

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 core type motors
SH 100 to SH 160

Selection and Ordering Data

Shaft height	Rated speed	Max. continuous speed		Max. speed ¹⁾		Rated power for duty type in accordance with IEC 60034-1				1PH7 asynchronous motor with solid shaft Forced ventilation			
SH	n_{rated}	$n_{S1 \text{ cont.}}^{2)}$	$n_{S1 \text{ cont.}}^{3)}$	n_{max}	$n_{max}^{4)}$	P_{rated}				Order No. Core type			
	rpm	rpm	rpm	rpm	rpm	S1 kW (HP)	S6-60% kW (HP)	S6-40% kW (HP)	S2-30 min kW (HP)				
100	2000	5500	–	9000	–	7 (9)	8.5 (11.4)	10 (13)	9.25 (12.4)	1PH7103 - ■ NG02 - 0C■0			
	1500	5500	–	9000	–	9 (12)	11 (14.8)	13 (17)	12 (16)	1PH7107 - ■ NF02 - 0C■0			
132	1000	4500	–	8000	–	12 (16)	15 (20)	18.5 (24.8)	16 (21)	1PH7133 - ■ ND02 - 0C■0			
	2000					20 (27)	25 (34)	30 (40)	27.5 (36.9)	1PH7133 - ■ NG02 - 0C■0			
	1000	4500	–	8000	–	17 (23)	20.5 (27.5)	25 (34)	22.5 (30.2)	1PH7137 - ■ ND02 - 0C■0			
	2000					28 (38)	35 (47)	43 (58)	39 (52)	1PH7137 - ■ NG02 - 0C■0			
160	1000	3700	–	6500	–	22 (30)	27 (36)	33 (44)	30 (40)	1PH7163 - ■ ND03 - 0C■0			
	1500					30 (40)	37 (50)	45 (60)	41 (55)	1PH7163 - ■ NF03 - 0C■0			
	1500	3700	–	6500	–	37 (50)	46 (62)	56 (75)	51 (68)	1PH7167 - ■ NF03 - 0C■0			
Fans:		External fan unit, heavy-gauge threaded cable entry in terminal box								2			
		External fan unit, metric cable entry in terminal box								7			
Encoder system:		Incremental encoder sin/cos 1 V _{pp} without C and D track								N			
Type: ⁵⁾		IM B5 (IM V1, IM V3)								2			
		IM B35 (IM V15, IM V36)								3			
Shaft extension (DE): ⁵⁾		Balancing:		Direction of air flow (fan):		Blow-out direction:						A J	
Fitted key Plain shaft		Half-key –		DE → NDE DE → NDE		Axial Axial							

For type, see "Selection guide".

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 core type motors
SH 100 to SH 160

Selection and Ordering Data

Motor type (continued)	Rated torque	Moment of inertia	Weight approx.	Rated current for duty type in accordance with IEC 60034-1				SIMODRIVE 611 power module	
	M_{rated}	J	m	I_{rated}				Rated output current ⁶⁾	Order No.
	Nm (lb _f -ft)	kgm ² (lb _f -in-s ²)	kg (lb)	S1 A	S6-60% A	S6-40% A	S2-30 min A	S1 A	
1PH7103-2NG02-.N.	33.4 (24.6)	0.017 (0.148)	40 (88)	17.5	20.5	23.5	21.5	24	For ordering data, see "Converter systems"
1PH7107-2NF02-.N.	57.3 (42.2)	0.029 (0.252)	63 (139)	23.5	27.5	31	29	24	
1PH7133-2ND02-.N.	114.6 (84.5)	0.076 (0.66)	90 (198)	30	36	43	37.5	30	
1PH7133-2NG02-.N.	95.5 (70.4)	0.076 (0.66)	90 (198)	45	54	63	59	45	
1PH7137-2ND02-.N.	162.3 (119.6)	0.109 (0.946)	130 (287)	43	50	60	54	45	
1PH7137-2NG02-.N.	133.7 (98.5)	0.109 (0.946)	130 (287)	60	73	87	80	60	
1PH7163-2ND03-.N.	210.1 (154.8)	0.19 (1.649)	180 (397)	55	65	77	71	60	
1PH7163-2NF03-.N.	191.0 (140.8)	0.19 (1.649)	180 (397)	72	86	102	94	85	
1PH7167-2NF03-.N.	235.5 (173.6)	0.23 (1.996)	228 (503)	82	97	115	104	85	



1PH7 motor (SH 100 to SH 160)

- ¹⁾ For continuous duty (with 30% n_{max} , 60% $\frac{2}{3} n_{max}$, 10% standstill) for a duty cycle time of 10 min. For maintenance intervals for motors and components, see 1PH Motors Planning Guide.
- ²⁾ Bearing version for coupling/belt output.
- ³⁾ Bearing version for increased maximum speed.
- ⁴⁾ Version for increased maximum speed only possible with vibration severity grade SR. The following options are not possible:
 - Shaft seal.
- ⁵⁾ The following motor versions are required for "ZF gearbox mounting prepared" (see "Gearboxes" for gear selection):
 - Shaft with fitted key and full-key balancing.
- ⁶⁾ With default setting of the pulse frequency.

