



# Short-circuit current limiter S800-SCL-SR



# S800-SCL-SR

## Self-resetting current limiting module

S800-SCL-SR is ABB's innovative self-resetting current limiting module which considerably increases the short-circuit breaking capacity of downstream manual motor starters and high performance MCBs



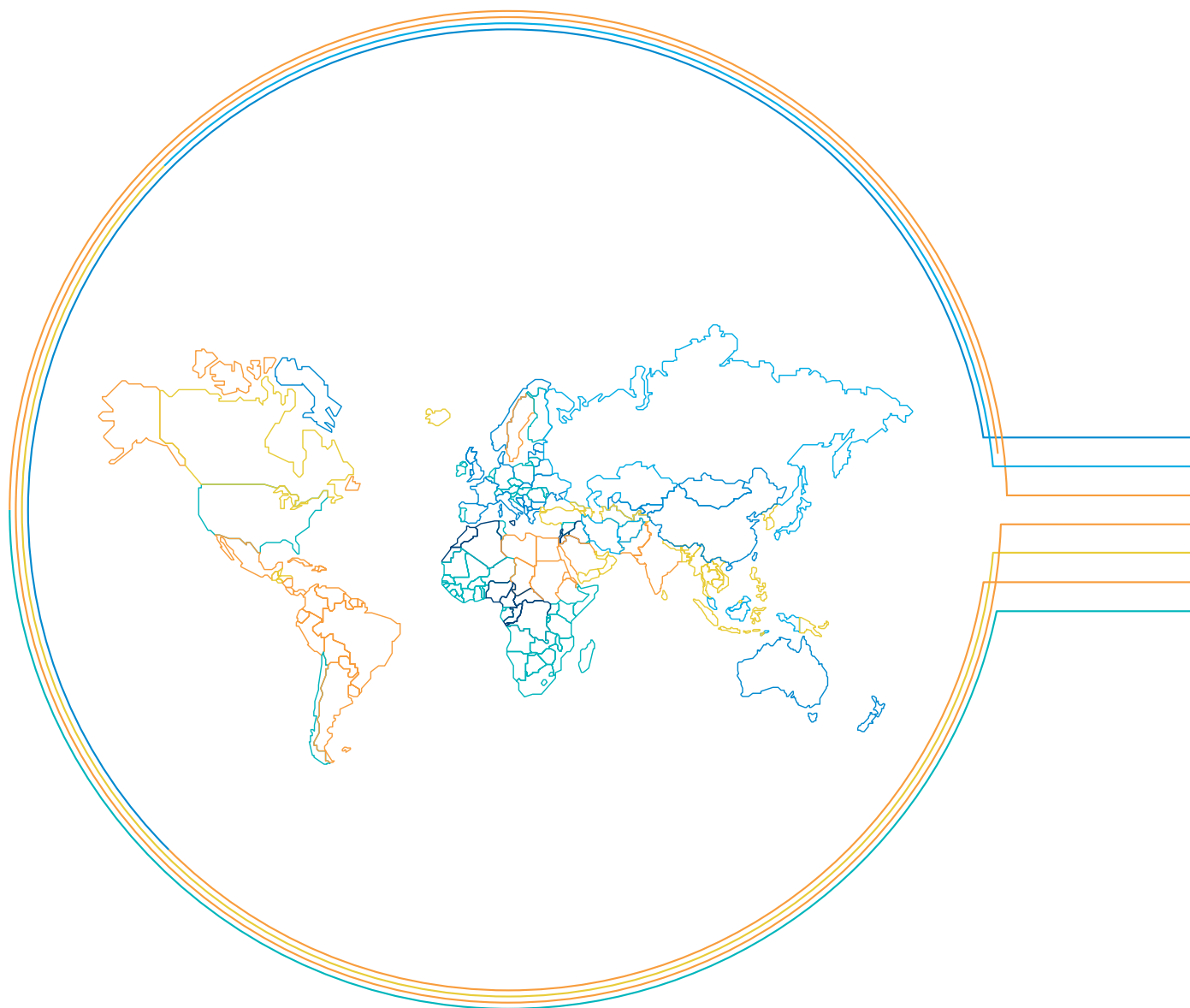
S800-SCL-SR is a self resetting current limiting module based on the S800 technology. It limits the short-circuit current until the downstream means of protection trips. Its current continuity makes it as the ideal solution for group protection:

All parallel branches remain operative. This leads to an expanded application range of the low voltage switchgear whose short-circuit capabilities are usually limited.

