

Protective Devices for SINAMICS G120C

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General Notes

- The voltage rating of any protection device must be at least the voltage rating of the supply circuit.
- Protective devices of the same type with lower current ratings may be used.
- Protection devices of the same type with a lower SCCR / I_{cc} rating may be used.
- The converters must be mounted in a suitable enclosure, while ensuring the minimum enclosure sizes are observed.

Overview of the approved protection devices according to UL standards

- JDDZ: Fuses of any manufacturer.
- DIVQ: Siemens circuit breaker
- NKJH: SIEMENS Type E combination motor controllers

ICC conditional short circuit current I_{cc}:

The maximum RMS value of a prospective short circuit current, available from a supply source.

Short-Circuit Current Rating (SCCR):

The Short-Circuit Current Rating (SCCR) is the prospective symmetrical fault current at a nominal voltage to which an apparatus or system is able to be connected without sustaining damage exceeding defined acceptance criteria.

UL Certificates:

FSAA, FSA, FSB, FSC
FSD, FSE, FSF

UL-File E121068, Vol. 7 Sec. 7 and 8
UL-File E192450, Vol. 13 Sec. 4

1 Protective devices for IEC applications

1.1 IEC Fuses

Power Module			Fuse			Min. enclosure volume	
Frame size	Rated Power, (LO)	Article no.	Max. rated current	Article no.	ICC	Metric	Imperial (USA)
FSA	0,55 kW	6SL3210-1KE11-8..2	10 A	3NA3803	100 kA	-	-
	0,75 kW	6SL3210-1KE12-3..2	10 A	3NA3803	100 kA		
	1,1 kW	6SL3210-1KE13-2..2	10 A	3NA3803	100 kA		
	1,5 kW	6SL3210-1KE14-3..2	10 A	3NA3803	100 kA		
	2,2 kW	6SL3210-1KE15-8..2	10 A	3NA3803	100 kA		
FSA	3,0 kW	6SL3210-1KE17-5..1	16 A	3NA3805	100 kA		
	4,0 kW	6SL3211-1KE18-8..1	16 A	3NA3805	100 kA		
FSB	5,5 kW	6SL3210-1KE21-3..1	32 A	3NA3812	100 kA		
	7,5 kW	6SL3210-1KE21-7..1	32 A	3NA3813	100 kA		
FSC	11,0 kW	6SL3210-1KE22-6..1	63 A	3NA3822	100 kA		
	15,0 kW	6SL3210-1KE23-3..1	63 A	3NA3822	100 kA		
	18,5 kW	6SL3210-1KE23-8..1	63 A	3NA3822	100 kA		
FSD	22,0 kW	6SL3210-1KE24-4..1	80 A	3NA3824	100 kA	0,6 m³ 1)	21,19 ft³ 1)
	30,0 kW	6SL3210-1KE26-0..1	100 A	3NA3830	100 kA		
	37,0 kW	6SL3210-1KE27-0..1	100 A	3NA3831	100 kA		
	45,0 kW	6SL3210-1KE28-4..1	125 A	3NA3832	100 kA		
FSE	55,0 kW	6SL3210-1KE31-1..1	160 A	3NA3836	100 kA		
FSF	75,0 kW	6SL3210-1KE31-4..1	200 A	3NA3140	100 kA		
	90,0 kW	6SL3210-1KE31-7..1	224 A	3NA3142	100 kA		
	110,0 kW	6SL3210-1KE32-1..1	300 A	3NA3250	100 kA		
	132,0 kW	6SL3210-1KE32-4..1	315 A	3NA3252	100 kA		

1) No enclosure size restrictions apply for 65 kA ICC rating

Note: Siemens 3NA low-voltage fuse series is recommended.

