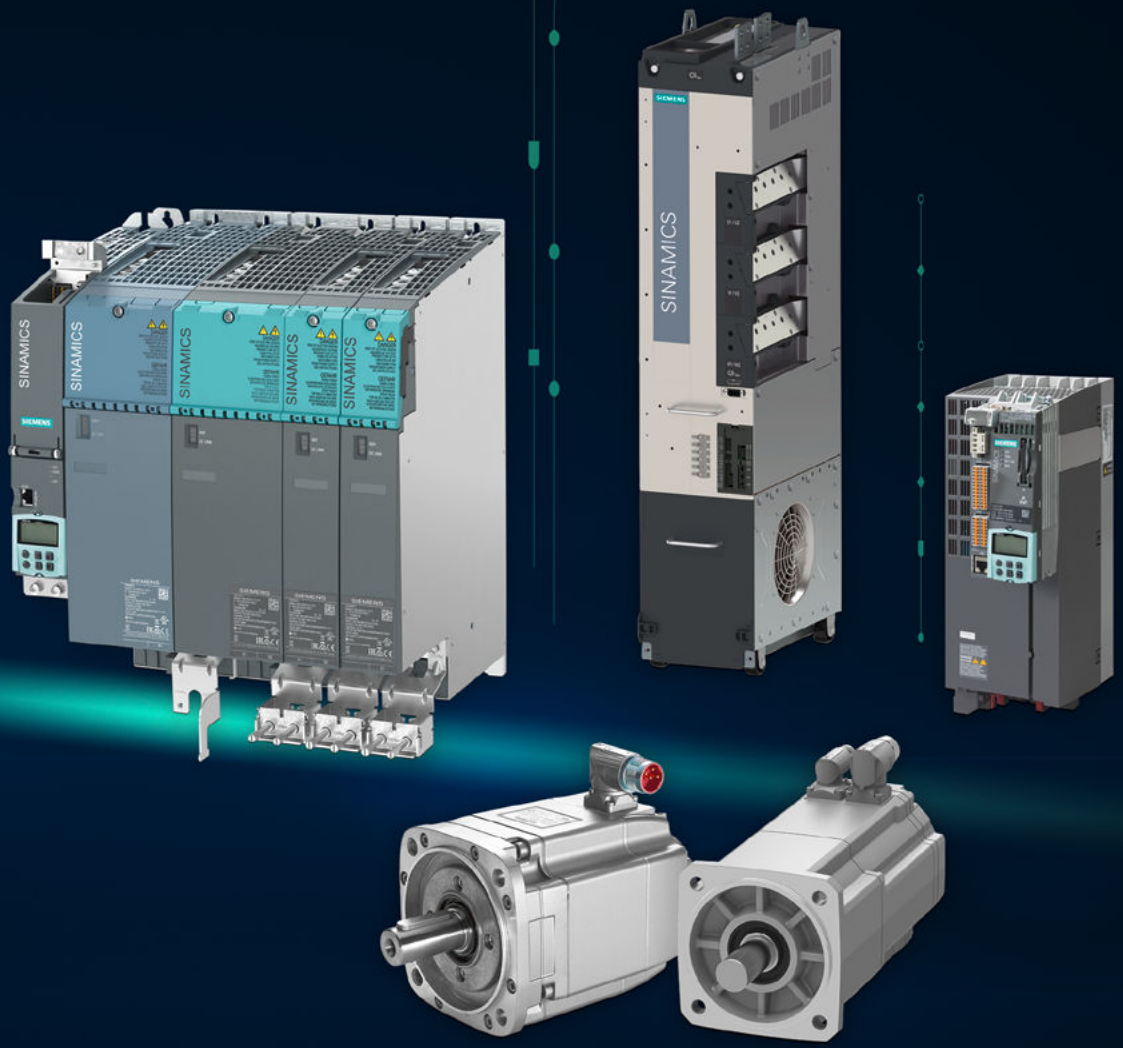
SIEMENS



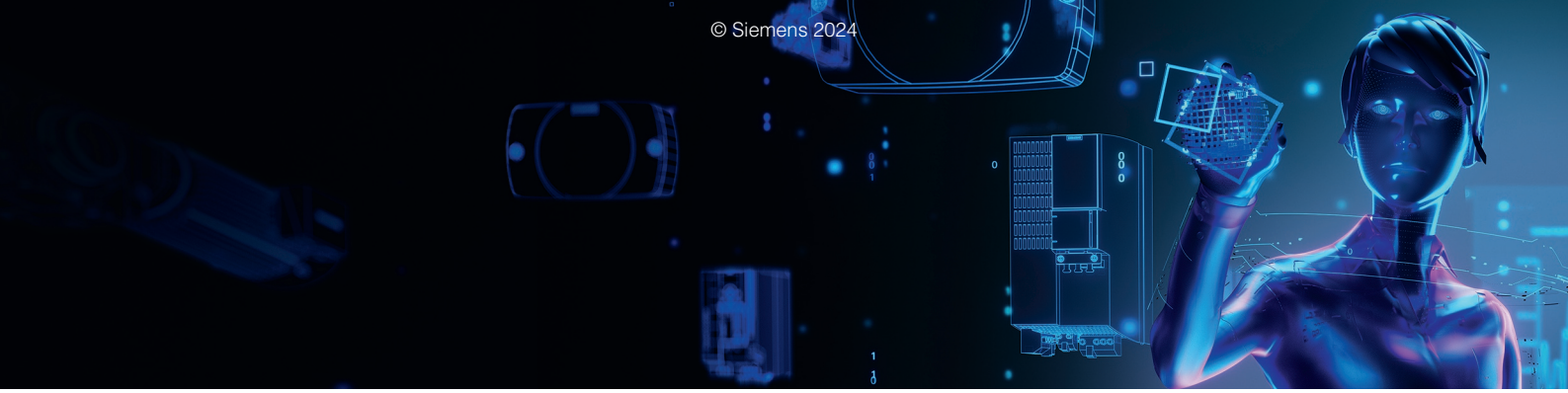
Catalog

Edition
2023

MOTION CONTROL DRIVES

SIMOTICS

siemens.com/d21-4



Digitalization in drive technology

From the digital world to the real world

siemens.com/digital-drives

Increase your transparency and productivity by digitalizing your drive technology

Many drives are used in the manufacturing and process industries. They produce lots of data anyway – why not use them to increase the availability and productivity of machines and plants?

