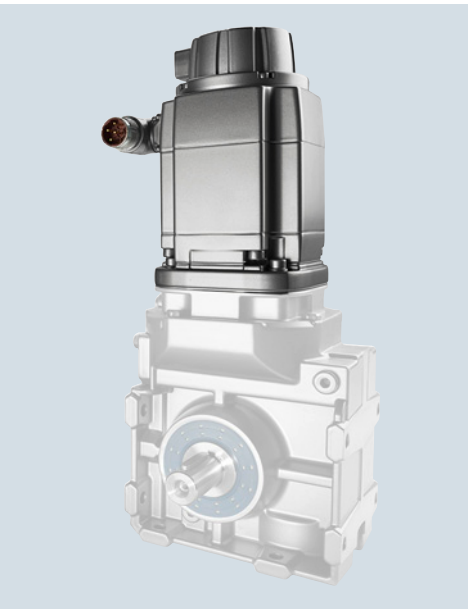
Technical definitions for servomotors



For information on built-in holding brakes, refer to chapter "Configuring guide".

General information

Overview

The servomotors deployed in SIMOTICS S-1FG1 servo geared motors are extremely compact, permanent-magnet-excited synchronous motors. With the available options and encoders, the servomotors can be combined with gearboxes to create the ideal solution for virtually any application. They therefore also satisfy the permanently increasing demands of state-of-the-art machine generations.

SIMOTICS S-1FG1 servo geared motors can be combined with the SINAMICS S120 drive system to create a powerful system with high functionality. The integrated encoder systems for speed and position control can be selected depending on the application.

The motors are designed for operation without external cooling and the heat is dissipated through the motor surface and via the flange connection to the gearbox. The servo geared motors have a high overload capability.

The motors are coded in the 9th to 13th positions of the Article No.

Ordering example:

Selection criteria	Requirements	Position of the Article No.: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
SIMOTICS S-1FG1 servo geared motor		**1 F G 1** . . . - . ■ ■ ■ ■ - ■ . . .
Encoder/resolver	20-bit absolute encoder + 12-bit multi-turn (AM20DQI)	**1 F G 1** . . . - . **R** . . . .
Motor shaft height	Motor shaft height = 48	**1 F G 1** . . . - . **R D** . . . . .
Motor length	Motor length = 2	**1 F G 1** . . . - . **R D 2** . . . .
Rated motor speed	3000 rpm	**1 F G 1** . . . - . **R D 2 3** . . .
DC link voltage and motor type	600 V for SIMOTICS S-1FG1 in motor version CT (Compact)	**1 F G 1** . . . - . **R D 2 3** - **2** . . .

As this example demonstrates, the motor is characterized by the following features within the Article No.:

- Motor encoder:
  See next page for further information
- Motor shaft height and motor length:
  See overview table on page 7/4
- Rated motor speed:
  The rated motor speed should be regarded as an informative value. The rated motor speed does not necessarily reflect the speed that can be input to the gearbox. The maximum permissible short-time speed at the gearbox input n_{1max} and the maximum permissible (short-time) output torques M_{2max} can be found in the "Technical specifications" of the relevant chapters for selection of servo geared motors.
- Motor type:
  Motors can be ordered in versions Compact (CT) and High Dynamic (HD).
  The motors in the Compact class are characterized by their compact dimensions and very high power density. The motors in the High Dynamic class have an excellent dynamic response thanks to their very low moment of inertia.
- DC link voltage:
  The motors are designed for various DC link voltages ranging from 510 V to 720 V or 270 V to 360 V.

Technical specifications

SIMOTICS S-1FG1 servo geared motors in motor versions CT and HD	
Motor type	Permanent-magnet-excited synchronous motor
Magnetic material	Rare-earth magnetic material
Cooling	Natural cooling
Temperature monitoring	Temperature sensor in the stator winding
Insulation of the stator winding according to EN 60034-1 (IEC 60034-1)	Temperature class 155 (F) for a winding overtemperature of T = 100 K at an ambient temperature of 40 °C
Degree of protection according to EN 60034-5 (IEC 60034-5)	IP65 (with mounted gearbox)
Vibration severity in accordance with EN 60034-14 (IEC 60034-14)	Grade A (with mounted gearbox) is maintained up to the rated speed
Sound pressure level L_{pA} (1 m) according to DIN EN ISO 1680, max. tolerance + 3 dB	Motor shaft heights: 36 and 48: 60 dB(A); 63: 70 dB(A) 80 und 100: 75 dB(A)
Connection	Connectors for signals and power
Holding brake	Zero-backlash 24 V DC
Approvals, according to:	cURus CE marking/ EC Declaration of Conformity

Overview

Short designations for the encoder systems

The first letters of the short designation define the encoder type:

AM Multi-turn absolute encoder

AS Single-turn absolute encoder

R Resolver

This is followed by the resolution in signals per revolution in bits.

