

**SIEMENS**



[www.usa.siemens.com/energy](http://www.usa.siemens.com/energy)

# Type SIMOSEC quick ship catalog

Answers for energy.

# Type SIMOSEC metal-enclosed interrupter switchgear quick ship catalog



The type SIMOSEC quick ship program offers shipment within eight weeks subject to confirmation in formal proposal of basic 5 kV and 15 kV load-interrupter switch configurations for indoor applications, such as transformer primary, stand-alone or duplex switches.

Type SIMOSEC metal-enclosed interrupter switchgear is factory-assembled, type tested, three-phase, three-wire, metal-enclosed, indoor switchgear that meets the ANSI/IEEE C37.20.3 standard and is used in power distribution systems with feeder currents up to 600 A.

Applications for type SIMOSEC metal-enclosed interrupter switchgear include:

- Substations (distribution, power supply and public utility switching)
- Public buildings (high-rise, railway station, hospital, airport, seaport, office park and shopping center)
- Industrial plants.

Type SIMOSEC switch units and cable compartments are offered as:

- Single or multiple sections
- Un-fused, single, or two fuses per phase
- Free-standing, close-coupled NEMA 1 applications
- With standard widths of 20" (500 mm) for single section. Other widths are also available.

Please contact your local Siemens representative for additional information.

**Type SIMOSEC metal-enclosed interrupter switchgear features and benefits include:**

- Applicable for systems up to 63 kA at 5 kV, 8.25 kV and 15 kV.
- Load-current switching rating 600 A
- Main bus continuous current rating 1,200 A (where applicable)
- Meets the ANSI/IEEE C37.20.3 standard
- UL or C-UL Listed
- Low-voltage operator controls compartment
- High switching capacity of 100 operations at 600 A, two to three times ANSI/IEEE standard requirements
- High endurance - 1,000 mechanical operations
- No maintenance or adjustment required on the switch module over the life of the switch
- Switch disconnecter combines the functionality of a load-interrupter switch and a grounding switch thereby offering additional safety to the operators
- Integrated mechanical interlocking
- Fuses and outgoing cables are front accessible allowing type SIMOSEC switchgear to be placed against a wall to maximize the use of available space
- Convenient view port for verification of primary contact position (visible break)
- Main bus at top or bottom to suit application
- Over 20 years experience and more than 350,000 switch-disconnector units installed globally.

**Standard switchgear features include:**

- Three-position switch: OPEN/CLOSED/GROUNDED with secondary grounding switch to discharge outgoing cables
- Two-position switch: OPEN/CLOSED with key interlocks between switch and fuse door for safety
- Padlocking provisions for manually operated mechanism
- Two normally open plus two normally closed switch auxiliary contacts,
- "Ready for Service" mechanical position indicator for switch
- Air-insulated terminals to connect one cable per phase
- Provisions for close-coupled transition connection
- One set of high-voltage current-limiting fuse links, one or two fuses per phase
- Mechanical type fuse-blown indicator
- Silver-plated copper bus bars
- Mimic diagram
- Rated for seismic zone 4, International Building Code (IBC) 2006
- Seismic capability to 300%g per IBC and NFPA 5000.

**Switchgear assembly options available:**

- Close coupled or stand alone
- Single or duplex configurations
- Fused or un-fused
- Top or bottom cable entry.

**Standard accessories and tools available:**

- One red operating handle (ON/OFF)
- One black operating handle (OFF/GROUND) (three-position switch only)
- One handle holder
- One installation and operation instruction manual
- Three capacitive voltage indicators (for ratings  $\geq 4.16$  kV)
- 24" (610 mm) tall top hat (optional 11.8" (300 mm)), when needed for top cable entry/exit, shipped loose.

