

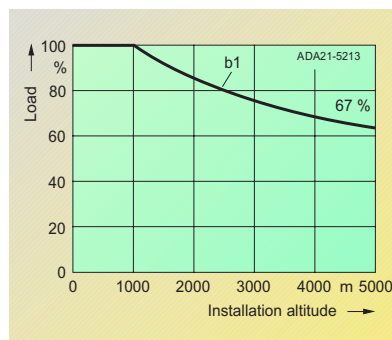
3-ph. AC 400 V, 30 A to 125 A, 1Q

Type	6RA70□□-6DS22-0				
	18	25	28	31	
Rated supply voltage armature ¹⁾	V	3-ph. AC 400 (+15 % / -20 %)			
Rated input current armature ²⁾	A	25	50	75	104
Rated supply voltage electronics supply	V	2-ph. AC 380 (-25 %) to 460 (+15 %); $I_n = 1$ A or 1-ph. AC 190 (-25 %) to 230 (+15 %); $I_n = 2$ A (-35 % for 1 min)			
Rated supply voltage field ¹⁾	V	2-ph. AC 400 (+15 % / -0%) ⁶⁾			
Rated frequency	Hz	45 to 65 ⁷⁾			
Rated DC voltage ¹⁾	V	485			
Rated DC current	A	30	60	90	125
Overload capability ⁵⁾		Max. 1.8 times rated DC current			
Rated output	kW	14.5	29	44	61
Power loss at rated DC current (approx.)	W	163	240	347	400
Rated DC voltage field ¹⁾	V	Max. 325			
Rated DC current field	A	5	10		
Operational ambient temperature	°C	0 to 45 at I_{rated} ³⁾ self-cooled			
Storage and transport temperature	°C	-25 to +70			
Installation altitude above sea level		≤ 1000 m at rated DC current ⁴⁾			
Dimensions (H x W x D)	mm	385 x 265 x 239	385 x 265 x 283		
See dimension drawing on Page		8/2			
Weight (approx.)	kg	11	14	16	16

- 1) The armature/field supply voltage can be less than the rated supply voltage armature/field (set with Parameter P078; for converters with 400 V rated voltage, input voltages of up to 85 V are permissible). The output voltage is reduced accordingly. The specified output DC voltage can be guaranteed up to undervoltages 5 % below the supply voltage (rated supply voltage armature/field).
- 2) Values apply to output rated DC current.
- 3) Load factor K1 (DC current) as a function of the coolant temperature (see P077 Operating Instructions, Section 11).
K1 > 1 only permissible where $K1 * K2 \leq 1st.$
overall reduction factor $K = K1 * K2$
(for K2 see Footnote 4).

Ambient or coolant temperature	Load factor K1 In devices with self-cooling	In devices with enhanced cooling
≤ +30 °C	1.18	1.10
+35 °C	1.12	1.05
+40 °C	1.06	1.00
+45 °C	1.00	0.95
+50 °C	0.94	0.90 ^{a)}
+55 °C	0.88	
+60 °C	0.82 ^{b)}	

- a) In spite of derating, converters of ≥ 400 A with enhanced cooling may be operated at an ambient or coolant temperature of 50 °C only if the rated supply voltage of the converter fan is safely within the limited tolerance range of 400 V +10% -15%.
- b) Not permissible when T400 or OP1S are used.
- 4) Load values K2 as a function of installation altitude (see P077 Operating Instructions, Section 11); overall reduction factor $K = K1 * K2$ (for K1 see Footnote 3).



Curve b1: Reduction factor of load values (DC current) at installation altitudes above 1000 m.

Installation altitude m	1000	2000	3000	4000	5000
Reduction factor K2	1.0	0.835	0.74	0.71	0.67

The supply voltages for all electric circuits apply for site altitudes up to 5000 m for basic insulation, with the exception of converters for 830 V rated supply voltage:
up to 4000 m 830 V
up to 4500 m 795 V
up to 5000 m 727 V

- 5) See Section 5.
- 6) 2-ph. AC 460 (+15% / -20%) is also permissible.
- 7) Operation in the extended frequency range of 23 Hz to 110 Hz is possible on request.