The following two places specify the type of interface:

DQ DRIVE-CLiQ interface

Built-in encoder systems with DRIVE-CLiQ interface

For motors with an integrated DRIVE-CLiQ interface, the encoder signal is internally digitized and transferred directly to the drive. Motors with a DRIVE-CLiQ interface simplify commissioning and diagnostics because, for example, the encoder system is automatically identified via the electronic rating plate.

The different encoder types, absolute or resolver, can all be connected with a MOTION-CONNECT DRIVE-CLiQ cable.

Absolute encoder, multi-turn

Multi-turn absolute encoder with DRIVE-CLiQ interface	
AM20DQI encoder	20-bit absolute encoder (resolution 1048576, internal 512 S/R) + 12-bit multi-turn (traversing range 4096 revolutions) can be used for Safety Integrated [1)]

This encoder outputs an absolute angular position between 0° and 360° in the specified resolution. An internal measuring gearbox enables it to differentiate between 4096 revolutions.

So with a ball screw, for example, the absolute position of the slide can be determined over a long distance.

Absolute encoder, single-turn

Single-turn absolute encoder with DRIVE-CLiQ interface	
AS20DQI encoder	Single-turn 20-bit absolute encoder (resolution 1048576, internal 512 S/R) can be used for Safety Integrated [1)]

This encoder outputs an absolute angular position between 0° and 360° in the specified resolution. In contrast to the multi-turn absolute encoder, it has no measuring gearbox and can therefore only supply the position value within one revolution. It does not have a traversing range.

Resolver

Resolvers with DRIVE-CLiQ interface	
Encoder R15DQ	15-bit resolver (resolution 32768, internal multi-pole)
Encoder R14DQ	14-bit resolver (resolution 16384, internal 2-pole)

The number of sine and cosine periods per revolution corresponds to the number of pole pairs of the resolver. In the case of a 2-pole resolver, the evaluation electronics may output an additional zero pulse per encoder revolution. This zero pulse ensures a unique assignment of the position information in relation to an encoder revolution. A 2-pole resolver can therefore be used as a single-turn encoder.

2-pole resolvers can be used for motors with any number of poles. With multi-pole resolvers, the pole pair numbers of the motor and the resolver are always identical, so that the resolution is correspondingly higher than with 2-pole resolvers.

Technical specifications

Absolute encoder with DRIVE-CLiQ interface	
Supply voltage	24 V
Absolute position via DRIVE-CLiQ	
• Resolution within one revolution	20 bits
• Traversing range of multi-turn absolute encoder (does not apply to single-turn absolute encoders AS)	4096 revolutions
Resolvers with DRIVE-CLiQ interface	
Supply voltage	24 V
Resolution	15 bit/14 bit

Overview

The SIMOTICS S-1FG1 servo geared motors are equipped with a temperature sensor. This sensor changes its resistance depending on the temperature in accordance with a defined curve.

The encoders with DRIVE-CLiQ interface or the Siemens converters determine the motor temperature by evaluating the resistance of the temperature sensor.

Appropriate temperature thresholds for alarm and trip are preset at the factory on the SINAMICS S120 drive system.

[1)] The servo geared motor equipped with this encoder is suitable for use with all safety functions provided by the SINAMICS S120 drive system, such as stop functions and functions for monitoring motion and position.

For more information on Safety Integrated with the SINAMICS S120 drive system, see catalog D21.4.

Technical specifications

Servomotors

The specifications below refer exclusively to the driving servomotor connected to the relevant gearbox.

Due to the mechanical load limits of the gearboxes, the built-on servomotors might have wider torque and speed ranges than can be fully exploited by the SIMOTICS S-1FG1 servo geared motors (as motor/gearbox units). The maximum speed of the motor is therefore limited primarily by the maximum permissible short-time speed at the gearbox input n_{1max} (see technical specifications in the relevant chapters for selecting servo geared motors).