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 100

Selection and Ordering Data

Shaft height	Rated speed	Max. continuous speed		Max. speed ¹⁾		Rated power for duty type in accordance with IEC 60034-1				1PH7 asynchronous motor with solid shaft Forced ventilation
SH	n_{rated}	$n_{S1 \text{ cont.}}^{2)}$	$n_{S1 \text{ cont.}}^{3)}$	n_{max}	$n_{max}^{4)}$	P_{rated}				Order No. Standard type
	rpm	rpm	rpm	rpm	rpm	S1 kW (HP)	S6-60% kW (HP)	S6-40% kW (HP)	S2-30 min kW (HP)	
100	1500	5500	10000	9000	12000	3.7 (5)	4.5 (6)	5.25 (7.04)	4.9 (6.6)	1PH7101 - ■ NF ■ ■ - 0 ■ ■ ■
	1000	5500	10000	9000	12000	3.7 (5)	4.5 (6)	5.25 (7.04)	4.7 (6.3)	1PH7103 - ■ ND ■ ■ - 0 ■ ■ ■
	1500					5.5 (7.4)	6.7 (9)	7.7 (10.3)	7 (9.4)	1PH7103 - ■ NF ■ ■ - 0 ■ ■ ■
	2000					7 (9)	8.5 (11.4)	10 (13)	9.25 (12.4)	1PH7103 - ■ NG ■ ■ - 0 ■ ■ ■
	1500	5500	10000	9000	12000	7 (9)	8.5 (11.4)	10 (13)	9.25 (12.4)	1PH7105 - ■ NF ■ ■ - 0 ■ ■ ■
	1000	5500	10000	9000	12000	6.25 (8.38)	7.5 (10)	8.8 (11.8)	7.75 (10.39)	1PH7107 - ■ ND ■ ■ - 0 ■ ■ ■
	1500					9 (12)	11 (15)	13 (17)	12 (16)	1PH7107 - ■ NF ■ ■ - 0 ■ ■ ■
	2000					10.5 (14)	12.5 (17)	14.5 (19.4)	13.5 (18.1)	1PH7107 - ■ NG ■ ■ - 0 ■ ■ ■
Fans:		External fan unit, heavy-gauge threaded cable entry in terminal box								2
		External fan unit, metric cable entry in terminal box								7
Encoder system:		Incremental encoder sin/cos 1 V _{pp} without C and D track								N
Terminal box/ Cable entry:		Top/right Top/NDE Top/left								0 2 3
Type: ⁵⁾		IM B3 (IM V5, IM V6) IM B5 (IM V1, IM V3) IM B35 (IM V15, IM V36)								0 2 3
Bearing version for:		Vibration severity:		Shaft and flange accuracy:						
Coupling/belt output		Grade R		Tolerance R						
Coupling/belt output		Grade S		Tolerance R						
Coupling/belt output		Grade SR		Tolerance R						
Increased speed (coupling/belt output) ⁶⁾		Grade SR		Tolerance R						
Shaft extension (DE): ⁵⁾		Balancing:		Direction of air flow (fan):		Blow-out direction:				
Fitted key		Half-key		DE → NDE		Axial				
Fitted key		Half-key		NDE → DE		Axial				
Fitted key		Full-key		DE → NDE		Axial				
Fitted key		Full-key		NDE → DE		Axial				
Plain shaft		–		DE → NDE		Axial				
Plain shaft		–		NDE → DE		Axial				
Degree of protection:		Seal:		Color:						
IP55, fan IP54		–		Unpainted						
IP55, fan IP54		DE flange with shaft sealing ring ⁶⁾		Unpainted						
IP55, fan IP54		–		Anthracite						
IP55, fan IP54		DE flange with shaft sealing ring ⁶⁾		Anthracite						
IP55, fan IP54		–		Anthracite, two coats						
IP55, fan IP54		DE flange with shaft sealing ring ⁶⁾		Anthracite, two coats						

To select the type and the degree of protection, see "Selection guide".

