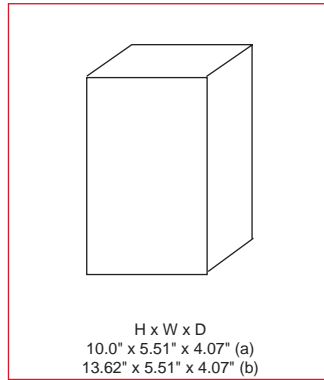


# S5

## 400A, 600V

### Electronic and thermal-magnetic trip types



Standard S5 package includes complete circuit breaker and mounting hardware. Order cable lugs or other connection scheme as a separate item.

- (a) With K5TF cable lugs, breaker is 10.0" tall.
- (b) With K5TG cable lugs, terminal covers are provided and breaker is 13.62" tall.

#### General

The S5 breaker family is a 400A frame utilizing a microprocessor-based overcurrent protective trip system. In the 400A version, the trip unit is adjustable from 160A up to 400A without the addition of any parts or rating plugs. As standard the S5 includes adjustable long time function for overload protection and adjustable instantaneous function for short circuit protection.

#### Versions

To meet all application needs, the S5 is available in various versions:

- B = Adjustment LI
- C = Adjustment LSI
- E = Adjustment LSIG
- Q = 100% UL rated
- D = Molded case switch
- M = Magnetic only (MCP)
- T = Thermal magnetic
- G = 2.5 Mag ( 3-pole only)

#### Trip functions

These tripping functions are available:

- L = Long time
- S = Short time
- I = Instantaneous
- G = Ground fault

#### Performance level

Each version is also available in different maximum fault interrupting levels

- N = Normal
- H = High
- L = Extra high

#### Number of poles

In UL/CSA version, the S5 is available in two pole or three pole version, both with the same dimensions. A four pole version is also available in UL/IEC form. For price estimate, add 35% to list price of selected version three pole breaker, contact ABB Control for details.

#### Accessory mounting

Internal accessories are UL/CSA approved for both factory or field installation. Accessories require control cable connectors. Shunt trips or UVR's mount in the left cavity. Auxiliary or bell alarm switches mount in the right cavity.

#### Reverse feeding

All versions of the S5 family are suitable for reverse feed applications.

#### Molded case switches

UL489 switches include no overcurrent protection except for a high instantaneous trip mechanism for self protection.

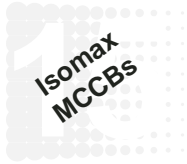
#### UL/CSA Interrupting capacity (kA RMS) UL489 / CSA C22.2

Voltage	N	H	L
240VAC	65	150	200
480VAC	35	65	100
600VAC	22	22	35
500VDC <sup>Ⓞ</sup>	35	50	65
600VDC <sup>Ⓞ</sup>	20	35	50

#### IEC-947 Interrupting capacity (kA RMS)

Voltage	N	H	L
230VAC	65	100	200
380/400/415VAC	35	65	100
440VAC	30	50	80
500VAC	25	40	65
690VAC	20	25	30

<sup>Ⓞ</sup> Thermal magnetic only.



# S5

## 400A, 600 VAC

### Electronic and thermal-magnetic trip types

The S5 breaker family uses two available microprocessor based internal trip units. The standard **PR211** trip unit includes adjustments for long time current pick-up and instantaneous current trip point.

The optional **PR212** trip unit includes adjustments for long time current pick-up/delay, short time pick-up/delay, I<sup>2</sup>t (on/off), instantaneous current trip point and further optional ground fault protection.

#### 400A Frame (160 – 400A adjustable continuous range)

Breaker	IC at 480VAC	Trip	Adjustment	2 pole, 600VAC catalog number	List price	3 pole, 600VAC catalog number	List price
S5N	35kA	PR211	LI	S5N400BW-2	<b>\$ 1798</b>	S5N400BW	<b>\$ 2151</b>
		PR212	LSI	S5N400CW-2	<b>2464</b>	S5N400CW	<b>2817</b>
		PR212	LSIG	—	—	S5N400EW	<b>3717</b>
S5H	65kA	PR211	LI	S5H400BW-2	<b>3285</b>	S5H400BW	<b>3654</b>
		PR212	LSI	S5H400CW-2	<b>3951</b>	S5H400CW	<b>4320</b>
		PR212	LSIG	—	—	S5H400EW	<b>5220</b>
S5L	100kA	PR211	LI	S5L400BW-2	<b>3945</b>	S5L400BW	<b>4733</b>
		PR212	LSI	S5L400CW-2	<b>4611</b>	S5L400CW	<b>5399</b>
		PR212	LSIG	—	—	S5L400EW	<b>6299</b>

#### Trip settings

Adjustment	Trip function	Range	Individual settings
L	Long time pick-up Long time delay	0.4 – 1.0 3.0 – 18 sec.	0.4-0.5-0.55-0.6-0.65-0.7-0.7-0.75-0.8-0.85-0.875-0.9-0.925-0.95-0.975-1.0 x Frame rating PR212 A - B - C - D
S	Short time pick-up Short time delay	1.0 – 10.0 0.05 – 0.5 sec.	Off-1.0-2.0-3.0-4.0-6.0-8.0-10.0 x Frame rating A - B - C - D (I <sup>2</sup> t On-Off)
I	Instantaneous trip	1.5 – 12.0	1.5-2.0-4.0-6.0-8.0-10.0-12.0 x Frame rating
G	Ground fault Ground fault delay	0.2 – 1.0 0.1 – 0.8 sec.	Off-0.2-0.3-0.4-0.6-0.8-0.9-1.0 x Frame rating A - B - C - D

#### Continuous amperage settings (long time adjustment) – PR211

Frame	Set points								Setting
	0.4	0.5	0.6	0.7	0.8	0.9	0.95	1.0	
400A	160	200	240	280	320	360	380	400	Amps

