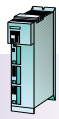
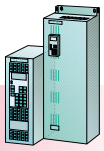
Selection and ordering data

Rectifier units

Compact PLUS units



Compact and chassis units



Nominal power rating[1]	Selection data: Rated DC link current	DC link base load current	Short-time current of DC link	Max. DC link inverter current[2]	Input current[3]	Rectifier unit	Total power loss	Dimensions W x H x D	For dimension drawing, see Section 7	Weight, approx.	Cooling air requirement
	$I_{DCrated}$	I_{DCG}	$I_{DCmax.}$					mm x mm x mm (in x in x in)		kg (lb)	m^3/s (ft^3/s)
kW	A	A	A	A	A	Order No.	kW		No.		
Supply voltage 3-ph. 380 V to 480 V AC											
Compact PLUS units with integrated brake chopper											
15	41	37	123/65[4]	80	36	**6SE7024–1EP85–0AA0**[6]	0.13	90 x 360 x 260 (3.5 x 14.2 x 10.2)	1	3.9 (8.6)	0.018 (0.636)
50	120	109	360/192[4]	[5]	108	**6SE7031–2EP85–0AA0**[6]	0.27	135 x 360 x 260 (5.3 x 14.2 x 10.2)	1	8.3 (18.3)	0.041 (1.448)
100	230	209	690/368[4]	[5]	207	**6SE7032–3EP85–0AA0**[6]	0.60	180 x 360 x 260 (7.1 x 14.2 x 10.2)	1	13.3 (29.3)	0.053 (1.871)
Compact units											
15	41	37	56	45	36	**6SE7024–1EB85–0AA0**	0.12	135 x 425 x 350 (5.3 x 16.7 x 13.8)	4	12 (26.5)	0.022 (0.777)
37	86	78	117	95	75	**6SE7028–6EC85–0AA0**	0.26	180 x 600 x 350 (7.1 x 23.6 x 13.8)	4	18 (39.7)	0.028 (0.989)
Chassis units											
75	173	157	235	[5]	149	**6SE7031–7EE85–0AA0**	0.62	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	45 (99.2)	0.2 (7.1)
110	270	246	367	[5]	233	**6SE7032–7EE85–0AA0**	0.86	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	45 (99.2)	0.2 (7.1)
160	375	341	510	[5]	326	**6SE7033–8EE85–0AA0**	1.07	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	45 (99.2)	0.2 (7.1)
200	463	421	630	[5]	403	**6SE7034–6EE85–0AA0**	1.32	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	45 (99.2)	0.2 (7.1)
250	605	551	823	[5]	526	**6SE7036–1EE85–0AA0**	1.67	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	45 (99.2)	0.2 (7.1)

1) The quoted nominal power ratings serve only as a guide for the selection of other components. The exact drive output depends on the connected inverters and this should be taken into account when planning.

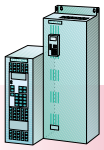
2) The connected inverter units must not exceed the specified total DC link current.

3) The currents are based on a line inductance of **3 %** in relation to the equipment impedance ***Z***, i.e. the ratio of the line short-circuit power to the converter power ***S*** is **33 : 1** or 100 : 1 if a 2 % line reactor is used as well.
Equipment impedance: $Z = \frac{V_{Line}}{\sqrt{3} \cdot I_{V_{Line}}}$

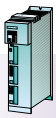
4) 3 x I_{DC} for 250 ms (only for Compact PLUS rectifier units)/1.6 x I_{DC} for 30 s.

5) No limitation due to precharging via controlled thyristor bridge. For maximum dimensioning, see "Dimensioning of the system components for multi-axis drives".

6) The brake chopper is built into the Compact PLUS rectifier unit. The brake resistor is to be selected accordingly and mounted externally. The 24 V current requirement is approx. 0.5 A per rectifier unit at 15 kW, 0.7 A at 50 kW and 100 kW.



Compact and chassis units



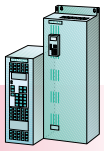
Compact PLUS units

Rectifier units

Sound pressure level with standard protection degree IP20/IP00	Power connections – Terminals for sizes B, C and P – Lugs for size E – Location: at top for DC, at bottom for AC			Auxiliary current requirement			
50 Hz	Finely stranded	Single- and multi-stranded	Retaining bolt	DC 24 V Standard version max. at 20 V	DC 24 V Max. version max. at 20 V	1-ph. or 2-ph. 230 V AC fan 50 Hz	60 Hz
dB (A)	mm^2 (AWG)	mm^2 (AWG)		A	A	A	A
60	max. 10 (8)	max. 10 (8)	–	0.5	–	none	none
68	max. 50 (1/0)	max. 50 (1/0)	–	0.7	–	none	none
65	max. 95 (4/0)	max. 95 (4/0)	–	0.7	–	none	none
60	2.5 to 10 (12 – 8)	2.5 to 16 (12 – 4)		0.5	–	none	none
60	2.5 to 35 (12 – 2)	10 to 50 (6 – 1/0)		0.5	–	none	none
75		2 x 300 (2 x 600)	M 12	0.3	–	0.6	0.75
75		2 x 300 (2 x 600)	M 12	0.3	–	0.6	0.75
75		2 x 300 (2 x 600)	M 12	0.3	–	0.6	0.75
75		2 x 300 (2 x 600)	M 12	0.3	–	0.6	0.75
75		2 x 300 (2 x 600)	M 16	0.3	–	0.6	0.75

