

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control									
400	160	9.5 (12.74)	227 (167.4)	30	274	2000	2000	2000	1PH7 163 – ■ ■ B ■ ■ – ■ ...
		13 (17.43)	310 (228.7)	37	294	1600	2000	2000	1PH7 167 – ■ ■ B ■ ■ – ■ ...
1150	100	4.3 (5.76)	36 (26.6)	10	391	2200	5500	5750	1PH7 103 – ■ ■ D ■ ■ – ■ ...
		7.2 (9.65)	60 (44.3)	17.5	360	3000	5500	5750	1PH7 107 – ■ ■ D ■ ■ – ■ ...
	132	13.5 (18.1)	112 (82.6)	29	381	2500	4500	5750	1PH7 133 – ■ ■ D ■ ■ – ■ ...
		19.5 (26.14)	162 (119.5)	43	367	2600	4500	5750	1PH7 137 – ■ ■ D ■ ■ – ■ ...
	160	25 (33.51)	208 (153.4)	55	364	3400	3700	5750	1PH7 163 – ■ ■ D ■ ■ – ■ ...
		31 (41.56)	257 (189.6)	70	357	3700	3700	5750	1PH7 167 – ■ ■ D ■ ■ – ■ ...
1750	100	4.3 (5.76)	24 (17.7)	10	398	4600	5500	8750	1PH7 101 – ■ ■ F ■ ■ – ■ ...
		6.25 (8.38)	34 (25.1)	13	398	2600	5500	8750	1PH7 103 – ■ ■ F ■ ■ – ■ ...
		8.0 (10.72)	44 (32.5)	17.5	398	4500	5500	8750	1PH7 105 – ■ ■ F ■ ■ – ■ ...
		10.0 (13.4)	55 (40.6)	23	381	4200	5500	8750	1PH7 107 – ■ ■ F ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

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• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

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• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from non-drive end
- On top/from left

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• Construction type:

- IM B3 (IM V5, IM V6)
- IM B5 (IM V1, IM V3) available only for shaft height 100 and 132
- IM B35 (IM V15, IM V36)

0
2
3

• Holding brake with emergency stop function:⁴⁾

- Without brake
- Brake connection voltage: **230 V AC, 50 to 60 Hz**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)
- Brake connection voltage: **24 V DC**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)

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For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/5.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current
$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J	kg (lb)	Order No.	Order No.
	A		Hz	kgm ² (lb _f -in-s ²)			
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control							
0.88	11.5	0.809	14.3	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . B . . - . ■ ■ ■	34 6SE7 023 - 4 ■ P60
0.88	14	0.814	14.3	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . B . . - . ■ ■ ■	37.5 6SE7 023 - 8 ■ D61
0.81	5	0.813	40.6	0.017 (0.1504)	40 (88.2)	1PH7 103 - . . D . . - . ■ ■ ■	10 6SE7 021 - 0 ■ P60
0.81	8.8	0.838	40.3	0.029 (0.2566)	65 (143.3)	1PH7 107 - . . D . . - . ■ ■ ■	20.5 6SE7 022 - 1 EP60
0.85	13	0.877	39.7	0.076 (0.6726)	90 (198.5)	1PH7 133 - . . D . . - . ■ ■ ■	34 6SE7 023 - 4 ■ P60
0.86	19	0.887	39.6	0.109 (0.9646)	150 (330.8)	1PH7 137 - . . D . . - . ■ ■ ■	47 6SE7 024 - 7 ■ D61
0.84	25	0.904	39.2	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . D . . - . ■ ■ ■	59 6SE7 026 - 0 ■ D61
0.83	34	0.909	39.1	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . D . . - . ■ ■ ■	72 6SE7 027 - 2 ■ D61
0.75	5.7	0.855	60.0	0.017 (0.1504)	40 (88.2)	1PH7 101 - . . F . . - . ■ ■ ■	10 6SE7 021 - 0 ■ P60
0.84	5.3	0.849	61.0	0.017 (0.1504)	40 (88.2)	1PH7 103 - . . F . . - . ■ ■ ■	14 6SE7 021 - 4 EP60
0.77	9.3	0.875	60.0	0.029 (0.2566)	65 (143.3)	1PH7 105 - . . F . . - . ■ ■ ■	20.5 6SE7 022 - 1 EP60
0.80	10.6	0.870	60.3	0.029 (0.2566)	65 (143.3)	1PH7 107 - . . F . . - . ■ ■ ■	27 6SE7 022 - 7 EP60
• Drive type: Coupling and belt Coupling and belt Coupling and belt Coupling and belt Increased max. speed⁵⁾ • Vibration sev. grade: R S SR N SR • Shaft and flange accuracy: R R R N (only in connection with brake attachment) R						B C D K L	
• Direction of air flow: DE → NDE NDE → DE⁷⁾ DE → NDE NDE → DE⁷⁾ DE → NDE NDE → DE⁷⁾ • Shaft end: With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway						A B C D J K	
• Paint finish: None None, flange and radial shaft sealing ring⁶⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), flange and radial shaft sealing ring⁶⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), flange and radial shaft sealing ring⁶⁾						0 2 3 5 6 8	
• Special models: Please specify additional order code and any required plain text; see Page 3/3.						-Z	
Converter Inverter							E T

1) n1: Maximum permissible speed at constant power or speed where for P = P rated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) For model with brake: 12th position in ordering no. is "2" or "3"; 14th position is "K"; 15th position is "A", "B", "J" or "K"; 16th position "0", "3" or "6".
5) Max.permissible rotational speed (see also Part 7). Shaft height 100: 12000 rpm, 132: 10000 rpm, 160: 8000 rpm, only with keyless shaft (15th position is "J" or "K").
6) Model prepared for ZF gearbox attachment: 12th position in ordering no. is "2" or "3"; 13th position is "0"; 14th position is "B"; 15th position is "C" or "D"; 16th position is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control (continued)

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control									
1750	132	13 (17.43)	71 (52.4)	24	398	3300	4500	8000	1PH7 131 – ■ ■ F ■ ■ – ■ ...
		17.5 (23.46)	96 (70.8)	34	398	3400	4500	8000	1PH7 133 – ■ ■ F ■ ■ – ■ ...
		21.5 (28.82)	117 (86.3)	42	398	3800	4500	8000	1PH7 135 – ■ ■ F ■ ■ – ■ ...
		25 (33.51)	136 (100.3)	56	357	4000	4500	8000	1PH7 137 – ■ ■ F ■ ■ – ■ ...
	160	34 (45.58)	186 (137.2)	72	364	4000	3700	6500	1PH7 163 – ■ ■ F ■ ■ – ■ ...
		41 (54.96)	224 (165.2)	79	398	2800	3700	6500	1PH7 167 – ■ ■ F ■ ■ – ■ ...
2300	100	7.5 (10.05)	31 (22.9)	17	388	5400	5500	9000	1PH7 103 – ■ ■ G ■ ■ – ■ ...
		12 (16.09)	50 (36.9)	26	400	5400	5500	9000	1PH7 107 – ■ ■ G ■ ■ – ■ ...
	132	22.5 (30.16)	93 (68.6)	45	398	4000	4500	8000	1PH7 133 – ■ ■ G ■ ■ – ■ ...
		29 (38.87)	120 (88.5)	56	398	4000	4500	8000	1PH7 137 – ■ ■ G ■ ■ – ■ ...
	160	38 (50.94)	158 (116.5)	80	374	3000	3700	6500	1PH7 163 – ■ ■ G ■ ■ – ■ ...
		44 (58.98)	183 (135)	85	398	3000	3700	6500	1PH7 167 – ■ ■ G ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

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• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

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• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from non-drive end
- On top/from left

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• Construction type:

- IM B3 (IM V5, IM V6)
- IM B5 (IM V1, IM V3) available only for shaft height 100 and 132
- IM B35 (IM V15, IM V36)

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• Holding brake with emergency stop function:⁴⁾

- Without brake
- Brake connection voltage: **230 V AC, 50 to 60 Hz**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)
- Brake connection voltage: **24 V DC**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)

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For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/7.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control (continued)

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	I_{rated} A Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control							
0.88	8.1	0.902	59.7	0.076 (0.6726)	90 (198.5)	1PH7 131 - . . F	27 6SE7 022 - 7 E P60
0.85	14	0.900	59.7	0.076 (0.6726)	90 (198.5)	1PH7 133 - . . F	34 6SE7 023 - 4 P60
0.86	16	0.906	59.5	0.109 (0.9646)	150 (330.8)	1PH7 135 - . . F	47 6SE7 024 - 7 D61
0.85	23	0.902	59.5	0.109 (0.9646)	150 (330.8)	1PH7 137 - . . F	59 6SE7 026 - 0 D61
0.86	28	0.915	59.2	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . F	72 6SE7 027 - 2 D61
0.86	30	0.920	59.2	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . F	92 6SE7 031 - 0 E60
0.79	8.2	0.866	78.8	0.017 (0.1504)	40 (88.2)	1PH7 103 - . . G	20.5 6SE7 022 - 1 E P60
0.80	12	0.878	78.7	0.029 (0.2566)	65 (143.3)	1PH7 107 - . . G	27 6SE7 022 - 7 E P60
0.86	17	0.900	78.0	0.076 (0.6726)	90 (198.5)	1PH7 133 - . . G	47 6SE7 024 - 7 D61
0.87	21	0.903	77.8	0.109 (0.9646)	150 (330.8)	1PH7 137 - . . G	59 6SE7 026 - 0 D61
0.83	36	0.900	77.3	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . G	92 6SE7 031 - 0 E60
0.84	40	0.911	77.4	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . G	92 6SE7 031 - 0 E60
• Drive type: Coupling and belt R Coupling and belt S Coupling and belt SR Coupling and belt N Increased max. speed ⁵⁾ SR						• Vibration sev. grade: R S SR N R	
• Direction of air flow: DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾						• Shaft and flange accuracy: R R R N (only in connection with brake attachment) R	
• Shaft end: With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway						• Paint finish: None None, flange and radial shaft sealing ring ⁶⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾	
• Special models: Please specify additional order code and any required plain text; see Page 3/3.						• Converter Inverter	

- n_1 : Maximum permissible speed at constant power or speed where for $P = P_{\text{rated}}$, there is still a 30% power reserve up to the stall limit.
- n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.
- n_{max} : Maximum rotational speed. This speed may not be exceeded! Notice: Due to $f_{\text{max}} < 5 \cdot f_{\text{rated}}$, the maximum rotational speed is sometimes limited to smaller values.
- For model with brake: 12th position in ordering no. is "2" or "3"; 14th position is "K"; 15th position is "A", "B", "J" or "K"; 16th position "0", "3" or "6".

- Max. permissible rotational speed (see also Part 7).
Shaft height 100: 12000 rpm, 132: 10000 rpm, 160: 8000 rpm, only with keyless shaft (15th position is "J" or "K").
- Model prepared for ZF gearbox attachment: 12th position in ordering no. is "2" or "3"; 13th position is "0"; 14th position is "B"; 15th position is "C" or "D"; 16th position is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
- Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control									
400	180	16.3 (21.85)	390 (287.7)	51	271	2000	2000	2000	1PH7 184 – ■ ■ B ■ ■ – ■ ...
		21.2 (28.42)	505 (372.5)	67	268	2000	2000	2000	1PH7 186 – ■ ■ B ■ ■ – ■ ...
	225	30.4 (40.75)	725 (534.8)	88	268	2000	2000	2000	1PH7 224 – ■ ■ B ■ ■ – ■ ...
		39.2 (52.55)	935 (689.7)	114	264	2000	2000	2000	1PH7 226 – ■ ■ B ■ ■ – ■ ...
		48 (64.34)	1145 (844.6)	136	272	2000	2000	2000	1PH7 228 – ■ ■ B ■ ■ – ■ ...
1150	180	44 (58.98)	366 (270)	89	383	3100	3500 ⁴⁾	5000	1PH7 184 – ■ ■ D ■ ■ – ■ ...
		58 (77.75)	482 (355.5)	116	390	3300	3500 ⁴⁾	5000	1PH7 186 – ■ ■ D ■ ■ – ■ ...
	225	81 (108.58)	670 (494.2)	160	385	2900	3100 ⁴⁾	4500	1PH7 224 – ■ ■ D ■ ■ – ■ ...
		105 (140.75)	870 (641.7)	197	390	2900	3100 ⁴⁾	4500	1PH7 226 – ■ ■ D ■ ■ – ■ ...
		129 (172.92)	1070 (789.2)	238	390	2900	3100 ⁴⁾	4500 ⁴⁾	1PH7 228 – ■ ■ D ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

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• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from drive end
- On top/from non-drive end
- On top/from left

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• Construction type:

- IM B3
 - IM B3
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
- Hoisting concept for other construction types (IM B6, IM B7, IM B8, IM V5, IM V6)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)

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• Holding brake with emergency stop function (suitable for IM B3 coupling drive)⁵⁾:

- Without brake
- With brake (brake includes emergency release screws and microswitch)
- With brake (brake includes manual release and microswitch)

0
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For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/9.