Drive technology offers the ideal entry point into the world of digitalization – for plant and machine builders as well as for users.

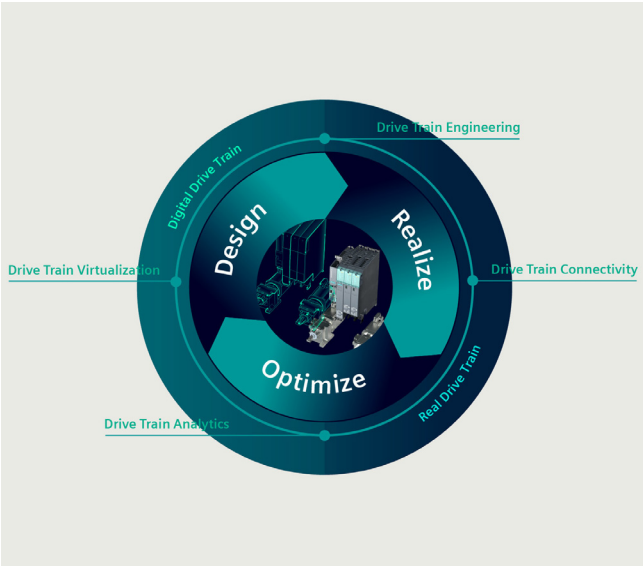
The digitalization portfolio for the drive train spans over the complete life cycle – from the design phase to realization and optimization – in the digital and the real world.

Our portfolio contains drive simulation solutions and efficient engineering tools, comprehensive connectivity that allows drives to be easily linked to the relevant platforms as well as smart analytics (e.g. cloud and edge apps) and drive system services.