Selection and ordering data

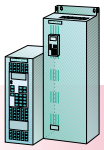
Self-commutating, pulsed rectifier/regenerative units Active Front End AFE



Compact and chassis units

Rated rectifier/ regenerative output at cos φ = 1 and 400 V supply voltage	Selection data: Short-time rectifier/ regenerative output at cos φ = 1 and 400 V supply voltage	Rated input current 3 AC from/to line	Base load input current 3 AC from/to line	Short-time input current 3 AC from/to line	**AFE inverters** with CUSA control board 6SE7090-0XX84-0BJ0	Power loss	Spare part from VC inverter of nominal power rating	Framework dimensions W x H x D	For dimension drawing, see Section 7	Weight, approx.	Cooling air requirement
P_{rated}	$P_{max.}$	$I_{n\,conv}$	I_G	$I_{max.}$		P_v	P_{type}				
kW	kW	A	A	A	Order No.	kW	kW	mm x mm x mm (in x in x in)	No.	kg (lb)	m^3/s (ft^3/s)
Supply voltage 3-ph. 380 V AC –20 % to 460 V +5 %											
Compact units											
6.8	11	10.2	9.2	16.3	**6SE7021–0EA81**	0.14	4	90 x 425 x 350 (3.5 x 16.7 x 13.8)	5	8 (17.4)	0.009 (0.318)
9	14	13.2	11.9	21.1	**6SE7021–3EB81**	0.18	5.5	135 x 425 x 350 (5.3 x 16.7 x 13.8)	5	12 (26.5)	0.022 (0.777)
12	19	17.5	15.8	28.0	**6SE7021–8EB81**	0.24	7.5	135 x 425 x 350 (5.3 x 16.7 x 13.8)	5	12 (26.5)	0.022 (0.777)
17	27	25.5	23.0	40.8	**6SE7022–6EC81**	0.34	11	180 x 600 x 350 (7.1 x 23.6 x 13.8)	5	24 (52.9)	0.028 (0.989)
23	37	34	31	54	**6SE7023–4EC81**	0.46	15	180 x 600 x 350 (7.1 x 23.6 x 13.8)	5	24 (52.9)	0.028 (0.989)
32	51	47	42	75	**6SE7024–7ED81**	0.63	22	270 x 600 x 350 (10.6 x 23.6 x 13.8)	5	35 (77.2)	0.054 (1.907)
40	63	59	53	94	**6SE7026–0ED81**	0.79	30	270 x 600 x 350 (10.6 x 23.6 x 13.8)	5	35 (77.2)	0.054 (1.907)
49	78	72	65	115	**6SE7027–2ED81**	0.98	37	270 x 600 x 350 (10.6 x 23.6 x 13.8)	5	35 (77.2)	0.054 (1.907)
Chassis units											
63	100	92	83	147	**6SE7031–0EE80**	1.06	45	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	7	55 (121.3)	0.11 (3.885)
85	135	124	112	198	**6SE7031–2EF80**	1.44	55	360 x 1050 x 365 (14.3 x 41.3 x 14.4)	7	65 (143.3)	0.15 (5.297)
100	159	146	131	234	**6SE7031–5EF80**	1.69	75	360 x 1050 x 365 (14.3 x 41.3 x 14.4)	7	65 (143.3)	0.15 (5.297)
125	200	186	167	298	**6SE7031–8EF80**	2.00	90	360 x 1050 x 365 (14.3 x 41.3 x 14.4)	7	65 (143.3)	0.15 (5.297)
143	228	210	189	336	**6SE7032–1EG80**	2.42	110	508 x 1450 x 465 (20 x 57.1 x 18.3)	7	155 (341.8)	0.33 (11.654)
177	282	260	234	416	**6SE7032–6EG80**	3.00	132	508 x 1450 x 465 (20 x 57.1 x 18.3)	7	155 (341.8)	0.33 (11.654)
214	342	315	284	504	**6SE7033–2EG80**	3.64	160	508 x 1450 x 465 (20 x 57.1 x 18.3)	7	165 (363.8)	0.44 (15.539)
250	400	370	333	592	**6SE7033–7EG80**	4.25	200	508 x 1450 x 465 (20 x 57.1 x 18.3)	7	180 (396.9)	0.44 (15.539)

1) The quoted nominal power ratings serve only as a guide for the selection of other components. The exact drive output depends on the motor connected and this should be taken into account when planning.