#### S5 thermal-magnetic breakers, for AC and DC applications

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Breaker	IC at 500VDC	Rating	Magnetic trip	2 pole, 600VAC/500VDC catalog number	List price	3 pole, 600VAC/DC catalog number	List price
S5N	35kA	300A (210 – 300A)	3000A	S5N300TW-2	<b>\$ 1798</b>	S5N300TW	<b>\$ 2151</b>
		400A (280 – 400A)	4000A	S5N400TW-2			
S5H	50kA	300A (210 – 300A)	3000A	S5H300TW-2	<b>3285</b>	S5H300TW	<b>3654</b>
		400A (280 – 400A)	4000A	S5H400TW-2			
S5L	65kA	300A (210 – 300A)	3000A	S5L300TW-2	<b>3945</b>	S5L300TW	<b>4733</b>
		400A (280 – 400A)	4000A	S5L400TW-2			

# S5

## 400A, 600 VAC

### 100% UL rated, electronic trip type



When applied correctly, UL tested 100% equipment rated breakers may be applied at full rating rather than on the sizing rules of the NEC where breakers and cable are sized based on actual continuous load current divided by 80%. This 100%

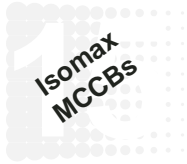
rating can save the user the cost of larger cable or bus bar. Please consult the NEC for details and other design factors needed for this application.

#### 400A Frame (160 – 400A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	3 pole, 600VAC catalog number	List price
S5N	35kA	PR211	LI	S5NQ400BW	\$ 2366
		PR212	LSI	S5NQ400CW	3099
		PR212	LSIG	S5NQ400EW	4089
S5H	65kA	PR211	LI	S5HQ400BW	4019
		PR212	LSI	S5HQ400CW	4752
		PR212	LSIG	S5HQ400EW	5742
S5L	100kA	PR211	LI	S5LQ400BW	5206
		PR212	LSI	S5LQ400CW	5939
		PR212	LSIG	S5LQ400EW	6929

#### Trip settings

Adjustment	Trip function	Range	Individual settings
L	Long time pick-up Long time delay	0.4 – 1.0 3.0 – 18 sec.	0.4-0.5-0.55-0.6-0.65-0.7-0.75-0.8-0.85-0.875-0.9-0.925-0.95-0.975-1.0 x Frame rating PR212 A - B - C - D
S	Short time pick-up Short time delay	1.0 – 10.0 0.05 – 0.5 sec.	Off-1.0-2.0-3.0-4.0-6.0-8.0-10.0 x Frame rating A - B - C - D (I <sup>2</sup> t On-Off)
I	Instantaneous trip	1.5 – 12.0	1.5-2.0-4.0-6.0-8.0-10.0-12.0 x Frame rating
G	Ground fault Ground fault delay	0.2 – 1.0 0.1 – 0.8 sec.	Off-0.2-0.3-0.4-0.6-0.8-0.9-1.0 x Frame rating A - B - C - D



# S5 400A, 600VAC

## Magnetic only (MCP)

All S5 magnetic only breakers utilize the electronic PR211 trip unit with an adjustable range of 1.5 to 12 times frame rating. Both two and three pole MCP's are 600VAC rated.

Type	Amps	Interruption capacity		Adjustment range	2 pole 600VAC catalog number	List price	3 pole 600VAC catalog number	List price
S5N	400	240 VAC 480VAC 600VAC	65kA 35kA 22kA	600 – 4800A	S5N400MW-2	<b>\$ 1798</b>	S5N400MW	<b>\$ 2151</b>
S5H	400	240VAC 480VAC 600VAC	150kA 65kA 22kA	600 – 4800A	S5H400MW-2	<b>3285</b>	S5H400MW	<b>3654</b>
S5L	400	240VAC 480VAC 600VAC	200kA 100kA 35kA	600 – 4800A	S5L400MW-2	<b>3945</b>	S5L400MW	<b>4733</b>

## Molded case switch

Switch	Interruption capacity ③		Amps	Magnetic trip	3 pole catalog number	List price
S5H-D	240VAC 480VAC 600VAC 600VDC	150kA 65kA 22kA 50kA	400A	5000A	S5H400DW	<b>\$ 1994</b>

## Neutral GF current transformer (required for 4 wire GF systems)

Amps	Catalog number	List price
400	K5NCT-400	<b>\$ 250</b>

## Connection options

Type	Wire range	Amps ②	Set of 2 catalog number	List price	Set of 3 catalog number	List price
CU/AL front lugs	250kcmil – 500kcmil	300	K5TF-2	<b>\$ 30</b>	K5TF K5TG ①	<b>\$ 45</b>
CU/AL front lugs	(2) 3/0 – 250kcmil	400	K5TG-2 ①			
CU front lugs (saddle) CU rear lugs Extended front bar	250kcmil – 500kcmil	400	—	—	Set of 6 catalog number K5TGS K5TGR K5ET-400	<b>90</b>
	250kcmil – 500kcmil	400	—	—		
	—	400	—	—		

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① Including lug cover.

② Suggested lugs for a circuit breaker up to amps shown. Cable size and type determine maximum amperage.

③ With fuse or MCCB protected circuit.

# S6

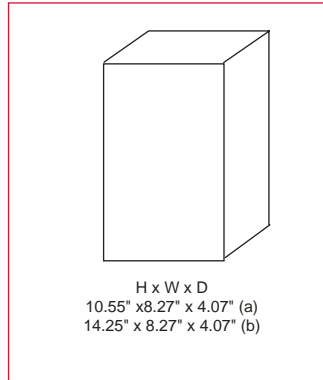
## 600A / 800A, 600V

### Electronic and thermal-magnetic trip type

Isomax  
MCCBs



S6



H x W x D  
10.55" x 8.27" x 4.07" (a)  
14.25" x 8.27" x 4.07" (b)

Standard S6 package includes complete circuit breaker and mounting hardware. Order cable lugs or other connection scheme as a separate item.