Servo geared motors SIMOTICS S-1FG1	Rated speed	Motor shaft height	Rated power	Stall current	Rated current	No. of pole pairs	Moment of inertia of rotor		Efficiency[1]
							without brake	with brake	
	n_{1rated}	SH	P_{rated} at ΔT=100 K	I_0 at ΔT=100 K	I_{rated} at ΔT=100 K	p	J_{mot}	$J_{Mot\ Br}$	η_M
Type	rpm		kW	A	A		10^{-4} kgm^2	10^{-4} kgm^2	%
SIMOTICS S-1FG1 in motor version CT (Compact) for DC link voltage 510 ... 720 V DC									
1FG1...-..D22-2...	2000	48	0.52	1.55	1.45	4	2.9	3.2	89
1FG1...-..E02-2...		63	0.93	2.85	2.55	4	7.7	8.7	91
1FG1...-..E22-2...			1.30	2.75	2.4	4	11.2	12.2	91
1FG1...-..E32-2...			1.68	4.9	4.1	4	14.7	15.7	91
1FG1...-..F12-2...		80	1.91	4.7	4	4	20	23.5	93
1FG1...-..F32-2...			2.43	7.3	5.8	4	26	29.5	93
1FG1...-..F42-2...			2.91	8	6.3	4	32.5	35.5	93
1FG1...-..G02-2...		100	2.58	7.8	6.1	4	54	62	93
1FG1...-..G12-2...			3.77	11.1	8.6	4	79	87	93
1FG1...-..G32-2...			4.71	12.9	9.5	4	104	112	94
1FG1...-..G52-2...			7.12	19	14.8	4	154	162	95
1FG1...-..D23-2...	3000	48	0.74	2.1	1.85	4	2.9	3.2	89
1FG1...-..E03-2...		63	1.24	4.05	3.25	4	7.7	8.7	91
1FG1...-..E23-2...			1.7	4.85	3.7	4	11.2	12.2	91
1FG1...-..E33-2...			2.11	7.4	5.3	4	14.7	15.7	91
1FG1...-..F03-2...		80	1.76	4.3	3.7	4	14.2	17.5	92
1FG1...-..F13-2...			2.42	8.1	6.1	4	20	23.5	93
1FG1...-..F33-2...			2.95	9.9	6.5	4	26	29.5	93
1FG1...-..F43-2...			3.14	11.4	6.6	4	32.5	35.5	93
1FG1...-..G03-2...		100	3.08	10.3	6.6	4	54	62	93
1FG1...-..G13-2...			3.86	17.3	9.6	4	79	87	93
1FG1...-..G33-2...			4.40	23.5	11.2	4	104	112	94
1FG1...-..G53-2...			7.38	29	16	4	154	162	95
1FG1...-..E04-2...	4500	63	1.56	5.7	3.95	4	7.7	8.7	91
1FG1...-..E24-2...			1.41	7.3	3.3	4	11.2	12.2	91
1FG1...-..E34-2...			1.41	11.1	3.8	4	14.7	15.7	91
1FG1...-..F04-2...		80	1.39	6.6	3.2	4	14.2	17.5	92
1FG1...-..F14-2...			1.67	12.2	4.7	4	20	23.5	92
1FG1...-..F34-2...			0.05 (2.95*)	14.8	0.7	4	26	29.5	93
1FG1...-..C26-2...	6000	36	0.41	1.5	1.09	3	0.65	0.75	87
1FG1...-..C46-2...			0.48	1.69	1.08	3	0.9	1	87
1FG1...-..D06-2...		48	0.60	2.25	1.63	4	1.6	1.92	87
1FG1...-..D26-2...			0.77	4.25	2.15	4	2.9	3.2	88

* Power at 3000 rpm

Footnotes see next page.