S800-SCL-SR can be combined with S800S high performance MCB or with manual motor starters. S800-SCL-SR can also back up a single circuit breaker or a group of circuit breakers or motor starters (group protection). Terminals and outside dimensions are identical to the S800 range.

ABB already offers a 3-pole short-circuit limiter, the S803S-SCL. Compared to the new S800S-SCL-SR it has a toggle and therefore the possibility to trip. After tripping the device has to be reset manually. Please check page 12 for details.

# The worldwide solution



S800-SCL-SR is available as IEC version and IEC/UL version.  
The IEC/UL version complies with IEC, UL 508 and CSA 22.2  
No. 14.

S800S-SCL-SR 1 ... 3-pole version  
up to 690 VAC

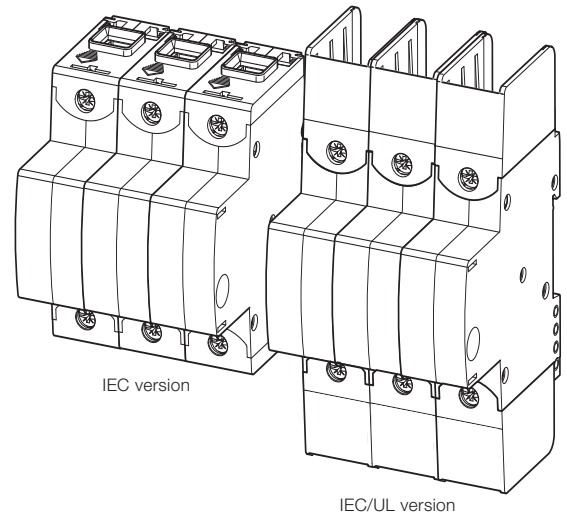
S803W-SCL-SR 3-pole version  
up to 600 VAC acc. to UL508 and  
690 VAC acc. to IEC

# Application

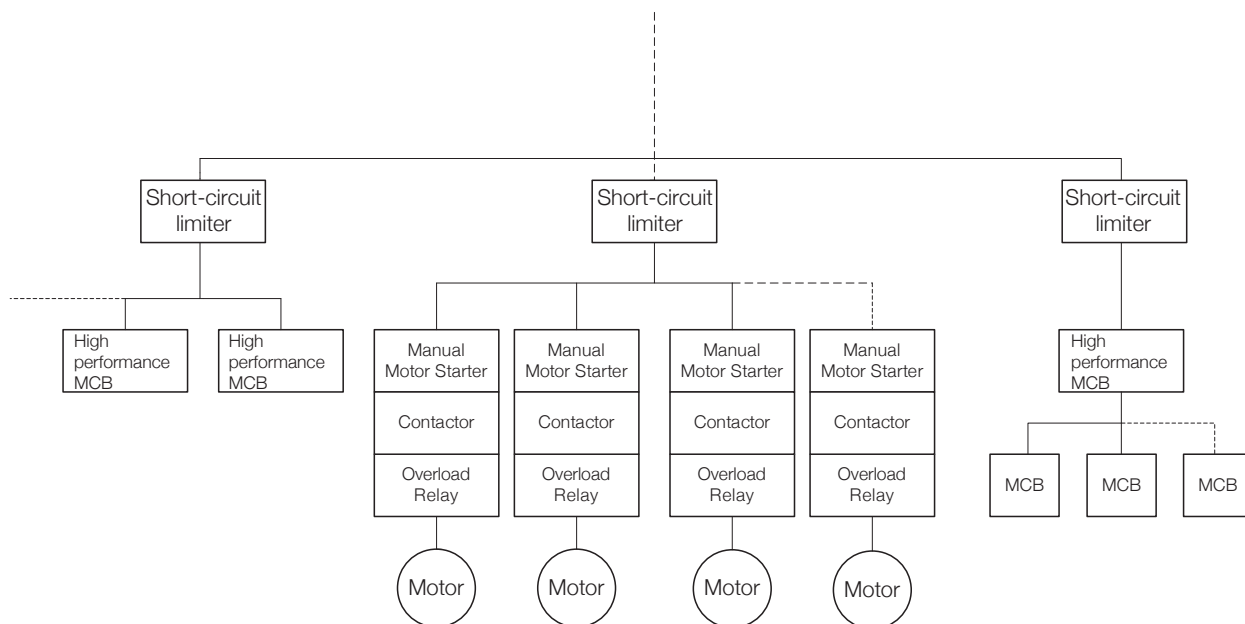
S800S-SCL-SR and S803W-SCL-SR are for high short-circuits levels. The drawing below shows three exemplary systems for short-circuits limitations.