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 100

Selection and Ordering Data

Motor type (continued)	Rated torque	Moment of inertia	Weight approx.	Rated current for duty type in accordance with IEC 60034-1				SIMODRIVE 611 power module	
	M_{rated}	J	m	I_{rated}				Rated output current ⁷⁾	Order No.
	Nm (lb _f -ft)	kgm ² (lb _f -in-s ²)	kg (lb)	S1 A	S6-60% A	S6-40% A	S2-30 min A	S1 A	
1PH7101-.NF...	23.6 (17.4)	0.017 (0.150)	40 (88)	10	11.5	12.5	12	24	For ordering data, see "Converter systems"
1PH7103-.ND...	35.3 (26)	0.017 (0.150)	40 (88)	10	11.5	13	12	24	
1PH7103-.NF...	35.0 (25.8)	0.017 (0.150)	40 (88)	13	16	18	16.5	24	
1PH7103-.NG...	33.4 (24.6)	0.017 (0.150)	40 (88)	17.5	20.5	23.5	21.5	24	
1PH7105-.NF...	44.6 (32.9)	0.029 (0.257)	63 (139)	17.5	21	23.5	22	24	
1PH7107-.ND...	59.7 (44)	0.029 (0.257)	63 (139)	17.5	20.5	23	21	24	
1PH7107-.NF...	57.3 (42.2)	0.029 (0.257)	63 (139)	23.5	27.5	31	29	24	
1PH7107-.NG...	50.1 (36.9)	0.029 (0.257)	63 (139)	26	28.5	33	31	30	



1PH7 motor (SH 100 to SH 160)

- ¹⁾ For continuous duty (with 30% n_{max} , 60% $\frac{2}{3} n_{max}$, 10% standstill) for a duty cycle time of 10 min. For maintenance intervals for motors and components, see the 1PH Motors Planning Guide.
- ²⁾ Bearing version for coupling/belt output.
- ³⁾ Bearing version for increased maximum speed.
- ⁴⁾ Version for increased maximum speed only possible with vibration severity grade SR. The following options are not possible:
 - Shaft sealing ring.
- ⁵⁾ The following motor versions are required for "ZF gearbox mounting prepared" (see "Gearboxes" for gear selection):
 - Types IM B5 or IM B35
 - Shaft with fitted key and full-key balancing.
- ⁶⁾ Only appropriate if the sealing ring is occasionally lubricated with oil spray/mist. A sealing ring is not possible with increased maximum speed.
- ⁷⁾ With default setting of the pulse frequency.

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 132

Selection and Ordering Data

Shaft height	Rated speed	Max. continuous speed		Max. speed ¹⁾		Rated power for duty type in accordance with IEC 60034-1				1PH7 asynchronous motor with solid shaft Forced ventilation
SH	n_{rated}	$n_{S1 \text{ cont.}}^{2)}$	$n_{S1 \text{ cont.}}^{3)}$	n_{max}	$n_{max}^{4)}$	P_{rated}				Order No. Standard type
	rpm	rpm	rpm	rpm	rpm	S1 kW (HP)	S6-60% kW (HP)	S6-40% kW (HP)	S2-30 min kW (HP)	
132	1500	4500	8500	8000	10000	11 (15)	13.5 (18.1)	16.5 (22.1)	15 (20)	1PH7131 - ■ NF ■ ■ - 0 ■ ■ ■
	1000	4500	8500	8000	10000	12 (16)	15 (20)	18.5 (24.8)	16 (22)	1PH7133 - ■ ND ■ ■ - 0 ■ ■ ■
	1500					15 (20)	18.5 (24.8)	23 (31)	20.5 (27.5)	1PH7133 - ■ NF ■ ■ - 0 ■ ■ ■
	2000					20 (27)	25 (34)	30 (40)	27.5 (36.9)	1PH7133 - ■ NG ■ ■ - 0 ■ ■ ■
	1500	4500	8500	8000	10000	18.5 (24.8)	23 (31)	28 (38)	25.5 (34.2)	1PH7135 - ■ NF ■ ■ - 0 ■ ■ ■
	1000	4500	8500	8000	10000	17 (23)	20.5 (27.5)	25 (34)	22.5 (30.2)	1PH7137 - ■ ND ■ ■ - 0 ■ ■ ■
	1500					22 (30)	27.5 (36.9)	33 (44)	30 (40)	1PH7137 - ■ NF ■ ■ - 0 ■ ■ ■
	2000					28 (38)	35 (47)	43 (58)	39 (52)	1PH7137 - ■ NG ■ ■ - 0 ■ ■ ■
Fans:		External fan unit, heavy-gauge threaded cable entry in terminal box								2
		External fan unit, metric cable entry in terminal box								7
Encoder system:		Incremental encoder sin/cos 1 V _{pp} without C and D track								N
Terminal box/ Cable entry:		Top/right Top/NDE Top/left								0 2 3
Type: ⁵⁾		IM B3 (IM V5, IM V6) IM B5 (IM V1, IM V3) IM B35 (IM V15, IM V36)								0 2 3
Bearing version for:		Vibration severity:		Shaft and flange accuracy:						
Coupling/belt output		Grade R		Tolerance R						
Coupling/belt output		Grade S		Tolerance R						
Coupling/belt output		Grade SR		Tolerance R						
Increased speed (coupling/belt output) ⁶⁾		Grade SR		Tolerance R						
Shaft extension (DE): ⁵⁾		Balancing:		Direction of air flow (fan):		Blow-out direction:				
Fitted key		Half-key		DE → NDE		Axial				
Fitted key		Half-key		NDE → DE		Axial				
Fitted key		Full-key		DE → NDE		Axial				
Fitted key		Full-key		NDE → DE		Axial				
Plain shaft		–		DE → NDE		Axial				
Plain shaft		–		NDE → DE		Axial				
Degree of protection:		Seal:		Color:						
IP55, fan IP54		–		Unpainted						
IP55, fan IP54		DE flange with shaft sealing ring ⁶⁾		Unpainted						
IP55, fan IP54		–		Anthracite						
IP55, fan IP54		DE flange with shaft sealing ring ⁶⁾		Anthracite						
IP55, fan IP54		–		Anthracite, two coats						
IP55, fan IP54		DE flange with shaft sealing ring ⁶⁾		Anthracite, two coats						