1.2 IEC Motor Starter Protectors

Power Module			MSP			Min. enclosure volume	
Frame Size	Rated Power, (LO)	Article no.	Max. rated current	Article no.	ICC @ 400 V AC	Metric	Imperial (USA)
FSAA	0,55 kW	6SL3210-1KE11-8..2	10 A	3RV2011-1JA..	65 kA	0,03 m³	1,06 ft³
			10 A	3RV2021-1JA..	65 kA		
	0,75 kW	6SL3210-1KE12-3..2	10 A	3RV2011-1JA..	65 kA		
			10 A	3RV2021-1JA..	65 kA		
	1,1 kW	6SL3210-1KE13-2..2	10 A	3RV2011-1JA..	65 kA		
			10 A	3RV2021-1JA..	65 kA		
	1,5 kW	6SL3210-1KE14-3..2	10 A	3RV2011-1JA..	65 kA		
			10 A	3RV2021-1JA..	65 kA		
	2,2 kW	6SL3210-1KE15-8..2	10 A	3RV2011-1JA..	65 kA		
			10 A	3RV2021-1JA..	65 kA		
FSA	3,0 kW	6SL3210-1KE17-5..1	16 A	3RV2011-4AA..	55 kA	0,06 m³	2,12 ft³
			16 A	3RV2021-4AA..	55 kA		
			16 A	3RV1031-4AA..	50 kA		
	4,0 kW	6SL3210-1KE18,8..1	16 A	3RV2011-4AA..	55 kA		
			16 A	3RV2021-4AA..	55 kA		
			16 A	3RV1031-4AA..	50 kA		
FSB	5,5 kW	6SL3210-1KE21-3..1	32 A	3RV1031-4EA..	50 kA	0,06 m³	2,12 ft³
			32 A	3RV2021-4EA..	65 kA		
			32 A	3RV2031-4EA..	65 kA		
	7,5 kW	6SL3210-1KE21-7..1	32 A	3RV1031-4EA..	50 kA		
			32 A	3RV2021-4EA..	65 kA		
			32 A	3RV2031-4EA..	65 kA		
FSC	11,0 kW	6SL3210-1KE22-6..1	50 A	3RV1031-4HA..	50 kA	0,14 m³	4,94 ft³
			52 A	3RV2031-4WA..	65 kA		
			63 A	3RV1041-4JA..	50 kA		
			63 A	3RV2041-4JA..	65 kA		
	15,0 kW	6SL3210-1KE23-2..1	50 A	3RV1031-4HA..	50 kA		
			52 A	3RV2031-4WA..	65 kA		
			63 A	3RV1041-4JA..	50 kA		
			63 A	3RV2041-4JA..	65 kA		
	18,5 kW	6SL3210-1KE23-8..1	50 A	3RV1031-4HA..	50 kA		
			52 A	3RV2031-4WA..	65 kA		
			63 A	3RV1041-4JA..	50 kA		
			63 A	3RV2041-4JA..	65 kA		

Power Module			MSP			Min. enclosure volume	
Frame Size	Rated Power, (LO)	Article no.	Max. rated current	Article no.	ICC @ 400 V AC	Metric	Imperial (USA)
FSD	22,0 kW	6SL3210-1KE24-4..1	75 A	3RV1041-4KA..	50 kA	0,6 m³	21,19 ft³
			75 A	3RV1042-4KA..	65 kA		
			73 A	3RV2031-4KA..	65 kA		
			73 A	3RV2032-4KA..	65 kA		
			75 A	3RV2041-4KA..	65 kA		
			75 A	3RV2042-4KA..	65 kA		
	30,0 kW	6SL3210-1KE26-0..1	90 A	3RV1041-4LA..	50 kA		
			90 A	3RV1042-4LA..	65 kA		
			93 A	3RV2041-4YA..	65 kA		
			93 A	3RV2041-4YA..	65 kA		
	37,0 kW	6SL3210-1KE27-0..1	100 A	3RV1041-4MA..	65 kA		
			100 A	3RV1042-4MA..	65 kA		
			100 A	3RV2041-4MA..	50 kA		
			100 A	3RV2042-4MA..	65 kA		
	45,0 kW	6SL3210-1KE28-4..1	100 A	3RV1041-4MA..	65 kA		
			100 A	3RV1042-4MA..	65 kA		
			100 A	3RV2041-4MA..	50 kA		
			100 A	3RV2042-4MA..	65 kA		

Note: The Icc values are valid for TN grid

1.3 IEC Circuit Breakers

Power Module		Article no.	Circuit Breaker			Min. enclosure volume	
Frame Size	Rated Power, (LO)		Max. rated current	Type	ICC @ 415 V	Metric	Imperial
FSD	22,0 kW	6SL3210-1KE24-4..1	80 A	3VL1708-2D...	70 kA	0,6 m³	21,19 ft³
				3VL2708-3DC...	100 kA		
				3VA1080-4ED...	36 kA		
				3VA1180-6E...	70 kA		
	30,0 kW	6SL3210-1KE26-0..1	100 A	3VL1710-2D...	70 kA		
				3VL2710-3DC...	100 kA		
				3VA1010-4ED...	36 kA		
				3VA1110-6E...	70 kA		
	37,0 kW	6SL3210-1KE27-0..1	100 A	3VL1710-2D...	70 kA		
				3VL2710-3DC...	100 kA		
				3VA1010-4ED...	36 kA		
				3VA1110-6E...	70 kA		
	45,0 kW	6SL3210-1KE28-4..1	100 A	3VL1710-2D...	70 kA		
				3VL2710-3DC...	100 kA		
				3VA1010-4ED...	36 kA		
				3VA1110-6E...	70 kA		
FSE	55,0 kW	6SL3210-1KE31-1...	160 A	3VL1716-2D...	70 kA		
				3VL2716-3DC...	100 kA		
				3VA1116-6E...	70 kA		
FSF	75,0 kW	6SL3210-1KE31-4..1	200 A	3VL3720-3DC...	100 kA		
				3VA1220-6EF...	70 kA		
	90,0 kW	6SL3210-1KE31-7..1	250 A	3VL3725-3DC...	100 kA		
				3VA1225-6EF...	70 kA		
	110,0 kW	6SL3210-1KE32-1..1	315 A	3VL4731-3DC...	100 kA		
			400 A	3VA2340-8..	100 kA		
	132,0 kW	6SL3210-1KE32-4..1	400 A	3VL4740-3DC...	100 kA		
				3VA2340-8..	100 A		