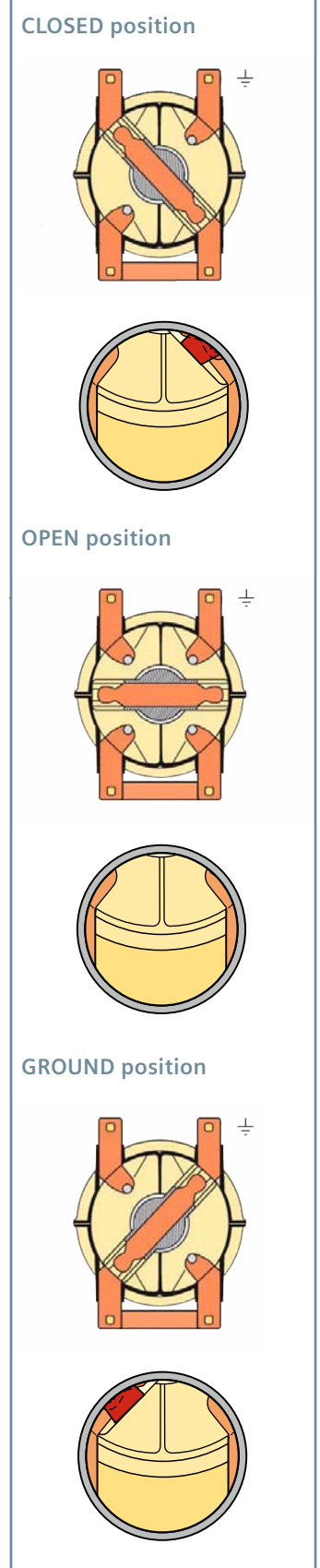


Figure 1: Switch contact positions

# Technical data

Table 1: Technical data

Rated maximum voltage		kV	5	8.25	15
Rated frequency		Hz	60	60	60
Rated withstand voltages	Power frequency	kV	19	36	36
	Lightning impulse (BIL)	kV	60	95	95
Rated normal current of main bus bar		A	1,200	1,200	1,200
Rated feeder continuous current (type CS only)		A	600	600	600
Rated short-circuit withstand current	Symmetrical (fused switch)	kA	63	63	63
	Asymmetrical (momentary) (rms) (fused switch)	kA	101	101	101
	Peak (fused switch)	kA	164	164	164
Rated fault closing current	Asymmetrical (rms)	kA	40	40	40
Rated short-time withstand current	Symmetrical, 2 s	kA	25	25	25
Rated peak withstand current	Peak (unfused switch)	kA	65	65	65
Rated short-circuit making current	Peak (unfused switch)	kA	65	65	65
Switching operations	At 600 A	----	100	100	100
	At fault current	----	20	20	20
	At no load	----	1,000	1,000	1,000
Rated filling pressure for three-position switch $p_{re}$ at 68 °F		psig	7.25	7.25	7.25

## Ordering example and standard configurations

### Ordering example

1. Identify the switch configuration for each section required for the application.
2. Determine fusing required if applicable.
3. List the associated catalog numbers and quantities needed.
4. Forward information to your local Siemens contact to request pricing, start the order process and to obtain approval drawings.
5. Information from item 4 to add to the purchase order plus:
  - Siemens, 7000 Siemens Road, Wendell, North Carolina 27591-8309 as the supplier
  - Siemens Energy, Inc. standard terms and conditions apply
  - Contact name and phone number at the ship to site
  - Delivery terms: FOB Laredo, Texas.

### Standard configurations

Applications with cables exiting the top, bottom, or to the right of the switch position are supplied with a manually operated three-position selector switch with grounding feature, and include a secondary ground switch to discharge outgoing cables (refer to Figure 4).

Applications with cables exiting at the top left or bottom left of the switch position are supplied with a manually operated two-position selector switch without grounding feature (refer to Figure 3). Includes key interlocks, one at the switch and one at the fuse door, to prevent access to the fuses, when the switch is in the CLOSED position.

# Catalog numbering system and high-voltage current limiting fuses

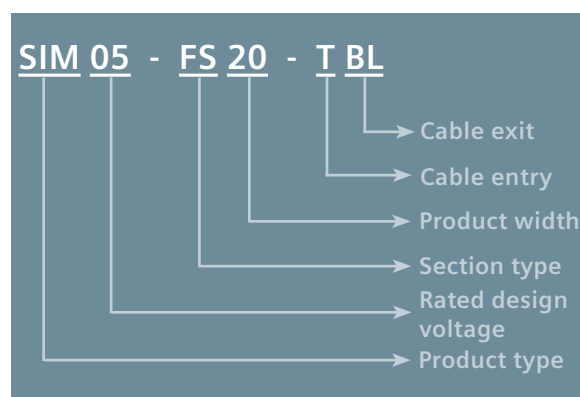
Table 2: Switch section type description