- (a) With K6TH cable lugs breaker is 10.55" tall.
- (b) With K6TJ cable lugs, terminal covers are provided and breaker is 14.25" tall.

#### General

The S6 breaker family is an 800A frame with a 600A and 800A version, both utilizing a microprocessor based overcurrent protective trip system. Both versions are adjustable from 40% to 100% of rating without the addition of any parts or rating plugs. As standard, the S6 includes adjustable long time function for overload protection and adjustable instantaneous function for short circuit protection.

#### Versions

To meet all application needs, the S6 is available in various versions:

- B = Adjustment LI
- C = Adjustment LSI
- E = Adjustment LSIG
- Q = 100% UL rated
- D = Molded case switch
- M = Magnetic only (MCP)
- T = Thermal magnetic
- G = 2.5 Mag (3-pole only)

#### Trip functions

These tripping functions are available:

- L = Long time
- S = Short time
- I = Instantaneous
- G = Ground fault

#### Performance level

Each version is also available in different maximum fault interrupting levels

- N = Normal
- H = High
- L = Extra high

#### Number of poles

In UL/CSA version, the S6 is available as in two pole or three pole version, both with the same dimensions. A four pole version is also available in UL/IEC form. For price estimate, add 35% to list price of selected version three pole breaker, contact ABB Control for details.

#### Accessory mounting

Internal accessories are UL/CSA approved for both factory or field installation. Accessories require control cable connectors. Shunt trips or UVR's mount in the left cavity. Auxiliary or bell alarm switches mount in the right cavity.

#### Reverse feeding

All versions of the S6 family are suitable for reverse feed applications.

#### Molded case switches

UL489 switches include no overcurrent protection except for a high instantaneous trip mechanism for self protection. IEC type molded case switches with no trip protection are also available.

#### UL/CSA Interrupting capacity (kA RMS) UL489 / CSA C22.2

Voltage	N	H	L
240VAC	65	150	200
480VAC	50	65	100
600VAC	25	35	42
500VDC <sup>Ⓢ</sup>	35	50	65
600VDC <sup>Ⓢ</sup>	20	25	50

#### IEC-947 Interrupting capacity (kA RMS)

Voltage	N	H	L
230VAC	65	100	200
380/400/415VAC	35	65	100
440VAC	30	50	80
500VAC	25	40	65
690VAC	20	25	35

Catalog Number number	Rating	Magnetic trip
S6N600GW	3 pole, 600 Amp thermal magnetic, I <sub>m</sub> =2.5 x I <sub>th</sub>	1500A
S6N800GW	3 pole, 800 Amp thermal magnetic, I <sub>m</sub> =2.5 x I <sub>th</sub>	2000A



# S6

## 600A / 800A, 600 VAC

### Electronic and thermal magnetic trip type

The S6 breaker family uses two available microprocessor based internal trip units. The standard **PR211** trip unit includes adjustments for long time current pick-up and instantaneous current trip point.

The optional **PR212** trip unit includes adjustments for long time current pick-up/delay, short time pick-up/delay, I<sup>2</sup>t (on/off), instantaneous current trip point and further optional ground fault protection.

#### 600A Frame (240 – 600A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	2 pole, 600VAC catalog number	List price	3 pole, 600VAC catalog number	List price
S6N	50kA	PR211	LI	S6N600BW-2	<b>\$ 2847</b>	S6N600BW	<b>\$ 3608</b>
		PR212	LSI	S6N600CW-2	<b>4237</b>	S6N600CW	<b>4998</b>
		PR212	LSIG	—	—	S6N600EW	<b>6998</b>
S6H	65kA	PR211	LI	S6H600BW-2	<b>4275</b>	S6H600BW	<b>5271</b>
		PR212	LSI	S6H600CW-2	<b>5665</b>	S6H600CW	<b>6661</b>
		PR212	LSIG	—	—	S6H600EW	<b>8661</b>
S6L	100kA	PR211	LI	S6L600BW-2	<b>5481</b>	S6L600BW	<b>6482</b>
		PR212	LSI	S6L600CW-2	<b>6871</b>	S6L600CW	<b>7872</b>
		PR212	LSIG	—	—	S6L600EW	<b>8972</b>

#### 800A Frame (320 – 800A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	2 pole, 600VAC catalog number	List price	3 pole, 600VAC catalog number	List price
S6N	50kA	PR211	LI	S6N800BW-2	<b>\$ 3842</b>	S6N800BW	<b>\$ 4802</b>
		PR212	LSI	S6N800CW-2	<b>5232</b>	S6N800CW	<b>6192</b>
		PR212	LSIG	—	—	S6N800EW	<b>8192</b>
S6H	65kA	PR211	LI	S6H800BW-2	<b>5275</b>	S6H800BW	<b>6465</b>
		PR212	LSI	S6H800CW-2	<b>6665</b>	S6H800CW	<b>7855</b>
		PR212	LSIG	—	—	S6H800EW	<b>9855</b>
S6L	100kA	PR211	LI	S6L800BW-2	<b>6476</b>	S6L800BW	<b>7676</b>
		PR212	LSI	S6L800CW-2	<b>7866</b>	S6L800CW	<b>9066</b>
		PR212	LSIG	—	—	S6L800EW	<b>11,066</b>

#### Trip settings

Adjustment	Trip function	Range	Individual settings
L	Long time pick-up Long time delay	0.4 – 1.0 3.0 – 18 sec.	0.4-0.5-0.55-0.6-0.65-0.7-0.75-0.8-0.85-0.9-0.925-0.95-0.975-1.0 x Frame rating PR212 A - B - C - D
S	Short time pick-up Short time delay	1.0 – 10.0 0.05 – 0.5 sec.	Off-1.0-2.0-3.0-4.0-6.0-8.0-10.0 x Frame rating A - B - C - D (I <sup>2</sup> t On-Off)
I	Instantaneous trip	1.5 – 12.0	1.5-2.0-4.0-6.0-8.0-10.0-12.0 x Frame rating
G	Ground fault Ground fault delay	0.2 – 1.0 0.1 – 0.8 sec.	Off-0.2-0.3-0.4-0.6-0.8-0.9-1.0 x Frame rating A - B - C - D

