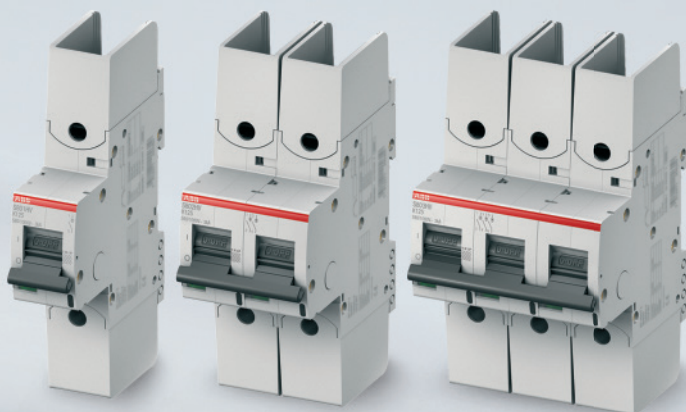


TECHNICAL INFORMATION

High Performance Circuit Breaker S800HV for 1000 V AC applications



The High Performance Circuit Breaker S800HV is designed for voltages of 580/1000 V AC. The S800HV is available as 1-, 2- and 3-pole version.

The small pole width of only 27 mm allows a space-saving installation. The current range covers the rated operational current range from 6–125 A with a max. rated short-circuit breaking capacity (I_{cu}) of 4 kA. Due to the high rated operational voltage of 580/1000 V AC the field of application is wide – from underground mining to distributions on high altitudes.

Features

- Rated operational voltage of 580/1000 V AC (IEC) and 600 V AC (UL), Supplementary Protector
- Rated short-circuit breaking capacity (I_{cu}) of 4 kA at 580/1000 V AC and 15 kA @ 600V V AC (UL) (only valid with XT2L 125 TMF 35-400)
- Fast modification on ring lug terminal is possible
- Compact
- Space saving

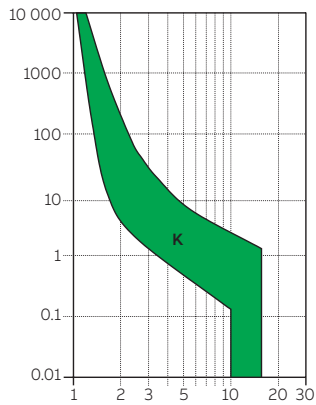
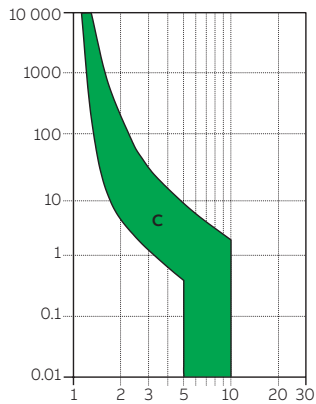
Application

- Transformer protection
- Motor protection
- Mining industry, opencast and underground
- Power distribution systems e. g. tunnels
- Lighting systems protection
- Protection of ventilation equipment
- Used for application supplied by long wires