To select the type and the degree of protection, see "Selection guide".

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 132

Selection and Ordering Data

Motor type (continued)	Rated torque	Moment of inertia	Weight approx.	Rated current for duty type in accordance with IEC 60034-1				SIMODRIVE 611 power module	
	M_{rated}	J	m	I_{rated}				Rated output current ⁷⁾	Order No.
	Nm (lb _f -ft)	kgm ² (lb _f -in-s ²)	kg (lb)	S1 A	S6-60% A	S6-40% A	S2-30 min A	S1 A	
1PH7131-.NF...	70.0 (51.6)	0.076 (0.673)	90 (199)	24	29	34	31.5	24	For ordering data, see "Converter systems"
1PH7133-.ND...	114.6 (84.5)	0.076 (0.673)	90 (199)	30	36	43	37.5	30	
1PH7133-.NF...	95.5 (70.4)	0.076 (0.673)	90 (199)	34	41	49	43.5	45	
1PH7133-.NG...	95.5 (70.4)	0.076 (0.673)	90 (199)	45	54	63	59	45	
1PH7135-.NF...	117.8 (86.8)	0.109 (0.965)	130 (287)	42	50	58	54	45	
1PH7137-.ND...	162.3 (119.6)	0.109 (0.965)	130 (287)	43	50	60	54	45	
1PH7137-.NF...	140.1 (103.3)	0.109 (0.965)	130 (287)	57	68	79	73	60	
1PH7137-.NG...	133.7 (98.5)	0.109 (0.965)	130 (287)	60	73	87	80	60	



1PH7 motor (SH 100 to SH 160)

- ¹⁾ For continuous duty (with 30% n_{max} , 60% $\frac{2}{3} n_{max}$, 10% standstill) for a duty cycle time of 10 min. For maintenance intervals for motors and components, see the 1PH Motors Planning Guide.
- ²⁾ Bearing version for coupling/belt output.
- ³⁾ Bearing version for increased maximum speed.
- ⁴⁾ Version for increased maximum speed only possible with vibration severity grade SR. The following options are not possible:
 - Shaft sealing ring.
- ⁵⁾ The following motor versions are required for "ZF gearbox mounting prepared" (see "Gearboxes" for gear selection):
 - Types IM B5 or IM B35
 - Shaft with fitted key and full-key balancing.
- ⁶⁾ Only appropriate if the sealing ring is occasionally lubricated with oil spray/mist. A sealing ring is not possible with increased maximum speed.
- ⁷⁾ With default setting of the pulse frequency.