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Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	I_{rated} A	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control								
0.84	26	0.830	14.2	0.503 (4.4545)	370 (815.8)	1PH7 184 - . . B . . - . ■ ■ ■	59	6SE7 026 - 0 ■ D61
0.81	38.5	0.845	14.0	0.666 (5.894)	440 (970.2)	1PH7 186 - . . B . . - . ■ ■ ■	72	6SE7 027 - 2 ■ D61
0.87	36.5	0.864	14.0	1.479 (13.0889)	630 (1389.2)	1PH7 224 - . . B . . - . ■ ■ ■	92	6SE7 031 - 0 ■ E60
0.86	49	0.880	14.0	1.930 (17.0802)	750 (1653.8)	1PH7 226 - . . B . . - . ■ ■ ■	124	6SE7 031 - 2 ■ F60
0.85	60.5	0.888	13.9	2.326 (20.5848)	860 (1896.3)	1PH7 228 - . . B . . - . ■ ■ ■	146	6SE7 031 - 5 ■ F60
0.82	42	0.920	39.2	0.503 (4.4545)	370 (815.8)	1PH7 184 - . . D . . - . ■ ■ ■	92	6SE7 031 - 0 ■ E60
0.81	58	0.925	39.1	0.666 (5.894)	440 (970.2)	1PH7 186 - . . D . . - . ■ ■ ■	124	6SE7 031 - 2 ■ F60
0.81	79	0.938	38.9	1.479 (13.0889)	630 (1389.2)	1PH7 224 - . . D . . - . ■ ■ ■	186	6SE7 031 - 8 ■ F60
0.84	87.5	0.941	38.9	1.930 (17.0802)	750 (1653.8)	1PH7 226 - . . D . . - . ■ ■ ■	210	6SE7 032 - 1 ■ G60
0.85	98	0.943	38.9	2.326 (20.5848)	860 (1896.3)	1PH7 228 - . . D . . - . ■ ■ ■	260	6SE7 032 - 6 ■ G60
• Drive type: Coupling R Coupling R Coupling S Coupling SR Belt R Belt R Increased cantilever forces R Increased cantilever forces R Increased maximum speed ⁶⁾ S						• Vibration sev. grade: R R S SR R R R R S		
• Direction of air flow: DE → NDE NDE → DE ⁸⁾ DE → NDE NDE → DE ⁸⁾ DE → NDE NDE → DE ⁸⁾						• Shaft and flange accuracy: N R R R N R R R R		
• Paint finish: Primed Primed, prepared for ZF gearbox attachment ⁷⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), prepared for ZF gearbox attachment ⁷⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), prepared for ZF gearbox attachment ⁷⁾						• Shaft end: With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway		
• Special models: Please specify additional order code and any required plain text; see Page 3/3.								
Converter Inverter								

1) n1: Maximum permissible speed at constant power or speed where for P = Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) Rotational speed is reduced in the event of increased cantilever forces, see Part 7.
5) For model with brake: 12th position in ordering no. is "0"; 14th and 15th position is "A"; 16th position is "0", "3" or "6".
6) For shaft height 180 nmax = 7000 rpm, 1PH7 224 nmax = 5500 rpm, coupling drive only.
7) Model prepared for ZF gearbox attachment: Only for types 1PH7 184, 186, and 224; 12th position in ordering no. is "3" or "5"; 13th is "0"; 14th is "B"; 15th is "C"; 16th is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
8) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control (continued)

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control									
1750	180	60 (80.43)	327 (241.2)	120	388	5000	3500 ⁴⁾	5000	1PH7 184 – ■ ■ F ■ ■ – ■ ...
		85 (113.94)	465 (343)	169	385	5000	3500 ⁴⁾	5000	1PH7 186 – ■ ■ F ■ ■ – ■ ...
	225	110 (147.45)	600 (442.6)	203	395	2900	3100 ⁴⁾	4500	1PH7 224 – ■ ■ U ■ ■ – ■ ...
		135 (180.97)	737 (543.6)	254	395	2900	3100 ⁴⁾	4500	1PH7 226 – ■ ■ F ■ ■ – ■ ...
		179 (239.95)	975 (719.2)	342	395	2900	3100 ⁴⁾	4500 ⁴⁾	1PH7 228 – ■ ■ F ■ ■ – ■ ...
2900	180	81 (108.58)	265 (195.5)	158	395	5000	3500 ⁴⁾	5000	1PH7 184 – ■ ■ L ■ ■ – ■ ...
		101 (135.39)	333 (245.6)	206	385	5000	3500 ⁴⁾	5000	1PH7 186 – ■ ■ L ■ ■ – ■ ...
	225	149 (199.73)	490 (361.4)	274	395	3500	3100 ⁴⁾	4500	1PH7 224 – ■ ■ L ■ ■ – ■ ...
		185 (247.99)	610 (450)	348	390	3500	3100 ⁴⁾	4500	1PH7 226 – ■ ■ L ■ ■ – ■ ...
		215 (288.2)	708 (522.2)	402	395	3500	3100 ⁴⁾	4500 ⁴⁾	1PH7 228 – ■ ■ L ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from drive end
- On top/from non-drive end
- On top/from left

0
1
2
3

• Construction type:

- IM B3
 - IM B3
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
- Hoisting concept for other construction types (IM B6, IM B7, IM B8, IM V5, IM V6)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)

0
1
3
4
3
5
6
5

• Holding brake with emergency stop function (suitable for IM B3 coupling drive)⁵⁾:

- Without brake
- With brake (brake includes emergency release screws and microswitch)
- With brake (brake includes manual release and microswitch)

0
2
4

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/11.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control (continued)

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	I_{rated} A	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control								
0.78	64	0.934	59.0	0.503 (4.4545)	370 (815.8)	1PH7 184 - . . F . . - . ■ ■ ■	124	6SE7 031 - 2 ■ F60
0.80	84	0.940	59.0	0.666 (5.894)	440 (970.2)	1PH7 186 - . . F . . - . ■ ■ ■	186	6SE7 031 - 8 ■ F60
0.84	88	0.944	58.9	1.479 (13.0889)	630 (1389.2)	1PH7 224 - . . U . . - . ■ ■ ■	210	6SE7 032 - 1 ■ G60
0.82	120	0.947	58.9	1.930 (17.0802)	750 (1653.8)	1PH7 226 - . . F . . - . ■ ■ ■	260	6SE7 032 - 6 ■ G60
0.81	169	0.948	58.8	2.326 (20.5848)	860 (1896.3)	1PH7 228 - . . F . . - . ■ ■ ■	370	6SE7 033 - 7 ■ G60
0.80	77	0.934	97.4	0.503 (4.4545)	370 (815.8)	1PH7 184 - . . L . . - . ■ ■ ■	186	6SE7 031 - 8 ■ F60
0.78	107	0.936	97.3	0.666 (5.894)	440 (970.2)	1PH7 186 - . . L . . - . ■ ■ ■	210	6SE7 032 - 1 ■ G60
0.84	115	0.946	97.3	1.479 (13.0889)	630 (1389.2)	1PH7 224 - . . L . . - . ■ ■ ■	315	6SE7 033 - 2 ■ G60
0.83	154	0.946	97.2	1.930 (17.0802)	750 (1653.8)	1PH7 226 - . . L . . - . ■ ■ ■	370	6SE7 033 - 7 ■ G60
0.82	186	0.946	97.2	2.326 (20.5848)	860 (1896.3)	1PH7 228 - . . L . . - . ■ ■ ■	510	6SE7 035 - 1 ■ K/J60
• Drive type:		• Vibration sev. grade:	• Shaft and flange accuracy:					
Coupling		R	N		A			
Coupling		R	R		B			
Coupling		S	R		C			
Coupling		SR	R		D			
Belt		R	N		E			
Belt		R	R		F			
Increased cantilever forces		R	N		G			
Increased cantilever forces		R	R		H			
Increased maximum speed ⁶⁾		S	R		J			
• Direction of air flow:		• Shaft end:						
DE → NDE		With keyway, half-key balancing			A			
NDE → DE ⁸⁾		With keyway, half-key balancing			B			
DE → NDE		With keyway, full-key balancing			C			
NDE → DE ⁸⁾		With keyway, full-key balancing			D			
DE → NDE		Without keyway			J			
NDE → DE ⁸⁾		Without keyway			K			
• Paint finish:								
Primed						0		
Primed, prepared for ZF gearbox attachment ⁷⁾						2		
Anthracite gray, standard finish (RAL 7016)						3		
Anthracite gray, standard finish (RAL 7016), prepared for ZF gearbox attachment ⁷⁾						5		
Anthracite gray, special finish (RAL 7016)						6		
Anthracite gray, special finish (RAL 7016), prepared for ZF gearbox attachment ⁷⁾						8		
• Special models:						-Z		
Please specify additional order code and any required plain text; see Page 3/3.								
Converter								
Inverter								

1) n1: Maximum permissible speed at constant power or speed where for P = Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) Rotational speed is reduced in the event of increased cantilever forces, see Part 7.
5) For model with brake: 12th position in ordering no. is "0"; 14th and 15th position is "A"; 16th position is "0", "3" or "6".
6) For shaft height 180 nmax = 7000 rpm, 1PH7 224 nmax = 5500 rpm, coupling drive only.
7) Model prepared for ZF gearbox attachment: Only for types 1PH7 184, 186, and 224; 12th position in ordering no. is "3" or "5"; 13th is "0"; 14th is "B"; 15th is "C"; 16th is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
8) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control									
500	280	80 (107.24)	1529 (1127.8)	144	400	1150	2200	2500	1PH7 284 – ■ ■ B ■ ■ – 0 ...
		100 (134.05)	1909 (1408.1)	180	400	1300	2200	2500	1PH7 286 – ■ ■ B ■ ■ – 0 ...
		130 (174.26)	2481 (1830)	233	400	1400	2200	2500	1PH7 288 – ■ ■ B ■ ■ – 0 ...
800	280	125 (167.56)	1492 (1100.5)	220	400	2200	2200	3300	1PH7 284 – ■ ■ C ■ ■ – 0 ...
		155 (207.77)	1850 (1364.6)	285	385	2200	2200	3300	1PH7 286 – ■ ■ C ■ ■ – 0 ...
		190 (254.69)	2268 (1672.9)	365	370	2200	2200	3300	1PH7 288 – ■ ■ C ■ ■ – 0 ...
1150	280	170 (227.88)	1414 (1043)	314	400	2200	2200	3300	1PH7 284 – ■ ■ D ■ ■ – 0 ...
		210 (281.5)	1745 (1287.1)	414	380	2200	2200	3300	1PH7 286 – ■ ■ D ■ ■ – 0 ...
		260 (348.53)	2160 (1593.2)	497	385	2200	2200	3300	1PH7 288 – ■ ■ D ■ ■ – 0 ...
1750	280	225 (301.61)	1228 (905.8)	393	400	2200	2200	3300	1PH7 284 – ■ ■ F ■ ■ – 0 ...
		270 (361.93)	1474 (1087.2)	466	400	2200	2200	3300	1PH7 286 – ■ ■ F ■ ■ – 0 ...
		340 (455.76)	1856 (1369)	586	400	2200	2200	3300	1PH7 288 – ■ ■ F ■ ■ – 0 ...

• Separate fan:⁴⁾

- With separate fan, non-drive end on top, air flow non-drive end to drive end
- With separate fan, non-drive end on the right, air flow non-drive end to drive end
- With separate fan, non-drive end on the left, air flow non-drive end to drive end
- With separate fan, drive end on top, air flow drive end to non-drive end
- With separate fan, drive end on the right, air flow drive end to non-drive end
- With separate fan, drive end on the left, air flow drive end to non-drive end
- Without separate fan, for simple pipe connection on non-drive end on the right

0
1
2
3
4
5
6

• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box/direction of cable entry (drive-end view):⁴⁾

- Terminal box non-drive side on right/cable entry underneath/encoder connector on drive side
- Terminal box non-drive side on left/cable entry underneath/encoder connector on drive side
- Terminal box non-drive side on top/cable entry on right/encoder connector on drive side
- Terminal box drive side on top/cable entry on right/encoder connector on non-drive side

0
1
2
5

• Construction type:⁴⁾

- IM B3
- IM V5 (can be converted later to IM V6)
- IM B35 (with flange A 660)
- IM V15 (with flange A 660; can be converted later to IM V36)

0
1
3
5

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/13.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	
	A		Hz	kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	A	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Vector Control								
0.87	60	0.922	17.0	4.2 (37.1694)	1300 (2866.5)	1PH7 284 - . . B . . - 0 ■ ■ ■ ■	146	6SE7 031 - 5 ■ F60
0.86	78	0.930	17.0	5.2 (46.0192)	1500 (3307.5)	1PH7 286 - . . B . . - 0 ■ ■ ■ ■	186	6SE7 031 - 8 ■ F60
0.87	100	0.933	17.0	6.3 (55.7541)	1700 (3748.5)	1PH7 288 - . . B . . - 0 ■ ■ ■ ■	260	6SE7 032 - 6 ■ G60
0.86	95	0.944	27.0	4.2 (37.1694)	1300 (2866.5)	1PH7 284 - . . C . . - 0 ■ ■ ■ ■	260	6SE7 032 - 6 ■ G60
0.85	135	0.948	27.0	5.2 (46.0192)	1500 (3307.5)	1PH7 286 - . . C . . - 0 ■ ■ ■ ■	370	6SE7 033 - 7 ■ G60
0.84	170	0.951	27.0	6.3 (55.7541)	1700 (3748.5)	1PH7 288 - . . C . . - 0 ■ ■ ■ ■	370	6SE7 033 - 7 ■ G60
0.82	158	0.956	38.6	4.2 (37.1694)	1300 (2866.5)	1PH7 284 - . . D . . - 0 ■ ■ ■ ■	315	6SE7 033 - 2 ■ G60
0.81	218	0.958	38.6	5.2 (46.0192)	1500 (3307.5)	1PH7 286 - . . D . . - 0 ■ ■ ■ ■	510	6SE7 035 - 1 ■ K/J60
0.82	252	0.960	38.6	6.3 (55.7541)	1700 (3748.5)	1PH7 288 - . . D . . - 0 ■ ■ ■ ■	510	6SE7 035 - 1 ■ K/J60
0.86	163	0.962	58.7	4.2 (37.1694)	1300 (2866.5)	1PH7 284 - . . F . . - 0 ■ ■ ■ ■	510	6SE7 035 - 1 ■ K/J60
0.87	184	0.963	58.7	5.2 (46.0192)	1500 (3307.5)	1PH7 286 - . . F . . - 0 ■ ■ ■ ■	510	6SE7 035 - 1 ■ K/J60
0.87	234	0.965	58.7	6.3 (55.7541)	1700 (3748.5)	1PH7 288 - . . F . . - 0 ■ ■ ■ ■	590	6SE7 036 - 0 ■ K/J60
• Drive type: ⁴⁾		• Vibration sev. grade:	• Shaft and flange accuracy:					
Coupling		N	N		A			
Coupling		R	R		B			
Belt/increased cantilever forces		N	N		E			
Belt/increased cantilever forces		R	R		F			
• Shaft end:								
With keyway, half-key balancing						A		
With keyway, full-key balancing						C		
Without keyway						J		
• Paint finish:								
Primed						0		
Anthracite gray, standard finish (RAL 7016)						3		
Anthracite gray, special finish (RAL 7016)						6		
• Special models:								
Please specify additional order code and any required plain text; see Page 3/3.						-Z		
Converter								
Inverter								

