

S6

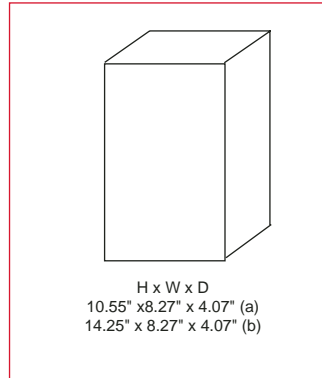
600A / 800A, 600V

Electronic and thermal-magnetic trip type

Isomax
MCCBs



S6



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®	35	50	65
600VDC®	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, Im=2.5 x Ith	1500A
S6N800GW	3 pole, 800 Amp thermal magnetic, Im=2.5 x Ith	2000A

① Thermal magnetic only.



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^2t (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		3 pole, 600VAC catalog number	
S6N	50kA	PR211 PR212 PR212	LI LSI LSIG	S6N600BW-2 S6N600CW-2 —	—	S6N600BW S6N600CW S6N600EW	
S6H	65kA	PR211 PR212 PR212	LI LSI LSIG	S6H600BW-2 S6H600CW-2 —	—	S6H600BW S6H600CW S6H600EW	
S6L	100kA	PR211 PR212 PR212	LI LSI LSIG	S6L600BW-2 S6L600CW-2 —	—	S6L600BW S6L600CW S6L600EW	

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

Breaker	IC at 480VAC	Trip type	Adjustment	2 pole, 600VAC catalog number		3 pole, 600VAC catalog number	
S6N	50kA	PR211 PR212 PR212	LI LSI LSIG	S6N800BW-2 S6N800CW-2 —	—	S6N800BW S6N800CW S6N800EW	
S6H	65kA	PR211 PR212 PR212	LI LSI LSIG	S6H800BW-2 S6H800CW-2 —	—	S6H800BW S6H800CW S6H800EW	
S6L	100kA	PR211 PR212 PR212	LI LSI LSIG	S6L800BW-2 S6L800CW-2 —	—	S6L800BW S6L800CW S6L800EW	

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	
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		3 pole, 600VAC/DC catalog number	
S6N	35kA	600A (420 – 600A) 800A (560 – 800A)	6000A 8000A	S6N600TW-2 S6N800TW-2		S6N600TW S6N800TW	
S6H	50kA	600A (420 – 600A) 800A (560 – 800A)	6000A 8000A	S6H600TW-2 S6H800TW-2		S6H600TW S6H800TW	
S6L	65kA	600A (420 – 600A) 800A (560 – 800A)	6000A 8000A	S6L600TW-2 S6L800TW-2		S6L600TW S6L800TW	

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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	
S6N	50kA	PR211 PR212 PR212	LI LSI LSIG	S6NQ600BW S6NQ600CW S6NQ600EW	
S6H	65kA	PR211 PR212 PR212	LI LSI LSIG	S6HQ600BW S6HQ600CW S6HQ600EW	
S6L	100kA	PR211 PR212 PR212	LI LSI LSIG	S6LQ600BW S6LQ600CW S6LQ600EW	

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

Breaker	IC at 480VAC	Trip type	Adjustment	3 pole 600VAC catalog number	
S6N	50kA	PR211 PR212 PR212	LI LSI LSIG	S6NQ800BW S6NQ800CW S6NQ800EW	
S6H	65kA	PR211 PR212 PR212	LI LSI LSIG	S6HQ800BW S6HQ800CW S6HQ800EW	
S6L	100kA	PR211 PR212 PR212	LI LSI LSIG	S6LQ800BW S6LQ800CW S6LQ800EW	

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 ² 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		3 pole 600VAC catalog number	
S6N	600 800	240VAC 480VAC 600VAC	65kA 50kA 25kA	900 – 7200A 1200 – 9600A	S6N600MW-2 S6N800MW-2		S6N600MW S6N800MW	
S6H	600 800	240VAC 480VAC 600VAC	150kA 65kA 35kA	900 – 7200A 1200 – 9600A	S6H600MW-2 S6H800MW-2		S6H600MW S6H800MW	
S6L	600 800	240VAC 480VAC 600VAC	200kA 100kA 42kA	900 – 7200A 1200 – 9600A	S6L600MW-2 S6L800MW-2		S6L600MW S6L800MW	

Molded case switches

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

Neutral current transformer (required for 4 wire GF systems)

Amps	Catalog number	
600 800	K6NCT-600 K6NCT-800	

Connection options

Type	Wire range	Amps ②	Set of 2 catalog number		Set of 3 catalog number	
CU/AL front lugs CU/AL front lugs	(2) 250kcmil – 500kcmil (3) 2/0 – 400kcmil	600 800	K6TH-2 K6TJ-2 ①		K6TH K6TJ ①	
CU rear lugs CU rear lugs	(2) 250kcmil – 350kcmil (3) 250 – 350kcmil	600 800	— —	— —	Set of 6 catalog number	
					K6THR K6TJR	
Extended front bar Extended front bar	— —	600 800	— —	— —	K6ET-600 K6ET-800	

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.