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 160

Selection and Ordering Data

Shaft height	Rated speed	Max. continuous speed		Max. speed ¹⁾		Rated power for duty type in accordance with IEC 60034-1				1PH7 asynchronous motor with solid shaft Forced ventilation					
SH	n_{rated}	$n_{S1 \text{ cont.}}^{2)}$	$n_{S1 \text{ cont.}}^{3)}$	n_{max}	$n_{max}^{4)}$	P_{rated}				Order No. Standard type					
	rpm	rpm	rpm	rpm	rpm	S1 kW (HP)	S6-60% kW (HP)	S6-40% kW (HP)	S2-30 min kW (HP)						
160	500	3700	7000	6500	8000	12 (16)	15 (20)	18 (24)	16.5 (22.1)	1PH7163 - ■ NB ■ ■ - 0 ■ ■ ■					
	1000					22 (30)	27 (36)	33 (44)	30 (40)	1PH7163 - ■ ND ■ ■ - 0 ■ ■ ■					
	1500					30 (40)	37 (50)	45 (60)	41 (55)	1PH7163 - ■ NF ■ ■ - 0 ■ ■ ■					
	2000					36 (48)	44 (59)	52 (70)	48 (64)	1PH7163 - ■ NG ■ ■ - 0 ■ ■ ■					
	500	3700	7000	6500	8000	16 (21)	19.5 (26.2)	24 (32)	21.5 (28.8)	1PH7167 - ■ NB ■ ■ - 0 ■ ■ ■					
	1000					28 (38)	34.5 (46.3)	42 (56)	38 (51)	1PH7167 - ■ ND ■ ■ - 0 ■ ■ ■					
	1500					37 (50)	46 (62)	56 (75)	51 (68)	1PH7167 - ■ NF ■ ■ - 0 ■ ■ ■					
	2000					41 (55)	51 (69)	61 (81)	56 (75)	1PH7167 - ■ NG ■ ■ - 0 ■ ■ ■					
Fans:		External fan unit, heavy-gauge threaded cable entry in terminal box								2					
		External fan unit, metric cable entry in terminal box								7					
Encoder system:		Incremental encoder sin/cos 1 V _{pp} without C and D track								N					
Terminal box/ Cable entry:		Top/right Top/NDE Top/left								0 2 3					
Type: ⁵⁾		IM B3 (IM V5, IM V6) IM B35 (IM V15, IM V36)								0 3					
Bearing version for:				Vibration severity:		Shaft and flange accuracy:									
Coupling/belt output				Grade R		Tolerance R									
Coupling/belt output				Grade S		Tolerance R									
Coupling/belt output				Grade SR		Tolerance R									
Increased speed (coupling/belt output) ⁶⁾				Grade SR		Tolerance R									
Shaft extension (DE): ⁵⁾				Balancing:		Direction of air flow (fan):		Blow-out direction:							
Fitted key				Half-key		DE → NDE		Axial							
Fitted key				Half-key		NDE → DE		Axial							
Fitted key				Full-key		DE → NDE		Axial							
Fitted key				Full-key		NDE → DE		Axial							
Plain shaft				–		DE → NDE		Axial							
Plain shaft				–		NDE → DE		Axial							
Degree of protection:				Seal:		Color:									
IP55, fan IP54				–		Unpainted									
IP55, fan IP54				DE flange with shaft sealing ring ⁶⁾		Unpainted									
IP55, fan IP54				–		Anthracite									
IP55, fan IP54				DE flange with shaft sealing ring ⁶⁾		Anthracite									
IP55, fan IP54				–		Anthracite, two coats									
IP55, fan IP54				DE flange with shaft sealing ring ⁶⁾		Anthracite, two coats									

To select the type and the degree of protection, see "Selection guide".

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 160

Selection and Ordering Data

Motor type (continued)	Rated torque	Moment of inertia	Weight approx.	Rated current for duty type in accordance with IEC 60034-1				SIMODRIVE 611 power module	
				I_{rated}				Rated output current ⁷⁾	Order No.
				S1	S6-60%	S6-40%	S2-30 min	S1	
	M_{rated}	J	m	A	A	A	A	A	
	Nm (lb _f -ft)	kgm ² (lb _f -in-s ²)	kg (lb)						
1PH7163-.NB...	229.2 (168.9)	0.19 (1.682)	180 (397)	30	36	42	39	30	For ordering data, see "Converter systems"
1PH7163-.ND...	210.1 (154.8)	0.19 (1.682)	180 (397)	55	65	77	71	60	
1PH7163-.NF...	191.0 (140.8)	0.19 (1.682)	180 (397)	72	86	102	94	85	
1PH7163-.NG...	171.9 (126.7)	0.19 (1.682)	180 (397)	85	100	114	107	85	
1PH7167-.NB...	305.5 (225.2)	0.23 (2.036)	228 (503)	37	44	53	48	45	
1PH7167-.ND...	267.4 (197.1)	0.23 (2.036)	228 (503)	71	85	100	92	85	
1PH7167-.NF...	235.5 (173.6)	0.23 (2.036)	228 (503)	82	97	115	104	85	
1PH7167-.NG...	195.8 (144.3)	0.23 (2.036)	228 (503)	89	106	124	115	120	