Technical data

S800HV

General data		
Tripping characteristic		C, K
Standard		IEC 60947-2, UL 1077
Poles		1 ... 3
Rated frequency f	Hz	50/60
Overvoltage category		III
Pollution degree		2
Suitability for isolation		yes
Data acc. to IEC 60947-2		
Rated operational voltage U_e	V	AC 580/1000
Rated operational current I_e	A	K: 6...125A C: 10A, 32A
Rated ultimate short-circuit capacity I_{cu}	kA	4 (6 ... 63 A) 3 (80 ... 125 A)
Rated service short-circuit capacity I_{cs}	kA	2.5 (6 ... 63 A) 2 (80 ... 125 A)
Rated insulation voltage U_i	V	AC 1000
Rated impulse withstand voltage U_{imp}	kV	8
Reference temperature for tripping characteristic	°C	K: 40 C: 30
Electrical and mechanical endurance	ops.	10 ... 32 A: 10000 electrical/10000 mechanical 40 ... 100 A: 1500 electrical/8500 mechanical 125 A: 4000 electrical/10000 mechanical
Data acc. to UL1077, Supplementary Protector		
Poles		3
Rated voltage U_n	V	AC 600 Y
Rated current I_n	A	10 ... 32
Characteristic		C, K
Short - circuit breaking capacity I_{cc}	kA	AC 600 Y = 15 kA with XT2L 125A TMF35-400
Mechanical data		
Housing		Material group I, RAL 7035
Toggle		black, lockable
Protection degree acc. to IEC / EN 60529		IP20; IP40 (actuating side only)
Classification acc. to NF F16-101, NF F 16-102		I3, F2
Classification acc. to IEC 61373 (shock and vibration)		Cat. 1, Class B
Shock resistance acc. to IEC / EN 60068-2-27		Test Ea: 5 g/30 ms Test Fc: 2 – 13.2 Hz/1 mm
Vibration resistance acc. to IEC / EN 60068-2-6		13.2 – 100 Hz/0.7 g with load 100 % x I_e 12+12 cycle with 55 °C/90–96 % RH and 25 °C/95–100 % RH
Environmental conditions (damp heat) acc. to IEC / EN 60068-2-30		16 hours 55°C/2 hours 70°C/55% RH
Environmental conditions (dry heat) acc. to IEC / EN 60068-2-2		16 hours 55°C/2 hours 70°C/55% RH
Ambient temperature	°C	–25 ... +60
Storage temperature	°C	–40 ... +70
Installation		
Terminal		Failsafe cage terminal
Connection (top/bottom) – Cu only	mm ²	1 ... 50 stranded 1 ... 70 flexible
Tightening torque	Nm	3.5
Screwdriver		POZI 2
Mounting		EN 60715
Mounting position		any
Supply side		any
Dimension and weight		
Pole dimension (H x L x W)	mm	142 x 82,5 x 26,5
Pole weight	kg	0,27



Tripping characteristic

Characteristics	Currents	Thermal tripping Small test current	Thermal tripping Large test current	Electromagnetic tripping
C	10 A, 32 A	$1.05 \times I_n$	$1.30 \times I_n$	$8 \times I_n \pm 20\%$
K	6...125 A	$1.05 \times I_n$	$1.20 \times I_n$	$13 \times I_n \pm 20\%$

Internal resistance at 25 °C ambient temperature and nominal power losses (per pole)

Rated current I_n [A]	Internal resistance R_i [mΩ]	Power loss P_v [W]
6	51.7	1.8
8	27.2	1.7
10	15.2	1.5
13	12.1	2
16	12.1	3.1
20	8.7	3.5
25	6.8	4.3
32	3.1	3.2
40	2.3	3.7
50	1.7	4.3
63	1.6	6.4
80	1	6.4
100	0.8	8
125	0.6	9.4

Influence of ambient temperature

The table refers to the conditions according to the product standard IEC 60947-2.

Max. operating current depending on the ambient temperature of S800 with characteristic C and K

C	Ambient temperature [°C]																					
In [A]	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	
10	12.0	11.8	11.7	11.5	11.3	11.1	10.9	10.7	10.6	10.4	10.2	10.0	9.8	9.6	9.4	9.3	9.1	8.9	8.7	8.5	8.3	
32	38.5	37.9	37.3	36.7	36.1	35.5	34.9	34.3	33.8	33.2	32.6	32.0	31.4	30.8	30.2	29.7	29.1	28.5	27.9	27.3	26.7	