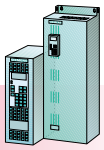
Compact and chassis units

Self-commutating, pulsed rectifier/regenerative units Active Front End AFE

Sound pressure level with standard protection degree IP20/IP00	Power connections – Terminals for sizes A to D – Lugs for sizes E to G – Location: at bottom for AFE reactor, at top for DC link connection			Auxiliary current requirement		
50 Hz	Finely stranded	Single- and multi-stranded	Retaining bolt	DC 24 V Standard version max. at 20 V	DC 24 V Max. version max. at 20 V	2-ph. 230 V AC fan at AFE inverters 50 Hz/60 Hz[1])
dB (A)	mm^2 (AWG)	mm^2 (AWG)		A	A	W
60	2.5 to 10 (12 – 8)	2.5 to 16 (12 – 6)		2	3	none
60	2.5 to 10 (12 – 8)	2.5 to 16 (12 – 6)		2	3	none
60	2.5 to 10 (12 – 8)	2.5 to 16 (12 – 6)		2	3	none
60	2.5 to 16 (12 – 6)	10 to 25 (6 – 4)		2	3	none
60	2.5 to 16 (12 – 6)	10 to 25 (6 – 4)		2	3	none
65	2.5 to 35 (12 – 2)	10 to 50 (6 – 1/0)		2	3	0.43/0.49
65	2.5 to 35 (12 – 2)	10 to 50 (6 – 1/0)		2	3	0.43/0.49
65	2.5 to 35 (12 – 2)	10 to 50 (6 – 1/0)		2	3	0.43/0.49
69		max. 2 x 70 (2 x 2/0)	M 10	The AFE chassis units are supplied only with the line connection module (cf. system components) as standard. The 24 V DC and 230 V AC auxiliary power supply and its fusing is integrated in the related line connection module.		
70		max. 2 x 70 (2 x 2/0)	M 10			
70		max. 2 x 70 (2 x 2/0)	M 10			
70		max. 2 x 70 (2 x 2/0)	M 10			
81		max. 2 x 150 (2 x 300)	M 12			
81		max. 2 x 150 (2 x 300)	M 12			
83		max. 2 x 150 (2 x 300)	M 12			
83		max. 2 x 150 (2 x 300)	M 12			

Selection and ordering data

Rectifier/regenerative units[1])



Compact and chassis units

Nominal power rating[2])	Selection data: Rated DC link current	DC link base load current	DC link short-time current	Input current[3])	**Rectifier/ regenerative unit**	Total power loss	Dimensions W x H x D	For dimension drawing, see Section 7	Weight, approx.	Cooling air requirement
	$I_{DCrated}$	I_{DCG}	$I_{DCmax.}$							
kW	A	A	A	A	Order No.	kW	mm x mm x mm (in x in x in)	No.	kg (lb)	m^3/s (ft^3/s)
Supply voltage 3-ph. 380 V to 480 V AC										
Compact units										
7.5	21	19	29	18	**6SE7022–1EC85–1AA0**	0.15	180 x 600 x 350 (7.1 x 23.6 x 13.8)	4	23 (50.7)	0.028 (0.989)
15	41	37	56	35	**6SE7024–1EC85–1AA0**	0.20	180 x 600 x 350 (7.1 x 23.6 x 13.8)	4	23 (50.7)	0.028 (0.989)
37	86	78	117	74	**6SE7028–6EC85–1AA0**	0.31	180 x 600 x 350 (7.1 x 23.6 x 13.8)	4	23 (50.7)	0.028 (0.989)
Chassis units										
75	173	157	235	149	**6SE7031–7EE85–1AA0**	0.69	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	45 (99.2)	0.2 (7.1)
90	222	202	302	192	**6SE7032–2EE85–1AA0**	0.97	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	45 (99.2)	0.2 (7.1)
132	310	282	422	269	**6SE7033–1EE85–1AA0**	1.07	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	45 (99.2)	0.2 (7.1)
160	375	341	510	326	**6SE7033–8EE85–1AA0**	1.16	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	52 (114.6)	0.2 (7.1)
200	463	421	630	403	**6SE7034–6EE85–1AA0**	1.43	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	52 (114.6)	0.2 (7.1)
250	605	551	823	526	**6SE7036–1EE85–1AA0**	1.77	270 x 1050 x 365 (10.6 x 41.3 x 14.4)	6	65 (114.6)	0.2 (7.1)

1) In the case of rapid changeover from supply to regenerative feedback, a dead time of 15 ms must be taken into account. For high dynamic response, AFE rectifier/regenerative units are to be used.

2) The quoted nominal power ratings serve only as a guide for the selection of other components. The exact drive output depends on the connected inverters and this should be taken into account when planning.

3) The currents are based on a line inductance of **3 %** in relation to the equipment impedance ***Z***, i.e. the ratio of the line short-circuit power to the converter power ***S*** is **33 : 1** or 100 : 1 if a 2 % line reactor is used as well.
Equipment impedance: $Z = \frac{V_{Line}}{\sqrt{3} \cdot I_{V_{Line}}}$