These solutions enable you to gain a better understanding of processes, states and utilization. The health status of the drive train can be monitored and analyzing drive data enables an early detection of anomalies and reduces downtimes.

This way, availability and productivity of machines and plants can be increased and the actual maintenance demand can be identified. Furthermore, data-based business models and service offerings are facilitated.

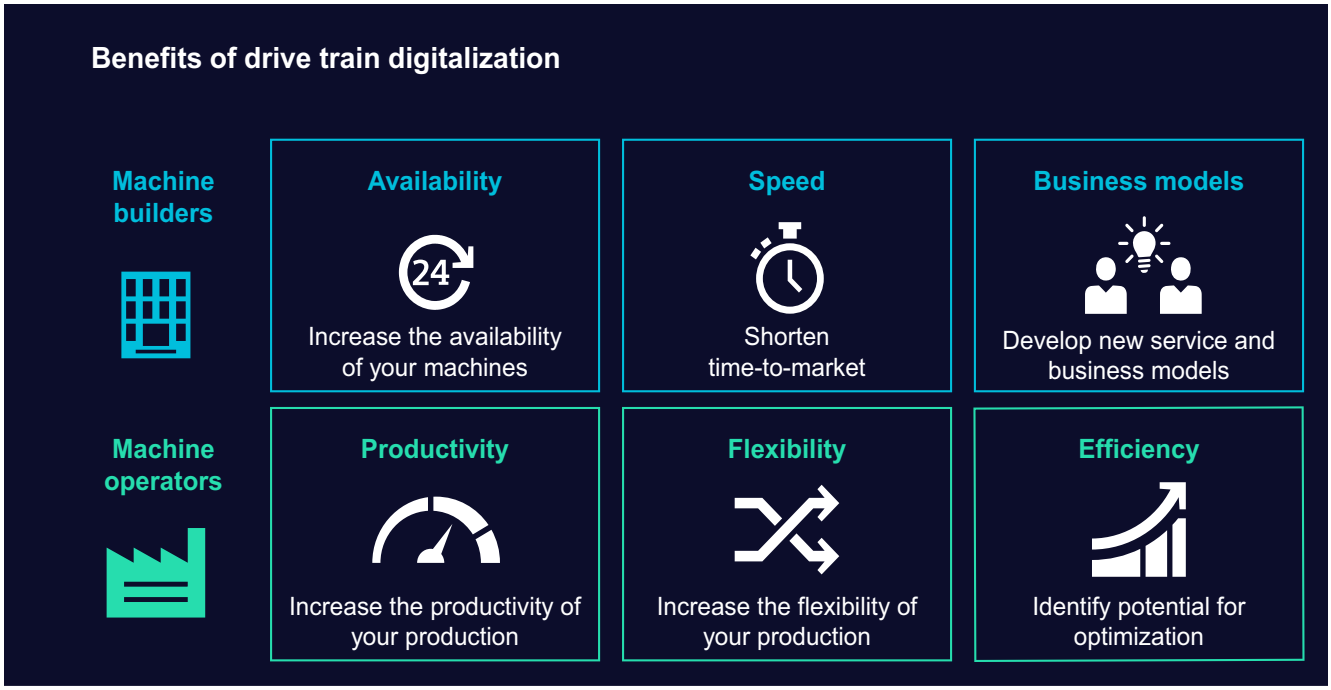
Our digitalization portfolio covers all phases of the life cycle: from the design phase to realization and optimization. It covers the digital and the real drive train.



Design: By creating a digital twin of the drives, machine builders can shorten their time-to-market since they can design, simulate and optimize their machine before ordering any material or products. Together with other tools from the engineering box, simulation can also speed up the engineering phase of drives and entire machines, for example by virtual commissioning of the PLC.

Realize: Once the machine is in operation, the drives can be connected to other platforms, for example to the cloud and Industrial Edge. This creates transparency in terms of what is going on inside the drive train, e.g. with regard to the actual current, torque and speed.

Optimize: To understand the collected data, our drive train analytics portfolio provides algorithms and analysis tools to unlock the potential of the data and turn the gained transparency into insights and valuable knowledge. These insights can then again be used in the design phase of the next life cycle, thus closing the loop.