K	Ambient temperature [°C]																				
In [A]	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
6	7.43	7.32	7.21	7.10	6.99	6.88	6.77	6.66	6.55	6.44	6.33	6.22	6.11	6.00	5.89	5.78	5.67	5.56	5.45	5.34	5.23
8	9.91	9.76	9.61	9.47	9.32	9.17	9.03	8.88	8.73	8.59	8.44	8.29	8.15	8.00	7.85	7.71	7.56	7.41	7.27	7.12	6.97
10	12.4	12.2	12.0	11.8	11.7	11.5	11.3	11.1	10.9	10.7	10.6	10.4	10.2	10.0	9.8	9.6	9.4	9.3	9.1	8.9	8.7
13	16.1	15.9	15.6	15.4	15.1	14.9	14.7	14.4	14.2	14.0	13.7	13.5	13.2	13.0	12.8	12.5	12.3	12.0	11.8	11.6	11.3
16	19.8	19.5	19.2	18.9	18.6	18.3	18.1	17.8	17.5	17.2	16.9	16.6	16.3	16.0	15.7	15.4	15.1	14.8	14.5	14.2	13.9
20	24.8	24.4	24.0	23.7	23.3	22.9	22.6	22.2	21.8	21.5	21.1	20.7	20.4	20.0	19.6	19.3	18.9	18.5	18.2	17.8	17.4
25	31.0	30.5	30.0	29.6	29.1	28.7	28.2	27.8	27.3	26.8	26.4	25.9	25.5	25.0	24.5	24.1	23.6	23.2	22.7	22.2	21.8
32	39.6	39.0	38.5	37.9	37.3	36.7	36.1	35.5	34.9	34.3	33.8	33.2	32.6	32.0	31.4	30.8	30.2	29.7	29.1	28.5	27.9
40	49.5	48.8	48.1	47.3	46.6	45.9	45.1	44.4	43.7	42.9	42.2	41.5	40.7	40.0	39.3	38.5	37.8	37.1	36.3	35.6	34.9
50	61.9	61.0	60.1	59.2	58.3	57.3	56.4	55.5	54.6	53.7	52.8	51.8	50.9	50.0	49.1	48.2	47.2	46.3	45.4	44.5	43.6
63	78.0	76.9	75.7	74.6	73.4	72.2	71.1	69.9	68.8	67.6	66.5	65.3	64.2	63.0	61.8	60.7	59.5	58.4	57.2	56.1	54.9
80	99.1	97.6	96.1	94.7	93.2	91.7	90.3	88.8	87.3	85.9	84.4	82.9	81.5	80.0	78.5	77.1	75.6	74.1	72.7	71.2	69.7
100	123.9	122.0	120.2	118.4	116.5	114.7	112.8	111.0	109.2	107.3	105.5	103.7	101.8	100.0	98.2	96.3	94.5	92.7	90.8	89.0	87.2
125	154.8	152.5	150.2	147.9	145.6	143.4	141.1	138.8	136.5	134.2	131.9	129.6	127.3	125.0	122.7	120.4	118.1	115.8	113.5	111.2	108.9

S800HV-C Ordering data

	Rated current	Order details			Weight	Pkg.
[kA]	[A]	Type code	Order code	GTIN EAN 76122714	[kg]	unit
4	10	S803HV-C10	2CCF019650R0001	72221	0.81	1
4	32	S803HV-C32	2CCF019651R0001	72245	0.81	1

S800HV-K Ordering data

I _{cu} [kA]	Rated current	Order details			Weight [kg]	Pkg. unit
	[A]	Type code	Order code	GTIN EAN 76122714		
4	6	S801HV-K6	2CCF019005R0001	36445	0.27	1
4	8	S801HV-K8	2CCF019006R0001	36964	0.27	1
4	10	S801HV-K10	2CCF019007R0001	36452	0.27	1
4	13	S801HV-K13	2CCF019008R0001	36469	0.27	1
4	16	S801HV-K16	2CCF019009R0001	36476	0.27	1
4	20	S801HV-K20	2CCF019010R0001	36483	0.27	1
4	25	S801HV-K25	2CCF019011R0001	36490	0.27	1
4	32	S801HV-K32	2CCF019012R0001	36605	0.27	1
4	40	S801HV-K40	2CCF019013R0001	36612	0.27	1
4	50	S801HV-K50	2CCF019014R0001	36629	0.27	1
4	63	S801HV-K63	2CCF019015R0001	36636	0.27	1
3	80	S801HV-K80	2CCF019016R0001	36643	0.27	1
3	100	S801HV-K100	2CCF019017R0001	36650	0.27	1
3	125	S801HV-K125	2CCF019018R0001	36667	0.27	1