2 Protective devices for UL/CSA applications

2.1 UL/CSA non-semiconductor fuses

Power Module Frame Size	Rated Power, (LO)	Article no.	Fuse Max. rated current	SCCR @ 480 V	Min. enclosure volume	
					Metric	Imperial (USA)
FSAA	0,55 kW	6SL3210-1KE11-8..2	10 A	100 kA	0,03 m³ 1)	1,06 ft³ 1)
	0,75 kW	6SL3210-1KE12-3..2	10 A	100 kA		
	1,1 kW	6SL3210-1KE13-2..2	10 A	100 kA		
	1,5 kW	6SL3210-1KE14-3..2	10 A	100 kA		
	2,2 kW	6SL3210-1KE15-8..2	10 A	100 kA		
FSA	3,0 kW	6SL3210-1KE17-5..1	15 A	100 kA	0,06 m³ 1)	2,12 ft³ 1)
	4,0 kW	6SL3211-1KE18-8..1	15 A	100 kA		
FSB	5,5 kW	6SL3210-1KE21-3..1	35 A	100 kA	0,14 m³ 1)	4,94 ft³ 1)
	7,5 kW	6SL3210-1KE21-7..1	35 A	100 kA		
FSC	11,0 kW	6SL3210-1KE22-6..1	60 A	100 kA	0,6 m³ 2)	21,19 ft³ 2)
	15,0 kW	6SL3210-1KE23-3..1	60 A	100 kA		
	18,5 kW	6SL3210-1KE23-8..1	60 A	100 kA		
FSD	22,0 kW	6SL3210-1KE24-4..1	70 A	100 kA		
	30,0 kW	6SL3210-1KE26-0..1	90 A	100 kA		
	37,0 kW	6SL3210-1KE27-0..1	100 A	100 kA		
	45,0 kW	6SL3210-1KE28-4..1	125 A	100 kA		
FSE	55,0 kW	6SL3210-1KE31-1..1	150 A	100 kA		
FSF	75,0 kW	6SL3210-1KE31-4..1	200 A	100 kA		
	90,0 kW	6SL3210-1KE31-7..1	250 A	100 kA		
	110,0 kW	6SL3210-1KE32-1..1	300 A	100 kA		
	132,0 kW	6SL3210-1KE32-4..1	350 A	100 kA		

1) No enclosure size restrictions apply when Mersen (Ferraz Shaw mut) type AJT fuses are used.

2) No enclosure size restrictions apply for 65 kA SCCR rating

Note:

Any non-semiconductor fuse Class J, CF, T, or L (JDDZ) from any manufacturer can be used for all Frame Sizes. Additionally, Class CC and G fuses can be used for Frame Size AA to Frame Size C.