Benefits for machine and plant builders

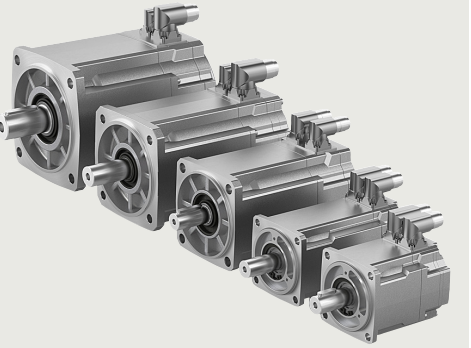
- Increased availability of machines and plants – thanks to digital options for checking and implementing design improvements and comprehensive monitoring of drive systems
- Shorter time-to-market and faster development times – thanks to practical software tools and a continuous database for concurrent development processes as well as virtual simulations, tests, and commissioning of machines and plants
- New options for future service and business models – ranging from customized application solutions and digital services to contractually guaranteed availabilities of machines and plants

Benefits for machine and plant operators

- Increased availability and productivity of production, fewer unscheduled downtimes – through the early detection of deviations and emerging risks thanks to digital drive monitoring
- More flexible production down to batch size 1 – through more effective use of knowledge from existing production lines thanks to transparent utilization, states, locations, and capacities down to the drive level
- Identification of potential for optimization to make production faster, better, and more efficient thanks to data-based transparency – for example, for faster modifications, simpler quality control, and the early prediction of maintenance demand as well as demand-oriented maintenance

siemens.com/digital-drives

SIMOTICS S servomotors



In addition, the Siemens Product Configurator can be used on the internet at the following address:
www.siemens.com/spc
See under:
Motors →
Motors for Motion Control →
SIMOTICS S servomotors

Technical specifications

Regulations, standards, and specifications

The motors comply with the appropriate standards and regulations, see table below.

As a result of the fact that in many countries the national regulations have been completely harmonized with the international IEC 60034-1 recommendation, there are no longer any differences with respect to coolant temperatures, temperature classes and temperature rise limits.

General specifications for rotating electrical machines	IEC 60034-1
Terminal designations and direction of rotation for electrical machines	IEC 60034-8
Types of construction of rotating electrical machines	IEC 60034-7
Cooling methods of rotating electrical machines	IEC 60034-6
Degrees of protection of rotating electrical machines	IEC 60034-5
Vibration severity of rotating electrical machines	IEC 60034-14
Noise limit values for rotating electrical machines	IEC 60034-9
Cylindrical shaft ends for electrical machines	DIN 748-3/IEC 60072-1

SIMOTICS S motors are UL approved by Underwriters Laboratories Inc. and have the "UL Recognized Component" test mark. This is used for components that are part of a larger product or system. This confirms compliance with the corresponding American and Canadian regulations, and allows the North American market to be accessed.

SIMOTICS S motors are certified to comply with the relevant EC guidelines 2006/95/EC and 2014/35/EU as well as the relevant standards EN 60034-1:2010, EN 60204-1:2006. By applying the CE mark to the product, Siemens AG confirms this for the product, and secures the free movement of goods within the European Union.

The SIMOTICS S servomotors are usually identified using a second nameplate.

Degree of protection acc. to IEC 60034-5

A suitable degree of protection must be selected according to the operating and environmental conditions to protect the motor against damage caused by the ingress of liquids, as well as dust and foreign bodies.

The protection class designation according to IEC 60034-5 is derived from the abbreviation IP (for International Protection) and two code numbers:

First code number

6: Protection against dust ingress and complete protection against touching

Second code number

4: Protection against splashwater from any direction

5: Protection against jet water from any direction

7: Protection against short-term immersion in water

Recommended degrees of protection for three-phase motors

When cooling lubricants are used, protection against water alone is inadequate. The IP rating should only be considered as a guideline in this case. The motors may have to be protected by suitable covers. When selecting the motor degree of protection, the motor shaft must be equipped with a suitable seal. It must be avoided that liquid accumulates on the flange when the motor is mounted with the shaft end facing upwards (IM V3).