4	6	S802HV-K6	2CCF019019R0001	36674		0.54	1
4	8	S802HV-K8	2CCF019020R0001	36681		0.54	1
4	10	S802HV-K10	2CCF019021R0001	36698		0.54	1
4	13	S802HV-K13	2CCF019022R0001	36704		0.54	1
4	16	S802HV-K16	2CCF019023R0001	36711		0.54	1
4	20	S802HV-K20	2CCF019024R0001	36728		0.54	1
4	25	S802HV-K25	2CCF019025R0001	36742		0.54	1
4	32	S802HV-K32	2CCF019026R0001	36759		0.54	1
4	40	S802HV-K40	2CCF019027R0001	36766		0.54	1
4	50	S802HV-K50	2CCF019028R0001	36773		0.54	1
4	63	S802HV-K63	2CCF019029R0001	36780		0.54	1
3	80	S802HV-K80	2CCF019030R0001	36797		0.54	1
3	100	S802HV-K100	2CCF019031R0001	36803		0.54	1
3	125	S802HV-K125	2CCF019032R0001	36810		0.54	1

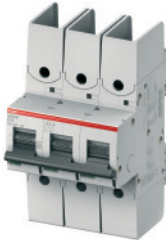
4	6	S803HV-K6	2CCF019033R0001	36827		0.81	1
4	8	S803HV-K8	2CCF019034R0001	36834		0.81	1
4	10	S803HV-K10	2CCF019035R0001	36841		0.81	1
4	13	S803HV-K13	2CCF019036R0001	36858		0.81	1
4	16	S803HV-K16	2CCF019037R0001	36865		0.81	1
4	20	S803HV-K20	2CCF019038R0001	36872		0.81	1
4	25	S803HV-K25	2CCF019039R0001	36889		0.81	1
4	32	S803HV-K32	2CCF019040R0001	36896		0.81	1
4	40	S803HV-K40	2CCF019041R0001	36902		0.81	1
4	50	S803HV-K50	2CCF019042R0001	36919		0.81	1
4	63	S803HV-K63	2CCF019043R0001	36926		0.81	1
3	80	S803HV-K80	2CCF019044R0001	36933		0.81	1
3	100	S803HV-K100	2CCF019045R0001	36940		0.81	1
3	125	S803HV-K125	2CCF019046R0001	36957		0.81	1



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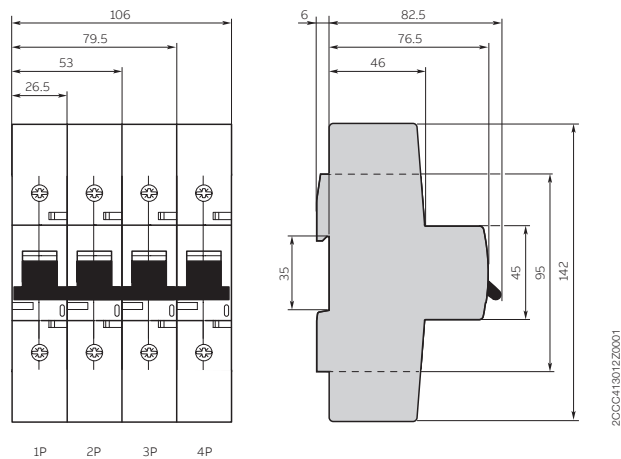


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2CCF013080R0004

S800HV Dimensions



Technical data

S803HV-SCL-SR

For a higher short-circuit breaking capacity, a self-resetting short-circuit limiter, the S803HV-SCL-SR, can be installed upstream to the S803HV.

The ultimate short-circuit breaking capacity (I_{cu}) is thus increased to 15 kA.

The S803HV-SCL-SR can be used either for line or group protection.

