR405541R7120	CR-S230VADC1CRGS					■						■	
1SVR405541R7210	CR-S230VADC1CRZ				■								■
1SVR405541R7220	CR-S230VADC1CRGZ					■							■

Pluggable interface relays and optocouplers

CR-P range



CR-P relay

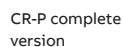
CR-P pluggable relays		
Type	Order code	
CR-P012DC1	1SVR405600R4000	
CR-P024DC1	1SVR405600R1000	
CR-P048DC1	1SVR405600R6000	
CR-P110DC1	1SVR405600R8000	
CR-P024AC1	1SVR405600R0000	
CR-P048AC1	1SVR405600R5000	
CR-P110AC1	1SVR405600R7000	
CR-P120AC1	1SVR405600R2000	
CR-P230AC1	1SVR405600R3000	
CR-P012DC2	1SVR405601R4000	
CR-P024DC2	1SVR405601R1000	
CR-P048DC2	1SVR405601R6000	
CR-P110DC2	1SVR405601R8000	
CR-P012AC2	1SVR405601R0200	
CR-P024AC2	1SVR405601R0000	
CR-P048AC2	1SVR405601R5000	
CR-P110AC2	1SVR405601R7000	
CR-P120AC2	1SVR405601R2000	
CR-P230AC2	1SVR405601R3000	
CR-P024DC2G	1SVR405606R1000	
CR-P024AC2G	1SVR405606R0000	
CR-P110AC2G	1SVR405606R7000	
CR-P230AC2G	1SVR405606R3000	

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

Output rating	
250 V 16 A	■
250 V 8 A	■

Output contacts	
c/o	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
Gold plated contacts	■

CR-P range

[illegible]

CR-P range



The complete versions of the CR-P range comprise of a pluggable interface relay, socket, holder, marker and a function module.

CR-P complete versions

Complete versions	Type	Order code	Relay	Socket	Function module	Holder
	CR-P012DC2		1SVR405601R4000	1SVR405650R1000	1SVR405652R0000	1SVR405659R0000
	CR-P024DC2		1SVR405601R1000	1SVR405650R0000	1SVR405652R1000	
	CR-P024DC2G		1SVR405606R1000	1SVR405650R0200	1SVR405652R9100	
	CR-P110DC2		1SVR405601R8000		1SVR405655R0000	
	CR-P024AC2		1SVR405601R0000		1SVR405655R1000	
	CR-P120AC2		1SVR405601R2000		1SVR405654R0100	
	CR-P230AC2		1SVR405601R3000		1SVR405655R0100	
	CR-P230AC2G		1SVR405606R3000		1SVR405655R1100	
	CR-PSS			1SVR405650R1000		
CR-PLS			1SVR405650R0000			
CR-PLC			1SVR405650R0200			
CR-P/M42			1SVR405652R0000			
CR-P/M42V			1SVR405652R1000			
CR-P/M42CV			1SVR405652R9100			
CR-P/M62C			1SVR405655R0000			
CR-P/M62CV			1SVR405655R1000			
CR-P/M92			1SVR405654R0100			
CR-P/M92C			1SVR405655R0100			
CR-P/M92CV			1SVR405655R1100			
CR-PH			1SVR405659R0000			

Complete versions

[illegible]