The short-circuit limiter provides full selectivity for any downstream motor protection combination. In case of a short-circuit in one of the end circuits, the S800S-SCL-SR/S803W-SCL-SR helps the manual motor starters to break the defect circuit without forcing the upstream protection device to trip.

In the event of a downstream short circuit occurrences the S800S-SCL-SR/S803W-SCL-SR will react selective to a group of, e. g. manual motor starters, until the respective faulty motor circuit has tripped. All other motor starters in the group remain operative!



Maximum system availability is given.





The combination can be widely used for protection circuits in a large variety of ABB's business segments where high short-circuits meet low voltage circuit breakers.

For example in:

- MNS installation
- Shipbuilding
- Mining
- Oil & Gas
- Power generation
- Wind Power
- ...

# Customer Benefits

## Maximum system availability

- Back-up up to highest short-circuit currents
- Full selectivity for any downstream motor-, or line protection combination
- No tripping

## Compact design

- Less cabinet space required

## Cost saving solution

- Easy or even unnecessary short circuit calculation
- Less required cabinet space
- Lower system cost due to the available choice of standard components
- One device protects a large number of downstream manual motor starters or miniature circuit breaker
- One device for both world standards

## Reliability

- Proven S800 high performance miniature circuit breaker technology
- Third party testing

## Safety

- All advantages of a fuseless distribution
- Low let through energy values
- Limited current peak
- Maximum personnel safety
- Increased breaking capacity of the connected circuit breaker- or motor starter combination

## Flexibility

- One size fits all approach regarding standards
- Simple and compact for the DIN rail



# Technical data

## S800S-SCL-SR/S803W-SCL-SR

	S800S-SCL-SR	S803W-SCL-SR
Rated operational current $I_e$	[A]	32, 63, 100
Pole		1, 2, 3
Rated operational voltage $U_e$		3
(AC) according to IEC 60947-2	50/60 Hz [V]	400/690
(AC) according to UL 508	50/60 Hz [V]	690
Rated insulation voltage $U_i$	[V]	690
Rated impulse withstand voltage $U_{imp}$	[kV]	8
Rated ultimate short-circuit breaking capacity		
<b><math>I_{cu} = I_{cs}</math> according to IEC 60947-2*</b>		
(AC) 50/60 Hz 240/415 V	[kA]	100
(AC) 50/60 Hz 254/440 V	[kA]	100
(AC) 50/60 Hz 277/480 V	[kA]	65
(AC) 50/60 Hz 289/500 V	[kA]	65
(AC) 50/60 Hz 346/600 V	[kA]	65
(AC) 50/60 Hz 400/690 V	[kA]	50
<b>Short-circuit rating according to UL 508, CSA 22.2*</b>		
(AC) 50/60 Hz 480 V	[kA]	65
(AC) 50/60 Hz 600 V	[kA]	65
*) Valid only for approved combinations Please have a look to separate coordination tables on pages 14 and 15		
Rated frequency	[Hz]	50/60
Mounting position		any
Connections $C_u$		
	[mm <sup>2</sup> ]	1 ... 50 rigid (solid/stranded)
	[mm <sup>2</sup> ]	1 ... 70 flexible
		14–1 AWG
Tightening torque		
	[Nm]	min. 3/max. 4
	[in. lbs.]	min. 26.5/max. 25
Feeding		optional
Mouting on DIN top hat rail		EN 60715
Ambient air temperature	[°C]	-40 ... +70
Storage temperature	[°C]	-40 ... +85
Degree of protection		IP20
Classification acc. to NF F 16-101, NF F 16-102		I3, F2
Damp Heat		IEC 60068-2-30, 55 °C / 95 % r.h.
Vibration		IEC 60068-2-6, 5–10 Hz / 3 mm and 10–500 Hz / 2 g at 0.5 x $I_e$
Random Vibration		IEC 60068-2-64, 5–500 Hz / 2 g at 0.5 x $I_e$
Resistance to climatic conditions		IEC 60068-2-1 /-2-2 /-2-30
Standard		
	IEC 60947-2	IEC 60947-2
	IEC 60947-4-1	IEC 60947-4-1
		UL 508, CSA 22.2 No. 14