Motor type (repeated)	Maximum torque	Static torque	Rated torque	SINAMICS S120 Motor Module Rated output current[2]	Booksize format Internal air cooling	Power cable with complete shield Motor connection (and brake connection) via power connector		
	M_{max}	M_0 at ΔT=100 K	M_{rated} at ΔT=100 K	I_{rated}		Power connector	Cable cross-section[3]	Pre-assembled cable
	Nm	Nm	Nm	A	Type	Size	mm²	Type
				Line voltage 380 ... 480 V 3 AC				
1FG1...-..D22-2...	10.5	2.85	2.5	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E02-2...	18	5.3	4.45	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E22-2...	26	7.5	6.2	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E32-2...	35	10.1	8	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F12-2...	37	11	9.1	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F32-2...	50	15.5	11.6	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F42-2...	61	18.7	13.9	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..G02-2...	55	16.2	12.3	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..G12-2...	80	24.5	18	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■N26-....**
1FG1...-..G32-2...	108	31.5	22.5	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■N26-....**
1FG1...-..G52-2...	150	45	34	30	**6SL3120-1TE23-0AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FG1...-..D23-2...	10.5	2.85	2.35	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E03-2...	18	5.3	3.95	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E23-2...	26	7.5	5.4	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E33-2...	35	10.1	6.7	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F03-2...	25	7	5.6	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F13-2...	37	11	7.7	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F33-2...	50	15.5	9.4	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F43-2...	61	18.7	10	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..G03-2...	55	16.2	9.8	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..G13-2...	80	24.5	12.3	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FG1...-..G33-2...	108	31.5	14	30	**6SL3120-1TE23-0AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FG1...-..G53-2...	150	45	23.5	30	**6SL3120-1TE23-0AD0**	1.5	4 × 6	**6FX■002-5■N56-....**
1FG1...-..E04-2...	18	5.3	3.3	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E24-2...	26	7.5	3	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E34-2...	35	10.1	3	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F04-2...	25	7	2.95	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F14-2...	37	11	3.55	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F34-2...	50	15.5	0.1	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..C26-2...	4.5	1.01	0.65	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..C46-2...	6.5	1.4	0.77	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..D06-2...	5.1	1.47	0.96	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..D26-2...	10.5	2.85	1.23	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**

Motor Module:	
Single Motor Module	**1**
Double Motor Module	**2**

Power cable:	
MOTION-CONNECT 800 PLUS	**8**
MOTION-CONNECT 500	**5**
Without brake cores	**C**
With brake cores	**D**
Length code	**....**

For information on the cables refer to MOTION-CONNECT connection systems in Catalog D 21.4

1) Optimum efficiency in continuous duty.

2) With default setting of the pulse frequency.

3) The current carrying capacity of the power cables complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C. Cable cross-section for brake connection 2 × 1.5 mm².

Technical specifications (continued)

Servo geared motors SIMOTICS S-1FG1	Rated speed	Motor shaft height	Rated power	Stall current	Rated current	No. of pole pairs	Moment of inertia of rotor		Efficiency[1]
							without brake	with brake	
	n_{1rated}	SH	P_{rated} at ΔT=100 K	I_0 at ΔT=100 K	I_{rated} at ΔT=100 K	p	J_{mot}	$J_{Mot\ Br}$	η_M
Type	rpm		kW	A	A		10^{-4} kgm^2	10^{-4} kgm^2	%
SIMOTICS S-1FG1 in motor version HD (High Dynamic) for DC link voltage 510 ... 720 V DC									
1FG1...-..E42-4...	2000	63	1.84	7.4	6.4	3	7.5	8.5	92
1FG1...-..F52-4...		80	3.10	12.5	9.8	4	22	25.5	93
1FG1...-..F62-4...			3.20	12.1	7.8	4	22	25.5	93
1FG1...-..D43-4...	3000	48	1.01	3.8	3.15	3	1.26	1.62	91
1FG1...-..E13-4...		63	1.45	6	4.75	3	4.05	5.1	91
1FG1...-..E43-4...			2.36	9.9	7.5	3	7.5	8.5	92
1FG1...-..F53-4...		80	1.92	20.5	7	4	22	25.5	93
1FG1...-..F63-4...			1.82	19.8	5.4	4	22	25.5	93
1FG1...-..D34-4...	4500	48	1.04	4.1	3	3	1	1.36	91
1FG1...-..D44-4...			1.18	5.1	3.45	3	1.26	1.62	91
1FG1...-..E14-4...		63	1.63	8.6	5.4	3	4.05	5.1	91
1FG1...-..E44-4...			1.60	13.7	5.1	3	7.5	8.5	92
1FG1...-..C36-4...	6000	36	0.48	1.92	1.43	3	0.25	0.35	88
1FG1...-..D36-4...		48	0.98	5.6	2.95	3	1	1.36	91

Footnotes see next page.

Motor type (repeated)	Maximum torque	Static torque	Rated torque	SINAMICS S120 Motor Module Rated output current[2]	Booksize format Internal air cooling	Power cable with complete shield Motor connection (and brake connection) via power connector		
	M_{max}	M_0 at ΔT=100 K	M_{rated} at ΔT=100 K	I_{rated}		Power connector	Cable cross-section[3]	Pre-assembled cable
	Nm	Nm	Nm	A	Type	Size	mm²	Type
				Line voltage 380 ... 480 V 3 AC				
1FG1...-..E42-4...	32	10.7	8.8	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F52-4...	65	20	14.8	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F62-4...	94	25.5	15.3	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..D43-4...	11.3	4.05	3.2	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E13-4...	17.3	6.2	4.6	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E43-4...	32	10.7	7.5	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..F53-4...	65	20	6.1	30	**6SL3120- 1TE23-0AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FG1...-..F63-4...	94	25.5	5.8	30	**6SL3120- 1TE23-0AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FG1...-..D34-4...	10	3.3	2.2	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..D44-4...	11.3	4.05	2.5	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E14-4...	17.3	6.2	3.45	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..E44-4...	32	10.7	3.4	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..C36-4...	4.3	1.13	0.77	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FG1...-..D36-4...	10	3.3	1.56	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**