2.2 UL/CSA Type E Combination Motor Controllers

Power Module			CMC				Min. enclosure volume	
Frame Size	Rated Power, (LO)	Article no.	Max. rated current	Rated power @ 3 AC 460 V	Article no.	SCCR @ 480 Y / 277 V	Metric	Imperial (USA)
FSA	0,55 kW	6SL3210-1KE11-8..2	10 A	5 HP	3RV2011-1JA..	65 kA	0,03 m³	1,06 ft³
			10 A	5 HP	3RV2021-1JA..	65 kA		
	0,75 kW	6SL3210-1KE12-3..2	10 A	5 HP	3RV2011-1JA..	65 kA		
			10 A	5 HP	3RV2021-1JA..	65 kA		
	1,1 kW	6SL3210-1KE13-2..2	10 A	5 HP	3RV2011-1JA..	65 kA		
			10 A	5 HP	3RV2021-1JA..	65 kA		
	1,5 kW	6SL3210-1KE14-3..2	10 A	5 HP	3RV2011-1JA..	65 kA		
			10 A	5 HP	3RV2021-1JA..	65 kA		
	2,2 kW	6SL3210-1KE15-8..2	10 A	5 HP	3RV2011-1JA..	65 kA		
			10 A	5 HP	3RV2021-1JA..	65 kA		
FSA	3,0 kW	6SL3210-1KE17-5..1	16 A	10 HP	3RV2011-4AA..	65 kA		
			16 A	10 HP	3RV2021-4AA..	65 kA		
			16 A	10 HP	3RV1031-4AA..	65 kA		
	4,0 kW	6SL3210-1KE18,8..1	16 A	10 HP	3RV2011-4AA..	65 kA		
			16 A	10 HP	3RV2021-4AA..	65 kA		
			16 A	10 HP	3RV1031-4AA..	65 kA		
FSB	5,5 kW	6SL3210-1KE21-3..1	25 A	15 HP	3RV2021-4DA..	65 kA	0,06 m³	2,12 ft³
			32 A	20 HP	3RV1031-4EA..	65 kA		
			32 A	20 HP	3RV2021-4EA..	50 kA		
			32 A	25 HP	3RV2031-4EA..	65 kA		
	7,5 kW	6SL3210-1KE21-7..1	25 A	15 HP	3RV2021-4DA..	65 kA		
			32 A	20 HP	3RV1031-4EA..	65 kA		
			32 A	20 HP	3RV2021-4EA..	50 kA		
			32 A	25 HP	3RV2031-4EA..	65 kA		
FSC	11,0 kW	6SL3210-1KE22-6..1	50 A	40 HP	3RV1031-4HA..	65 kA	0,14 m³	4,49 ft³
			63 A	50 HP	3RV1041-4JA..	65 kA		
	15,0 kW	6SL3210-1KE23-2..1	50 A	40 HP	3RV1031-4HA..	65 kA		
			63 A	50 HP	3RV1041-4JA..	65 kA		
	18,5 kW	6SL3210-1KE23-8..1	50 A	40 HP	3RV1031-4HA..	65 kA		
			65 A	50 HP	3RV1041-4JA..	65 kA		
FSD	22,0 kW	6SL3210-1KE24-4..1	75 A	60 HP	3RV1041-4KA..	65 kA	0,6 m³	21,19 ft³
			75 A	60 HP	3RV1042-4KA..	65 kA		
			73 A	50 HP	3RV2031-4KA..	20 kA		
			73 A	50 HP	3RV2032-4KA..	30 kA		
			75 A	60 HP	3RV2041-4KA..	65 kA		
			75 A	60 HP	3RV2042-4KA..	65 kA		
	30,0 kW	6SL3210-1KE26-0..1	90 A	75 HP	3RV1041-4LA..	65 kA		
			90 A	75 HP	3RV1042-4LA..	65 kA		
			93 A	75 HP	3RV2041-4YA..	65 kA		
			93 A	75 HP	3RV2041-4YA..	65 kA		
	37,0 kW	6SL3210-1KE27-0..1	100 A	75 HP	3RV1041-4MA..	65 kA		
			100 A	75 HP	3RV1042-4MA..	65 kA		
			100 A	75 HP	3RV2041-4MA..	65 kA		
			100 A	75 HP	3RV2042-4MA..	65 kA		
	45,0 kW	6SL3210-1KE28-4..1	100 A	75 HP	3RV1041-4MA..	65 kA		
			100 A	75 HP	3RV1042-4MA..	65 kA		
			100 A	75 HP	3RV2041-4MA..	65 kA		
			100 A	75 HP	3RV2042-4MA..	65 kA		

3RV20 motor starter protectors are approved in accordance with UL 508/UL60947-4-1 in combination with the terminal blocks listed below:

- 3RV2011 and 3RV2021 with 3RV2928-1H
- 3RV203. with 3RV2938-1K
- 3RV204. with 3RT2946-4GA07

For CSA not necessary

3RV104 motor starter protectors are approved in accordance with UL 508/UL60947-4-1 in combination with the 3RT1946-4GA07 terminal blocks.