1) n1: Maximum permissible speed at constant power or speed where for P=Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) For possible combinations, refer to page 3/42.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control									
500	160	12 (16.09)	230 (169.6)	30	340	2100	2500	2500	1PH7 163 – ■ ■ B ■ ■ – ■ ...
		16 (21.45)	306 (225.7)	35	350	1700	2500	2500	1PH7 167 – ■ ■ B ■ ■ – ■ ...
1350	100	4.7 (6.3)	33 (24.3)	9.5	433	3000	5500	6750	1PH7 103 – ■ ■ D ■ ■ – ■ ...
		8.0 (10.72)	57 (42)	17	405	3800	5500	6750	1PH7 107 – ■ ■ D ■ ■ – ■ ...
	132	15 (20.11)	106 (78.19)	30	433	3100	4500	6750	1PH7 133 – ■ ■ D ■ ■ – ■ ...
		22 (29.49)	156 (115.1)	42	416	3200	4500	6750	1PH7 137 – ■ ■ D ■ ■ – ■ ...
	160	28 (37.53)	198 (146)	53	413	4100	3700	6500	1PH7 163 – ■ ■ D ■ ■ – ■ ...
		34 (45.58)	241 (177.8)	67	400	4600	3700	6500	1PH7 167 – ■ ■ D ■ ■ – ■ ...
2000	100	4.7 (6.3)	22 (16.2)	10	459	6000	5500	9000	1PH7 101 – ■ ■ F ■ ■ – ■ ...
		7.0 (9.38)	33 (24.3)	13	459	3400	5500	9000	1PH7 103 – ■ ■ F ■ ■ – ■ ...
		9.0 (12.06)	43 (31.7)	17.5	450	5000	5500	9000	1PH7 105 – ■ ■ F ■ ■ – ■ ...
		11 (14.75)	53 (39.1)	23	433	5300	5500	9000	1PH7 107 – ■ ■ F ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from non-drive end
- On top/from left

0
2
3

• Construction type:

- IM B3 (IM V5, IM V6)
- IM B5 (IM V1, IM V3) available only for shaft height 100 and 132
- IM B35 (IM V15, IM V36)

0
2
3

• Holding brake with emergency stop function:⁴⁾

- Without brake
- Brake connection voltage: **230 V AC, 50 to 60 Hz**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)
- Brake connection voltage: **24 V DC**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)

0
1
2
3
4
5
6
7
8

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/15.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current	
	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	
$\cos \varphi$	A		Hz	kgm^2 ($\text{lb}_f\text{-in-s}^2$)	kg (lb)	Order No.	A	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control								
0.86	13	0.841	17.6	0.185 (1.6372)	175 (385.9)	1PH7 163 – . . . B ■■■■	34	6SE7 023 – 4 ■■P60
0.89	13	0.836	17.7	0.228 (2.0178)	210 (463.1)	1PH7 167 – . . . B ■■■■	37.5	6SE7 023 – 8 ■■D61
0.81	4.5	0.830	47.1	0.017 (0.1504)	40 (88.2)	1PH7 103 – . . . D ■■■■	10	6SE7 021 – 0 ■■P60
0.80	8.1	0.853	47.0	0.029 (0.2566)	65 (143.3)	1PH7 107 – . . . D ■■■■	20.5	6SE7 022 – 1 E P60
0.84	12	0.887	46.4	0.076 (0.6726)	90 (198.5)	1PH7 133 – . . . D ■■■■	34	6SE7 023 – 4 ■■P60
0.85	17	0.895	46.3	0.109 (0.9646)	150 (330.8)	1PH7 137 – . . . D ■■■■	47	6SE7 024 – 7 ■■D61
0.83	24	0.911	45.8	0.185 (1.6372)	175 (385.9)	1PH7 163 – . . . D ■■■■	59	6SE7 026 – 0 ■■D61
0.83	34	0.910	45.8	0.228 (2.0178)	210 (463.1)	1PH7 167 – . . . D ■■■■	72	6SE7 027 – 2 ■■D61
0.72	6.0	0.862	68.2	0.017 (0.1504)	40 (88.2)	1PH7 101 – . . . F ■■■■	10	6SE7 021 – 0 ■■P60
0.82	5.6	0.860	69.1	0.017 (0.1504)	40 (88.2)	1PH7 103 – . . . F ■■■■	14	6SE7 021 – 4 E P60
0.78	9.3	0.878	68.3	0.029 (0.2566)	65 (143.3)	1PH7 105 – . . . F ■■■■	20.5	6SE7 022 – 1 E P60
0.79	10.8	0.876	68.6	0.029 (0.2566)	65 (143.3)	1PH7 107 – . . . F ■■■■	27	6SE7 022 – 7 E P60
• Drive type: Coupling and belt Coupling and belt Coupling and belt Coupling and belt		• Vibration sev. grade: R S SR N		• Shaft and flange accuracy: R R R N (only in connection with brake attachment) R			B C D K L	
Increased max. speed ⁵⁾		SR						
• Direction of air flow: DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾		• Shaft end: With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway					A B C D J K	
• Paint finish: None None, flange and radial shaft sealing ring ⁶⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾							0 2 3 5 6 8	
• Special models: Please specify additional order code and any required plain text; see Page 3/3.							–Z	
Converter Inverter								E T

1) n1: Maximum permissible speed at constant power or speed where for P=Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) For model with brake: 12th position in ordering no. is "2" or "3"; 14th position is "K"; 15th position is "A", "B", "J" or "K"; 16th position "0", "3" or "6".
5) Max. permissible rotational speed (see also Part 7). Shaft height 100: 12000 rpm, 132: 10000 rpm, 160: 8000 rpm, only with keyless shaft (15th position is "J" or "K").
6) Model prepared for ZF gearbox attachment: 12th position in ordering no. is "2" or "3"; 13th position is "0"; 14th position is "B"; 15th position is "C" or "D"; 16th position is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control (continued)

Rated Rotational Speed n_{rated} rpm	Shaft Height SH	Rated Output P_{rated} kW (HP)	Rated Torque M_{rated} Nm (lb _f -ft)	Rated Current I_{rated} A	Rated Voltage V_{rated} V	Speed during Field Weakening ¹⁾ n_1 rpm	Max. Permissible Continuous Speed ²⁾ n_{S1} rpm	Max. Speed ³⁾ n_{max} rpm	1PH7 Asynchronous Motors Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control									
2000	132	15 (20.11)	72 (53.1)	25	459	3900	4500	8000	1PH7 131 – ■ ■ F ■ ■ – ■ ...
		20 (26.81)	96 (70.8)	34	459	4100	4500	8000	1PH7 133 – ■ ■ F ■ ■ – ■ ...
		24 (32.17)	115 (84.8)	42	459	4700	4500	8000	1PH7 135 – ■ ■ F ■ ■ – ■ ...
		28 (37.53)	134 (98.8)	55	402	4000	4500	8000	1PH7 137 – ■ ■ F ■ ■ – ■ ...
	160	37 (49.6)	177 (130.6)	70	412	4000	3700	6500	1PH7 163 – ■ ■ F ■ ■ – ■ ...
		45 (60.32)	215 (158.6)	76	459	3300	3700	6500	1PH7 167 – ■ ■ F ■ ■ – ■ ...
2650	100	8.0 (10.72)	29 (21.4)	16.5	440	7000	5500	9000	1PH7 103 – ■ ■ G ■ ■ – ■ ...
		13 (17.43)	47 (34.7)	24.5	459	6700	5500	9000	1PH7 107 – ■ ■ G ■ ■ – ■ ...
	132	24 (32.17)	87 (64.2)	42	450	4000	4500	8000	1PH7 133 – ■ ■ G ■ ■ – ■ ...
		30 (40.21)	108 (79.7)	52	450	4200	4500	8000	1PH7 137 – ■ ■ G ■ ■ – ■ ...
	160	40 (53.62)	144 (106.2)	76	433	3500	3700	6500	1PH7 163 – ■ ■ G ■ ■ – ■ ...
		44 (58.98)	159 (117.3)	77	459	3300	3700	6500	1PH7 167 – ■ ■ G ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from non-drive end
- On top/from left

0
2
3

• Construction type:

- IM B3 (IM V5, IM V6)
- IM B5 (IM V1, IM V3) available only for shaft height 100 and 132
- IM B35 (IM V15, IM V36)

0
2
3

• Holding brake with emergency stop function:⁴⁾

- Without brake
- Brake connection voltage: **230 V AC, 50 to 60 Hz**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)
- Brake connection voltage: **24 V DC**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)

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For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/17.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control (continued)

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current
$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J			
	A		Hz	kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control							
0.88	8.5	0.903	68.0	0.076 (0.6726)	90 (198.5)	1PH7 131 - . . F	27 6SE7 022 - 7 EP60
0.84	15	0.900	68.0	0.076 (0.6726)	90 (198.5)	1PH7 133 - . . F	34 6SE7 023 - 4 C61
0.85	17	0.905	67.8	0.109 (0.9646)	150 (330.8)	1PH7 135 - . . F	47 6SE7 024 - 7 D61
0.85	23	0.900	67.9	0.109 (0.9646)	150 (330.8)	1PH7 137 - . . F	59 6SE7 026 - 0 D61
0.85	29	0.912	67.5	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . F	72 6SE7 027 - 2 D61
0.84	32	0.916	67.4	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . F	92 6SE7 031 - 0 E60
0.78	8.2	0.871	90.3	0.017 (0.1504)	40 (88.2)	1PH7 103 - . . G	20.5 6SE7 021 - 1 EP60
0.78	12	0.887	90.2	0.029 (0.2566)	65 (143.3)	1PH7 107 - . . G	27 6SE7 022 - 7 EP60
0.85	17	0.898	89.6	0.076 (0.6726)	90 (198.5)	1PH7 133 - . . G	47 6SE7 024 - 7 D61
0.84	21	0.894	89.4	0.109 (0.9646)	150 (330.8)	1PH7 137 - . . G	59 6SE7 026 - 0 D61
0.82	37	0.895	89.0	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . G	92 6SE7 031 - 0 E60
0.80	40	0.911	89.0	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . G	92 6SE7 031 - 0 E60
• Drive type:						B C D K L	
Coupling and belt							
Coupling and belt							
Coupling and belt							
Coupling and belt							
Increased max. speed ⁵⁾							
• Vibration sev. grade:						A B C D J K	
R							
S							
SR							
N							
N (only in connection with brake attachment)							
R							
• Shaft and flange accuracy:						0 2 3 5 6 8	
• Direction of air flow:						-Z	
DE → NDE							
NDE → DE ⁷⁾							
DE → NDE							
NDE → DE ⁷⁾							
DE → NDE							
NDE → DE ⁷⁾							
• Shaft end:						E T	
With keyway, half-key balancing							
With keyway, half-key balancing							
With keyway, full-key balancing							
With keyway, full-key balancing							
Without keyway							
Without keyway							
• Paint finish:							
None							
None, flange and radial shaft sealing ring ⁶⁾							
Anthracite gray, standard finish (RAL 7016)							
Anthracite gray, standard finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾							
Anthracite gray, special finish (RAL 7016)							
Anthracite gray, special finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾							
• Special models:							
Please specify additional order code and any required plain text; see Page 3/3.							
Converter							
Inverter							

1) n1: Maximum permissible speed at constant power or speed where for P = Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) For model with brake: 12th position in ordering no. is "2" or "3"; 14th position is "K"; 15th position is "A", "B", "J" or "K"; 16th position "0", "3" or "6".
5) Max. permissible rotational speed (see also Part 7). Shaft height 100: 12000 rpm, 132: 10000 rpm, 160: 8000 rpm, only with keyless shaft (15th position is "J" or "K").
6) Model prepared for ZF gearbox attachment: 12th position in ordering no. is "2" or "3"; 13th position is "0"; 14th position is "B"; 15th position is "C" or "D"; 16th position is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control									
500	180	20.5 (27.48)	392 (289.1)	51	335	2500	2500	2500	1PH7 184 – ■ ■ B ■ ■ – ■ ...
		26.5 (35.52)	506 (373.2)	67	335	2500	2500	2500	1PH7 186 – ■ ■ B ■ ■ – ■ ...
	225	38 (50.94)	725 (534.8)	86	335	2200	2500	2500	1PH7 224 – ■ ■ B ■ ■ – ■ ...
		49 (65.68)	935 (689.7)	112	330	2500	2500	2500	1PH7 226 – ■ ■ B ■ ■ – ■ ...
		60 (80.43)	1145 (844.6)	135	340	2500	2500	2500	1PH7 228 – ■ ■ B ■ ■ – ■ ...
1350	180	50 (67.02)	375 (276.6)	86	450	3700	3500 ⁴⁾	5000	1PH7 184 – ■ ■ D ■ ■ – ■ ...
		67 (89.81)	475 (350.4)	114	460	3800	3500 ⁴⁾	5000	1PH7 186 – ■ ■ D ■ ■ – ■ ...
	225	92 (123.32)	650 (479.4)	156	450	2900	3100 ⁴⁾	4500	1PH7 224 – ■ ■ D ■ ■ – ■ ...
		120 (160.86)	847 (624.7)	193	460	2900	3100 ⁴⁾	4500	1PH7 226 – ■ ■ D ■ ■ – ■ ...
		147 (197.05)	1043 (769.3)	232	460	2900	3100 ⁴⁾	4500 ⁴⁾	1PH7 228 – ■ ■ D ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from drive end
- On top/from non-drive end
- On top/from left

0
1
2
3

• Construction type:

- IM B3
 - IM B3
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH 722. with flange A 550)
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
- Hoisting concept for other construction types (IM B6, IM B7, IM B8, IM V5, IM V6)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)

0
1
3
4
3
5
6
5

• Holding brake with emergency stop function (suitable for IM B3 coupling drive)⁵⁾:

- Without brake
- With brake (brake includes emergency release screws and microswitch)
- With brake (brake includes manual release and microswitch)