Catalog number code	Section description
CC20	20" (500 mm) wide cable connection
CS20	20" (500 mm) wide non-fused switch
FS20	20" (500 mm) wide fused switch

Table 3: Cable code description

Catalog number code	Cable entry code description	Cable exit code description
TB <sup>1</sup>	T = top entry <sup>2</sup>	B = bottom exit
BT <sup>1</sup>	B = bottom entry	T = top entry <sup>2</sup>
TBR <sup>1</sup>	T = top entry <sup>2</sup>	BR = bottom right with provisions for close-couple coordination to transformer
TBL <sup>1</sup>	T = top entry <sup>2</sup>	BL = bottom left with provisions for close-couple coordination to transformer
BTR	B = bottom entry	TR = top right with provisions for close-couple coordination to transformer
BTL	B = bottom entry	TL = top left with provisions for close-couple coordination to transformer
BB	B = bottom entry	B = bottom exit
TT <sup>1</sup>	T = top entry <sup>2</sup>	T = top exit top entry <sup>2</sup>

Table 4: Catalog numbering system



**Footnotes:**

- <sup>1</sup> Must specify that transformer supplier must match our termination.
- <sup>2</sup> Top hat shipped loose for field installation.

## High-voltage current limiting fuses, type DIN/E according to ANSI/IEEE C37.41/C37.46

These fuses are designed for use with type SIMOSEC switches and have short-circuit fault current ratings up to 63 kA symmetrical for 5 kV and 15 kV applications.

Table 5: Fuse selection chart<sup>1,2</sup>

Maximum design voltage (kV)	Rated current (A)	Continuous current	Fuse part number
5.0	200E	183	55GFMSJ200ES
5.0	400E	302	55GFMSJ400ES
5.0	450E	325	55GFMSJ450ES
15.0	100E	85	175GXMSJ100ES
15.0	125E	112	175GXQSJ125ES
15.0	150E	123	175GXQSJ150ES
15.0	175E	167	155GXQSJ175ES

**Footnotes:**

- <sup>1</sup> Indicate order of one or two fuses per phase.
- <sup>2</sup> Additional fuse ratings are available but not included in the quick ship program.

Table 6: Single section fused switches (see Figures 3-4)

Rated maximum voltage (kV)	Fuse rating	Width in inches (mm)	Catalog part number
5.0	Refer to fuse selection chart on page 6	19.7 (500)	SIM05-FS20-TB
5.0		19.7 (500)	SIM05-FS20-BT
5.0		19.7 (500)	SIM05-FS20-TBR <sup>1</sup>
5.0		19.7 (500)	SIM05-FS20-TBL <sup>1,2</sup>
5.0		19.7 (500)	SIM05-FS20-BTR
5.0		19.7 (500)	SIM05-FS20-BTL <sup>1,2</sup>
15.0		19.7 (500)	SIM15-FS20-TB
15.0		19.7 (500)	SIM15-FS20-BT
15.0		19.7 (500)	SIM15-FS20-TBR <sup>1</sup>
15.0		19.7 (500)	SIM15-FS20-TBL <sup>1,2</sup>
15.0		19.7 (500)	SIM15-FS20-BTR <sup>1</sup>
15.0		19.7 (500)	SIM15-FS20-BTL <sup>1,2</sup>

Table 7: Single section un-fused switches (see Figure 5)

Rated maximum voltage (kV)	Width in inches (mm)	Catalog part number
5.0	19.7 (500)	SIM05-CS20-TB
5.0	19.7 (500)	SIM05-CS20-BT
5.0	19.7 (500)	SIM05-CS20-TBR <sup>1</sup>
5.0	19.7 (500)	SIM05-CS20-TBL <sup>1</sup>
5.0	19.7 (500)	SIM05-CS20-BTR <sup>1</sup>
5.0	19.7 (500)	SIM05-CS20-BTL <sup>1</sup>
15.0	19.7 (500)	SIM15-CS20-TB
15.0	19.7 (500)	SIM15-CS20-BT
15.0	19.7 (500)	SIM15-CS20-TBR <sup>1</sup>
15.0	19.7 (500)	SIM15-CS20-TBL <sup>1</sup>
15.0	19.7 (500)	SIM15-CS20-BTR <sup>1</sup>
15.0	19.7 (500)	SIM15-CS20-BTL <sup>1</sup>