1PH7 motor (SH 100 to SH 160)

- ¹⁾ For continuous duty (with 30% n_{max} , 60% $\frac{2}{3} n_{max}$, 10% standstill) for a duty cycle time of 10 min. For maintenance intervals for motors and components, see the 1PH Motors Planning Guide.
- ²⁾ Bearing version for coupling/belt output.
- ³⁾ Bearing version for increased maximum speed.
- ⁴⁾ Version for increased maximum speed only possible with vibration severity grade SR. The following options are not possible:
 - Shaft sealing ring.
- ⁵⁾ The following motor versions are required for "ZF gearbox mounting prepared" (see "Gearboxes" for gear selection):
 - Types IM B5 or IM B35
 - Shaft with fitted key and full-key balancing.
- ⁶⁾ Only appropriate if the sealing ring is occasionally lubricated with oil spray/mist. A sealing ring is not possible with increased maximum speed.
- ⁷⁾ With default setting of the pulse frequency.

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 180

Selection and Ordering Data

Shaft height	Rated speed	Max. continuous speed				Max. speed ¹⁾	Rated power for duty type in accordance with IEC 60034-1				1PH7 asynchronous motor with solid shaft Forced ventilation						
SH	n_{rated}	$n_{S1 \text{ cont.}}$ ²⁾	$n_{S1 \text{ cont.}}$ ³⁾	$n_{S1 \text{ cont.}}$ ⁴⁾	n_{max}	n_{max} ⁵⁾	P_{rated}				Order No. Standard type						
	rpm	rpm	rpm	rpm	rpm	rpm	S1 kW (HP)	S6-60% kW (HP)	S6-40% kW (HP)	S2-30 min kW (HP)							
180	500	3500	3000	4500	5000	7000	21.5 (28.8)	26.5 (35.5)	30.5 (40.9)	30 (40)	1PH7184 - ■ NT ■ ■ - 0 ■ ■ ■						
	1000						39 (52)	48 (64)	58 (78)	58 (78)	1PH7184 - ■ ND ■ ■ - 0 ■ ■ ■						
	1250						40 (54)	50 (57)	56 (75)	66 (89)	1PH7184 - ■ NE ■ ■ - 0 ■ ■ ■						
	1500						51 (68)	68 (91)	81 (109)	81 (68)	1PH7184 - ■ NF ■ ■ - 0 ■ ■ ■						
	2500						78 (105)	97 (130)	115 (154)	115 (154)	1PH7184 - ■ NL ■ ■ - 0 ■ ■ ■						
	500	3500	3000	4500	5000	7000	29.6 (39.7)	36.5 (49)	43 (58)	38 (51)	1PH7186 - ■ NT ■ ■ - 0 ■ ■ ■						
	1000						51 (68)	65 (87)	77 (103)	77 (103)	1PH7186 - ■ ND ■ ■ - 0 ■ ■ ■						
	1250						60 (80)	71 (95)	80 (107)	84 (113)	1PH7186 - ■ NE ■ ■ - 0 ■ ■ ■						
	Fans:					External fan unit, heavy-gauge threaded cable entry in terminal box						2					
						External fan unit, metric cable entry in terminal box						7					
Encoder system:					Incremental encoder sin/cos 1 V _{PP} 2048 pulses/revolution without C or D track						N						
Terminal box/ Cable entry:					Top/right Top/DE Top/NDE Top/left						0 1 2 3						
Type:					IM B3 IM B3 (IM V5, IM V6) (hoisting system for vertical types) IM B35 IM B35 (flange <i>D</i> = 450 mm (17.72), only for 1PH7184) IM B35 (IM V15, IM V36) (hoisting system for vertical types) IM B35 (IM V15, IM V36) (flange <i>D</i> = 450 mm (17.72), only for 1PH7184)						0 2 3 4 5 6						
Bearing version for:					Vibration severity:		Shaft and flange accuracy:										
Coupling output					Grade R		Tolerance N									A	
Coupling output					Grade R		Tolerance R									B	
Coupling output					Grade S		Tolerance R									C	
Coupling output					Grade SR		Tolerance R									D	
Belt output					Grade R		Tolerance N									E	
Belt output					Grade R		Tolerance R									F	
Increased cantilever force (belt output) ⁶⁾					Grade R		Tolerance N									G	
Increased cantilever force (belt output) ⁶⁾					Grade R		Tolerance R									H	
Increased speed (coupling output) ⁶⁾					Grade S		Tolerance R									J	
Shaft extension (DE): ⁷⁾					Balancing:		Direction of air flow (fan):				Blow-out direction:						
Fitted key					Half-key		DE → NDE				Right					A	
Fitted key					Half-key		NDE → DE				Axial					B	
Fitted key					Full-key		DE → NDE				Right					C	
Fitted key					Full-key		NDE → DE				Axial					D	
Plain shaft					—		DE → NDE				Right					J	
Plain shaft					—		NDE → DE				Axial					K	
Degree of protection:					Seal:				Color:								
IP55, fan IP54					—				Primed							0	
IP55, fan IP54					DE flange with shaft sealing ring ⁶⁾				Primed							2	
IP55, fan IP54					—				Anthracite							3	
IP55, fan IP54					DE flange with shaft sealing ring ⁶⁾				Anthracite							5	
IP55, fan IP54					—				Anthracite, two coats							6	
IP55, fan IP54					DE flange with shaft sealing ring ⁶⁾				Anthracite, two coats							8	