0
2
4

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/19.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _F -in-s ²)	kg (lb)	Order No.	I_{rated} A	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control								
0.83	26	0.858	17.5	0.503 (4.4545)	370 (815.8)	1PH7 184 – . . . B ■ ■ ■	59	6SE7 026 – 0 ■ D61
0.79	39.5	0.870	17.3	0.666 (5.894)	440 (970.2)	1PH7 186 – . . . B ■ ■ ■	72	6SE7 027 – 2 ■ D61
0.85	37.5	0.888	17.3	1.479 (13.0889)	630 (1389.2)	1PH7 224 – . . . B ■ ■ ■	92	6SE7 031 – 0 ■ E60
0.85	50	0.900	17.3	1.930 (17.0802)	750 (1653.8)	1PH7 226 – . . . B ■ ■ ■	124	6SE7 031 – 2 ■ F60
0.84	61.5	0.907	17.2	2.326 (20.5848)	860 (1896.3)	1PH7 228 – . . . B ■ ■ ■	146	6SE7 031 – 5 ■ F60
0.81	42	0.928	45.8	0.503 (4.4545)	370 (815.8)	1PH7 184 – . . . D ■ ■ ■	92	6SE7 031 – 0 ■ E60
0.79	59.5	0.930	45.7	0.666 (5.894)	440 (970.2)	1PH7 186 – . . . D ■ ■ ■	124	6SE7 031 – 2 ■ F60
0.80	78.5	0.942	45.6	1.479 (13.0889)	630 (1389.2)	1PH7 224 – . . . D ■ ■ ■	186	6SE7 031 – 8 ■ F60
0.82	88.5	0.945	45.6	1.930 (17.0802)	750 (1653.8)	1PH7 226 – . . . D ■ ■ ■	210	6SE7 032 – 1 ■ G60
0.84	99.5	0.947	45.6	2.326 (20.5848)	860 (1896.3)	1PH7 228 – . . . D ■ ■ ■	260	6SE7 032 – 6 ■ G60
• Drive type:		• Vibration sev. grade:		• Shaft and flange accuracy:			A B C D E F G H J	
Coupling Coupling Coupling Coupling Belt Belt Increased cantilever forces Increased cantilever forces Increased maximum speed ⁶⁾		R R S SR R R R R S		N R R R N R R R				
• Direction of air flow:		• Shaft end:					A B C D J K	
DE → NDE NDE → DE ⁸⁾ DE → NDE NDE → DE ⁸⁾ DE → NDE NDE → DE ⁸⁾		With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway						
• Paint finish:							0 2 3 5 6 8	
Primed Primed, prepared for ZF gearbox attachment ⁷⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), prepared for ZF gearbox attachment ⁷⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), prepared for ZF gearbox attachment ⁷⁾								
• Special models:							–Z	
Please specify additional order code and any required plain text; see Page 3/3.								
Converter Inverter								E T

1) n1: Maximum permissible speed at constant power or speed where for P=Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) Rotational speed is reduced in the event of increased cantilever forces, see Part 7.
5) For model with brake: 12th position in ordering no. is "0"; 14th and 15th position is "A"; 16th position is "0", "3" or "6".
6) For shaft height 180 nmax = 7000 rpm, 1PH7 224 nmax = 5500 rpm, coupling drive only.
7) Model prepared for ZF gearbox attachment: Only for types 1PH7 184, 186, and 224; 12th position in ordering no. is "3" or "5"; 13th is "0"; 14th is "B"; 15th is "C"; 16th is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
8) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control (continued)

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control									
2000	180	68 (91.15)	325 (239.7)	120	450	5000	3500 ⁴⁾	5000	1PH7 184 – ■ ■ F ■ ■ – ■ ...
		94 (126.01)	450 (331.9)	165	445	5000	3500 ⁴⁾	5000	1PH7 186 – ■ ■ F ■ ■ – ■ ...
	225	124 (166.22)	590 (435.2)	200	460	2900	3100 ⁴⁾	4500	1PH7 224 – ■ ■ U ■ ■ – ■ ...
		153 (205.09)	730 (538.5)	254	450	2900	3100 ⁴⁾	4500	1PH7 226 – ■ ■ F ■ ■ – ■ ...
		196 (262.73)	936 (690.4)	332	450	3000	3100 ⁴⁾	4500 ⁴⁾	1PH7 228 – ■ ■ F ■ ■ – ■ ...
2900	180	81 (108.58)	267 (196.9)	158	395	5000	3500 ⁴⁾	5000	1PH7 184 – ■ ■ L ■ ■ – ■ ...
		101 (135.39)	333 (245.6)	206	385	5000	3500 ⁴⁾	5000	1PH7 186 – ■ ■ L ■ ■ – ■ ...
	225	149 (199.73)	490 (361.4)	274	395	3500	3100 ⁴⁾	4500	1PH7 224 – ■ ■ L ■ ■ – ■ ...
		185 (247.99)	610 (449.9)	348	390	3500	3100 ⁴⁾	4500	1PH7 226 – ■ ■ L ■ ■ – ■ ...
		215 (288.2)	708 (522.2)	402	395	3500	3100 ⁴⁾	4500 ⁴⁾	1PH7 228 – ■ ■ L ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from drive end
- On top/from non-drive end
- On top/from left

0
1
2
3

• Construction type:

- IM B3
 - IM B3
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH 722. with flange A 550)
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
- Hoisting concept for other construction types (IM B6, IM B7, IM B8, IM V5, IM V6)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)

0
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4
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5
6
5

• Holding brake with emergency stop function (suitable for IM B3 coupling drive)⁵⁾:

- Without brake
- With brake (brake includes emergency release screws and microswitch)
- With brake (brake includes manual release and microswitch)

0
2
4

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/21.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control (continued)

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	I_{rated} A	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control								
0.78	66	0.935	67.3	0.503 (4.4545)	370 (815.8)	1PH7 184 – . . . F . . . – . ■ ■ ■	124	6SE7 031 – 2 ■ F60
0.78	87	0.941	67.3	0.666 (5.894)	440 (970.2)	1PH7 186 – . . . F . . . – . ■ ■ ■	186	6SE7 031 – 8 ■ F60
0.82	91	0.944	67.2	1.479 (13.0889)	630 (1389.2)	1PH7 224 – . . . U . . . – . ■ ■ ■	210	6SE7 032 – 1 ■ G60
0.82	119	0.948	67.2	1.930 (17.0802)	750 (1653.8)	1PH7 226 – . . . F . . . – . ■ ■ ■	260	6SE7 032 – 6 ■ G60
0.79	168	0.950	67.1	2.326 (20.5848)	860 (1896.3)	1PH7 228 – . . . F . . . – . ■ ■ ■	370	6SE7 033 – 7 ■ G60
0.80	77	0.934	97.4	0.503 (4.4545)	370 (815.8)	1PH7 184 – . . . L . . . – . ■ ■ ■	186	6SE7 031 – 8 ■ F60
0.78	107	0.936	97.3	0.666 (5.894)	440 (970.2)	1PH7 186 – . . . L . . . – . ■ ■ ■	210	6SE7 032 – 1 ■ G60
0.84	115	0.946	97.3	1.479 (13.0889)	630 (1389.2)	1PH7 224 – . . . L . . . – . ■ ■ ■	315	6SE7 033 – 2 ■ G60
0.83	154	0.946	97.2	1.930 (17.0802)	750 (1653.8)	1PH7 226 – . . . L . . . – . ■ ■ ■	370	6SE7 033 – 7 ■ G60
0.82	188	0.954	97.2	2.326 (20.5848)	860 (1896.3)	1PH7 228 – . . . L . . . – . ■ ■ ■	510	6SE7 035 – 1 ■ K/J60
• Drive type:		• Vibration sev. grade:		• Shaft and flange accuracy:		A B C D E F G H J		
Coupling Coupling Coupling Coupling Belt Belt Increased cantilever forces Increased cantilever forces Increased maximum speed ⁶⁾		R R S SR R R R R S		N R R R N R N R R				
• Direction of air flow:		• Shaft end:				A B C D J K		
DE → NDE NDE → DE ⁸⁾ DE → NDE NDE → DE ⁸⁾ DE → NDE NDE → DE ⁸⁾		With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway						
• Paint finish:						0 2 3 5 6 8		
Primed Primed, prepared for ZF gearbox attachment ⁷⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), prepared for ZF gearbox attachment ⁷⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), prepared for ZF gearbox attachment ⁷⁾								
• Special models:						–Z		
Please specify additional order code and any required plain text; see Page 3/3.								
Converter Inverter								E T

1) n1: Maximum permissible speed at constant power or speed where for P = Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) Rotational speed is reduced in the event of increased cantilever forces, see Part 7.
5) For model with brake: 12th position in ordering no. is "0"; 14th and 15th position is "A"; 16th position is "0", "3" or "6".
6) For shaft height 180 nmax = 7000 rpm, 1PH7 224 nmax = 5500 rpm, coupling drive only.
7) Model prepared for ZF gearbox attachment: Only for types 1PH7 184, 186, and 224; 12th position in ordering no. is "3" or "5"; 13th is "0"; 14th is "B"; 15th is "C"; 16th is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
8) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control									
600	280	95 (127.35)	1519 (1120.4)	144	480	1650	2200	3000	1PH7 284 – ■ ■ B ■ ■ – 0 ...
		120 (160.86)	1916 (1413.2)	180	480	1750	2200	3000	1PH7 286 – ■ ■ B ■ ■ – 0 ...
		155 (207.77)	2474 (1824.8)	233	480	1850	2200	3000	1PH7 288 – ■ ■ B ■ ■ – 0 ...
1000	280	150 (201.07)	1433 (1057)	220	480	2200	2200	3300	1PH7 284 – ■ ■ C ■ ■ – 0 ...
		185 (247.99)	1767 (1303.3)	285	480	2200	2200	3300	1PH7 286 – ■ ■ C ■ ■ – 0 ...
		230 (308.31)	2197 (1620.5)	365	460	2200	2200	3300	1PH7 288 – ■ ■ C ■ ■ – 0 ...
1350	280	200 (268.1)	1416 (1044.4)	314	470	2200	2200	3300	1PH7 284 – ■ ■ D ■ ■ – 0 ...
		245 (328.42)	1733 (1278.3)	414	445	2200	2200	3300	1PH7 286 – ■ ■ D ■ ■ – 0 ...
		305 (408.85)	2158 (1591.7)	497	450	2200	2200	3300	1PH7 288 – ■ ■ D ■ ■ – 0 ...
2000	280	255 (341.82)	1218 (898.4)	393	455	2200	2200	3300	1PH7 284 – ■ ■ F ■ ■ – 0 ...
		310 (415.55)	1481 (1092.4)	466	455	2200	2200	3300	1PH7 286 – ■ ■ F ■ ■ – 0 ...
		385 (516.09)	1838 (1355.7)	586	455	2200	2200	3300	1PH7 288 – ■ ■ F ■ ■ – 0 ...

• Separate fan:⁴⁾

- With separate fan, non-drive end on top, air flow non-drive end to drive end
- With separate fan, non-drive end on the right, air flow non-drive end to drive end
- With separate fan, non-drive end on the left, air flow non-drive end to drive end
- With separate fan, drive end on top, air flow drive end to non-drive end
- With separate fan, drive end on the right, air flow drive end to non-drive end
- With separate fan, drive end on the left, air flow drive end to non-drive end
- Without separate fan, for simple pipe connection on non-drive end on the right

0
1
2
3
4
5
6

• Encoder:

- Without encoder
- Incremental encoder HTL (1,024 pulses/revolution)
- Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box/direction of cable entry (drive-end view):⁴⁾

- Terminal box non-drive side on right/cable entry underneath/encoder connector on drive side
- Terminal box non-drive side on left/cable entry on underneath/encoder connector on drive side
- Terminal box non-drive side on top/cable entry on right/encoder connector on drive side
- Terminal box drive side on top/cable entry on right/encoder connector on non-drive side

0
1
2
5

• Construction type:⁴⁾

- IM B3
- IM V5 (can be converted later to IM V6)
- IM B35 (with flange A 660)
- IM V15 (with flange A 660; can be converted later to IM V36)

0
1
3
5

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/23.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current	
	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	
$\cos \varphi$	A		Hz	kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	A	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Vector Control								
0.86	61	0.932	20.3	4.2 (37.1694)	1300 (2866.5)	1PH7 284 – . . B . . – 0 ■ ■ ■	146	6SE7 031 – 5 ■ F60
0.86	80	0.939	20.3	5.2 (46.0192)	1500 (3307.5)	1PH7 286 – . . B . . – 0 ■ ■ ■	186	6SE7 031 – 8 ■ F60
0.86	102	0.941	20.3	6.3 (55.754)	1700 (3748.5)	1PH7 288 – . . B . . – 0 ■ ■ ■	260	6SE7 032 – 6 ■ G60
0.86	90	0.950	34.0	4.2 (37.1694)	1300 (2866.5)	1PH7 284 – . . C . . – 0 ■ ■ ■	260	6SE7 032 – 6 ■ G60
0.84	135	0.954	34.0	5.2 (46.0192)	1500 (3307.5)	1PH7 286 – . . C . . – 0 ■ ■ ■	370	6SE7 033 – 7 ■ G60
0.84	170	0.956	34.0	6.3 (55.754)	1700 (3748.5)	1PH7 288 – . . C . . – 0 ■ ■ ■	370	6SE7 033 – 7 ■ G60
0.82	159	0.958	45.3	4.2 (37.1694)	1300 (2866.5)	1PH7 284 – . . D . . – 0 ■ ■ ■	315	6SE7 033 – 2 ■ G60
0.80	217	0.960	45.3	5.2 (46.0192)	1500 (3307.5)	1PH7 286 – . . D . . – 0 ■ ■ ■	510	6SE7 035 – 1 ■ K/J60
0.82	250	0.962	45.3	6.3 (55.754)	1700 (3748.5)	1PH7 288 – . . D . . – 0 ■ ■ ■	510	6SE7 035 – 1 ■ K/J60
0.86	162	0.962	67.0	4.2 (37.1694)	1300 (2866.5)	1PH7 284 – . . F . . – 0 ■ ■ ■	510	6SE7 035 – 1 ■ K/J60
0.87	182	0.964	67.0	5.2 (46.0192)	1500 (3307.5)	1PH7 286 – . . F . . – 0 ■ ■ ■	510	6SE7 035 – 1 ■ K/J60
0.87	232	0.965	67.0	6.3 (55.754)	1700 (3748.5)	1PH7 288 – . . F . . – 0 ■ ■ ■	590	6SE7 036 – 0 ■ K/J60
• Drive type: ⁴⁾		• Vibration sev. grade:		• Shaft and flange accuracy:			A B E F	
Coupling		N		N				
Coupling		R		R				
Belt/increased cantilever forces		N		N				
Belt/increased cantilever forces		R		R				
• Shaft end:						A C J		
With keyway, half-key balancing								
With keyway, full-key balancing								
Without keyway								
• Paint finish:						0 3 6		
Primed								
Anthracite gray, standard finish (RAL 7016)								
Anthracite gray, special finish (RAL 7016)								
• Special models:						–Z		
Please specify additional order code and any required plain text; see Page 3/3.								
Converter Inverter								E T