Table 8: Two sections, stand-alone fused switches (see Figure 6)

Rated maximum voltage (kV)	Fuse rating	Width in inches (mm)	Catalog part number
5.0	Refer to fuse selection chart on page 6	39.4 (1,000)	SIM05-CC20FS20-BB
5.0		39.4 (1,000)	SIM05-FS20CC20-BB
5.0		39.4 (1,000)	SIM05-CC20FS20-TT
5.0		39.4 (1,000)	SIM05-FS20CS20-TT
15.0		39.4 (1,000)	SIM15-CC20FS20-BB
15.0		39.4 (1,000)	SIM15-FS20CC20-BB
15.0		39.4 (1,000)	SIM15-CC20FS20-TT
15.0		39.4 (1,000)	SIM15-FS20CC20-TT

Table 9: Duplex switches (see Figure 7)

Rated maximum voltage (kV)	Fuse rating	Width in inches (mm)	Catalog part number
5.0	Refer to fuse selection chart on page 6	39.4 (1,000)	SIM05-FS20CS20-BTL <sup>1,2</sup>
5.0		39.4 (1,000)	SIM05-CS20FS20-BTR <sup>1,2</sup>
5.0		39.4 (1,000)	SIM05-CS20FS20-BT <sup>2</sup>
5.0		39.4 (1,000)	SIM05-FS20CS20-TBL <sup>1,2</sup>
5.0		39.4 (1,000)	SIM05-CS20FS20-TBR <sup>1,2</sup>
5.0		39.4 (1,000)	SIM05-CS20FS20-TB <sup>2</sup>
15.0		39.4 (1,000)	SIM15-FS20CS20-BTL <sup>1,2</sup>
15.0		39.4 (1,000)	SIM15-CS20FS20-BTR <sup>1,2</sup>
15.0		39.4 (1,000)	SIM15-CS20DFS20-BT <sup>2</sup>
15.0		39.4 (1,000)	SIM15-FS20CS20-TBL <sup>1,2</sup>
15.0		39.4 (1,000)	SIM15-CS20FS20-TBR <sup>1,2</sup>
15.0		39.4 (1,000)	SIM15-CS20FS20-TB <sup>2</sup>

**Footnotes:**

- 1. Close coupling via side connection to transformer.
- 2. Two-position switch with key interlocks.