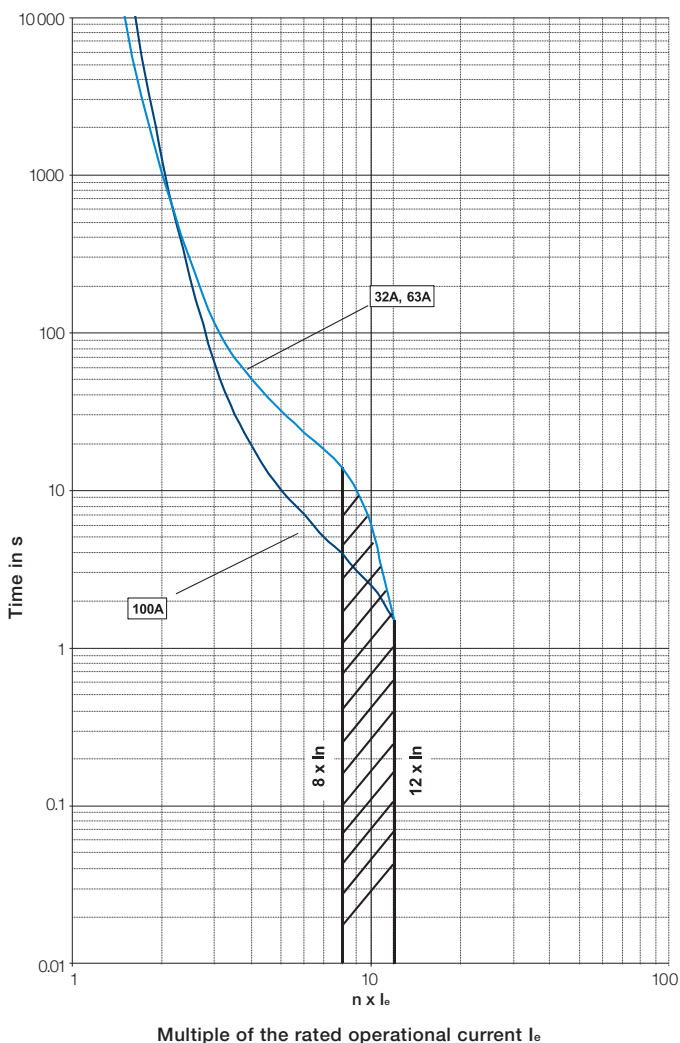
### Internal resistance at 25°C ambient temperature and nominal power losses

Rated current $I_n$ [A]	Internal resistance $R_i$ [mΩ/pole]	Power losses $P_{vn}$ [W/pole]
32	2.8	3.6
63	1.3	5.7
100	0.7	7.8

### Influence of ambient temperature – single mounted devices

Rated current $I_n$ [A]	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C
32	38.2	37.2	35.8	35.2	34.2	33.3	32	30.7	29.8	28.8	27.8	26.5	25.1
63	75.3	73.2	70.6	69.3	67.4	65.5	63	60.5	58.6	56.7	54.8	52.3	49.8
100	119.5	116.2	112	110	107	104	100	96	93	90	87	84	80

### Maximum load



### Installation requirements

The total sum of the rated currents of all downstream motor starters or circuit breakers shall not exceed the rated current of the S800-SCL-SR. Furthermore the sum of all load currents including inrush currents shall not exceed the maximum permissible load of the S800-SCL-SR.