1) n1: Maximum permissible speed at constant power or speed where for P=Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax < 5 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) For possible combinations, refer to page 3/42.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 690 V for SIMOVERT MASTERDRIVES Vector Control (Option C30)									
500	280	77 (103.22)	1471 (1085)	80	690	1150	2200	2500	1PH7 284 – ■ ■ B ■ ■ – 0 ...
		96 (128.69)	1834 (1352.8)	101	690	1300	2200	2500	1PH7 286 – ■ ■ B ■ ■ – 0 ...
		125 (167.56)	2388 (1761.4)	130	690	1400	2200	2500	1PH7 288 – ■ ■ B ■ ■ – 0 ...
800	280	115 (154.16)	1373 (1012.7)	120	690	2200	2200	3300	1PH7 284 – ■ ■ C ■ ■ – 0 ...
		145 (194.37)	1731 (1276.8)	160	665	2200	2200	3300	1PH7 286 – ■ ■ C ■ ■ – 0 ...
		185 (247.99)	2208 (1628.6)	210	640	2200	2200	3300	1PH7 288 – ■ ■ C ■ ■ – 0 ...
1150	280	164 (219.84)	1362 (1004.6)	176	690	2200	2200	3300	1PH7 284 – ■ ■ D ■ ■ – 0 ...
		203 (272.12)	1686 (1243.6)	233	655	2200	2200	3300	1PH7 286 – ■ ■ D ■ ■ – 0 ...
		251 (336.46)	2084 (1537.2)	280	665	2200	2200	3300	1PH7 288 – ■ ■ D ■ ■ – 0 ...
1750	280	217 (290.88)	1184 (873.3)	221	690	2200	2200	3300	1PH7 284 – ■ ■ F ■ ■ – 0 ...
		261 (349.87)	1424 (1050.3)	262	690	2200	2200	3300	1PH7 286 – ■ ■ F ■ ■ – 0 ...
		329 (441.02)	1795 (1323.9)	330	690	2200	2200	3300	1PH7 288 – ■ ■ F ■ ■ – 0 ...

• Separate fan:⁵⁾

With separate fan, non-drive end on top, air flow non-drive end to drive end
 With separate fan, non-drive end on the right, air flow non-drive end to drive end
 With separate fan, non-drive end on the left, air flow non-drive end to drive end
 With separate fan, drive end on top, air flow drive end to non-drive end
 With separate fan, drive end on the right, air flow drive end to non-drive end
 With separate fan, drive end on the left, air flow drive end to non-drive end
 Without separate fan, for simple pipe connection on non-drive end on the right

0
1
2
3
4
5
6

• Encoder:

Without encoder
 Incremental encoder HTL (1,024 pulses/revolution)
 Incremental encoder HTL (2,048 pulses/revolution)

A
H
J

• Terminal box/direction of cable entry (drive-end view):⁵⁾

Terminal box non-drive side on right/cable entry underneath/encoder connector on drive side
 Terminal box non-drive side on left/cable entry underneath/encoder connector on drive side
 Terminal box non-drive side on top/cable entry on right/encoder connector on drive side
 Terminal box drive side on top/cable entry on right/encoder connector on non-drive side

0
1
2
5

• Construction type:⁵⁾

IM B3
 IM V5 (can be converted later to IM V6)
 IM B35 (with flange A 660)
 IM V15 (with flange A 660; can be converted later to IM V36)

0
1
3
5

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/25.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Vector Control

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES VC Inverter/Converter Rated Current	
	I_{μ}	η_{rated}	f_{rated}	J			I_{rated}	
$\cos \varphi$	A		Hz	kgm^2 ($\text{lb}_f\text{-in-s}^2$)	kg (lb)	Order No.	A	Order No.
Supply voltage 3-ph. AC 690 V for SIMOVERT MASTERDRIVES Vector Control (Option C30)								
0.87	34	0.923	17.0	4.2 (37.1694)	1300 (2866.5)	1PH7 284 - . . B . . - 0 ■ ■ ■ ■	82	6SE7 028 - 2 ■ G60
0.86	45	0.927	17.0	5.2 (46.0192)	1500 (3307.5)	1PH7 286 - . . B . . - 0 ■ ■ ■ ■	118	6SE7 031 - 2 ■ G60
0.86	57	0.930	17.0	6.3 (55.754)	1700 (3748.5)	1PH7 288 - . . B . . - 0 ■ ■ ■ ■	145	6SE7 031 - 5 ■ G60
0.85	55	0.943	27.0	4.2 (37.1694)	1300 (2866.5)	1PH7 284 - . . C . . - 0 ■ ■ ■ ■	118 ⁴⁾	6SE7 031 - 2 ■ G60
0.84	80	0.947	27.0	5.2 (46.0192)	1500 (3307.5)	1PH7 286 - . . C . . - 0 ■ ■ ■ ■	171	6SE7 031 - 7 ■ G60
0.84	100	0.950	27.0	6.3 (55.754)	1700 (3748.5)	1PH7 288 - . . C . . - 0 ■ ■ ■ ■	208 ⁴⁾	6SE7 032 - 1 ■ G60
0.81	91	0.955	38.6	4.2 (37.1694)	1300 (2866.5)	1PH7 284 - . . D . . - 0 ■ ■ ■ ■	171 ⁴⁾	6SE7 031 - 7 ■ G60
0.80	125	0.957	38.6	5.2 (46.0192)	1500 (3307.5)	1PH7 286 - . . D . . - 0 ■ ■ ■ ■	297	6SE7 033 - 0 ■ K/J60
0.81	145	0.959	38.6	6.3 (55.754)	1700 (3748.5)	1PH7 288 - . . D . . - 0 ■ ■ ■ ■	297	6SE7 033 - 0 ■ K/J60
0.86	94	0.961	58.7	4.2 (37.1694)	1300 (2866.5)	1PH7 284 - . . F . . - 0 ■ ■ ■ ■	208 ⁴⁾	6SE7 032 - 1 ■ G60
0.87	105	0.963	58.7	5.2 (46.0192)	1500 (3307.5)	1PH7 286 - . . F . . - 0 ■ ■ ■ ■	297	6SE7 033 - 0 ■ K/J60
0.86	134	0.964	58.7	6.3 (55.754)	1700 (3748.5)	1PH7 288 - . . F . . - 0 ■ ■ ■ ■	354	6SE7 033 - 5 ■ K/J60
• Drive type: ⁵⁾						• Vibration sev. grade:		
Coupling						N		
Coupling						R		
Belt/increased cantilever forces						N		
Belt/increased cantilever forces						R		
• Shaft end:						• Shaft and flange accuracy:		
With keyway, half-key balancing						A		
With keyway, full-key balancing						B		
Without keyway						E		
• Paint finish:						F		
Primed						A		
Anthracite gray, standard finish (RAL 7016)						C		
Anthracite gray, special finish (RAL 7016)						J		
• Special models:						0		
Please specify additional order code and any required plain text; see Page 3/3.						3		
						6		
						-C30		
Converter						H		
Inverter						W		

1) n_1 : Maximum permissible speed at constant power or speed where for $P = P_{rated}$, there is still a 30% power reserve up to the stall limit.
2) n_{S1} : Maximum permissible speed that is continuously permitted without speed duty cycles.
3) n_{max} : Maximum rotational speed. This speed may not be exceeded! Notice: Due to $f_{max.} < 5 \cdot f_{rated}$, the maximum rotational speed is sometimes limited to smaller values.
4) Notice: The rated converter current is smaller than the rated motor current.
5) For possible combinations, refer to page 3/42.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control¹⁾

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ²⁾	Max. Permissible Continuous Speed ³⁾	Max. Speed ⁴⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Motion Control									
400	160	9.5 (12.74)	227 (2009.2)	30	274	800	800	800	1PH7 163 – ■ ■ B ■ ■ – ■ ...
		13 (17.43)	310 (2743.8)	37	294	800	800	800	1PH7 167 – ■ ■ B ■ ■ – ■ ...
1000	100	3.7 (5.76)	35 (77.2)	10	343	2000	2000	2000	1PH7 103 – ■ ■ D ■ ■ – ■ ...
		6.25 (8.38)	60 (531.1)	17.5	319	2000	2000	2000	1PH7 107 – ■ ■ D ■ ■ – ■ ...
	132	12 (16.09)	115 (253.6)	30	336	2000	2000	2000	1PH7 133 – ■ ■ D ■ ■ – ■ ...
		17 (22.79)	162 (1433.9)	43	322	2000	2000	2000	1PH7 137 – ■ ■ D ■ ■ – ■ ...
	160	22 (29.49)	210 (463.1)	55	315	2000	2000	2000	1PH7 163 – ■ ■ D ■ ■ – ■ ...
		28 (37.53)	267 (588.7)	71	312	2000	2000	2000	1PH7 167 – ■ ■ D ■ ■ – ■ ...
1500	100	3.7 (4.96)	24 (212.4)	10	350	3000	3000	3000	1PH7 101 – ■ ■ F ■ ■ – ■ ...
		5.5 (7.37)	35 (77.2)	13.0	350	2100	3000	3000	1PH7 103 – ■ ■ F ■ ■ – ■ ...
		7.0 (9.38)	45 (99.2)	17.5	346	3000	3000	3000	1PH7 105 – ■ ■ F ■ ■ – ■ ...
		9.0 (12.06)	57 (125.7)	23.5	336	3000	3000	3000	1PH7 107 – ■ ■ F ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Absolute encoder EnDat 2,048 pulses/revolution
- Incremental encoder sin/cos 1 V_{pp} (without C track or D track)
- Incremental encoder sin/cos 1 V_{pp} (with C track and D track)
- Resolver, 2-pole

E
N
M
R

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from non-drive end
- On top/from left

0
2
3

• Construction type:

- IM B3 (IM V5, IM V6)
- IM B5 (IM V1, IM V3) available only for shaft height 100 and 132
- IM B35 (IM V15, IM V36)

0
2
3

• Holding brake with emergency stop function:⁵⁾

- Without brake
- Brake connection voltage: **230 V AC, 50 to 60 Hz**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)
- Brake connection voltage: **24 V DC**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)

0
1
2
3
4
5
6
7
8

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/27.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control¹⁾

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ}	η_{rated}	f_{rated}	J	kg	Order No.	I_{rated}	Order No.
	A		Hz	kgm ² (lb _f -in-s ²)	(lb)		A	
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Motion Control								
0.88	11.5	0.809	14.3	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . B . . - . ■ ■ ■	34	6SE7 023 - 4 EP50
0.88	14	0.814	14.3	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . B . . - . ■ ■ ■	37.5	6SE7 023 - 8 ■ D51
0.82	4.8	0.794	35.6	0.017 (0.1504)	40 (88.2)	1PH7 103 - . . D . . - . ■ ■ ■	10	6SE7 021 - 0 ■ P50
0.81	8.9	0.822	35.3	0.029 (0.2566)	65 (143.3)	1PH7 107 - . . D . . - . ■ ■ ■	20.5	6SE7 022 - 1 EP50
0.86	13	0.865	34.8	0.076 (0.6726)	90 (198.5)	1PH7 133 - . . D . . - . ■ ■ ■	34	6SE7 023 - 4 EP50
0.86	19	0.878	34.6	0.109 (0.9646)	150 (330.8)	1PH7 137 - . . D . . - . ■ ■ ■	47	6SE7 024 - 7 ■ D51
0.85	24	0.899	34.2	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . D . . - . ■ ■ ■	59	6SE7 026 - 0 ■ D51
0.84	33	0.903	34.2	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . D . . - . ■ ■ ■	72	6SE7 027 - 2 ■ D51
0.74	5.9	0.847	51.6	0.017 (0.1504)	40 (88.2)	1PH7 101 - . . F . . - . ■ ■ ■	10	6SE7 021 - 0 ■ P50
0.84	5.4	0.832	52.7	0.017 (0.1504)	40 (88.2)	1PH7 103 - . . F . . - . ■ ■ ■	14	6SE7 021 - 4 EP50
0.78	9.4	0.866	51.7	0.029 (0.2566)	65 (143.3)	1PH7 105 - . . F . . - . ■ ■ ■	20.5	6SE7 022 - 1 EP50
0.80	11	0.859	52.0	0.029 (0.2566)	65 (143.3)	1PH7 107 - . . F . . - . ■ ■ ■	27	6SE7 022 - 7 EP50
• Drive type:						• Vibration sev. grade:		
Coupling and belt						R		
Coupling and belt						S		
Coupling and belt						SR		
Coupling and belt						N		
						N (only in connection with brake attachment)		
						B		
						C		
						D		
						K		
• Direction of air flow:						A		
DE → NDE						B		
NDE → DE ⁷⁾						C		
DE → NDE						D		
NDE → DE ⁷⁾						J		
DE → NDE						K		
NDE → DE ⁷⁾								
• Shaft end:						0		
With keyway, half-key balancing						2		
With keyway, half-key balancing						3		
With keyway, full-key balancing						5		
With keyway, full-key balancing						6		
Keyless						8		
Keyless								
• Paint finish:						-Z		
None								
None, flange and radial shaft sealing ring ⁶⁾								
Anthracite gray, standard finish (RAL 7016)								
Anthracite gray, standard finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾								
Anthracite gray, special finish (RAL 7016)								
Anthracite gray, special finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾								
• Special models:								
Please specify additional order code and any required plain text; see Page 3/3.								
Converter								
Inverter								

1) For rated currents < 37.5 A, Compact PLUS devices are assigned.
2) n1: Maximum permissible speed at constant power or speed where for P = Prated, there is still a 30% power reserve up to the stall limit.
3) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
4) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 2 · frated, the maximum rotational speed is sometimes limited to smaller values.
5) For model with brake: 12th position in ordering no. is "2" or "3"; 14th position is "K"; 15th position is "A", "B", "J" or "K"; 16th position is "0", "3" or "6".
6) Model prepared for ZF gearbox attachment: 12th position in ordering no. is "2" or "3"; 13th position is "0"; 14th position is "B"; 15th position is "C" or "D"; 16th position is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control¹⁾ (continued)