CR-M range



CR-M pluggable relays with LED

		Type	Order code																
		CR-M012DC2L	1SVR405611R4100																
		CR-M012DC2LD	1SVR405611R4400																
		CR-M024DC2L	1SVR405611R1100																
		CR-M024DC2LD	1SVR405611R1400																
		CR-M048DC2L	1SVR405611R6100																
		CR-M048DC2LD	1SVR405611R6400																
		CR-M060DC2L	1SVR405611R4300																
		CR-M110DC2L	1SVR405611R8100																
		CR-M110DC2LD	1SVR405611R8400																
		CR-M125DC2L	1SVR405611R8300																
		CR-M125DC2LD	1SVR405611R8500																
		CR-M220DC2L	1SVR405611R9100																
		CR-M220DC2LD	1SVR405611R9400																
		CR-M012AC2L	1SVR405611R0300																
		CR-M024AC2L	1SVR405611R0300																
		CR-M048AC2L	1SVR405611R5100																
		CR-M110AC2L	1SVR405611R7100																
		CR-M120AC2L	1SVR405611R2100																
		CR-M230AC2L	1SVR405611R3100																
Input voltage																			
12 V DC			■	■															
24 V DC					■	■													
48 V DC							■	■											
60 V DC									■										
110 V DC										■	■								
125 V DC												■	■						
220 V DC														■	■				
12 V AC																■			
24 V AC																	■		
48 V AC																		■	
60 V AC																			
110 V AC																		■	
120 V AC																		■	
230 V AC																		■	
Output rating																			
250 V 6 A																			
250 V 10 A																			
250 V 12 A			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Output contacts																			
c/o			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Gold plated contacts																			
Additional features																			
LED			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Free-wheeling diode				■		■		■			■		■		■				

Pluggable interface relays and optocouplers

CR-M range



CR-M

CR-M pluggable relays with LED

Type	Order code
CR-M012DC3L	1SVR405612R4100
CR-M012DC3LD	1SVR405612R4400
CR-M024DC3L	1SVR405612R1100
CR-M024DC3LD	1SVR405612R1400
CR-M048DC3L	1SVR405612R6100
CR-M048DC3LD	1SVR405612R6400
CR-M060DC3L	1SVR405612R4300
CR-M110DC3L	1SVR405612R8100
CR-M110DC3LD	1SVR405612R8400
CR-M125DC3L	1SVR405612R8300
CR-M125DC3LD	1SVR405612R8500
CR-M220DC3L	1SVR405612R9100
CR-M220DC3LD	1SVR405612R9400
CR-M012AC3L	1SVR405612R0300
CR-M024AC3L	1SVR405612R0100
CR-M048AC3L	1SVR405612R5100
CR-M110AC3L	1SVR405612R7100
CR-M120AC3L	1SVR405612R2100
CR-M230AC3L	1SVR405612R3100

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

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

Output contacts	
c/o	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Gold plated contacts	

Additional features	
LED	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Free-wheeling diode	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Pluggable interface relays and optocouplers

CR-M range



CR-M

CR-M pluggable relays with LED

	Type	Order code
	CR-M012DC4L	1SVR405613R4100
	CR-M012DC4LD	1SVR405613R4400
	CR-M024DC4L	1SVR405613R1100
	CR-M024DC4LD	1SVR405614R1100
	CR-M048DC4L	1SVR405613R6100
	CR-M048DC4LD	1SVR405613R6400
	CR-M060DC4L	1SVR405613R4300
	CR-M110DC4L	1SVR405613R8100
	CR-M110DC4LD	1SVR405613R8400
	CR-M125DC4L	1SVR405613R8300
	CR-M125DC4LD	1SVR405613R8500
	CR-M220DC4L	1SVR405613R9100
	CR-M220DC4LD	1SVR405613R9400
	CR-M012AC4L	1SVR405613R0300
	CR-M024AC4L	1SVR405613R0100
	CR-M048AC4L	1SVR405613R5100
	CR-M110AC4L	1SVR405613R7100
	CR-M120AC4L	1SVR405613R2100
	CR-M230AC4L	1SVR405613R3100

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

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

Output contacts	
c/o	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
Gold plated contacts	

Additional features	
LED	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Free-wheeling diode	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Pluggable interface relays and optocouplers

CR-M range



CR-M

CR-M pluggable relays with gold plated contacts

Type	Order code
CR-M024DC4G	1SVR405618R1000
CR-M024AC4G	1SVR405618R0000
CR-M110AC4G	1SVR405618R7000
CR-M230AC4G	1SVR405618R3000
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	
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 6 A	■
250 V 10 A	
250 V 12 A	