2.3 UL/CSA Circuit Breakers

Power Module			Circuit Breaker				SCCR @		Min. enclosure volume	
Frame Size	Rated Power, (LO)	Article no.	Max. rated current	UL/CSA Type ¹⁾	Article no. Example (European) ²⁾	480 V	480 Y / 277 V		Metric	Imperial (USA)
FSAA	0,55 kW	6SL3210-1KE11-8..2	15 A	LGG	-	5 kA	³⁾	0,03 m³	1,06 ft³	
			15 A	CED6	-	5 kA	³⁾			
			15 A	3RV1742	3RV1742-5BD..	5 kA	³⁾			
			15 A	3RV2711	3RV2711-4AD..	---	5 kA			
	0,75 kW	6SL3210-1KE12-3..2	15 A	LGG	-	5 kA	³⁾			
			15 A	CED6	-	5 kA	³⁾			
			15 A	3RV1742	3RV1742-5BD..	5 kA	³⁾			
			15 A	3RV2711	3RV2711-4AD..	---	5 kA			
	1,1 kW	6SL3210-1KE13-2..2	15 A	LGG	-	5 kA	³⁾			
			15 A	CED6	-	5 kA	³⁾			
			15 A	3RV1742	3RV1742-5BD..	5 kA	³⁾			
			15 A	3RV2711	3RV2711-4AD..	---	5 kA			
	1,5 kW	6SL3210-1KE14-3..2	15 A	LGG	-	5 kA	³⁾			
			15 A	CED6	-	5 kA	³⁾			
			15 A	3RV1742	3RV1742-5BD..	5 kA	³⁾			
			15 A	3RV2711	3RV2711-4AD..	---	5 kA			
	2,2 kW	6SL3210-1KE15-8..2	15 A	LGG	-	5 kA	³⁾			
			15 A	CED6	-	5 kA	³⁾			
			15 A	3RV1742	3RV1742-5BD..	5 kA	³⁾			
			15 A	3RV2711	3RV2711-4AD..	---	5 kA			
FSA	3,0 kW	6SL3210-1KE17-5..1	15 A	LGG	-	65 kA	³⁾			
			15 A	CED6	-	65 kA	³⁾			
			15 A	3RV1742	3RV1742-5BD..	65 kA	³⁾			
			15 A	3RV2711	3RV2711-4AD..	---	65 kA			
	4,0 kW	6SL3210-1KE18-8..1	15 A	LGG	-	65 kA	³⁾			
			15 A	CED6	-	65 kA	³⁾			
			15 A	3RV1742	3RV1742-5BD..	65 kA	³⁾			
			15 A	3RV2711	3RV2711-4AD..	---	65 kA			
FSB	5,5 kW	6SL3210-1KE21-3..1	35 A	LGG	-	65 kA	³⁾	0,06 m³	2,12 ft³	
			35 A	CED6	-	65 kA	³⁾			
			35 A	NCGA	3VL1135-1KM..	35 kA	³⁾			
			35 A	HCGA	3VL1135-2KM..	65 kA	³⁾			
			35 A	3RV1742	3RV1742-5FD..	---	65 kA			
	7,5 kW	6SL3210-1KE21-7..1	35 A	LGG	-	65 kA	³⁾			
			35 A	CED6	-	65 kA	³⁾			
			35 A	NCGA	3VL1135-1KM..	35 kA	³⁾			
			35 A	HCGA	3VL1135-2KM..	65 kA	³⁾			
			35 A	3RV1742	3RV1742-5FD..	---	65 kA			
FSC	11,0 kW	6SL3210-1KE22-6..1	60 A	LGG	-	65 kA	³⁾	0,14 m³	4,49 ft³	
			60 A	CED6	-	65 kA	³⁾			
			60 A	NCGA	3VL1106-1KM..	35 kA	³⁾			
			60 A	HCGA	3VL1106-2KM..	65 kA	³⁾			
			60 A	3RV1742	3RV1742-5LD..	---	65 kA			
	15,0 kW	6SL3210-1KE23-2..1	60 A	LGG	-	65 kA	³⁾			
			60 A	CED6	-	65 kA	³⁾			
			60 A	NCGA	3VL1106-1KM..	35 kA	³⁾			
			60 A	HCGA	3VL1106-2KM..	65 kA	³⁾			
			60 A	3RV1742	3RV1742-5LD..	---	65 kA			
	18,5 kW	6SL3210-1KE23-8..1	60 A	LGG	-	65 kA	³⁾			
			60 A	CED6	-	65 kA	³⁾			
			60 A	NCGA	3VL1106-1KM..	35 kA	³⁾			
			60 A	HCGA	3VL1106-2KM..	65 kA	³⁾			
			60 A	3RV1742	3RV1742-5LD..	---	65 kA			