Line protection

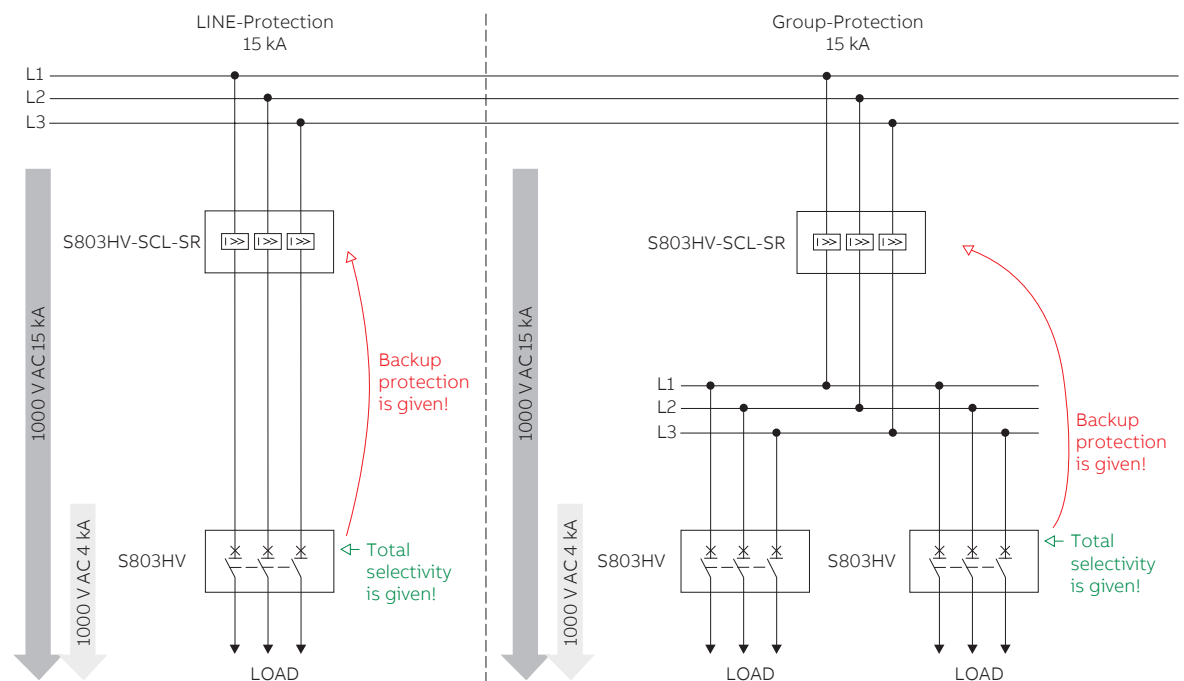
Each S803HV will be protected with one S803HV-SCL-SR.

Group protection

One single S803HV-SCL-SR can protect several mounted downstream S803HV. This case is cost effective as all of the used S803HV will have a short-circuit breaking capacity of 15 kA. In case of a failure, only the defective branch will open.

The other branches with S803HV will remain operative.

Back-protection and total selectivity is given due to the use of S803HV-SCL-SR.