Output contacts	
c/o	4
Gold plated contacts	■

Additional features	
LED	■
Free-wheeling diode	■

Pluggable interface relays and optocouplers

CR-M range



CR-M complete version

CR-M range complete versions													
Type	Order code												
CR-M012DC4LDGSS	1SVR405618R4410												
CR-M024DC4SS42V	1SVR405613R1010												
CR-M024DC4LS42V	1SVR405613R1011												
CR-M024DC4LC42	1SVR405613R1012												
CR-M024DC4GSS42V	1SVR405618R1011												
CR-M024DC4GLC62CV	1SVR405618R1010												
CR-M024DC4LGLC22	1SVR405618R1110												
CR-M024DC4LDGSS	1SVR405618R1410												
CR-M024AC4LS62CV	1SVR405613R0010												
CR-M230AC4SS92CV	1SVR405613R3110												
CR-M230AC4LS92CV	1SVR405613R3011												
CR-M230AC4LC92	1SVR405613R3012												
CR-M230AC4GSS92CV	1SVR405618R3112												
CR-M230AC4GLC	1SVR405618R3110												
CR-M230AC4LGSS	1SVR405618R3111												

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 6 A	■	■	■	■	■	■	■	■	■	■	■	■	■
250 V 10 A													
250 V 12 A													

Output contacts													
c/o	4	4	4	4	4	4	4	4	4	4	4	4	4
Gold plated contacts	■				■	■	■	■				■	■

Socket type													
Standard socket	■	■			■			■		■		■	■
Logical socket			■	■		■	■		■		■		

Additional features													
LED	■	■	■	■	■	■	■	■	■	■	■	■	■
Free-wheeling diode	■	■	■	■	■		■	■				■	■

CR-M range



CR-M complete version



The complete versions of the CR-M range comprise of a pluggable interface relay, socket, holder, marker and where applicable a function module.

CR-M complete versions

Complete versions		Order code		Relay		Socket		Function module		Holder	
		Type									
1SVR405618R4410	CR-M012DC4LDGSS	■						■			■
1SVR405613R1010	CR-M024DC4SS42V		■					■			■
1SVR405613R1011	CR-M024DC4LS42V		■						■		■
1SVR405613R1012	CR-M024DC4LC42		■						■		■
1SVR405618R1011	CR-M024DC4GSS42V			■				■			■
1SVR405618R1010	CR-M024DC4GLC62CV			■					■		■
1SVR405618R1110	CR-M024DC4LGLC22				■				■		■
1SVR405618R1410	CR-M024DC4LDGSS					■					■
1SVR405613R0010	CR-M024AC4LS62CV					■	■				■
1SVR405613R3110	CR-M230AC4SS92CV						■			■	■
1SVR405613R3011	CR-M230AC4LS92CV						■				■
1SVR405613R3012	CR-M230AC4LC92							■		■	■
1SVR405618R3112	CR-M230AC4GSS92CV							■		■	■
1SVR405618R3110	CR-M230AC4LGLC						■		■		■
1SVR405618R3111	CR-M230AC4LGSS						■	■			■

Pluggable interface relays and optocouplers

CR-P/M range



CR-P/M ...

CR-P/M function modules	
Type	Order code
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

Related control supply voltage	
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	■

Function	
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	■
Varistor - overvoltage protection	■
LED red	■
LED green	■

CR-U range



CR-U

CR-U pluggable relays without LED

[illegible]

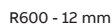
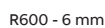
CR-U range