Power Module Frame Size	Rated Power, (LO)	Article no.	Circuit Breaker		Article no. Example (European) ²⁾	SCCR @		Min. enclosure volume	
			Max. rated current	UL/CSA Type ¹⁾		480 V	480 Y / 277 V	Metric	Imperial (USA)
FSD	22,0 kW	6SL3210-1KE24-4..1	70 A	3RV1742	3RV1742-5QD..	---	65 kA	0,6 m³	21,19 ft³
			70 A	3RV2742	3RV2742-5QD..	---	65 kA		
			70 A	NGG	-	25 kA	³⁾		
			70 A	HGG	-	35 kA	³⁾		
			70 A	LGG	-	65 kA	³⁾		
			70 A	NCGA	3VL1107-1KM..	35 kA	³⁾		
			70 A	HCGA	3VL1107-2KM..	65 kA	³⁾		
			70 A	NDGB	3VL2507-1KN..	35 kA	³⁾		
			70 A	HDGB	3VL2507-2KN..	65 kA	³⁾		
			70 A	LDGB	3VL2507-3KN..	65 kA	³⁾		
			70 A	CED6	-	100 kA	³⁾		
			70 A	FXD6-A	-	35 kA	³⁾		
			70 A	FD6-A	-	35 kA	³⁾		
			70 A	HFD6	-	65 kA	³⁾		
			70 A	HFXD6	-	65 kA	³⁾		
			70 A	HHFD6	-	100 kA	³⁾		
			70 A	HHFXD6	-	100 kA	³⁾		
			70 A	CFD6	-	100 kA	³⁾		
			70 A	3VA51	3VA5170-4E..	25 kA	³⁾		
			70 A	3VA51	3VA5170-5E..	35 kA	³⁾		
			70 A	3VA51	3VA5170-6E..	65 kA	³⁾		
FSD	30,0 kW	6SL3210-1KE26-0..1	90 A	NGG	-	25 kA	³⁾	0,6 m³	21,19 ft³
			90 A	HGG	-	35 kA	³⁾		
			90 A	LGG	-	65 kA	³⁾		
			90 A	NCGA	3VL1191-1KM..	35 kA	³⁾		
			90 A	HCGA	3VL1191-2KM..	65 kA	³⁾		
			90 A	NDGB	3VL2591-1KN..	35 kA	³⁾		
			90 A	HDGB	3VL2591-2KN..	65 kA	³⁾		
			90 A	LDGB	3VL2591-3KN..	65 kA	³⁾		
			90 A	CED6	-	100 kA	³⁾		
			90 A	FXD6-A	-	35 kA	³⁾		
			90 A	FD6-A	-	35 kA	³⁾		
			90 A	HFD6	-	65 kA	³⁾		
			90 A	HFXD6	-	65 kA	³⁾		
			90 A	HHFD6	-	100 kA	³⁾		
			90 A	HHFXD6	-	100 kA	³⁾		
			90 A	CFD6	-	100 kA	³⁾		
			100 A	3VA51	3VA5110-4E..	---	25 kA		
			100 A	3VA51	3VA5110-5E..	---	35 kA		
			100 A	3VA51	3VA5110-6E..	---	65 kA		
			100 A	3VA52	3VA5210-7E..	100 kA	³⁾		

Power Module Frame Size	Rated Power, (LO)	Article no.	Circuit Breaker		Article no. Example (European) ²⁾	SCCR @		Min. enclosure volume	
			Max. rated current	UL/CSA Type ¹⁾		480 V	480 Y / 277 V	Metric	Imperial (USA)
FSD	37,0 kW	6SL3210-1KE27-0..1	100 A	NGG	-	25 kA	³⁾	0,6 m³	21,19 ft³
			100 A	HGG	-	35 kA	³⁾		
			100 A	LGG	-	65 kA	³⁾		
			100 A	NCGA	3VL1110-1KM..	35 kA	³⁾		
			100 A	HCGA	3VL1110-2KM..	65 kA	³⁾		
			100 A	NDGB	3VL2510-1KN..	35 kA	³⁾		
			100 A	HDGB	3VL2510-2KN..	65 kA	³⁾		
			100 A	LDGB	3VL2510-3KN..	65 kA	³⁾		
			100 A	NFGB	3VL3510-1KN..	35 kA	³⁾		
			100 A	HFGB	3VL3510-2KN..	65 kA	³⁾		
			100 A	LFGB	3VL3510-3KN..	65 kA	³⁾		
			100 A	CED6	-	100 kA	³⁾		
			100 A	FXD6-A	-	35 kA	³⁾		
			100 A	FD6-A	-	35 kA	³⁾		
			100 A	HFD6	-	65 kA	³⁾		
			100 A	HFXD6	-	65 kA	³⁾		
			100 A	HHFD6	-	100 kA	³⁾		
			100 A	HHFXD6	-	100 kA	³⁾		
			100 A	CFD6	-	100 kA	³⁾		
			100 A	3VA51	3VA5110-4E..	---	25 kA		
			100 A	3VA51	3VA5110-5E..	---	35 kA		
			100 A	3VA51	3VA5110-6E..	---	65 kA		
			100 A	3VA52	3VA5210-7E..	100 kA	³⁾		
FSD	45,0 kW	6SL3210-1KE28-4..1	110 A	NGG	-	25 kA	³⁾	0,6 m³	21,19 ft³
			110 A	HGG	-	35 kA	³⁾		
			110 A	LGG	-	65 kA	³⁾		
			100 A	NCGA	3VL1110-1KM..	35 kA	³⁾		
			100 A	HCGA	3VL1110-2KM..	65 kA	³⁾		
			110 A	NDGB	3VL2511-1KN..	35 kA	³⁾		
			110 A	HDGB	3VL2511-2KN..	65 kA	³⁾		
			110 A	LDGB	3VL2511-3KN..	65 kA	³⁾		
			110 A	NFGB	3VL3511-1KN..	35 kA	³⁾		
			110 A	HFGB	3VL3511-2KN..	65 kA	³⁾		
			110 A	LFGB	3VL3511-3KN..	65 kA	³⁾		
			110 A	CED6	-	100 kA	³⁾		
			110 A	FXD6-A	-	35 kA	³⁾		
			110 A	FD6-A	-	35 kA	³⁾		
			110 A	HFD6	-	65 kA	³⁾		
			110 A	HFXD6	-	65 kA	³⁾		
			110 A	HHFD6	-	100 kA	³⁾		
			110 A	HHFXD6	-	100 kA	³⁾		
			110 A	CFD6	-	100 kA	³⁾		
			110 A	3VA51	3VA5111-4E..	---	25 kA		
			110 A	3VA51	3VA5111-5E..	---	35 kA		
			110 A	3VA51	3VA5111-6E..	---	65 kA		
			110 A	3VA52	3VA5211-7E..	100 kA	³⁾		