SIMOREG 6RA70 DC MASTER

Technical Data



Converters for single-quadrant operation

3-ph. AC 400 V, 210 A to 600 A, 1Q

Type	6RA70□□-6DS22-0				
	75	78	81	85	
Rated supply voltage armature ¹⁾	V	3-ph. AC 400 (+15 % / -20 %)			
Rated input current armature ²⁾	A	175	233	332	498
Rated supply voltage electronics supply	V	2-ph. AC 380 (-25%) to 460 (+15%); $I_n=1$ A or 1-ph. AC 190 (-5%) to 230 (+15%); $I_n=2$ A (-35% for 1 min)			
Rated supply voltage fan	V	24 V DC internal		3-ph. AC 400 (±15%) 50 Hz 3-ph. AC 460 (±10%) 60 Hz	
Nominal fan current	A	0.3 ⁷⁾			
Air flow rate	m ³ /h	100	570		
Fan noise level	dBA	40	73		
Rated supply voltage field ¹⁾	V	2-ph. AC 400 (+15 % / -20%) ⁶⁾			
Rated frequency	Hz	45 to 65 ⁹⁾			
Rated DC voltage ¹⁾	V	485			
Rated DC current	A	210	280	400	600
Overload capability ⁵⁾		Max. 1.8 times rated DC current			
Rated output	kW	102	136	194	291
Power loss at rated DC current (approx.)	W	676	800	1328	1798
Rated DC voltage field ¹⁾	V	Max. 325			
Rated DC current field	A	15		25	
Operational ambient temperature	°C	0 to 40 at I_{rated} ³⁾ separately cooled			
Storage and transport temperature	°C	-25 to +70			
Installation altitude above sea level		≤ 1000 m at rated DC current ⁴⁾			
Dimensions (H x W x D)	mm	385 x 265 x 283		625 x 268 x 318	
See dimension drawing on Page		8/2		8/3	
Weight (approx.)	kg	16	17	30	

1) The armature/field supply voltage can be less than the rated supply voltage armature/field (set with Parameter P078; for converters with 400 V rated voltage, input voltages of up to 85 V are permissible). The output voltage is reduced accordingly. The specified output DC voltage can be guaranteed up to undervoltages 5 % below the supply voltage (rated supply voltage armature/field).

2) Values apply to output rated DC current.

3) Load factor K1 (DC current) as a function of the coolant temperature (see P077 Operating Instructions, Section 11).
 $K1 > 1$ only permissible where $K1 * K2 \leq 1st$.
 overall reduction factor $K = K1 * K2$
 (for K2 see Footnote 4).

Ambient or coolant temperature	Load factor K1	
	In devices with self-cooling	In devices with enhanced cooling
≤ +30 °C	1.18	1.10
+35 °C	1.12	1.05
+40 °C	1.06	1.00
+45 °C	1.00	0.95
+50 °C	0.94	0.90 ^{a)}
+55 °C	0.88	
+60 °C	0.82 ^{b)}	

a) In spite of derating, converters of ≥ 400 A with enhanced cooling may be operated at an ambient or coolant temperature of 50 °C only if the rated supply voltage of the converter fan is safely within the limited tolerance range of 400 V +10% -15%.

b) Not permissible when T400 or OP1S are used.