Short-circuit breaking capacity only downstream device

Short-circuit breaking capacity coordinated group S800-SCL-SR

Technical data

S803HV-SCL-SR



2CC0413403R0001

S803HV-SCL-SR in combination with S803HV

General data		
Standard		IEC 60947-2
Poles		3
Rated frequency f	Hz	50/60
Data acc. to IEC 60947-2		
Rated operational voltage U_e	V	AC 580/1000
Rated operational current I_e	A	32, 63, 100
Rated ultimate short-circuit capacity I_{cu}	kA	15
Rated service short-circuit capacity I_{cs}	kA	10
Rated insulation voltage U_i	V	AC 1000
Rated impulse withstand voltage U_{imp}	kV	8
Mechanical data		
Housing		Material group I, RAL 7035
Toggle		black, lockable
Protection degree acc. to IEC / EN 60529		IP20; IP40 (actuating side only)
Classification acc. to NF F16-101, NF F 16-102		I3, F2
Classification acc. to IEC 61373 (shock and vibration)		Cat. 1, Class B
Shock resistance acc. to IEC / EN 60068-2-27		Test Ea: 5 g / 30 ms Test Fc: 2–13.2 Hz / 1 mm 13.2–100 Hz / 0.7 g with load 100 % x I_e
Vibration resistance acc. to IEC / EN 60068-2-6		12+12 cycle with 55 °C / 90–96 % RH and 25 °C / 95–100 % RH
Environmental conditions (damp heat) acc. to IEC / EN 60068-2-30		16 hours 55 °C / 2 hours 70 °C / 55 % RH
Environmental conditions (dry heat) acc. to IEC / EN 60068-2-2		
Ambient temperature	°C	–25 ... +60
Storage temperature	°C	–40 ... +70
Installation		
Terminal		Failsafe cage terminal 1 ... 50 solid / stranded 1 ... 70 flexible
Connection (top/bottom) – Cu only	mm ²	
Tightening torque	Nm	3.5
Screwdriver		POZI 2
Mounting		EN 60715
Mounting position		any
Supply side		any
Dimension and weight		
Pole dimension (H x L x W)	mm	142 x 76.5 x 26.5
Pole weight	kg	0.25

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

Rated current I_n [A]	Internal resistance R_i [mΩ]	Power loss P_v [W]
32	2.8	3.6
63	1.3	5.7
100	0.7	7.8

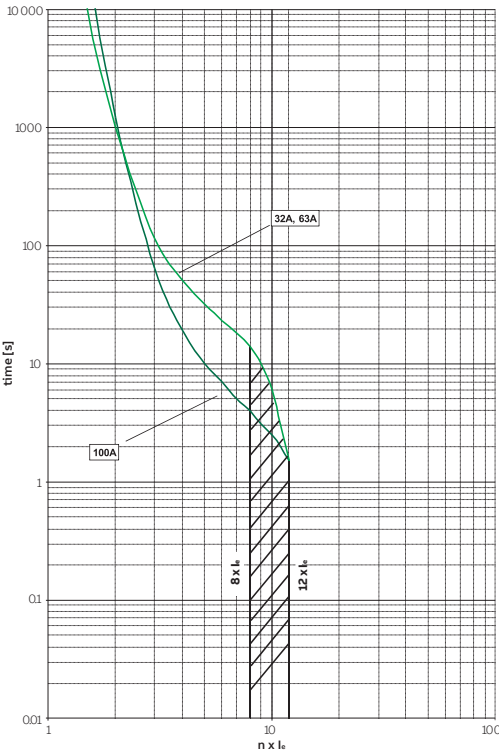
Approved combinations with S803HV

Downstream devices	Upstream devices S803HV-SCL-SR Self resetting short-circuit limiter		
Rated operational current Ie [A]	32	63	100
6	■		
8	■		
10	■	■	■
13	■	■	■
16		■	■
20		■	■
25		■	■
32		■	■
40		■	■
50			■
63			■
80			
100			
125			

Influence of ambient temperature – single mounted devices

Rated current In [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 S803HV shall not exceed the rated current of the S803HV-SCL-SR.

Furthermore the sum of all load currents including inrush currents shall not exceed the maximum permissible load of the S803HV-SCL-SR.

Contact

Belgium

ABB ELECTRO n.v.
Hoge Wei, 27
1930 Zaventem, Belgium
Phone +32 (0) 27 18 63 11
Fax +32 (0) 27 18 66 66
abb.be

Brasil

ABB Ltda
Av. dos Autonomistas, 1496
06020-902-Osasco-SP, Brasil
Phone +55 (0) 80 00 14 91 11
Fax +55 (11) 36 88 99 77
abb.br

Czech Republic

ABB s.r.o.
Herspická 13
61900 Brno, Czech Republic
Phone +420 54 31 45 50 3
Fax +420 54 32 43 48 9
abb.cz/elsynn

Denmark

ABB AS
Meterbuen 33
2740 Skovlunde, Denmark
Phone +45 44 50 44 50
Fax +45 44 50 44 60
abb.dk