Power Module Frame Size	Rated Power, (LO)	Article no.	Circuit Breaker		Article no. Example (European) ²⁾	SCCR @		Min. enclosure volume	
			Max. rated current	UL/CSA Type ¹⁾		480 V	480 Y / 277 V	Metric	Imperial (USA)
FSE	55,0 kW	6SL3210-1KE31-1..1	150 A	NCGA	3VL1115-1KM..	35 kA	³⁾	0,6 m³	21,19 ft³
			150 A	HCGA	3VL1115-2KM..	65 kA	³⁾		
			150 A	NDGB	3VL2515-1KN..	35 kA	³⁾		
			150 A	HDGB	3VL2515-2KN..	65 kA	³⁾		
			150 A	LDGB	3VL2515-3KN..	65 kA	³⁾		
			150 A	NFGB	3VL3515-1KN..	35 kA	³⁾		
			150 A	HFGB	3VL3515-2KN..	65 kA	³⁾		
			150 A	LFGB	3VL3515-3KN..	65 kA	³⁾		
			150 A	FXD6-A	-	35 kA	³⁾		
			150 A	FD6-A	-	35 kA	³⁾		
			150 A	HFD6	-	65 kA	³⁾		
			150 A	HFXD6	-	65 kA	³⁾		
			150 A	HHFD6	-	100 kA	³⁾		
			150 A	HHFXD6	-	100 kA	³⁾		
			150 A	CFD6	-	100 kA	³⁾		
			150 A	3VA52	3VA5215-5E..	35 kA	³⁾		
			150 A	3VA52	3VA5215-6E..	65 kA	³⁾		
			150 A	3VA52	3VA5215-7E..	100 kA	³⁾		
FSF	75,0 kW	6SL3210-1KE31-4..1	200 A	NFGB	3VL3520-1KN..	35 kA	³⁾	0,6 m³	21,19 ft³
			200 A	HFGB	3VL3520-2KN..	65 kA	³⁾		
			200 A	LFGB	3VL3520-3KN..	65 kA	³⁾		
			200 A	FXD6-A	-	35 kA	³⁾		
			200 A	FD6-A	-	35 kA	³⁾		
			200 A	HFD6	-	65 kA	³⁾		
			200 A	HFXD6	-	65 kA	³⁾		
			200 A	HHFD6	-	100 kA	³⁾		
			200 A	HHFXD6	-	100 kA	³⁾		
			200 A	CFD6	-	100 kA	³⁾		
			200 A	JXD6-A	-	35 kA	³⁾		
			200 A	JD6-A	-	35 kA	³⁾		
			200 A	HJD6-A	-	65 kA	³⁾		
			200 A	HJXD6-A	-	65 kA	³⁾		
			200 A	HHJD6	-	100 kA	³⁾		
			200 A	HHJXD6	-	100 kA	³⁾		
			200 A	CJD6-A	-	100 kA	³⁾		
			200 A	3VA52	3VA5220-5E..	35 kA	³⁾		
			200 A	3VA52	3VA5220-6E..	65 kA	³⁾		
			200 A	3VA52	3VA5220-7E..	100 kA	³⁾		