Motor Module:	
Single Motor Module	**1**
Double Motor Module	**2**

Power cable:	
MOTION-CONNECT 800 PLUS	**8**
MOTION-CONNECT 500	**5**
Without brake cores	**C**
With brake cores	**D**
Length code	**....**

For information on the cables refer to MOTION-CONNECT connection systems in Catalog D 21.4

7

1) Optimum efficiency in continuous duty.

2) With default setting of the pulse frequency.

3) The current carrying capacity of the power cables complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C. Cable cross-section for brake connection 2 × 1.5 mm².

Technical specifications (continued)

Servo geared motors SIMOTICS S-1FG1	Rated speed	Motor shaft height	Rated power	Stall current	Rated current	No. of pole pairs	Moment of inertia of rotor		Efficiency[1]
							without brake	with brake	
	n_{1rated}	SH	P_{rated} at ΔT=100 K	I_0 at ΔT=100 K	I_{rated} at ΔT=100 K	p	J_{mot}	$J_{Mot\ Br}$	η_M
Type	rpm		kW	A	A		10^{-4} kgm^2	10^{-4} kgm^2	%
SIMOTICS S-1FG1 in motor version CT (Compact) for DC link voltage 270 ... 330 V DC									
1FG1...-..C23-1...	3000	36	0.27	1.5	1.37	3	0.65	0.75	86
1FG1...-..C43-1...			0.36	1.69	1.5	3	0.9	1	87
1FG1...-..D23-1...		48	0.74	3.85	3.35	4	2.9	3.2	89
SIMOTICS S-1FG1 in motor version HD (High Dynamic) for DC link voltage 270 ... 330 V DC									
1FG1...-..C33-3...	3000	36	0.31	1.92	1.77	3	0.25	0.35	88
1FG1...-..D33-3...		48	0.83	3.9	3.5	3	1	1.36	91

Footnotes see next page.

Motor type (repeated)	Maximum torque	Static torque	Rated torque	SINAMICS S120 blocksize format Rated output current[2]	PM240-2 Power Module Air cooling	Power cable with complete shield Motor connection (and brake connection) via power connector		
	M_{max}	M_0 at ΔT=100 K	M_{rated} at ΔT=100 K	I_{rated}		Power connector	Cable cross-section[3]	Pre-assembled cable
	Nm	Nm	Nm	A	Type	Size	mm²	Type
				Line voltage 200 ... 240 V 1 AC				
1FG1...-..C23-1...	4.5	1.01	0.87	3	**6SL3210-1PB13-0■L0**	1	4 × 1.5	**6FX■002-5■G10-....**
1FG1...-..C43-1...	6.5	1.4	1.16	3	**6SL3210-1PB13-0■L0**	1	4 × 1.5	**6FX■002-5■G10-....**
1FG1...-..D23-1...	10.5	2.85	2.35	3.9	**6SL3210-1PB13-8■L0**	1	4 × 1.5	**6FX■002-5■G10-....**
				Line voltage 200 ... 240 V 1 AC				
1FG1...-..C33-3...	4.3	1.13	0.99	3	**6SL3210-1PB13-0■L0**	1	4 × 1.5	**6FX■002-5■G10-....**
1FG1...-..D33-3...	10	3.1	2.65	3.9	**6SL3210-1PB13-8■L0**	1	4 × 1.5	**6FX■002-5■G10-....**

Line filter:	
None	**U**
Integrated	**A**

Power cable:	
MOTION-CONNECT 800 PLUS	**8**
MOTION-CONNECT 500	**5**
Without brake cores	**C**
With brake cores	**D**
Length code	**....**

For information on the cables refer to MOTION-CONNECT connection systems in Catalog D 21.4

7

[1] Optimum efficiency in continuous duty.

[2] With default setting of the pulse frequency.

[3] The current carrying capacity of the power cables complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C. Cable cross-section for brake connection 2 × 1.5 mm².

Notes