To select the type and the degree of protection, see "Selection guide".

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 180

Selection and Ordering Data

Motor type (continued)	Rated torque	Moment of inertia	Weight approx. ⁸⁾	Rated current for duty type in accordance with IEC 60034-1				SIMODRIVE 611 power module	
	M_{rated}	J	m	I_{rated}				Rated output current ⁹⁾	Order No.
	Nm (lb _f -ft)	kgm ² (lb _f -in-s ²)	kg (lb)	S1 A	S6-60% A	S6-40% A	S2 30 min A	S1 A	
1PH7184-.NT...	410 (302)	0.5 (4.425)	390 (860)	76	90	103	102	85	For ordering data, see "Converter systems"
1PH7184-.ND...	372 (274)	0.5 (4.425)		90	106	126	126	120	
1PH7184-.NE...	305 (225)	0.5 (4.425)		85	100	110	128	85	
1PH7184-.NF...	325 (240)	0.5 (4.425)		120	149	174	174	120	
1PH7184-.NL...	298 (220)	0.5 (4.425)		172	204	237	237	200	
1PH7186-.NT...	565 (416)	0.67 (5.930)	460 (1014)	105	126	147	130	120	
1PH7186-.ND...	487 (359)	0.67 (5.930)		118	141	164	164	120	
1PH7186-.NE...	458 (338)	0.67 (5.930)		120	135	150	156	120	



1PH7 motor (SH 180 and SH 225)

¹⁾ For continuous duty (with 30% n_{max} , 60% $\frac{2}{3} n_{max}$, 10% standstill) for a duty cycle time of 10 min. For maintenance intervals for motors and components, see the 1PH Motors Planning Guide.

²⁾ Bearing version for coupling/belt output.

³⁾ Bearing version for increased cantilever force.

⁴⁾ Bearing version for increased maximum speed.

⁵⁾ Version for increased maximum speed, only possible in combination with vibration severity grade S. The following options are not possible:

- ZF gearbox mounting prepared
- Shaft sealing ring.

⁶⁾ Only appropriate if the sealing ring is occasionally lubricated with oil spray/mist. A sealing ring is not possible for type IM B3 (IM V5, IM V6), version with increased cantilever force or increased maximum speed.

⁷⁾ The following motor versions are required for "ZF gearbox mounting prepared" (see "Gearboxes" for gear selection):

- Type IM B35, IM V15 (not IM V36)
- Shaft with fitted key and full-key balancing
- Bearing version for coupling output
- Shaft and flange accuracy R
- DE flange with shaft sealing ring

⁸⁾ Applies to type IM B35, as type IM B3, the motor is 20 kg (44 lb) lighter.

⁹⁾ With default setting of the pulse frequency.