Type	Order code
CR-U 21	1SVR405661R0000
CR-U 41	1SVR405662R0000
CR-U 41V	1SVR405662R1000
CR-U 41B	1SVR405662R4000
CR-U 41BV	1SVR405662R4100
CR-U 41C	1SVR405662R9000
CR-U 41CV	1SVR405662R9100
CR-U 51B	1SVR405663R0000
CR-U 51D	1SVR405663R4000
CR-U 51C	1SVR405663R1000
CR-U 61	1SVR405664R0000
CR-U 61V	1SVR405664R1000
CR-U 61E	1SVR405664R4000
CR-U 61EV	1SVR405664R4100
CR-U 91	1SVR405664R0100
CR-U 91V	1SVR405664R1100
CR-U 61C	1SVR405665R0000
CR-U 61CV	1SVR405665R1000
CR-U 61D	1SVR405665R4000
CR-U 61DV	1SVR405665R4100
CR-U 91C	1SVR405665R0100
CR-U 91CV	1SVR405665R1100
CR-U 71	1SVR405666R0000
CR-U 71A	1SVR405666R1000
CR-U 81	1SVR405666R2000
CR-U T	1SVR405677R0000

[illegible][illegible]

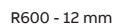
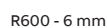
R600 range



Selection table

		Order number	
		Type	
		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
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
n/o			
n/c			
Gold plated contacts			
Terminal type			
Screw			
Spring			

R600 range



Selection table

		Type	Order number
		RBR121-48-60VUC	1SNA645502R0600
		RBR121G-48-60VUC	1SNA645506R0200
		RB122G-48-60VUC	1SNA645040R1500
		RBR122G-48-60VUC	1SNA645540R1700
		RB121-115VUC	1SNA645003R0500
		RB121G-115VUC	1SNA645007R0100
		RB121R-115VUC	1SNA645046R0700
		RBR121-115VUC	1SNA645503R0700
		RBR121G-115VUC	1SNA645507R0300
		RB122G-115VUC	1SNA645041R0200
		RBR122G-115VUC	1SNA645541R0400
		RB111-115VUC	1SNA645016R2100
		RB111-230VUC	1SNA645017R2200
		RB121-230VUC	1SNA645004R0400
		RB121G-230VUC	1SNA645008R1200
		RB121R-230VUC	1SNA645011R2400
		RBR121-230VUC	1SNA645504R0000
		RBR121G-230VUC	1SNA645508R1400
		RBR121R-230VUC	1SNA645511R2600
		RB122G-230VUC	1SNA645013R2600
		RBR122G-230VUC	1SNA645513R2000
		RB121-60-230VUC	1SNA645020R0100
		RBR121-60-230VUC	1SNA645520R0300

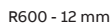
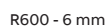
Input voltage																
5 V DC																
12 V DC																
24 V DC																
48-60 V DC	■	■	■	■												
115 V DC					■	■	■	■	■	■	■					
230 V DC												■	■			
60-230 V DC															■	■
24 V AC																
48-60 V AC	■	■	■	■												
115 V AC					■	■	■	■	■	■	■					
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	2	2	1	1	1	1	1	2	2			1	1	1
n/o												1	1			
n/c																
Gold plated contacts		■	■	■		■			■	■	■			■		■

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

R600 range



Selection table

Type	Order number	
	OBIC0100-5-12VDC	1SNA645047R0000
	OBRIC0100-5-12VDC	1SNA645547R0200
	OBIC0100-24VDC	1SNA645021R2600
	OBRIC0100-24VDC	1SNA645521R2000
	OBIC0100-48-60VUC	1SNA645049R1200
	OBRIC0100-48-60VUC	1SNA645549R1400
	OBIC0100-115-230	1SNA645022R2700
	OBRIC0100-115-230	1SNA645522R2100
	OBOC2000-5-12VDC	1SNA645050R1700
	OBROC2000-5-12VDC	1SNA645550R1100
	OBOC2000-24VDC	1SNA645051R0400
	OBOC2000-24VUC	1SNA645025R2200
	OBOC5000-24VDC	1SNA645024R2100
	OBROC2000-24VDC	1SNA645551R0600
	OBROC2000-24VUC	1SNA645525R2400
	OBROC5000-24VDC	1SNA645524R2300
	OBOC2000-48-60VUC	1SNA645053R0600
	OBROC2000-48-60VUC	1SNA645553R0000
	OBOC2000-115VUC	1SNA645054R0700
	OBOC5000-115VUC	1SNA645058R1300
	OBOC2000-230VUC	1SNA645026R2300
	OBROC2000-230VUC	1SNA645526R2500
	OBROC5000-230VUC	1SNA645559R1600
	OBOA1000-24VDC	1SNA645027R2400
	OBOA2000-24VDC	1SNA645029R0600
	OBROA1000-24VDC	1SNA645527R2600
	OBROA2000-24VDC	1SNA645529R0000
	OBOA1000-115VUC	1SNA645062R0700
	OBOA1000-230VUC	1SNA645028R0500