# Order data

## S800S-SCL-SR/S803W-SCL-SR



Self-resetting short-circuit limiter IEC version	Type designation	Product number	EAN number	Weight	Pack.
[A]			7612271	[kg]	unit
<b>1-pole</b>					
32	S801S-SCL32-SR	2CCS801901R0539	412012	0.25	1
63	S801S-SCL63-SR	2CCS801901R0599	412036	0.25	1
100	S801S-SCL100-SR	2CCS801901R0639	411992	0.25	1
<b>2-pole</b>					
32	S802S-SCL32-SR	2CCS802901R0539	412074	0.5	1
63	S802S-SCL63-SR	2CCS802901R0599	412098	0.5	1
100	S802S-SCL100-SR	2CCS802901R0639	412050	0.5	1
<b>3-pole</b>					
32	S803S-SCL32-SR	2CCS803901R0539	411930	0.75	1
63	S803S-SCL63-SR	2CCS803901R0599	411947	0.75	1
100	S803S-SCL100-SR	2CCS803901R0639	411954	0.75	1



Self-resetting short-circuit limiter IEC/UL version	Type designation	Product number	EAN number	Weight	Pack.
[A]			7612271	[kg]	unit
<b>3-pole</b>					
32	S803W-SCL32-SR	2CCS803917R0539	412319	0.75	1
63	S803W-SCL63-SR	2CCS803917R0599	412326	0.75	1
100	S803W-SCL100-SR	2CCS803917R0639	412302	0.75	1



# Technical and order data

## S803S-SCL

A typical application of the conventional S803S-SCL is the airflow alignment in wind energy plants. If a failure does not isolate all motor protection devices, the system could possibly be harmed.

The conventional short-circuit limiter S803S-SCL can also be used for group protection, though all downstream circuits would be de-energized in case of a short circuit exceeding the breaking capacity of one downstream device.

		<b>S803S-SCL</b>
Rated operational current $I_e$	[A]	32, 63, 125
Pole		3
Rated operational voltage $U_e$		
(AC) 50/60 Hz	[V]	400/690
Disconnecter properties compliant to IEC 60947-2		yes
Standard		IEC 60947-2
Ambient air temperature	[°C]	-25 ... +60
Storage temperature	[°C]	-40 ... +70
Vibration		IEC 60068-2-27; IEC 60068-2

\*) Valid only for approved combinations  
Please have a look to separate coordination tables on pages 14 and 15



Short-circuit current limiter with cage terminal	Type designation	Product number	EAN number	Weight	Pack.
[A]			7612271	[kg]	unit
32	S803S-SCL32	2CCS800900R0291	1208912	0.74	1
63	S803S-SCL63	2CCS800900R0301	1208929	0.74	1
125	S803S-SCL125	2CCS800900R0281	1208905	0.74	1

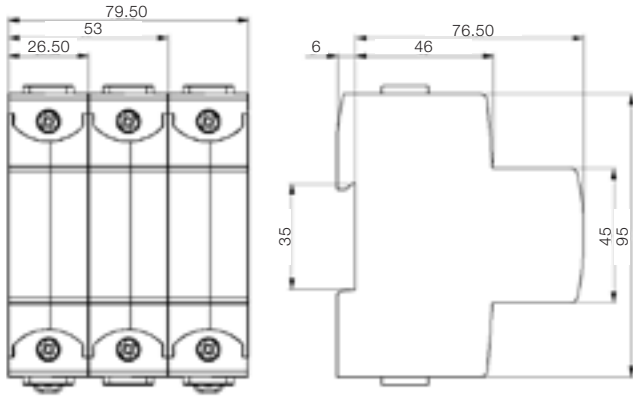


Short-circuit current limiter with ring lug terminal	Type designation	Product number	EAN number	Weight	Pack.
[A]			761227	[kg]	unit
32	S803S-SCL32-R	2CCS800900R0332	1408916	0.74	1
63	S803S-SCL63-R	2CCS800900R0331	1208950	0.74	1
125	S803S-SCL125-R	2CCS800900R0311	1208936	0.74	1