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 225

Selection and Ordering Data

Shaft height	Rated speed	Max. continuous speed			Max. speed ¹⁾		Rated power for duty type in accordance with IEC 60034-1				1PH7 asynchronous motor with solid shaft Forced ventilation								
SH	n_{rated}	$n_{S1 \text{ cont.}}$ ²⁾	$n_{S1 \text{ cont.}}$ ³⁾	$n_{S1 \text{ cont.}}$ ⁴⁾	n_{max}	n_{max} ⁵⁾	P_{rated}					Order No. Standard type							
	rpm	rpm	rpm	rpm	rpm	rpm	S1 kW (HP)	S6-60% kW (HP)	S6-40% kW (HP)	S2-30 min kW (HP)									
225	700	3100	2700	3600	4500	5500	55 (74)	66 (89)	75 (101)	78 (105)	1PH7224 - ■ NC ■ ■ - 0 ■ ■ ■								
	1000						71 (95)	88 (118)	105 (141)	114 (153)	1PH7224 - ■ ND ■ ■ - 0 ■ ■ ■								
	1500						100 (134)	126 (169)	136 (182)	140 (188)	1PH7224 - ■ NF ■ ■ - 0 ■ ■ ■								
Fans:					External fan unit, heavy-gauge threaded cable entry in terminal box							2							
					External fan unit, metric cable entry in terminal box							7							
Encoder system:					Incremental encoder sin/cos 1 V _{pp} without C and D track							N							
Terminal box/ Cable entry:					Top/right Top/DE Top/NDE Top/left							0 1 2 3							
Type:					IM B3 IM B3 (IM V5, IM V6) (hoisting system for vertical types) IM B35 IM B35 (IM V15, IM V36) (hoisting system for vertical types)							0 1 3 5							
Bearing version for:					Vibration severity:			Shaft and flange accuracy:											
Coupling output					Grade R			Tolerance N										A	
Coupling output					Grade R			Tolerance R										B	
Coupling output					Grade S			Tolerance R										C	
Coupling output					Grade SR			Tolerance R										D	
Belt output					Grade R			Tolerance N										E	
Belt output					Grade R			Tolerance R										F	
Increased cantilever force ⁶⁾ (belt output)					Grade R			Tolerance N										G	
Increased cantilever force ⁶⁾ (belt output)					Grade R			Tolerance R										H	
Increased speed (coupling output) ⁶⁾					Grade S			Tolerance R										J	
Shaft extension (DE): ⁷⁾					Balancing:			Direction of air flow (fan):		Blow-out direction:									
Fitted key					Half-key			DE → NDE		Right								A	
Fitted key					Half-key			NDE → DE		Axial								B	
Fitted key					Full-key			DE → NDE		Right								C	
Fitted key					Full-key			NDE → DE		Axial								D	
Plain shaft					–			DE → NDE		Right								J	
Plain shaft					–			NDE → DE		Axial								K	
Degree of protection:					Seal:					Color:									
IP55, fan IP54					–					Primed									0
IP55, fan IP54					DE flange with shaft sealing ring ⁶⁾					Primed									2
IP55, fan IP54					–					Anthracite									3
IP55, fan IP54					DE flange with shaft sealing ring ⁶⁾					Anthracite									5
IP55, fan IP54					–					Anthracite, two coats									6
IP55, fan IP54					DE flange with shaft sealing ring ⁶⁾					Anthracite, two coats									8

To select the type and the degree of protection, see "Selection guide".

Asynchronous motors

Main spindle motors for SIMODRIVE 611

1PH7 standard type motors
SH 225

Selection and Ordering Data

Motor type (continued)	Rated torque	Moment of inertia	Weight approx. ⁸⁾	Rated current for duty type in accordance with IEC 60034-1				SIMODRIVE 611 power module	
	M_{rated}	J	m	I_{rated}				Rated output current ⁹⁾	Order No.
	Nm (lb _f -ft)	kgm ² (lb _f -in-s ²)	kg (lb)	S1 A	S6-60% A	S6-40% A	S2-30 min A	S1 A	
1PH7224-.NC...	750 (553)	1.48 (13.099)	650 (1433)	117	135	149	155	120	For ordering data, see "Converter systems"
1PH7224-.ND...	678 (450)	1.48 (13.099)	650 (1433)	164	190	222	240	200	
1PH7224-.NF...	636 (469)	1.48 (13.099)	650 (1433)	188	230	248	256	200	



1PH7 motor (SH 180 and SH 225)

¹⁾ For continuous duty (with 30% n_{max} , 60% $^{2/3} n_{max}$, 10% standstill) for a duty cycle time of 10 min. For maintenance intervals for motors and components, see the 1PH Motors Planning Guide.

²⁾ Bearing version for coupling/belt output.

³⁾ Bearing version for increased cantilever force.

⁴⁾ Bearing version for increased maximum speed.

⁵⁾ Version for increased maximum speed, only possible in combination with vibration severity grade S. The following options are not possible:

- ZF gearbox mounting prepared
- Shaft sealing ring.

⁶⁾ Only appropriate if the sealing ring is occasionally lubricated with oil spray/mist. A sealing ring is not possible for type IM B3 (IM V5, IM V6), version with increased cantilever force or increased maximum speed.

⁷⁾ The following motor versions are required for "ZF gearbox mounting prepared" (see "Gearboxes" for gear selection):

- Type IM B35, IM V15 (not IM V36)
- Shaft with fitted key and full-key balancing
- Bearing version for coupling output
- Shaft and flange accuracy R
- DE flange with shaft sealing ring.

⁸⁾ Applies to type IM B35, as type IM B3, the motor is 20 kg (44 lb) lighter.

⁹⁾ With default setting of the pulse frequency.