Finland

ABB OY
Domestic Sales
Hiomotie 13
P.O. Box 184
00381 Helsinki, Finland
Phone +358 10 22 20 00
Fax +358 10 22 22 91 3
abb.fi

France

ABB Entrelec
Division Commercial France
300 rue des Prés Seigneurs
ZA La Boisse – BP 90145
01124 Montluel Cedex, France
Phone +33 (0) 825 38 63 55
Fax +33 (0) 825 87 09 26
abb.fr

Great Britain

ABB Limited
Tower Court
Foleshill Enterprise Park
Courtaulds Way
Conventry
CV6 5NX, England
Phone +44 (0) 24 76 36 85 00
Fax +44 (0) 24 76 36 44 99
abb.co.uk

Ireland

Asea Brown Boveri Ltd.
Belgrad Road, Tallaght
Dublin 24, Ireland
Phone +35 31 40 57 30 0
Fax +35 31 40 57 33 2
abb.com/lowvoltage

Italy

ABB SACE S.p.A.
Line Protection Devices
Viale dell'Industria, 18
20010 Vittuone (MI), Italy
Phone +39 02 90 34 1
Fax: +39 02 90 34 76 09
abb.it

The Netherlands

ABB b.v.
Automation Products
George Hintzenweg 81
3068 AV Rotterdam
Postbus 301
3000 AH Rotterdam, The Netherlands
Phone +31 (0) 10 40 78 91 1
Fax +31 (0) 10 40 78 09 0
abb.nl

Norway

ABB AS
Jacob Borchsgt. 6
P.O. Box 797 Brakeroya
3002 Drammen, Norway
Phone +47 32 24 80 00
Fax +47 32 24 79 34
abb.no

Poland

ABB Sp. z o. o.
Automation Products
ul. Zeganska 1
04-713 Warszawa, Poland
Phone +48 22 51 64 441
Fax +48 22 51 64 444
abb.pl

P.R. China

ABB (China) Ltd
Universal Plaza, 10 Jiuxianqiao Lu
Chaoyang District
100016 Beijing, P.R. China
Phone +86 10 8456 6688
Fax +86 10 8456 9907
abb.com.cn

Russian Federation

ABB Industrial & Building Systems Ltd.
30/1, bld. 2 Obrucheva St.
117861 Moscow, Russia
Phone +7 495 960 2200
Fax +7 495 960 2220
abb.ru/ibs

Singapore

ABB Pte Ltd
2 Ayer Rajah Crescent
Singapore 139935
Phone +65 6776 5711
Fax +65 6778 0222
abb.com.sg

Spain

ABB Automation Products, S.A.
c/Torrent d'Olla, 220
08012 Barcelona, Spain
Phone +34 93 48 42 10 4
Fax +34 93 48 42 20 1
abb.es

Sweden

ABB Automation
Technologies Cewe Control
Motorgråd 20
72161 Västerås, Sweden
Phone +46 (0) 21 32 07 00
Fax +46 (0) 21 12 60 01
abb.se

Thailand

ABB LIMITED
161/1 SG Tower, 1st-4th Floor,
Soi Mahadlekluang 3,
Rajdamri Road, Lumpini, Pathumwan,
Bangkok 10330, Thailand
Phone +66 (0) 2665 1000
Fax +66 (0) 2665 1043
abb.com.th

Ukraine

ABB Ltd, Ukraine
Automation Products Low Voltage
4, Ivana Lepshe Blvd.
Kiev 67, 03680, Ukraine
Phone +380 44 495 22 11
Fax +380 44 495 22 10
abb.ua

USA

ABB, Inc.
8155 T and B Blvd.
Memphis, TN 38125
Phone: +1 901 252 5000
abb.us

ABB Switzerland Ltd.

Low Voltage Products
Fulachstrasse 150
CH-8201 Schaffhausen, Switzerland
Phone +41 (0) 58 586 41 11
Fax +41 (0) 58 586 42 22

abb.ch

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