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ²⁾	Max. Permissible Continuous Speed ³⁾	Max. Speed ⁴⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Motion Control									
1500	132	11 (14.75)	70 (154.3)	24	350	3000	3000	3000	1PH7 131 – ■ ■ F ■ ■ – ■ ...
		15 (20.11)	96 (211.7)	34	346	3000	3000	3000	1PH7 133 – ■ ■ F ■ ■ – ■ ...
		18.5 (24.8)	118 (260.2)	42	350	3000	3000	3000	1PH7 135 – ■ ■ F ■ ■ – ■ ...
		22 (29.49)	140 (308.7)	57	308	3000	3000	3000	1PH7 137 – ■ ■ F ■ ■ – ■ ...
	160	30 (40.21)	191 (421.2)	72	319	3000	3000	3000	1PH7 163 – ■ ■ F ■ ■ – ■ ...
		37 (49.6)	236 (520.4)	82	350	2800	3000	3000	1PH7 167 – ■ ■ F ■ ■ – ■ ...
2000	100	7 (9.38)	33 (72.8)	17.5	343	4000	4000	4000	1PH7 103 – ■ ■ G ■ ■ – ■ ...
		10.5 (14.08)	50 (442.6)	26	350	4000	4000	4000	1PH7 107 – ■ ■ G ■ ■ – ■ ...
	132	20 (26.81)	96 (211.7)	45	350	3900	4000	4000	1PH7 133 – ■ ■ G ■ ■ – ■ ...
		28 (37.53)	134 (295.5)	60	350	3800	4000	4000	1PH7 137 – ■ ■ G ■ ■ – ■ ...
	160	36 (48.26)	172 (379.3)	85	333	3000	3700	4000	1PH7 163 – ■ ■ G ■ ■ – ■ ...
		41 (54.96)	196 (432.2)	89	350	2800	3700	4000	1PH7 167 – ■ ■ G ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
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• Encoder:

- Absolute encoder EnDat 2,048 pulses/revolution
- Incremental encoder sin/cos 1 V_{pp} (without C track or D track)
- Incremental encoder sin/cos 1 V_{pp} (with C track and D track)
- Resolver, 2-pole

E
N
M
R

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from non-drive end
- On top/from left

0
2
3

• Construction type:

- IM B3 (IM V5, IM V6)
- IM B5 (IM V1, IM V3) available only for shaft height 100 and 132
- IM B35 (IM V15, IM V36)

0
2
3

• Holding brake with emergency stop function:⁵⁾

- Without brake
- Brake connection voltage: **230 V AC, 50 to 60 Hz**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)
- Brake connection voltage: **24 V DC**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)

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For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/29.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control¹⁾

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	I_{rated} A Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Motion Control							
0.88	8.4	0.896	51.3	0.076 (0.6726)	90 (198.5)	1PH7 131 - . . F . . - . ■ ■ ■	27 6SE7 022 - 7 EP50
0.85	14	0.895	51.3	0.076 (0.6726)	90 (198.5)	1PH7 133 - . . F . . - . ■ ■ ■	34 6SE7 023 - 4 EP50
0.85	17	0.902	51.1	0.109 (0.9646)	150 (330.8)	1PH7 135 - . . F . . - . ■ ■ ■	47 6SE7 024 - 7 ■ D51
0.85	23	0.900	51.2	0.109 (0.9646)	150 (330.8)	1PH7 137 - . . F . . - . ■ ■ ■	59 6SE7 026 - 0 ■ D51
0.85	30	0.912	50.9	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . F . . - . ■ ■ ■	72 6SE7 027 - 2 ■ D51
0.86	32	0.916	50.8	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . F . . - . ■ ■ ■	92 6SE7 031 - 0 ■ E50
0.80	8.3	0.857	68.9	0.017 (0.1504)	40 (88.2)	1PH7 103 - . . G . . - . ■ ■ ■	20.5 6SE7 021 - 1 EP50
0.80	12	0.869	68.6	0.029 (0.2566)	65 (143.3)	1PH7 107 - . . G . . - . ■ ■ ■	27 6SE7 022 - 7 EP50
0.86	18	0.898	68.0	0.076 (0.6726)	90 (198.5)	1PH7 133 - . . G . . - . ■ ■ ■	47 6SE7 024 - 7 ■ D51
0.88	21	0.903	68.0	0.109 (0.9646)	150 (330.8)	1PH7 137 - . . G . . - . ■ ■ ■	59 6SE7 027 - 3 ■ D51
0.84	37	0.906	67.5	0.185 (1.6372)	175 (385.9)	1PH7 163 - . . G . . - . ■ ■ ■	92 6SE7 031 - 0 ■ E50
0.84	40	0.907	67.4	0.228 (2.0178)	210 (463.1)	1PH7 167 - . . G . . - . ■ ■ ■	92 6SE7 031 - 0 ■ E50
• Drive type: Coupling and belt Coupling and belt Coupling and belt Coupling and belt						• Vibration sev. grade: R S SR N	• Shaft and flange accuracy: R R R N (only in connection with brake attachment)
• Direction of air flow: DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾						• Shaft end: With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Keyless Keyless	B C D K
• Paint finish: None None, flange and radial shaft sealing ring ⁶⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾							A B C D J K
• Special models: Please specify additional order code and any required plain text; see Page 3/3.							0 2 3 5 6 8
Converter Inverter							-Z
							E T

1) For rated currents < 37.5 A, Compact PLUS devices are assigned.
2) n1: Maximum permissible speed at constant power or speed where for P = Prated, there is still a 30% power reserve up to the stall limit.
3) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
4) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 2 · frated, the maximum rotational speed is sometimes limited to smaller values.
5) For model with brake: 12th position in ordering no. is "2" or "3"; 14th position is "K"; 15th position is "A", "B", "J" or "K"; 16th position is "0", "3" or "6".
6) Model prepared for ZF gearbox attachment: 12th position in ordering no. is "2" or "3"; 13th position is "0"; 14th position is "B"; 15th position is "C" or "D"; 16th position is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque ¹⁾	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Motion Control									
400	180	16.3 (21.85)	390 (287.7)	51	271	800	800	800	1PH7 184 – ■ ■ B ■ ■ – ■ ...
		21.2 (28.42)	505 (372.5)	67	268	800	800	800	1PH7 186 – ■ ■ B ■ ■ – ■ ...
	225	30.4 (40.75)	725 (534.8)	88	268	800	800	800	1PH7 224 – ■ ■ B ■ ■ – ■ ...
		39.2 (52.55)	935 (689.7)	114	264	800	800	800	1PH7 226 – ■ ■ B ■ ■ – ■ ...
		48 (64.34)	1145 (844.6)	136	272	800	800	800	1PH7 228 – ■ ■ B ■ ■ – ■ ...
1000	180	39 (52.28)	372 (820.3)	90	335	2000	2000	2000	1PH7 184 – ■ ■ D ■ ■ – ■ ...
		51 (68.36)	485 (1069.4)	116	340	2000	2000	2000	1PH7 186 – ■ ■ D ■ ■ – ■ ...
	225	71 (95.17)	678 (1495)	161	335	2000	2000	2000	1PH7 224 – ■ ■ D ■ ■ – ■ ...
		92 (123.32)	880 (1940.4)	198	340	2000	2000	2000	1PH7 226 – ■ ■ D ■ ■ – ■ ...
		113 (151.47)	1080 (2381.4)	240	340	2000	2000	2000	1PH7 228 – ■ ■ D ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Absolute encoder EnDat 2,048 pulses/revolution
- Incremental encoder sin/cos 1 V_{pp} (without C track or D track)
- Incremental encoder sin/cos 1 V_{pp} (with C track and D track)
- Resolver, 2-pole

E
N
M
R

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from drive end
- On top/from non-drive end
- On top/from left

0
1
2
3

• Construction type:

- IM B3
 - IM B3
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
- Hoisting concept for other construction types (IM B6, IM B7, IM B8, IM V5, IM V6)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)

0
1
3
4
3
5
6
5

• Holding brake with emergency stop function (suitable for IM B3 coupling drive)⁴⁾:

- Without brake
- With brake (brake includes emergency release screws and microswitch)
- With brake (brake includes manual release and microswitch)

0
2
4

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/31.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control

Table with 8 columns: Power Factor, Magnetizing Current, Rated Efficiency, Rated Frequency, Moment of inertia, Weight, 1PH7 Asynchronous Motors, SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current. Sub-headers include cos φ, Iμ, ηrated, frated, J, kgm², kg, Order No., Irated, and A.

Table with 8 columns: Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Motion Control, followed by 7 columns of motor specifications and part numbers (e.g., 1PH7 184, 6SE7 026).

Table with 3 main sections: Drive type, Vibration sev. grade, Shaft and flange accuracy; Direction of air flow, Shaft end; Paint finish; Special models. Includes a vertical column with letters A through T.

1) n1: Maximum permissible speed at constant power or speed where for P=Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax < 2 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) For model with brake: 12th position in ordering no. is "0"; 14th and 15th position is "A"; 16th position is "0", "3" or "6".
5) Model prepared for ZF gearbox attachment: Only for types 1PH7 184, 186, and 224; 12th position in ordering no. is "3" or "5"; 13th is "0"; 14th is "B"; 15th is "C"; 16th is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
6) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control (continued)

Rated Rotational Speed n_{rated} rpm	Shaft Height SH	Rated Output P_{rated} kW (HP)	Rated Torque M_{rated} Nm (lb _f -ft)	Rated Current I_{rated} A	Rated Voltage V_{rated} V	Speed during Field Weakening ¹⁾ n_1 rpm	Max. Permissible Continuous Speed ²⁾ n_{S1} rpm	Max. Speed ³⁾ n_{max} rpm	1PH7 Asynchronous Motors Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Motion Control									
1500	180	51 (68.36)	325 (716.6)	120	335	3000	3000	3000	1PH7 184 – ■ ■ F ■ ■ – ■ ...
		74 (99.2)	471 (1038.6)	170	330	3000	3000	3000	1PH7 186 – ■ ■ F ■ ■ – ■ ...
	225	95 (127.35)	605 (1334)	204	340	2900	3000 ⁴⁾	3000	1PH7 224 – ■ ■ U ■ ■ – ■ ...
		130 (174.26)	828 (1825.7)	278	340	2900	3000 ⁴⁾	3000	1PH7 226 – ■ ■ F ■ ■ – ■ ...
		160 (214.48)	1019 (2246.9)	350	340	2900	3000 ⁴⁾	3000	1PH7 228 – ■ ■ F ■ ■ – ■ ...
2500	180	78 (104.56)	298 (657.1)	171	340	5000	3500 ⁴⁾	5000	1PH7 184 – ■ ■ L ■ ■ – ■ ...
		106 (142.09)	405 (893)	235	335	5000	3500 ⁴⁾	5000	1PH7 186 – ■ ■ L ■ ■ – ■ ...
	225	142 (190.35)	542 (1195.1)	298	340	3500	3100 ⁴⁾	4500	1PH7 224 – ■ ■ L ■ ■ – ■ ...
		168 (225.2)	642 (1415.6)	362	335	3500	3100 ⁴⁾	4500	1PH7 226 – ■ ■ L ■ ■ – ■ ...
		205 (274.8)	783 (1726.5)	433	340	3500	3100 ⁴⁾	4500 ⁴⁾	1PH7 228 – ■ ■ L ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Absolute encoder EnDat 2,048 pulses/revolution
- Incremental encoder sin/cos 1 V_{pp} (without C track or D track)
- Incremental encoder sin/cos 1 V_{pp} (with C track and D track)
- Resolver, 2-pole

E
N
M
R

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from drive end
- On top/from non-drive end
- On top/from left

0
1
2
3

• Construction type:

- IM B3
 - IM B3
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
- Hoisting concept for other construction types (IM B6, IM B7, IM B8, IM V5, IM V6)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)

0
1
3
4
3
5
6
5

• Holding brake with emergency stop function (suitable for IM B3 coupling drive)⁵⁾:

- Without brake
- With brake (brake includes emergency release screws and microswitch)
- With brake (brake includes manual release and microswitch)

0
2
4

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/33.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control (continued)

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	I_{rated} A	Order No.
Supply voltage 3-ph. AC 400 V for SIMOVERT MASTERDRIVES Motion Control								
0.78	64	0.930	50.7	0.503 (4.4545)	370 (815.8)	1PH7 184 - . . F . . - . . ■ ■ ■	124	6SE7 031 - 2 ■ F50
0.81	84	0.937	50.7	0.666 (5.894)	440 (970.2)	1PH7 186 - . . F . . - . . ■ ■ ■	175	6SE7 032 - 1 ■ G50
0.84	88.5	0.944	50.6	1.479 (13.0889)	630 (1389.2)	1PH7 224 - . . U . . - . . ■ ■ ■	218	6SE7 032 - 6 ■ G50
0.84	120	0.945	50.6	1.930 (17.0802)	750 (1653.8)	1PH7 226 - . . F . . - . . ■ ■ ■	308	6SE7 033 - 7 ■ G50
0.82	169	0.949	50.5	2.326 (20.5848)	860 (1896.3)	1PH7 228 - . . F . . - . . ■ ■ ■	423	6SE7 035 - 1 E K50
0.82	77	0.937	84.1	0.503 (4.4545)	370 (815.8)	1PH7 184 - . . L . . - . . ■ ■ ■	175	6SE7 032 - 1 ■ G50
0.82	108	0.942	84.1	0.666 (5.894)	440 (970.2)	1PH7 186 - . . L . . - . . ■ ■ ■	262	6SE7 033 - 2 ■ G50
0.84	115	0.948	84.0	1.479 (13.0889)	630 (1389.2)	1PH7 224 - . . L . . - . . ■ ■ ■	308	6SE7 033 - 7 ■ G50
0.84	154	0.95	84.0	1.930 (17.0802)	750 (1653.8)	1PH7 226 - . . L . . - . . ■ ■ ■	423	6SE7 035 - 1 E K50
0.84	185	0.95	83.9	2.326 (20.5848)	860 (1896.3)	1PH7 228 - . . L . . - . . ■ ■ ■	491	6SE7 036 - 0 E K50
• Drive type: Coupling R Coupling R Coupling S Coupling SR Belt R Belt R Increased cantilever forces R Increased cantilever forces R						• Vibration sev. grade: N R R R N R N R		
• Shaft and flange accuracy:						A B C D E F G H		
• Direction of air flow: DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾						• Shaft end: With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway		
• Paint finish: Primed Primed, prepared for ZF gearbox attachment ⁶⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), prepared for ZF gearbox attachment ⁶⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), prepared for ZF gearbox attachment ⁶⁾						A B C D J K		
• Special models: Please specify additional order code and any required plain text; see Page 3/3.						0 2 3 5 6 8		
Converter Inverter						-Z		
						E T		