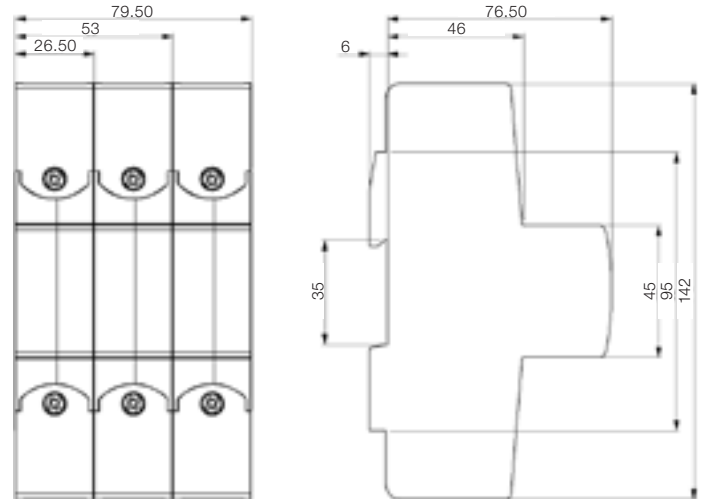
# Technical data

## S800-SCL-SR and S803S-SCL

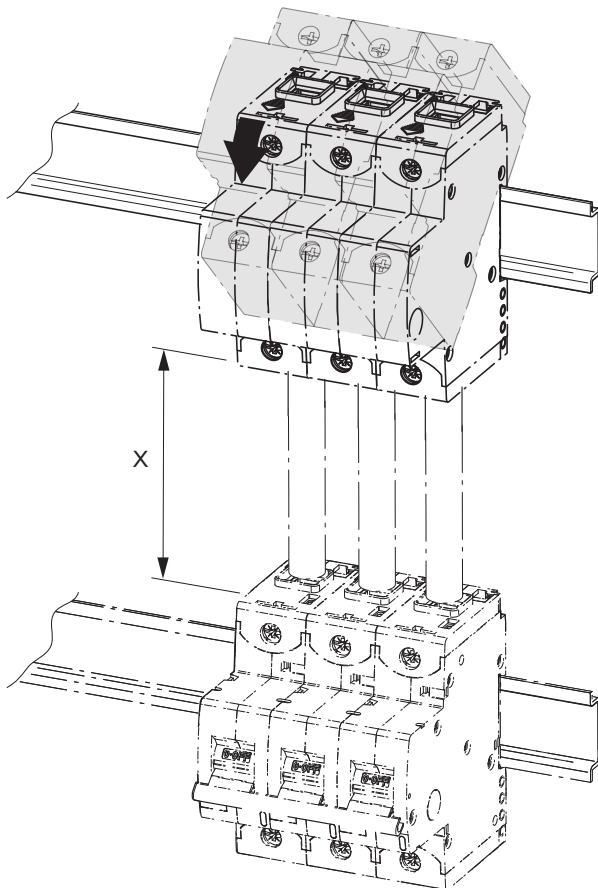
Dimension  
S800S-SCL-SR/S803S-SCL



Dimension  
S803W-SCL-SR



Minimum cable length between S800-SCL-SR/S803S-SCL  
and downstream devices



MS/MO325  
MS/MO132  
S800

S800-SCL-SR/S803S-SCL	min. length X	min. cross section
32 A	80 mm	6 mm <sup>2</sup>
63 A	80 mm	16 mm <sup>2</sup>
100/125 A	250 mm	35 mm <sup>2</sup>