SIMOREG 6RA70 DC MASTER

Technical Data

Converters for single-quadrant operation

3-ph. AC 400 V, 850 A to 2000 A, 1Q

Type	6RA70□□-6DS22-0			6RA70□□-4DS22-0		
	87	91	93	95		
Rated supply voltage armature ¹⁾	V	3-ph. AC 400 (+15% / -20%)				
Rated input current armature ²⁾	A	705	995	1326	1658	
Rated supply voltage electronics supply	V	2-ph. AC 380 (-25%) to 460 (+15%); $I_n=1$ A or 1-ph. AC 190 (-25%) to 230 (+15%); $I_n=2$ A (-35% for 1 min)				
Rated supply voltage fan	V	3-ph. AC 400 (±15%) 50 Hz	3-ph. AC 400 (±10%) 50 Hz	3-ph. AC 400 (±10%) 50 Hz		
		3-ph. AC 460 (±10%) 60 Hz	3-ph. AC 460 (±10%) 60 Hz	3-ph. AC 460 (±10%) 60 Hz	3-ph. AC 460 (±10%) 60 Hz	
		50 Hz	60 Hz	50 Hz	60 Hz	
Nominal fan current	A	0.3 ⁷⁾	1.0 ⁸⁾	1.25 ⁸⁾	1.0 ⁸⁾	1.25 ⁸⁾
Air flow rate	m ³ /h	570	1300	1300	2400	2400
Fan noise level	dBA	73	83	87	83	87
Rated supply voltage field ¹⁾	V	2-ph. AC 400 (+15% / -20%) ⁶⁾				
Rated frequency	Hz	45 to 65 ⁹⁾				
Rated DC voltage ¹⁾	V	485				
Rated DC current	A	850	1200	1600	2000	
Overload capability ⁵⁾		Max. 1.8 times rated DC current				
Rated output	kW	412	582	776	970	
Power loss at rated DC current (approx.)	W	2420	4525	5710	6810	
Rated DC voltage field ¹⁾	V	Max. 325				
Rated DC current field	A	30			40	
Operational ambient temperature	°C	0 to 40 at I_{rated} ³⁾ separately cooled				
Storage and transport temperature	°C	-25 to +70				
Installation altitude above sea level		≤ 1000 m at rated DC current ⁴⁾				
Dimensions (H x W x D)	mm	700 x 268 x 362	780 x 410 x 362	880 x 450 x 500		
See dimension drawing on Page		8/4			8/5	
Weight (approx.)	kg	40	80	125		

4) Load values K2 as a function of installation altitude (see P077 Operating Instructions, Section 11);
Overall reduction factor $K = K_1 * K_2$
(for K1 see Footnote 3).

Installation altitude m	1000	2000	3000	4000	5000
Reduction factor K2	1.0	0.835	0.74	0.71	0.67

The supply voltages for all electric circuits are possible for site altitudes up to 5000 m with basic insulation, with the exception of converters for 830 V rated supply voltage:
up to 4000 m 830 V
up to 4500 m 795 V
up to 5000 m 727 V

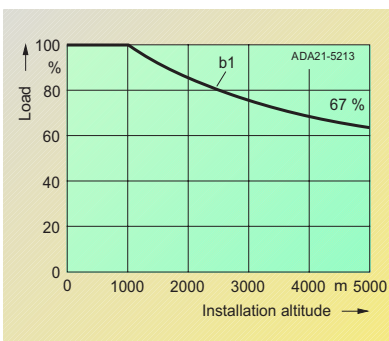
5) See Section 5.

6) 2-ph. AC 460 (+15% / -20%) is also permissible.

7) For UL systems, a Siemens motor protection circuit-breaker Type 3RV1011-0DA1 or 3RV1011-0EA1, adjusted to 0.3 A for the fan motor Type R2D220-AB02-19 must be installed in 6RA7081, 6RA7085 and 6RA7087 converters with a rated voltage of 400 V or 575 V.

8) For UL systems, a Siemens motor protection circuit-breaker Type 3RV1011-0KA1 or 3RV1011-1AA1, adjusted to 1.25 A for the fan motor Type RH28M-2DK.3F.1R must be installed in 6RA7090, 6RA7091, 6RA7093 and 6RA7095 converters with a rated voltage of 400 V or 575 V.

9) Operation in the extended frequency range of 23 Hz to 110 Hz is possible on request.



Curve b1: Reduction factor of load values (DC current) at installation altitudes above 1000 m.