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	■ ■ ■ ■ ■ ■ ■ ■
1 A	■ ■ ■ ■ ■ ■ ■ ■
2 A	■ ■ ■ ■ ■ ■ ■ ■
5 A	■ ■ ■ ■ ■ ■ ■ ■

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

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

Kind of output	
Transistor	■ ■ ■ ■ ■ ■ ■ ■
MOS-FET	■ ■ ■ ■ ■ ■ ■ ■
Triac	■ ■ ■ ■ ■ ■ ■ ■

Limit switches

Overview

Limit switches are electromechanical devices. The contacts are mechanically linked to an actuator for visible operations. By combining different types of actuators and casings, our limit switches are perfectly suited to a large variety of applications.



Prewired LS2..

LS

20

P

24

B

11

-

U

01

Limit Switch

2 = Pre-wired limit switch casing width: 30 mm

0 = 1 cable output left / right

1 = 1 cable output bottom

Plastic casing

Actuator

10 ... 92

Cable length

01 = 1 m

U = cable UL 62 - PVC

Contact blocks

11 = 1 N.O. + 1 N.C., up to 10 A

Snap action

B = Zb Snap



Cable inlet LS3.., LS4..

LS

32

M

41

B

11

Limit Switch

3 = Casing width: 30 mm

2 = 1 cable inlet M16 x 1.5 for ISO 16 cable gland

3 = 1 cable inlet M20 x 1.5 for ISO 20 cable gland

5 = 1 cable inlet by 1/2" NPT plastic adaptor delivered not mounted

4 = Casing width: 40 mm

3 = 1 cable inlet M20 x 1.5 for ISO 20 cable gland

5 = 1 cable inlet for 1/2" NPT cable gland

Metal casing

Contact types

11 = 1 N.O. + 1 N.C. contacts

Snap action

B = Zb Snap

Actuator

10 ... 92

This represents an overview of ABB's limit switches offering. Please reference the **Limit Switches catalog** for the complete portfolio.

Limit switches

Overview

Actuators and movements to be detected			
Actuator type	Symbol	Actuator number	Comments*
Plungers		101121	Plastic or metal plunger
Roller plungers		121314152224	Plastic or metal roller Roller or ball at the tip
Roller levers + plunger		3132	For horizontal or vertical movement
Roller levers		41424546	Plastic, metal or rubber roller Different roller diameters Different lever sizes and shape
Adjustable roller levers		5152	Plastic, metal or rubber roller Different roller diameters
Rod Levers		7172	Metal, fiber glass or nylon rod Different rod diameters
Spring rod levers		9192	Plain or insulated spring tip

* NOTE: a same number can be a slightly different actuator from one range to the other. For accurate description of the actuator, please refer to the ordering details pages.
Ex: actuator n°13 is a plastic roller plunger for LS20 and LS30 but a metal roller plunger for LS40 ranges.

Limit switches

Overview



IP67

LS 2 -

30 mm width

P

Plastic



Double insulation

M

Metal

Actuators and movements to be detected

11	12	13	14	15	21	22	24	41
42	45	46	51	54	71	91	92	



IP66

LS 3 -

30 mm width

LS 4 -

40 mm width

M

Metal

Actuators and movements to be detected

11	12	13	31	32	41	42
51	52	71	72	91	92	



IP65

LS 3 -

30 mm width

LS 4 -

40 mm width

P

Plastic



Double insulation

Actuators and movements to be detected

10	11	12	13	31	32	41
42	51	52	71	72	91	92

This represents an overview of ABB's limit switches offering. Please reference the **Limit Switches catalog** for the complete portfolio.