Figure 3

Figure 4

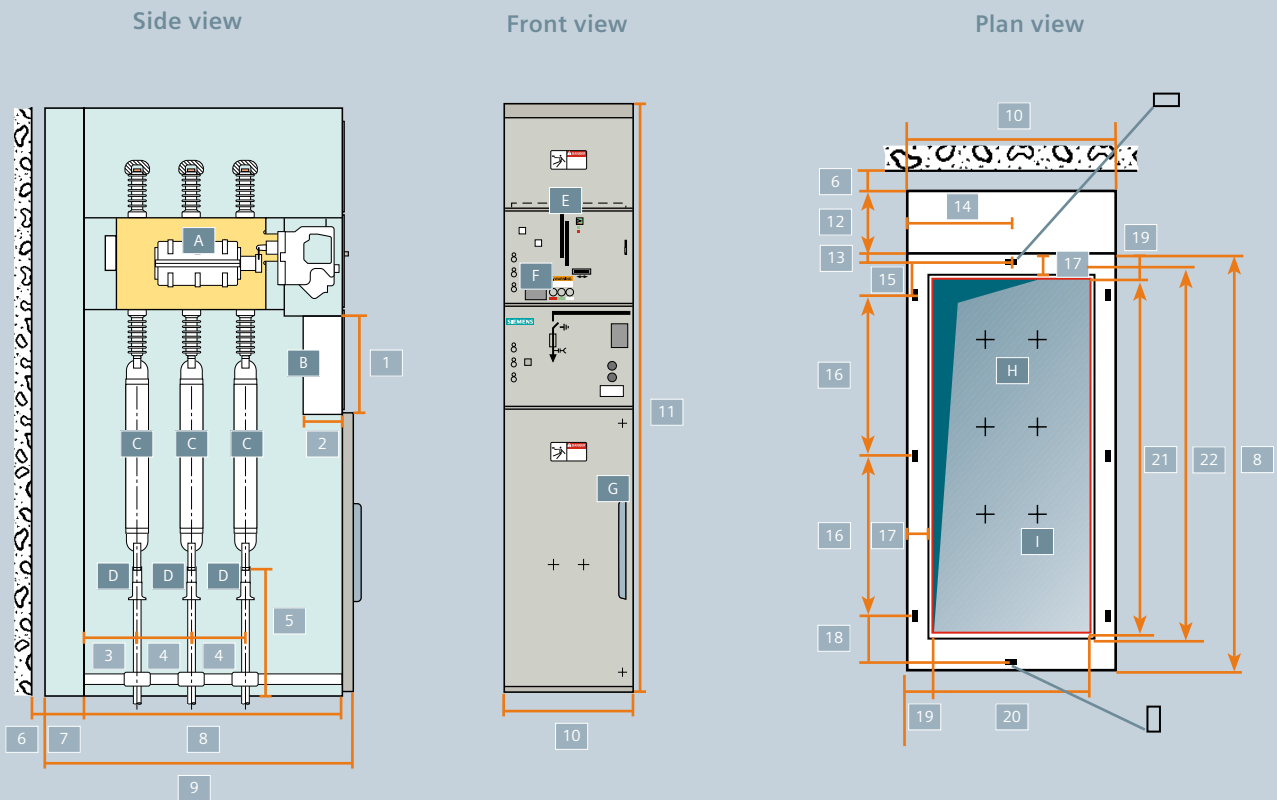
Figure 5

Figure 6

Figure 7

SIM05-FS20-TB	SIM05-FS20-TBL	SIM05-CS20-TBR	SIM05-CC20FS20-TT	SIM05-CS20FS20-TBR	Item	Inches (mm)
					A	19.7 (500)
					B	24.0 (610)
					C	48.4 (1,230)
					D	88.6 (2,250)
					E	112.6 (2,860)

# Type SIMOSEC metal-enclosed interrupter switchgear type FS section



Item	Description
A	Switch disconnector
B	Low-voltage operator controls compartment
C	High-voltage current limiting fuses
D	Cable connection
E	Switch operation location
F	Contact view port
G	Fuse/cable door
H	Floor opening
I	Feeder cables position

Item	Dimensions in inches (mm)	Item	Dimensions in inches (mm)
1	14.6 (371)	12	5.9 (150)
2	5.8 (148)	13	0.8 (20)
3	8.1 (205)	14	9.8 (250)
4	8.3 (210)	15	3.1 (80)
5	19.3 (490)	16	15.2 (385)
6	2 (50)	17	2.3 (58)
7	5.9 (150)	18	4.3 (110)
8	39.4 (1,000)	19	2.4 (60)
9	48.4 (1,230)	20	15 (380)
10	19.7 (500)	21	33.5 (850)
11	88.6 (2,250)	22	33.7 (857)

**Global Siemens Headquarters**

Siemens AG  
Wittelsbacherplatz 2  
80333 Muenchen  
Germany

**Global Siemens Energy Headquarters**

Siemens AG  
Energy Sector  
Freyeslebenstrasse 1  
91058 Erlangen  
Germany

[www.energy.siemens.com](http://www.energy.siemens.com)

**Legal Manufacturer**

Siemens Energy, Inc.  
Infrastructure & Cities Sector  
Medium Voltage Distribution  
7000 Siemens Road  
Wendell, North Carolina  
USA  
Telephone: +1 (800) 347-6659

[www.usa.siemens.com/energy](http://www.usa.siemens.com/energy)

Order No. E50001-F710-A374-X-4A00 | Printed in USA |  
© 2.2012, Siemens AG

All rights reserved.

Trademarks mentioned in this document are the property of Siemens AG, its affiliates, or their respective owners.

Subject to change without prior notice.

The information in this document contains general descriptions of the technical options available, which may not apply in all cases. The required technical options should therefore be specified in the contract.