1) n1: Maximum permissible speed at constant power or speed where for P=Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 2 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) Rotational speed is reduced in the event of increased cantilever forces, see Part 7.
5) For model with brake: 12th position in ordering no. is "0"; 14th and 15th position is "A"; 16th position is "0", "3" or "6".
6) Model prepared for ZF gearbox attachment: Only for types 1PH7 184, 186, and 224; 12th position in ordering no. is "3" or "5"; 13th is "0"; 14th is "B"; 15th is "C"; 16th is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control¹⁾

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ²⁾	Max. Permissible Continuous Speed ³⁾	Max. Speed ⁴⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Motion Control									
400	160	9.5 (12.74)	227 (2009.2)	30	274	800	800	800	1PH7 163 – ■ ■ B ■ ■ – ■ ...
		13 (17.43)	310 (2743.8)	37	294	800	800	800	1PH7 167 – ■ ■ B ■ ■ – ■ ...
1150	100	4.3 (5.76)	36 (26.6)	10	391	2200	2300	2300	1PH7 103 – ■ ■ D ■ ■ – ■ ...
		7.2 (9.65)	60 (44.3)	17.5	360	2300	2300	2300	1PH7 107 – ■ ■ D ■ ■ – ■ ...
	132	13.5 (18.1)	112 (82.6)	29	381	2300	2300	2300	1PH7 133 – ■ ■ D ■ ■ – ■ ...
		19.5 (26.14)	162 (119.5)	43	367	2300	2300	2300	1PH7 137 – ■ ■ D ■ ■ – ■ ...
	160	25 (33.51)	208 (153.4)	55	364	2300	2300	2300	1PH7 163 – ■ ■ D ■ ■ – ■ ...
		31 (41.55)	257 (189.6)	70	357	2300	2300	2300	1PH7 167 – ■ ■ D ■ ■ – ■ ...
1750	100	4.3 (5.76)	24 (212.4)	10	398	3500	3500	3500	1PH7 101 – ■ ■ F ■ ■ – ■ ...
		6.25 (8.38)	34 (25.1)	13.0	398	2600	3500	3500	1PH7 103 – ■ ■ F ■ ■ – ■ ...
		8 (10.72)	44 (32.5)	17.5	398	3500	3500	3500	1PH7 105 – ■ ■ F ■ ■ – ■ ...
		10 (13.4)	55 (40.6)	23	381	3500	3500	3500	1PH7 107 – ■ ■ F ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Absolute encoder EnDat 2,048 pulses/revolution
- Incremental encoder sin/cos 1 V_{pp} (without C track or D track)
- Incremental encoder sin/cos 1 V_{pp} (with C track and D track)
- Resolver, 2-pole

E
N
M
R

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from non-drive end
- On top/from left

0
2
3

• Construction type:

- IM B3 (IM V5, IM V6)
- IM B5 (IM V1, IM V3) available only for shaft height 100 and 132
- IM B35 (IM V15, IM V36)

0
2
3

• Holding brake with emergency stop function:⁵⁾

- Without brake
- Brake connection voltage: **230 V AC, 50 to 60 Hz**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)
- Brake connection voltage: **24 V DC**
- With brake
- With brake (brake includes microswitch)
- With brake (brake includes manual release)
- With brake (brake includes manual release and microswitch)

0
1
2
3
4
5
6
7
8

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/35.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control¹⁾

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	I_{rated} A	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Motion Control								
0.88	11.5	0.809	14.3	0.185 (1.6372)	175 (385.9)	1PH7 163 – . . . B ■ ■ ■	34	6SE7 023 – 4 E P50
0.88	14	0.814	14.3	0.228 (2.0178)	210 (463.1)	1PH7 167 – . . . B ■ ■ ■	37.5	6SE7 023 – 8 ■ D51
0.81	5.0	0.813	40.6	0.017 (0.1504)	40 (88.2)	1PH7 103 – . . . D ■ ■ ■	10	6SE7 021 – 0 ■ P50
0.81	8.8	0.838	40.3	0.029 (0.2566)	65 (143.3)	1PH7 107 – . . . D ■ ■ ■	20.5	6SE7 022 – 1 E P50
0.85	13	0.877	39.7	0.076 (0.6726)	90 (198.5)	1PH7 133 – . . . D ■ ■ ■	34	6SE7 023 – 4 E P50
0.86	19	0.887	39.6	0.109 (0.9646)	150 (330.8)	1PH7 137 – . . . D ■ ■ ■	47	6SE7 024 – 7 ■ D51
0.84	25	0.904	39.2	0.185 (1.6372)	175 (385.9)	1PH7 163 – . . . D ■ ■ ■	59	6SE7 026 – 0 ■ D51
0.83	34	0.909	39.1	0.228 (2.0178)	210 (463.1)	1PH7 167 – . . . D ■ ■ ■	72	6SE7 027 – 2 ■ D51
0.75	5.7	0.855	60.0	0.017 (0.1504)	40 (88.2)	1PH7 101 – . . . F ■ ■ ■	10	6SE7 021 – 0 ■ P50
0.84	5.3	0.849	61.0	0.017 (0.1504)	40 (88.2)	1PH7 103 – . . . F ■ ■ ■	14	6SE7 021 – 4 E P50
0.77	9.3	0.875	60.0	0.029 (0.2566)	65 (143.3)	1PH7 105 – . . . F ■ ■ ■	20.5	6SE7 022 – 1 E P50
0.80	10.6	0.870	60.3	0.029 (0.2566)	65 (143.3)	1PH7 107 – . . . F ■ ■ ■	27	6SE7 022 – 7 E P50
• Drive type: Coupling and belt Coupling and belt Coupling and belt Coupling and belt		• Vibration sev. grade: R S SR N		• Shaft and flange accuracy: R R R N (only in connection with brake attachment)		B C D K		
• Direction of air flow: DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾		• Shaft end: With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway				A B C D J K		
• Paint finish: None None, flange and radial shaft sealing ring ⁶⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾							0 2 3 5 6 8	
• Special models: Please specify additional order code and any required plain text; see Page 3/3.						–Z		
Converter Inverter								E T

1) For rated currents < 37.5 A, Compact PLUS devices are assigned.
2) n1: Maximum permissible speed at constant power or speed where for P = Prated, there is still a 30% power reserve up to the stall limit.
3) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
4) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 2 · frated, the maximum rotational speed is sometimes limited to smaller values.
5) For model with brake: 12th position in ordering no. is "2" or "3"; 14th position is "K"; 15th position is "A", "B", "J" or "K"; 16th position is "0", "3" or "6".
6) Model prepared for ZF gearbox attachment: 12th position in ordering no. is "2" or "3"; 13th position is "0"; 14th position is "B"; 15th position is "C" or "D"; 16th position is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control¹⁾ (continued)

Rated Rotational Speed n_{rated} rpm	Shaft Height SH	Rated Output P_{rated} kW (HP)	Rated Torque M_{rated} Nm (lb _f -ft)	Rated Current I_{rated} A	Rated Voltage V_{rated} V	Speed during Field Weakening ²⁾ n_1 rpm	Max. Permissible Continuous Speed ³⁾ n_{S1} rpm	Max. Speed ⁴⁾ n_{max} rpm	1PH7 Asynchronous Motors Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Motion Control									
1750	132	13 (17.43)	71 (52.4)	24	398	3500	3500	3500	1PH7 131 – ■ ■ F ■ ■ – ■ ...
		17.5 (23.46)	96 (70.8)	34	398	3500	3500	3500	1PH7 133 – ■ ■ F ■ ■ – ■ ...
		21.5 (28.82)	117 (86.3)	42	398	3500	3500	3500	1PH7 135 – ■ ■ F ■ ■ – ■ ...
		25 (33.51)	136 (100.3)	56	357	3500	3500	3500	1PH7 137 – ■ ■ F ■ ■ – ■ ...
	160	34 (45.58)	186 (137.2)	72	364	3500	3500	3500	1PH7 163 – ■ ■ F ■ ■ – ■ ...
		41 (54.96)	224 (165.2)	79	398	3300	3500	3500	1PH7 167 – ■ ■ F ■ ■ – ■ ...
2300	100	7.5 (10.05)	31 (22.9)	17	388	4600	4600	4600	1PH7 103 – ■ ■ G ■ ■ – ■ ...
		12 (16.08)	50 (442.6)	26	400	4600	4600	4600	1PH7 107 – ■ ■ G ■ ■ – ■ ...
	132	22.5 (30.16)	93 (68.6)	45	398	4000	4500	4600	1PH7 133 – ■ ■ G ■ ■ – ■ ...
		29 (38.87)	120 (88.5)	56	398	4000	4500	4600	1PH7 137 – ■ ■ G ■ ■ – ■ ...
	160	38 (50.94)	158 (116.5)	80	374	3000	3700	4600	1PH7 163 – ■ ■ G ■ ■ – ■ ...
		44 (58.98)	183 (135)	85	398	3000	3700	4600	1PH7 167 – ■ ■ G ■ ■ – ■ ...

- **Separate fan:**
With separate fan
Without separate fan, for pipe connection
With separate fan, but with metric cable entries in accordance with EN 50262
Without separate fan, for pipe connection,
but with metric cable entries in accordance with EN 50262

2
6
7
8

- **Encoder:**
Absolute encoder EnDat 2,048 pulses/revolution
Incremental encoder sin/cos 1 V_{pp} (without C track or D track)
Incremental encoder sin/cos 1 V_{pp} (with C track and D track)
Resolver, 2-pole

E
N
M
R

- **Terminal box arrangement/direction of cable entry (drive-end view):**
On top/from right
On top/from non-drive end
On top/from left

0
2
3

- **Construction type:**
IM B3 (IM V5, IM V6)
IM B5 (IM V1, IM V3) available only for shaft height 100 and 132
IM B35 (IM V15, IM V36)

0
2
3

- **Holding brake with emergency stop function:⁵⁾**
Without brake
Brake connection voltage: **230 V AC, 50 to 60 Hz**
With brake
With brake (brake includes microswitch)
With brake (brake includes manual release)
With brake (brake includes manual release and microswitch)
Brake connection voltage: **24 V DC**
With brake
With brake (brake includes microswitch)
With brake (brake includes manual release)
With brake (brake includes manual release and microswitch)

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For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/37.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control¹⁾ (continued)

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current	
$\cos \varphi$	I_{μ} A	η_{rated}	f_{rated} Hz	J kgm ² (lb _f -in-s ²)	kg (lb)	Order No.	I_{rated} A	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Motion Control								
0.88	8.1	0.902	59.7	0.076 (0.6726)	90 (198.5)	1PH7 131 – . . F . . – . ■ ■ ■	27	6SE7 022 – 7 E P50
0.85	14	0.900	59.7	0.076 (0.6726)	90 (198.5)	1PH7 133 – . . F . . – . ■ ■ ■	34	6SE7 023 – 4 ■ C51
0.86	16	0.906	59.5	0.109 (0.9646)	150 (330.8)	1PH7 135 – . . F . . – . ■ ■ ■	47	6SE7 024 – 7 ■ D51
0.85	23	0.902	59.5	0.109 (0.9646)	150 (330.8)	1PH7 137 – . . F . . – . ■ ■ ■	59	6SE7 026 – 0 ■ D51
0.86	28	0.915	59.2	0.185 (1.6372)	175 (385.9)	1PH7 163 – . . F . . – . ■ ■ ■	72	6SE7 027 – 2 ■ D51
0.86	30	0.920	59.2	0.228 (2.0178)	210 (463.1)	1PH7 167 – . . F . . – . ■ ■ ■	92	6SE7 031 – 0 ■ E50
0.79	8.2	0.866	78.8	0.017 (0.1504)	40 (88.2)	1PH7 103 – . . G . . – . ■ ■ ■	20.5	6SE7 021 – 1 E P50
0.80	12	0.878	78.7	0.029 (0.2566)	65 (143.3)	1PH7 107 – . . G . . – . ■ ■ ■	27	6SE7 022 – 7 E P50
0.86	17	0.900	78.0	0.076 (0.6726)	90 (198.5)	1PH7 133 – . . G . . – . ■ ■ ■	47	6SE7 024 – 7 ■ D51
0.87	21	0.903	77.8	0.109 (0.9646)	150 (330.8)	1PH7 137 – . . G . . – . ■ ■ ■	59	6SE7 026 – 0 ■ D51
0.83	36	0.900	77.3	0.185 (1.6372)	175 (385.9)	1PH7 163 – . . G . . – . ■ ■ ■	92	6SE7 031 – 0 ■ E50
0.84	40	0.911	77.4	0.228 (2.0178)	210 (463.1)	1PH7 167 – . . G . . – . ■ ■ ■	92	6SE7 031 – 0 ■ E50
• Drive type: Coupling and belt Coupling and belt Coupling and belt Coupling and belt		• Vibration sev. grade: R S SR N		• Shaft and flange accuracy: R R R N (only in connection with brake attachment)		B C D K		
• Direction of air flow: DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾ DE → NDE NDE → DE ⁷⁾		• Shaft end: With keyway, half-key balancing With keyway, half-key balancing With keyway, full-key balancing With keyway, full-key balancing Without keyway Without keyway				A B C D J K		
• Paint finish: None None, flange and radial shaft sealing ring ⁶⁾ Anthracite gray, standard finish (RAL 7016) Anthracite gray, standard finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾ Anthracite gray, special finish (RAL 7016) Anthracite gray, special finish (RAL 7016), flange and radial shaft sealing ring ⁶⁾							0 2 3 5 6 8	
• Special models: Please specify additional order code and any required plain text; see Page 3/3.						–Z		
Converter Inverter								E T