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#### Continuous amperage settings (long time adjustment) — PR211

Frame	Set points									Setting
	0.4	0.5	0.6	0.7	0.8	0.9	0.95	1.0		
600A	240	300	360	420	480	540	570	600	Amps	
800A	320	400	480	560	640	720	760	800	Amps	

#### S6 thermal-magnetic breakers, for AC and DC applications

Breaker	IC at 500VDC	Rating	Magnetic trip	2 pole, 600VAC /500DC catalog number	List price	3 pole, 600VAC/DC catalog number	List price
S6N	35kA	600A (420 – 600A)	6000A	S6N600TW-2	<b>\$ 2847</b>	S6N600TW	<b>\$ 3608</b>
		800A (560 – 800A)	8000A	S6N800TW-2	<b>3842</b>	S6N800TW	<b>4802</b>
S6H	50kA	600A (420 – 600A)	6000A	S6H600TW-2	<b>4275</b>	S6H600TW	<b>5271</b>
		800A (560 – 800A)	8000A	S6H800TW-2	<b>5275</b>	S6H800TW	<b>6465</b>
S6L	65kA	600A (420 – 600A)	6000A	S6L600TW-2	<b>5481</b>	S6L600TW	<b>6482</b>
		800A (560 – 800A)	8000A	S6L800TW-2	<b>6476</b>	S6L800TW	<b>7676</b>

# S6

## 600A / 800A, 600 VAC

### 100% UL rated, electronic trip type



When applied correctly, UL tested 100% equipment rated breakers may be applied at full rating rather than on the sizing rules of the NEC where breakers and cable are sized based on actual continuous load current divided by 80%. This 100%

rating can save the user the cost of larger cable or bus bar. Please consult the NEC for details and other design factors needed for this application.

#### 600A Frame (240 – 600A adjustable continuous range)

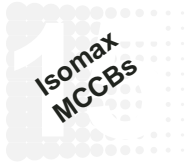
Breaker	IC at 480VAC	Trip type	Adjustment	3 pole 600VAC catalog number	List price
S6N	50kA	PR211	LI	S6NQ600BW	\$ 3969
		PR212	LSI	S6NQ600CW	5498
		PR212	LSIG	S6NQ600EW	7698
S6H	65kA	PR211	LI	S6HQ600BW	5798
		PR212	LSI	S6HQ600CW	7327
		PR212	LSIG	S6HQ600EW	9527
S6L	100kA	PR211	LI	S6LQ600BW	7130
		PR212	LSI	S6LQ600CW	8659
		PR212	LSIG	S6LQ600EW	9869

#### 800A Frame (320 – 800A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	3 pole 600VAC catalog number	List price
S6N	50kA	PR211	LI	S6NQ800BW	\$ 5282
		PR212	LSI	S6NQ800CW	6811
		PR212	LSIG	S6NQ800EW	9011
S6H	65kA	PR211	LI	S6HQ800BW	7112
		PR212	LSI	S6HQ800CW	8641
		PR212	LSIG	S6HQ800EW	10,841
S6L	100kA	PR211	LI	S6LQ800BW	8444
		PR212	LSI	S6LQ800CW	9973
		PR212	LSIG	S6LQ800EW	12,173

#### Trip settings

Adjustment	Trip function	Range	Individual settings
L	Long time pick-up Long time delay	0.4 – 1.0 3.0 – 18 sec.	0.4-0.5-0.55-0.6-0.65-0.7-0.75-0.8-0.85-0.875-0.9-0.925-0.95-0.975-1.0 x Frame rating PR212 A - B - C - D
S	Short time pick-up Short time delay	1.0 – 10.0 0.05 – 0.5 sec.	Off-1.0-2.0-3.0-4.0-6.0-8.0-10.0 x Frame rating A - B - C - D (I <sup>2</sup> t On-Off)
I	Instantaneous trip	1.5 – 12.0	1.5-2.0-4.0-6.0-8.0-10.0-12.0 x Frame rating
G	Ground fault Ground fault delay	0.2 – 1.0 0.1 – 0.8 sec.	Off-0.2-0.3-0.4-0.6-0.8-0.9-1.0 x Frame rating A - B - C - D



# S6 600A / 800A

## Magnetic only (MCP)

All S6 magnetic only breakers utilize the electronic PR211 trip unit with an adjustable range of 1.5 to 12 times frame rating. Both two and three pole MCPs are 600VAC rated.

Type	Amps	Interruption capacity		Adjustment range	2 pole 600VAC catalog number	List price	3 pole 600VAC catalog number	List price
S6N	600	240VAC	65kA	900 – 7200A 1200 – 9600A	S6N600MW-2 S6N800MW-2	<b>\$ 2847</b> <b>3842</b>	S6N600MW S6N800MW	<b>\$ 3608</b> <b>4802</b>
	800	480VAC	50kA					
		600VAC	25kA					
S6H	600	240VAC	150kA	900 – 7200A 1200 – 9600A	S6H600MW-2 S6H800MW-2	<b>4275</b> <b>5270</b>	S6H600MW S6H800MW	<b>5271</b> <b>6465</b>
	800	480VAC	65kA					
		600VAC	35kA					
S6L	600	240VAC	200kA	900 – 7200A 1200 – 9600A	S6L600MW-2 S6L800MW-2	<b>5481</b> <b>6476</b>	S6L600MW S6L800MW	<b>6482</b> <b>7676</b>
	800	480VAC	100kA					
		600VAC	42kA					