# Approved combinations S800-SCL-SR/S803S-SCL

## Approved combinations with high performance MCB S800

Downstream devices	Upstream devices					
	S800S-SCL-SR/S803W-SCL-SR Self resetting short-circuit limiter			S803S-SCL Short-circuit limiter		
Rated current $I_n$ [A]	32	63	100	32	63	125
<b>S800S Characteristic B</b>						
6	on request	on request	on request			
8	on request	on request	on request			
10	■	on request	on request	■		
13	■	on request	on request	■		
16	■	on request	on request	■		
20	■	on request	on request	■		
25	■	on request	on request	■		
32	■	■	on request	■	■	
40		■	on request		■	
50		■	on request		■	
63		■	■		■	■
80			■			■
100			■			■
125						■
<b>S800S Characteristic C</b>						
6	on request	on request	on request			
8	on request	on request	on request			
10	■	on request	on request	■		
13	■	on request	on request	■		
16	■	■	on request	■		
20	■	■	on request	■		
25	■	■	on request	■		
32		■	■	■	■	
40		■	■		■	
50		■	■		■	
63			■		■	■
80			■			■
100						■
125						■
<b>S800S Characteristic D/K</b>						
6	on request	on request	on request			
8	on request	on request	on request			
10	■	■	on request	■		
13	■	■	on request	■		
16	■	■	on request	■		
20		■	■	■		
25		■	■	■		
32		■	■	■	■	
40		■	■		■	
50			■		■	
63					■	■
80						■
100						■
125						■

## Approved combinations with motor starter/S800S-KM

Downstream devices	Upstream devices					
	S800S-SCL-SR/S803W-SCL-SR Self resetting short-circuit limiter			S803S-SCL short-circuit limiter		
Rated current I <sub>e</sub> [A]	32	63	100	32	63	125
<b>MS/MO325</b>						
0.1–2.5	■	■	■			
4	■	■	■			
6.3	■	■	■			
9	■	■	■	■	■	
12.5	■	■	■	■	■	
16	■	■	■	■	■	
20		■	■	■	■	
25		■	■	■	■	
<b>MS/MO132</b>						
0.1–2.5	■	■				
4	■	■				
6.3	■	■	■			
10	■	■	■	■	■	
16	■	■	■	■	■	
20		■	■	■	■	
25		■	■	■	■	
32		■	■	■	■	
<b>S800S-KM</b>						
20		■	■	■		
25		■	■	■		
32		■	■	■	■	
40		■	■		■	
50			■		■	
63					■	■
80						■

\* Motor starter combinations acc. to IEC 60947-4-1  
 – Combinations with S500-K and S500-KM on request

■ Applies for all voltages according to the table below

	S800S-SCL-SR	S803W-SCL-SR	S803S-SCL
Rated ultimate short-circuit breaking capacity			
<b>I<sub>cu</sub> = I<sub>cs</sub> according to IEC 60947-2</b>			
(AC) 50/60 Hz 240/415 V	[kA] 100	100	
(AC) 50/60 Hz 254/440 V	[kA] 100	100	100
(AC) 50/60 Hz 277/480 V	[kA] 65	65	
(AC) 50/60 Hz 289/500 V	[kA] 65	65	
(AC) 50/60 Hz 346/600 V	[kA] 65	65	
(AC) 50/60 Hz 400/690 V	[kA] 50	50	50
<b>Short-circuit rating according to UL 508, CSA 22.2</b>			
(AC) 50/60 Hz 480 V	[kA]	65	
(AC) 50/60 Hz 600 V	[kA]	65	

# Contact us

## **ABB Schweiz AG**

CMC Low Voltage Products

Fulachstrasse 150

CH-8201 Schaffhausen

Telefon +41 58 586 41 11

Telefax +41 58 586 42 22

**[www.abb.ch](http://www.abb.ch)**

In consideration of modification to standards and materials, the characteristics and overall dimensions indicated in this catalogue may be binding only following confirmation by ABB.

2CCC413009E0201 Subject to alterations