1) For rated currents < 37.5 A, Compact PLUS devices are assigned.
2) n1: Maximum permissible speed at constant power or speed where for P = Prated, there is still a 30% power reserve up to the stall limit.
3) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
4) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 2 · frated, the maximum rotational speed is sometimes limited to smaller values.
5) For model with brake: 12th position in ordering no. is "2" or "3"; 14th position is "K"; 15th position is "A", "B", "J" or "K"; 16th position is "0", "3" or "6".
6) Model prepared for ZF gearbox attachment: 12th position in ordering no. is "2" or "3"; 13th position is "0"; 14th position is "B"; 15th position is "C" or "D"; 16th position is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Motion Control									
400	180	16.3 (21.85)	390 (287.7)	51	271	800	800	800	1PH7 184 – ■ ■ B ■ ■ – ■ ...
		21.2 (28.42)	505 (372.5)	67	268	800	800	800	1PH7 186 – ■ ■ B ■ ■ – ■ ...
	225	30.4 (40.75)	725 (534.8)	88	268	800	800	800	1PH7 224 – ■ ■ B ■ ■ – ■ ...
		39.2 (52.55)	935 (689.7)	114	264	800	800	800	1PH7 226 – ■ ■ B ■ ■ – ■ ...
		48 (64.34)	1145 (844.6)	136	272	800	800	800	1PH7 228 – ■ ■ B ■ ■ – ■ ...
1150	180	44 (58.98)	366 (270)	89	383	2300	2300	2300	1PH7 184 – ■ ■ D ■ ■ – ■ ...
		58 (77.75)	482 (355.5)	116	390	2300	2300	2300	1PH7 186 – ■ ■ D ■ ■ – ■ ...
	225	81 (108.58)	670 (494.2)	160	385	2300	2300	2300	1PH7 224 – ■ ■ D ■ ■ – ■ ...
		105 (140.75)	870 (641.7)	197	390	2300	2300	2300	1PH7 226 – ■ ■ D ■ ■ – ■ ...
		129 (172.92)	1070 (789.2)	238	390	2300	2300	2300	1PH7 228 – ■ ■ D ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Absolute encoder EnDat 2,048 pulses/revolution
- Incremental encoder sin/cos 1 V_{pp} (without C track or D track)
- Incremental encoder sin/cos 1 V_{pp} (with C track and D track)
- Resolver, 2-pole

E
N
M
R

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from drive end
- On top/from non-drive end
- On top/from left

0
1
2
3

• Construction type:

- IM B3
 - IM B3
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
- Hoisting concept for other construction types (IM B6, IM B7, IM B8, IM V5, IM V6)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)

0
1
3
4
3
5
6
5

• Holding brake with emergency stop function (suitable for IM B3 coupling drive)⁴⁾:

- Without brake
- With brake (brake includes emergency release screws and microswitch)
- With brake (brake includes manual release and microswitch)

0
2
4

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/39.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control

Table with 8 columns: Power Factor, Magnetizing Current, Rated Efficiency, Rated Frequency, Moment of inertia, Weight, 1PH7 Asynchronous Motors, SIMOVERT MASTERDRIVES MC Inverter/Converter. Sub-headers include cos φ, Iμ, ηrated, frated, J, kgm², kg, Order No., Irated, and A.

Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Motion Control

Table with 8 columns: Power Factor, Magnetizing Current, Rated Efficiency, Rated Frequency, Moment of inertia, Weight, 1PH7 Asynchronous Motors, SIMOVERT MASTERDRIVES MC Inverter/Converter. Rows include motor models like 1PH7 184, 186, 224, 226, 228 and their corresponding MC codes.

Table with 3 main sections: Drive type, Vibration sev. grade, Shaft and flange accuracy; Direction of air flow, Shaft end; Paint finish; Special models. Includes options like Coupling, Belt, Keyway, and various finish codes.

1) n1: Maximum permissible speed at constant power or speed where for P=Prated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax < 2 · frated, the maximum rotational speed is sometimes limited to smaller values.
4) For model with brake: 12th position in ordering no. is "0", 14th and 15th position is "A"; 16th position is "0", "3" or "6".
5) Model prepared for ZF gearbox attachment: Only for types 1PH7 184, 186, and 224; 12th position in ordering no. is "3" or "5", 13th is "0"; 14th is "B"; 15th is "C"; 16th is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
6) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control (continued)

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque	Rated Current	Rated Voltage	Speed during Field Weakening ¹⁾	Max. Permissible Continuous Speed ²⁾	Max. Speed ³⁾	1PH7 Asynchronous Motors
n_{rated}		P_{rated}	M_{rated}	I_{rated}	V_{rated}	n_1	n_{S1}	n_{max}	
rpm	SH	kW (HP)	Nm (lb _f -ft)	A	V	rpm	rpm	rpm	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Motion Control									
1750	180	60 (80.43)	327 (241.2)	120	388	3500	3500 ⁴⁾	3500	1PH7 184 – ■ ■ F ■ ■ – ■ ...
		85 (113.94)	465 (343)	169	385	3500	3500 ⁴⁾	3500	1PH7 186 – ■ ■ F ■ ■ – ■ ...
	225	110 (147.45)	600 (442.6)	203	395	2900	3100 ⁴⁾	3500	1PH7 224 – ■ ■ U ■ ■ – ■ ...
		135 (180.97)	737 (543.6)	254	395	2900	3100 ⁴⁾	3500	1PH7 226 – ■ ■ F ■ ■ – ■ ...
		179 (239.95)	975 (719.2)	342	395	2900	3100 ⁴⁾	3500	1PH7 228 – ■ ■ F ■ ■ – ■ ...
2900	180	81 (108.58)	265 (195.5)	158	395	5000	3500 ⁴⁾	5000	1PH7 184 – ■ ■ L ■ ■ – ■ ...
		101 (135.39)	333 (245.6)	206	385	5000	3500 ⁴⁾	5000	1PH7 186 – ■ ■ L ■ ■ – ■ ...
	225	149 (199.73)	490 (543.6)	274	395	3500	3100 ⁴⁾	4500	1PH7 224 – ■ ■ L ■ ■ – ■ ...
		185 (247.99)	610 (449.9)	348	390	3500	3100 ⁴⁾	4500	1PH7 226 – ■ ■ L ■ ■ – ■ ...
		215 (288.2)	708 (522.2)	402	395	3500	3100 ⁴⁾	4500 ⁴⁾	1PH7 228 – ■ ■ L ■ ■ – ■ ...

• Separate fan:

- With separate fan
- Without separate fan, for pipe connection
- With separate fan, but with metric cable entries in accordance with EN 50262
- Without separate fan, for pipe connection, but with metric cable entries in accordance with EN 50262

2
6
7
8

• Encoder:

- Absolute encoder EnDat 2,048 pulses/revolution
- Incremental encoder sin/cos 1 V_{pp} (without C track or D track)
- Incremental encoder sin/cos 1 V_{pp} (with C track and D track)
- Resolver, 2-pole

E
N
M
R

• Terminal box arrangement/direction of cable entry (drive-end view):

- On top/from right
- On top/from drive end
- On top/from non-drive end
- On top/from left

0
1
2
3

• Construction type:

- IM B3
 - IM B3
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
 - IM B35 (only for 1PH7 184 with flange A 400)
 - IM B35 (only for 1PH7 184 with flange A 450)
 - IM B35 (for 1PH7 186 with flange A 450 and 1PH7 22. with flange A 550)
- Hoisting concept for other construction types (IM B6, IM B7, IM B8, IM V5, IM V6)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)
- Hoisting concept for other construction types (IM V15, IM V36)

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3
4
3
5
6
5

• Holding brake with emergency stop function (suitable for IM B3 coupling drive)⁵⁾:

- Without brake
- With brake (brake includes emergency release screws and microswitch)
- With brake (brake includes manual release and microswitch)

0
2
4

For order number supplements for drive type, direction of air flow, and paint finish (positions 14 through 16 of the order no.), see page 3/41.

Servo Motors for SIMOVERT MASTERDRIVES
Asynchronous Servo Motors

1PH7 Motors

Selection and Ordering Data with SIMOVERT MASTERDRIVES Motion Control (continued)

Power Factor	Magnetizing Current	Rated Efficiency	Rated Frequency	Moment of inertia	Weight, approx.	1PH7 Asynchronous Motors	SIMOVERT MASTERDRIVES MC	
	I_{μ}	η_{rated}	f_{rated}	J			Inverter/Converter	Rated Current
$\cos \varphi$	A		Hz	kgm^2 ($\text{lb}_f\text{-in-s}^2$)	kg (lb)	Order No.	I_{rated}	Order No.
Supply voltage 3-ph. AC 480 V for SIMOVERT MASTERDRIVES Motion Control								
0.78	64	0.934	59.0	0.503 (4.4545)	370 (815.8)	1PH7 184 - . . F . . - . .	124	6SE7 031 - 2 F50
0.80	84	0.940	59.0	0.666 (5.894)	440 (970.2)	1PH7 186 - . . F . . - . .	186	6SE7 032 - 1 G50
0.84	88	0.944	58.9	1.479 (13.0889)	630 (1389.2)	1PH7 224 - . . U . . - . .	210	6SE7 032 - 6 G50
0.82	120	0.947	58.9	1.930 (17.0802)	750 (1653.8)	1PH7 226 - . . F . . - . .	262	6SE7 033 - 2 G50
0.81	169	0.948	58.8	2.326 (20.5848)	860 (1896.3)	1PH7 228 - . . F . . - . .	423	6SE7 035 - 1 E K50
0.80	77	0.934	97.4	0.503 (4.4545)	370 (815.8)	1PH7 184 - . . L . . - . .	175	6SE7 032 - 1 G50
0.78	107	0.936	97.3	0.666 (5.894)	440 (970.2)	1PH7 186 - . . L . . - . .	218	6SE7 032 - 6 G50
0.84	115	0.946	97.3	1.479 (13.0889)	630 (1389.2)	1PH7 224 - . . L . . - . .	308	6SE7 033 - 7 G50
0.83	154	0.947	97.2	1.930 (17.0802)	750 (1653.8)	1PH7 226 - . . L . . - . .	423	6SE7 035 - 1 E K50
0.82	186	0.946	97.2	2.326 (20.5848)	860 (1896.3)	1PH7 228 - . . L . . - . .	491	6SE7 036 - 0 E K50
• Drive type:						• Vibration sev. grade:		
Coupling						R		
Coupling						R		
Coupling						S		
Coupling						SR		
Belt						R		
Belt						R		
Increased cantilever forces						R		
Increased cantilever forces						R		
• Direction of air flow:						• Shaft end:		
DE → NDE						With keyway, half-key balancing		
NDE → DE ⁷⁾						With keyway, half-key balancing		
DE → NDE						With keyway, full-key balancing		
NDE → DE ⁷⁾						With keyway, full-key balancing		
DE → NDE						Without keyway		
NDE → DE ⁷⁾						Without keyway		
• Paint finish:						• Special models:		
Primed						Please specify additional order code and any required plain text; see Page 3/3.		
Primed, prepared for ZF gearbox attachment ⁶⁾								
Anthracite gray, standard finish (RAL 7016)								
Anthracite gray, standard finish (RAL 7016), prepared for ZF gearbox attachment ⁶⁾								
Anthracite gray, special finish (RAL 7016)								
Anthracite gray, special finish (RAL 7016), prepared for ZF gearbox attachment ⁶⁾								
Converter								
Inverter								

1) n1: Maximum permissible speed at constant power or speed where for P= P rated, there is still a 30% power reserve up to the stall limit.
2) nS1: Maximum permissible speed that is continuously permitted without speed duty cycles.
3) nmax: Maximum rotational speed. This speed may not be exceeded! Notice: Due to fmax. < 2 · f rated, the maximum rotational speed is sometimes limited to smaller values.
4) Rotational speed is reduced in the event of increased cantilever forces, see Part 7.
5) For model with brake: 12th position in ordering no. is "0"; 14th and 15th position is "A"; 16th position is "0", "3" or "6".
6) Model prepared for ZF gearbox attachment: Only for types 1PH7 184, 186, and 224; 12th position in ordering no. is "3" or "5", 13th is "0"; 14th is "B"; 15th is "C"; 16th is "2", "5" or "8". Stagnant fluids are not permitted at the shaft exit.
7) Preferred air flow direction in contaminated environments.

Servo Motors for SIMOVERT MASTERDRIVES

Asynchronous Servo Motors

1PH7 Motors, Shaft Height 280

Selection and Ordering Data

Permissible Combinations of Mechanical Models

1PH7 28 . Motors
Shaft Height 280

Position in
Order No. 8. 9. 10. 11. 12. 13. 14. 15. 16.
1PH7 28 . - ■ . . . ■ . . . - . ■ . . .

Permissible Combinations of Mechanical Models

Separately driven fan
8th Position in Order No.
1PH7 28 . - ■ -

Order No. Supplement

0	1	2	3	4	5	6
NDE Top Non- Drive End --> Drive End	NDE Right Non- Drive End --> Drive End	NDE Left Non- Drive End --> Drive End	Drive End Top Drive End --> Non- Drive End	Drive End Right Drive End --> Non- Drive End	Drive End Left Drive End --> Non- Drive End	Simple Pipe Connection Non-Drive End Right (Can Be Converted to N Drive End Left)

1PH7 28 . - 0 - Type of construction IM B3

1PH7 28 . - 1 - Type IM V5
(Can be converted later to
IM V6)

1PH7 28 . - 3 - Type of construction IM B35

1PH7 28 . - 5 - Type IM V15
(Can be converted later to
IM V36)

Option order codes

R1Y Standard finish RAL ...
R2Y Special finish RAL ...
G14 With air filter
K08 Encoder connector attachment, facing
K55 Customer-specific entry plate for terminal box¹⁾
K83 Terminal box rotation by + 90 degrees (from standard position)
K84 Terminal box rotation by - 90 degrees (from standard position)
K85 Terminal box rotation by 180 degrees (from standard position)
K16 Additional normal shaft end (only available with no encoder)
K31 Additional rating plate
K45 230 V standstill heating
C30 690 V model
Y55 Atypical shaft end, drive end
Y80 Different rating plate data¹⁾
Y82 Additional plate with customer information¹⁾
M83 Additional pulling thread on motor feet

Standard Model

1PH7 Motors, Shaft Height 280

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