## Molded case switches

Type	Interruption capacity ③		Amps	Magnetic trip	3 pole catalog number	List price
S6H-D	240VAC	200kA	—	—	—	—
	480VAC	100kA	600	10,000A	S6H600DW	<b>\$ 3275</b>
	600VAC	42kA	800	10,000A	S6H800DW	<b>4248</b>
	600VDC	50kA	—	—	—	—
Non-UL, switches without overcurrent protection	Withstand rating		400	none	S6D400W	<b>3275</b>
	600VAC	15kA	630	none	S6D630W	<b>3275</b>
			800	none	S6D800W	<b>4248</b>

## Neutral current transformer (required for 4 wire GF systems)

Amps	Catalog number	List price
600	K6NCT-600	<b>\$ 250</b>
800	K6NCT-800	

## Connection options

Type	Wire range	Amps ②	Set of 2 catalog number	List price	Set of 3 catalog number	List price
CU/AL front lugs	(2) 250kcmil – 500kcmil (3) 2/0 – 400kcmil	600	K6TH-2	<b>\$ 50</b>	K6TH K6TJ ①	<b>\$ 75</b> <b>135</b>
CU/AL front lugs		800	K6TJ-2 ①	<b>90</b>		
CU rear lugs	(2) 250kcmil – 350kcmil (3) 250 – 350kcmil	600	—	—	Set of 6 catalog number K6THR K6TJR	<b>150</b> <b>170</b>
		800	—	—		
Extended front bar	—	600	—	—	K6ET-600	<b>150</b>
Extended front bar	—	800	—	—	K6ET-800	<b>170</b>

① Includes lug cover.

② Suggested lugs for a circuit breaker up to amps shown. Cable size and type determine maximum amperage.

③ With fuse or MCCB protected circuit.

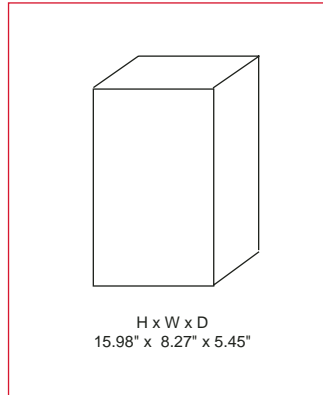
# S7

## 1200A, 600 VAC

### Electronic trip type



S7



H x W x D  
15.98" x 8.27" x 5.45"

Standard S7 package includes complete circuit breaker and mounting hardware. Order cable lugs or other connection scheme as a separate item.

#### General

The S7 breaker family is a 1200A frame utilizing a microprocessor based overcurrent protective trip system. In the 1200A version, the trip unit is adjustable from 480A up to 1200A without the addition of any parts or rating plugs. As standard, the S7 includes adjustable long time function for overload protection and adjustable instantaneous function for short circuit protection.

#### Versions

To meet all application needs, the S7 is available in various versions:

- B = Adjustment LI
- C = Adjustment LSI
- E = Adjustment LSIG
- Q = 100% UL rated
- D = Molded case switch
- M = Magnetic only (MCP)

#### Trip functions

These tripping functions are available:

- L = Long time
- S = Short time
- I = Instantaneous
- G = Ground fault

#### Performance level

Each version is also available in different maximum fault interrupting levels

- H = High
- L = Extra high (IEC only)

#### Number of poles

In UL/CSA version, the S7 is available as in two pole or three pole version, both with the same dimensions. A four pole version is also available in a UL/IEC form. For price estimate, add 35% to list price of selected three pole, contact ABB Control.

#### Accessory mounting

Internal accessories are UL/CSA approved for both factory or field installation. Accessories require control cable connectors. Shunt trips or UVR's mount in the left cavity. Auxiliary or bell alarm switches mount in the right cavity.

#### Reverse feeding

All versions of the S7 family are suitable for reverse feed applications.

#### Molded case switches

UL489 switches include no overcurrent protection except for a high instantaneous trip mechanism for self protection. IEC type molded case switches with no trip protection are also available.

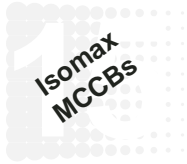
#### UL/CSA Interrupting capacity (kA RMS) UL489 / CSA C22.2

Voltage	H	
240VAC	100	
480VAC	65	
600VAC	50	

#### IEC-947 Interrupting capacity (kA RMS)

Voltage	H	L
230VAC	100	200
380/400/415VAC	65	100
440VAC	55	80
500VAC	45	70
690VAC	25	35

① Consult factory



## S7 1200A, 600 VAC Electronic trip type

The S7 breaker family uses two available microprocessor based internal trip units. The standard **PR211** trip unit includes adjustments for long time current pick-up and instantaneous current trip point.

The optional **PR212** trip unit includes adjustments for long time current pick-up/delay, short time pick-up/delay,  $I^2t$  (on/off), instantaneous current trip point and further optional ground fault protection.

### 1000A Frame (400 – 1000A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	2 pole, 600VAC catalog number	List price	3 pole, 600VAC catalog number	List price
S7H	65kA	PR211	LI	S7H1000BW-2	<b>\$ 6959</b>	S7H1000BW	<b>\$ 7724</b>
		PR212	LSI	S7H1000CW-2	<b>8039</b>	S7H1000CW	<b>8804</b>
		PR212	LSIG	—	—	S7H1000EW	<b>10,604</b>

### 1200A Frame (480 – 1200A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	2 pole, 600VAC catalog number	List price	3 pole, 600VAC catalog number	List price
S7H	65kA	PR211	LI	S7H1200BW-2	<b>\$ 6959</b>	S7H1200BW	<b>\$ 7724</b>
		PR212	LSI	S7H1200CW-2	<b>8039</b>	S7H1200CW	<b>8804</b>
		PR212	LSIG	—	—	S7H1200EW	<b>10,604</b>