Double insulation

A **Class II** or **double insulated** electrical appliance does not require a safety connection to electrical earth (ground).

The degree of protection required for electrical equipment depends on the environmental characteristics.

Ingress Protection	First digit solids protection	Second digit liquids protection
IP	6 Dust Tight	5 Low pressure water jet
		6 Powerful water jets
		7 Temporary immersion (up to 1 m)

Limit switches

Stocked switches



Limit switches

Casing width	Electrical connection	Casing material	Actuator type	Contact type	Contact block	Ordering code
20mm	Pre-wired	Metal	45mm rubber roller lever	Snap action	1 NC+1NO	LS20M42B11-U02
30mm	1/2" NPT	Plastic	n/a	Slow action	1 NC+1NO	LS35P80D11-S
30mm	1/2" NPT	Plastic	Adj 3mm SS rod lever	Snap action	1 NC+1NO	LS35P71B11
30mm	1/2" NPT	Plastic	18mm plastic roller lever	Snap action	1 NC+1NO	LS35P41B11
30mm	1/2" NPT	Plastic	18mm plastic roller lever	Snap action	2 NC	LS35P41B02-R
30mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS35M51B11
30mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS35P51B11
30mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	2 NC	LS35P51B02
30mm	Pre-wired	Metal	Plain steel plunger	Snap action	1 NC+1NO	LS20M11B11-U03
30mm	1/2" NPT	Plastic	Plain steel plunger	Snap action	1 NC+1NO	LS35P11B11
30mm	1/2" NPT	Plastic	Plastic roller plunger	Snap action	1 NC+1NO	LS35P13B11
30mm	1/2" NPT	Plastic	Plastic roller, steel plunger	Snap action	1 NC+1NO	LS35P31B11
30mm	1/2" NPT	Plastic	Plastic roller, steel plunger	Slow action	1 NC+1NO	LS35P32D11-R
30mm	1/2" NPT	Plastic	Spring rod	Snap action	1 NC+1NO	LS35P91B11
30mm	1/2" NPT	Plastic	Straight key	Snap action	1 NC+1NO	LS35P16B11
40mm	1/2" NPT	Metal	w/out head	Snap action	1 NC+1NO	LS45M00B11
40mm	1/2" NPT	Metal	Adj 3mm SS rod lever	Snap action	1 NC+1NO	LS45M71B11
40mm	1/2" NPT	Plastic	Adj 3mm SS rod lever	Snap action	2 NC+1NO	LS45P71B11
40mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS45M51B11
40mm	1/2" NPT	Plastic	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS45P51B11
40mm	1/2" NPT	Metal	18mm plastic roller lever	Snap action	1 NC+1NO	LS45M41B11
40mm	1/2" NPT	Metal	Adj 22mm SS ball-bearing roller	Snap action	1 NC+1NO	LS45M53B11
40mm	1/2" NPT	Metal	Adj 45mm rubber roller lever	Snap action	1 NC+1NO	LS45M54B11
40mm	1/2" NPT	Metal	Adj 52mm rubber roller lever	Snap action	1 NC+1NO	LS45M52B11
40mm	1/2" NPT	Metal	Plastic roller plunger	Snap action	1 NC+1NO	LS45M13B11
40mm	1/2" NPT	Metal	Spring rod	Snap action	1 NC+1NO	LS45M91B11
40mm	1/2" NPT	Metal	SS lateral plunger	Snap action	1 NC+1NO	LS45M21B11
60mm	1/2" NPT	Metal	Adj 18mm plastic roller lever	Snap action	1 NC+1NO	LS75P41B11
60mm	1/2" NPT	Metal	Pull action w/ring	Snap action	1 NC+1NO	LS75M98B11-A
Yellow free movement IPS footswitch					1 NC+1NO	IPSY1A11

This represents an overview of ABB's limit switches offering. Please reference the **Limit Switches catalog** for the complete portfolio.