Power Module Frame Size	Rated Power, (LO)	Article no.	Circuit Breaker		Article no. Example (European) ²⁾	SCCR @		Min. enclosure volume	
			Max. rated current	UL/CSA Type ¹⁾		480 V	480 Y / 277 V	Metric	Imperial (USA)
FSF	90,0 kW	6SL3210-1KE31-7..1	250 A	NFGB	3VL3525-1KN..	35 kA	³⁾	0,6 m³	21,19 ft³
			250 A	HFGB	3VL3525-2KN..	65 kA	³⁾		
			250 A	LFGB	3VL3525-3KN..	65 kA	³⁾		
			250 A	FXD6-A	-	35 kA	³⁾		
			250 A	FD6-A	-	35 kA	³⁾		
			250 A	HFD6	-	65 kA	³⁾		
			250 A	HFXD6	-	65 kA	³⁾		
			250 A	HHFD6	-	100 kA	³⁾		
			250 A	HHFXD6	-	100 kA	³⁾		
			250 A	CFD6	-	100 kA	³⁾		
			250 A	JXD6-A	-	35 kA	³⁾		
			250 A	JD6-A	-	35 kA	³⁾		
			250 A	HJD6-A	-	65 kA	³⁾		
			250 A	HJXD6-A	-	65 kA	³⁾		
			250 A	HHJD6	-	100 kA	³⁾		
			250 A	HHJXD6	-	100 kA	³⁾		
			250 A	CJD6-A	-	100 kA	³⁾		
			250 A	3VA52	3VA5225-5E..	35 kA	³⁾		
			250 A	3VA52	3VA5225-6E..	65 kA	³⁾		
			250 A	3VA52	3VA5225-7E..	100 kA	³⁾		
FSF	110,0 kW	6SL3210-1KE32-1..1	300 A	NJGA	3VL4130-1KN..	35 kA	³⁾	0,6 m³	21,19 ft³
			300 A	HJGA	3VL4130-2KN..	65 kA	³⁾		
			300 A	LJGA	3VL4130-3KN..	65 kA	³⁾		
			300 A	JXD6-A	-	35 kA	³⁾		
			300 A	JD6-A	-	35 kA	³⁾		
			300 A	HJD6	-	65 kA	³⁾		
			300 A	HJXD6	-	65 kA	³⁾		
			300 A	HHJD6	-	100 kA	³⁾		
			300 A	HHJXD6	-	100 kA	³⁾		
			300 A	CJD6-A	-	100 kA	³⁾		
			300 A	LD6-A	-	35 kA	³⁾		
			300 A	HLD6-A	-	65 kA	³⁾		
			300 A	HLXD6-A	-	65 kA	³⁾		
			300 A	HHLD6	-	65 kA	³⁾		
			300 A	HHLXD6	-	65 kA	³⁾		
			400 A	3VA63	3VA6340-5..	35 kA	³⁾		
			400 A	3VA63	3VA6340-6..	65 kA	³⁾		
			400 A	3VA63	3VA6340-7..	100 kA	³⁾		
			400 A	3VA63	3VA6340-8..	100 kA	³⁾		

Power Module Frame Size	Rated Power, (LO)	Article no.	Circuit Breaker			SCCR @		Min. enclosure volume	
			Max. rated current	UL/CSA Type ¹⁾	Article no. Example (European) ²⁾	480 V	480 Y / 277 V	Metric	Imperial (USA)
FSF	132,0 kW	6SL3210-1KE32-4..1	350 A	NJGA	3VL4135-1KN..	35 kA	³⁾	0,6 m³	21,19 ft³
			350 A	HJGA	3VL4135-2KN..	65 kA	³⁾		
			350 A	LJGA	3VL4135-3KN..	65 kA	³⁾		
			350 A	JXD6-A	-	35 kA	³⁾		
			350 A	JD6-A	-	35 kA	³⁾		
			350 A	HJD6	-	65 kA	³⁾		
			350 A	HJXD6	-	65 kA	³⁾		
			350 A	HHJD6	-	100 kA	³⁾		
			350 A	HHJXD6	-	100 kA	³⁾		
			350 A	CJD6-A	-	100 kA	³⁾		
			350 A	LD6-A	-	35 kA	³⁾		
			350 A	HLD6-A	-	65 kA	³⁾		
			350 A	HLXD6-A	-	65 kA	³⁾		
			350 A	HHLD6	-	65 kA	³⁾		
			350 A	HHLXD6	-	65 kA	³⁾		
			400 A	3VA63	3VA6340-5..	35 kA	³⁾		
			400 A	3VA63	3VA6340-6..	65 kA	³⁾		
			400 A	3VA63	3VA6340-7..	100 kA	³⁾		
			400 A	3VA63	3VA6340-8..	100 kA	³⁾		

1) NCGA & HCGA are UL listed 3VL11 series (Siemens type VL150x UL) circuit breakers shown in the European circuit breaker catalog LV 16. Other Frame Sizes alike.

2) For more breaker article numbers, please refer to the European circuit breaker catalog LV 16.

3) The SCCR shown in the table for 3 phase straight rated 480V AC supply systems can also be applied to a 3 phase center point grounded (slash rated) supply systems of 480Y/277 V AC.

However, vice versa or conversely CANNOT be done i.e. the SCCR shown in the table for a 3 phase center point grounded (slash rated) supply systems CANNOT be applied to a straight rated supply systems.

For more information:



<https://support.industry.siemens.com/cs/ww/de/ps/13206/man>