### Trip settings

Adjustment	Trip function	Range	Individual settings
L	Long time pick-up Long time delay	0.4 – 1.0 3.0 – 18 sec.	0.4-0.5-0.55-0.6-0.65-0.7-0.75-0.8-0.85-0.875-0.9-0.925-0.95-0.975-1.0 x Frame rating PR212 A - B - C - D
S	Short time pick-up Short time delay	1.0 – 10.0 0.05 – 0.5 sec.	Off-1.0-2.0-3.0-4.0-6.0-8.0-10.0 x Frame rating A - B - C - D ( $I^2t$ On-Off)
I	Instantaneous trip	1.5 – 12.0	1.5-2.0-4.0-6.0-8.0-10.0-12.0 x Frame rating
G	Ground fault Ground fault delay	0.2 – 1.0 0.1 – 0.8 sec.	Off-0.2-0.3-0.4-0.6-0.8-0.9-1.0 x Frame rating A - B - C - D

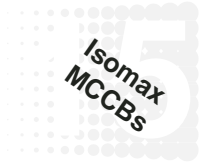
### Continuous amperage settings (long time adjustment) – PR211

Frame	Set points									Setting
	0.4	0.5	0.6	0.7	0.8	0.9	0.95	1.0		
1000A	400	500	600	700	800	900	950	1000	Amps	
1200A	480	600	720	840	960	1080	1140	1200	Amps	

# S7

## 1200A, 600VAC

### UL 100% rated



When applied correctly, UL tested 100% equipment rated breakers may be applied at full rating rather than on the sizing rules of the NEC where breakers and cable are sized based on actual continuous load current divided by 80%. This 100%

rating can save the user the cost of larger cable or bus bar. Please consult the NEC for details and other design factors needed for this application.

#### 1000A Frame (400 – 1000A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	3 pole catalog number	List price
S7H	65kA	PR211	LI	S7HQ1000BW	\$ 8495
		PR212	LSI	S7HQ1000CW	9684
		PR212	LSIG	S7HQ1000EW	11,664

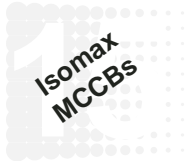
#### 1200A Frame (480 – 1200A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	3 pole catalog number	List price
S7H	65kA	PR211	LI	S7HQ1200BW	\$ 8495
		PR212	LSI	S7HQ1200CW	9684
		PR212	LSIG	S7HQ1200EW	11,664

#### Trip settings

Adjustment	Trip function	Range	Individual settings
L	Long time pick-up Long time delay	0.4 – 1.0 3.0 – 18 sec.	0.4-0.5-0.55-0.6-0.65-0.7-0.75-0.8-0.85-0.875-0.9-0.925-0.95-0.975-1.0 x Frame rating PR212 A - B - C - D
S	Short time pick-up Short time delay	1.0 – 10.0 0.05 – 0.5 sec.	Off-1.0-2.0-3.0-4.0-6.0-8.0-10.0 x Frame rating A - B - C - D (I <sup>2</sup> t On-Off)
I	Instantaneous trip	1.5 – 12.0	1.5-2.0-4.0-6.0-8.0-10.0-12.0 x Frame rating
G	Ground fault Ground fault delay	0.2 – 1.0 0.1 – 0.8 sec.	Off-0.2-0.3-0.4-0.6-0.8-0.9-1.0 x Frame rating A - B - C - D

© Consult factory.



# S7 1200A, 600V

## Magnetic only (MCP)

All S7 magnetic only breakers utilize the electronic PR211 trip unit with an adjustable range of 1.5 to 12 times frame rating. Both two and three pole MCPs are 600VAC rated.

Type	Amps	Interruption capacity		Adjustment range	2 pole catalog number	List price	3 pole catalog number	List price
S7H	1000 1200	240VAC 480VAC 600VAC	100kA 65kA 50kA	1500 – 12,000A 1800 – 14,400A	S7H1000MW-2 S7H1200MW-2	<b>\$ 6959</b>	S7H1000MW S7H1200MW	<b>\$ 7724</b>

## Molded case switches

Type	Interruption capacity ②		Amps	Magnetic trip	3 pole catalog number	List price
S7H-D	240VAC 480VAC 600VAC 600VDC	100kA 65kA 50kA 12kA	1000 1200	20,000A 20,000A	S7H1000DW S7H1200DW	<b>\$ 7300</b>
Non-UL, switches without overcurrent protection	Withstand rating		1000	—	S7D1000W S7D1250W	
	600VAC	25kA	1250	—		

## Neutral current transformer (required for 4 wire GF systems)

Amps	Catalog number	List price
1000	K7NCT-1000	<b>\$ 250</b>
1200	K7NCT-1200	

## Connection options

Type	Wire range	Amps ①	Set of 2 catalog number	List price	Set of 3 catalog number	List price
CU/AL front lugs	(4) 4/0 – 500kcmil	1200	K7TK-2	<b>\$ 120</b>	K7TK	<b>\$ 180</b>
Extended front bar	—	1200	—	—	Set of 6 catalog number	<b>240</b>
					K7ET-1250	

① Suggested lugs for a circuit breaker up to amps shown. Cable size and type determine maximum amperage.  
② With fuse or MCCB protected circuit.

