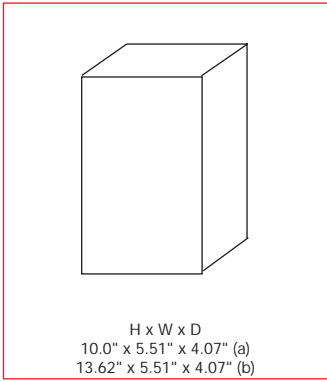




# S5

## 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.

H x W x D  
 10.0" x 5.51" x 4.07" (a)  
 13.62" x 5.51" x 4.07" (b)

#### 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)

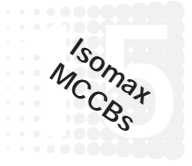
Voltage	N	H	L
230VAC	65	100	200
380/400/415VAC	35	65	100
440VAC	30	50	80
500VAC	25	40	65
690VAC	20	25	30

<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.	0.4-0.5-0.55-0.6-0.65-0.7-0.75-0.8-0.85-0.875-0.9-0.925-0.95-0.975-1.0 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-0.2-0.3-0.4-0.6-0.8-0.9-1.0 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

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		S5N400TW	
S5H	50kA	300A (210 – 300A)	3000A	S5H300TW-2	<b>3285</b>	S5H300TW	<b>3654</b>
		400A (280 – 400A)	4000A	S5H400TW-2		S5H400TW	
S5L	65kA	300A (210 – 300A)	3000A	S5L300TW-2	<b>3945</b>	S5L300TW	<b>4733</b>
		400A (280 – 400A)	4000A	S5L400TW-2		S5L400TW	



# 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.

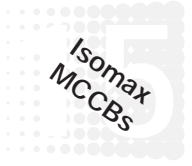
#### 400A Frame (160 – 400A adjustable continuous range)

Breaker	IC at 480VAC	Trip type	Adjustment	3 pole, 600VAC catalog number	List price
S5N	35kA	PR211	LI	S5NQ400BW	<b>\$ 2366</b>
		PR212	LSI	S5NQ400CW	<b>3099</b>
		PR212	LSIG	S5NQ400EW	<b>4089</b>
S5H	65kA	PR211	LI	S5HQ400BW	<b>4019</b>
		PR212	LSI	S5HQ400CW	<b>4752</b>
		PR212	LSIG	S5HQ400EW	<b>5742</b>
S5L	100kA	PR211	LI	S5LQ400BW	<b>5206</b>
		PR212	LSI	S5LQ400CW	<b>5939</b>
		PR212	LSIG	S5LQ400EW	<b>6929</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 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 (1/2 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 <sup>②</sup>	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 <sup>①</sup>	<b>\$ 45</b>
CU/AL front lugs	(2) 3/0 – 250kcmil	400	K5TG-2 <sup>③</sup>			
CU front lugs (saddle)	250kcmil – 500kcmil	400	—	—	Set of 6 catalog number	<b>90</b>
CU rear lugs	250kcmil – 500kcmil	400	—		K5TGS K5TGR	
Extended front bar	—	400	—		K5ET-400	

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.