# S8 1600 / 2000 / 2500A Insulated case circuit breaker

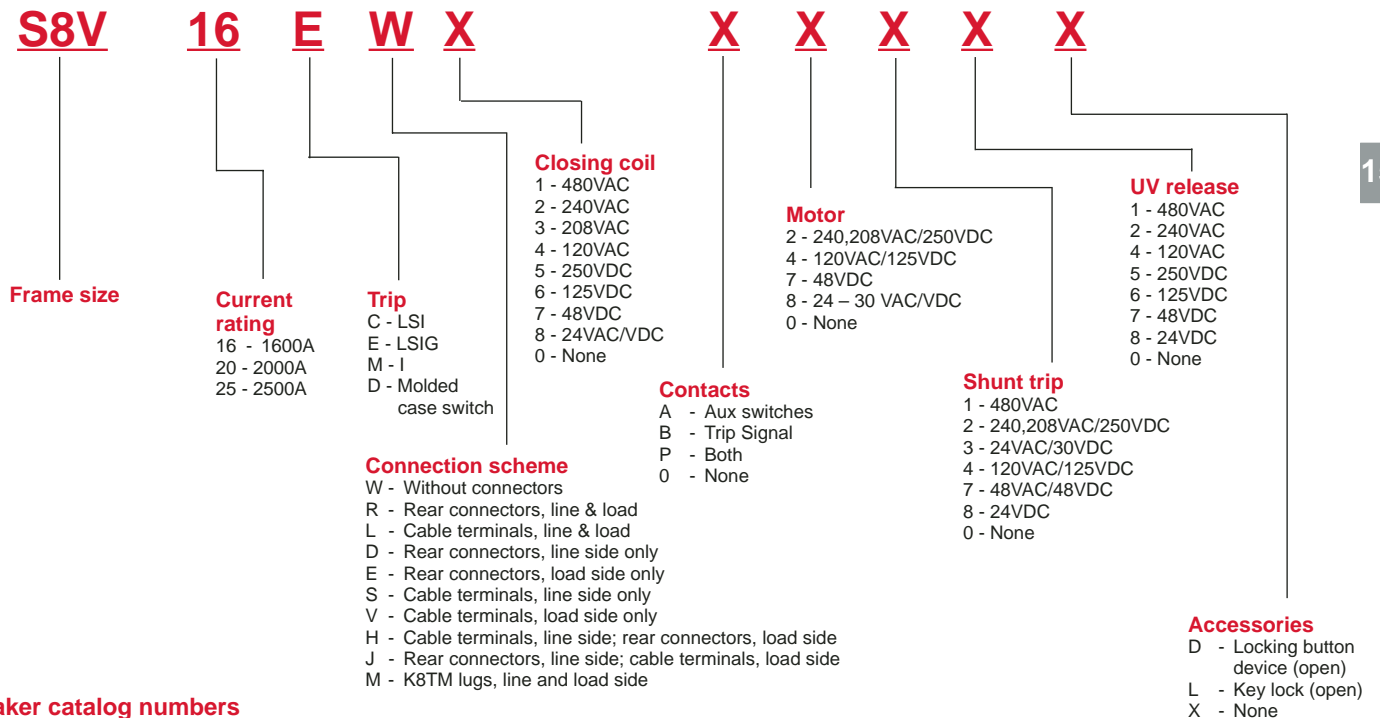
Isomax  
MCCBs

## Description

- Insulated case type molded case circuit breaker with manually operated stored energy mechanism. Optional electric charging motor available
  - Three cycle closing time for use in generator synchronizing applications.
  - Electric spring charging mechanism rated for over 5,000 operations
  - Three different frame ratings, 1600, 2000 and 2500 amperes. All are same compact physical size.
  - Solid state trip units are available in four different configurations including adjustments for long time, short time, instantaneous and ground fault.
  - Standard interrupting rating of 100kA at 480VAC.
  - Short time withstand rating of 35kA at 600VAC for one second when breaker ordered with adjustable short time trip.
  - Breaker includes charging handle for manual energizing of closing/opening springs
  - Built-in ground fault (LSIG) for use with four-wire systems requires neutral GF sensor. Meets NEC ground fault requirements for service entrance applications.
  - Internal accessories include electric charging motor, shunt trips, a combination auxiliary/bell alarm switch, and an undervoltage release.
  - Breakers are suitable for use in reverse feed applications.
  - Wide range of adjustments on trip settings, trip unit
- includes cover to prevent tampering.
  - Front indicators for contact position.
  - Uses convenient mounting pads for ease of installation in enclosures.
  - Internal accessories are prewired to terminal block mounted on right side of breaker.
  - Trip signal contact option indicates when breaker has tripped due to overcurrent.
  - Canadian Standards Association certification under C22.2 No. 5 under File LR90467 for both breakers and internal accessories.
  - In compliance with IEC947 including 690VAC. Breakers are labeled with both UL/CSA and IEC ratings.
  - Breakers are Underwriters Laboratories listed under Standard UL 489 for molded case circuit breakers per File E93565, internal accessories are per File E116596.

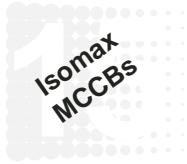


## Catalog number information



## Breaker catalog numbers

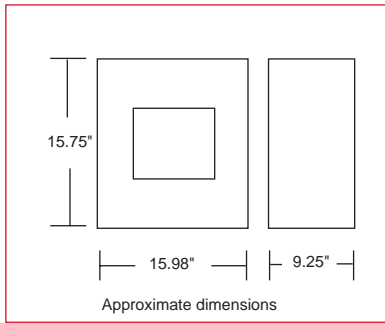
The breaker catalog number must be completed. Please note that variations can affect price.



# S8

## 1600 / 2000 / 2500A

### Insulated case circuit breaker



#### Description

Breaker is shipped complete with installed trip unit and accessories. Cable terminals or rear T connectors can be included if desired. For four-wire systems an external neutral ground fault sensor must be ordered separately.

#### Trip functions

- L – Long time pick-up and delay
- S – Short time pick-up and delay
- I – Instantaneous trip
- G – Ground fault pick-up and delay

#### 3 pole, 600VAC maximum<sup>①</sup>

Maximum continuous rating				1600A		2000A		2500A	
Breaker	IC at 480VAC	Trip type	Adjustment	Catalog number	List price	Catalog number	List price	Catalog number	List price
S8V	100kA	PR212	LSI	S8V16CW	\$ 12,540	S8V20CW	\$ 14,427	S8V25CW	\$ 21,561
			LSIG	S8V16EW	14,505	S8V20EW	16,561	S8V25EW	24,487
			I	S8V16MW	11,267	S8V20MW	12,988	S8V25MW	20,916
			MCS	S8V16DW	9620	S8V20DW	10,999	S8V25DW	16,267

#### UL/CSA Interrupting capacity (kA RMS)

##### UL489 / CSA C22.2

Voltage	V
240VAC	125
480VAC	100
600VAC	85
600VDC <sup>②</sup>	25

#### IEC-947 Interrupting capacity (kA RMS)

Voltage	V
230VAC	120
300/400/415VAC	120
440VAC	100
500VAC	70
690VAC	50

#### Trip settings

Adjustment	Trip function	Range	Individual settings
L	Long time pick-up Long time delay	0.4 – 1.0 3.0 – 18 sec.	0.4-0.5-0.55-0.6-0.65-0.7-0.75-0.8-0.85-0.875-0.9-0.925-0.95-0.975-1.0 x Frame rating A - B - C - D
S	Short time pick-up Short time delay	1.0 – 10.0 0.05 – 0.5 sec.	Off-1.0-2.0-3.0-4.0-6.0-8.0-10.0 x Frame rating A - B - C - D (I <sup>2</sup> t On-Off)
I	Instantaneous trip	1.5 – 12.0	1.5-2.0-4.0-6.0-8.0-10.0-12.0 x Frame rating
G	Ground fault Ground fault delay	0.2 – 1.0 0.1 – 0.8 sec.	Off-0.2-0.3-0.4 x Frame rating A - B - C - D

#### Continuous amperage settings (long time adjustment)

Frame	Set points														Setting
	0.4	0.5	0.6	0.65	0.7	0.75	0.8	0.85	0.875	0.9	0.925	0.95	0.975	1.0	
1600A	640	800	960	1040	1120	1200	1280	1360	1400	1440	1480	1520	1560	1600	Amps
2000A	800	1000	1200	1300	1400	1500	1600	1700	1750	1800	1850	1900	1950	2000	Amps
2500A	1000	1250	1500	1625	1750	1875	2000	2125	2187.5	2250	2312.5	2375	2437.5	2500	Amps

#### UL 100% equipment rated circuit breakers

Circuit breakers and cable are sized per the National Electric Code on a basis of actual continuous load current divided by 80%. For example, a 360 ampere load should be connected by cable capable of handling 450 amperes (360A / 0.80 = 450A) and therefore be protected by a 450 ampere rated circuit breaker. Other factors may need to be considered when sizing breakers in special applications.

When applied correctly, UL-tested 100% equipment rated breakers may be applied at full rating, therefore saving the user the cost of larger cable or bus. Using the example above, the 360 ampere load could be used with cable capable of handling 360 amperes (360A / 1.00 = 360A) and only a 400 ampere rated circuit breaker (400A is next available size CB).

#### 1600A, S8 Frame 100% rated

Catalog number	List price
S8VQ16CW	\$ 13,168
S8VQ16EW	15,231

#### 2000A, S8 Frame 100% rated

Catalog number	List price
S8VQ20CW	\$ 15,148
S8VQ20EW	17,390

① Three pole breakers are listed and approved for use in two pole applications with center-pole not connected.  
② Applies to MCS only.

# S8

## 1600A, 2000A & 2500A

### Accessories



#### Internal accessories

(Must be factory mounted for UL/CSA)

Item	Type	Factory installed catalog number suffix	List price
Closing coil	480VAC	1	\$ 575
	240VAC	2	
	208VAC	3	
	120VAC	4	
	250VDC	5	
	125VDC	6	
	48VDC	7	
	24VAC/VDC	8	
Electric motor (inc. spring charged signal contact)	240,208VAC & 250VDC	2	3217
	120VAC/125VDC	4	
	48VDC	7	
	24 – 30VAC/VDC	8	
Shunt trip	480VAC	1	518
	240,208VAC & 250VDC	2	
	24VAC/30VDC	3	
	120VAC/125VDC	4	
	48VAC/48VDC	7	
	24VDC	8	
Undervoltage release	480VAC	1	518
	240VAC	2	
	120VAC	4	
	250VDC	5	
	125VDC	6	
	48VDC	7	
	24VDC	8	
	Aux. contacts	2A/1B	
Trip signal	1A/1B	B	192
Combo. aux. & trip contacts	2A/1B Aux & 1A/1B Trip	P	588
Padlockable button cover (open)	—	D	144
Key lock (open)	—	L	155

#### Connection accessories (includes sets of 3)

Item	Type	Catalog number	List price	
Cable terminals	1600A Max.	1/0 – 750kcmil (4)	K8TL	\$ 274
	2500A Max.	1/0 – 750kcmil (6)	K8TM	315
	Rear T conn.	2500A Max.	K8RT2500	855

#### Neutral ground fault current transformer

Item	Type	Catalog number	List price
Ground Fault Neutral CT	1600A	K8NCT-1600	\$ 888
	2000A	K8NCT-2000	
	2500A	K8NCT-2500	

Note: Neutral GF CT required for proper GF operation.

#### Door flange

Item	Catalog number	List price
Face plate	K8FP	\$ 25

#### Closing coil

Required for closing breaker electrically, the coil voltage must be specified at the time of order entry.

#### Internal accessory ratings

Accessory type	Voltage	Rating
Shunt trip	All	100VA/120Watts
Undervoltage releases	AC/DC	30VA (12 Watts/ 10VA (4 Watts))
Auxiliary contacts	240VAC 125VDC 250VDC	10A Max. 0.3A Max. 0.15A Max
Closing coil	AC/DC	30VA / 40VA

#### Stored energy electric motor operators

E.O.	Type	Inrush (VA)	Normal (watts)	Closing time	Opening time	Resetting time
MS8	Stored energy	1000	230	0.05s	0.035s	9.0s

Mechanical life of 10,000 cycles at 20 operations per hour.