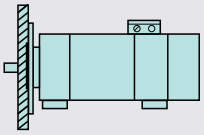
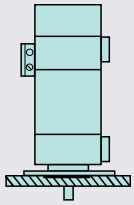
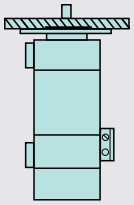
The following table provides support when selecting the appropriate degree of protection for motors.

Effect	General workshop environment	Water/ general cooling lubricant (95 % water, 5 % oil)
Dry	IP64	–
Humid/moist environment	–	IP64
Mist	–	IP65
Spray	–	IP65
Jet	–	IP67
Splash/ brief immersion/ constant immersion	–	IP67

Technical specifications

Type of construction, installation position acc. to IEC 60034-7

The SIMOTICS S-1FT2 motors have an IM B5 type of construction. They may also be used in mounting positions IM V1 and IM V3.

Code 1	IM B5	IM V1	IM V3
Code 2	IM 3001	IM 3011	IM 3031
			
	Horizontal flange mounting	Flange mounting, output shaft pointing vertically downwards	Flange mounting, output shaft pointing vertically upwards

Shaft and flange accuracy acc. to IEC 60072-1 or DIN 429955

Radial eccentricity tolerance of shaft in relation to housing axis

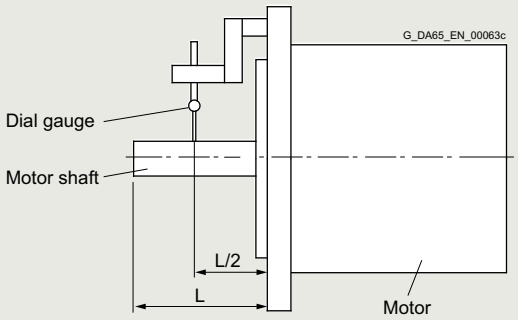
(referred to cylindrical shaft ends)

Shaft end ØD x L mm (in)	acc. to IEC 60072-1 or Tolerance "N" acc. to DIN 429955 µm	Tolerance "R" acc. to DIN 429955 µm
8 × 25 (0.31 × 0.98)	30	15
11 × 23 (0.43 × 0.91)	35	18
14 × 30 (0.55 × 1.18)		
19 × 40 (0.75 × 1.57)	40	21
24 × 50 (0.94 × 1.97)		
32 × 58 (1.26 × 2.28)	50	25
38 × 80 (1.50 × 3.15)		
48 × 82 (1.89 × 3.23)		

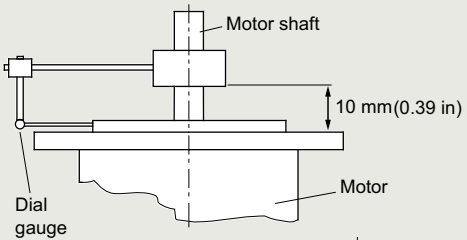
Concentricity tolerance of the centering ring and axial eccentricity tolerance of the flange surface referred to the motor shaft

Centering diameter mm (in)	acc. to IEC 60072-1 or Tolerance "N" acc. to DIN 429955 µm	Tolerance "R" acc. to DIN 429955 µm
30 (1.18)	60	30
40 (1.57)	80	40
50 (1.97)		
60 (2.36)		
70 (2.76)		
80 (3.15)		
95 (3.74)		
110 (4.33)	100	50
130 (5.12)		
180 (7.09)		
250 (9.84)	125	63

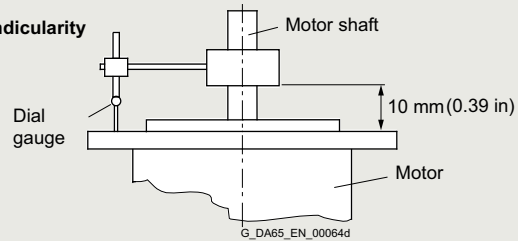
Test: radial eccentricity



Test: concentricity



Test: perpendicularity

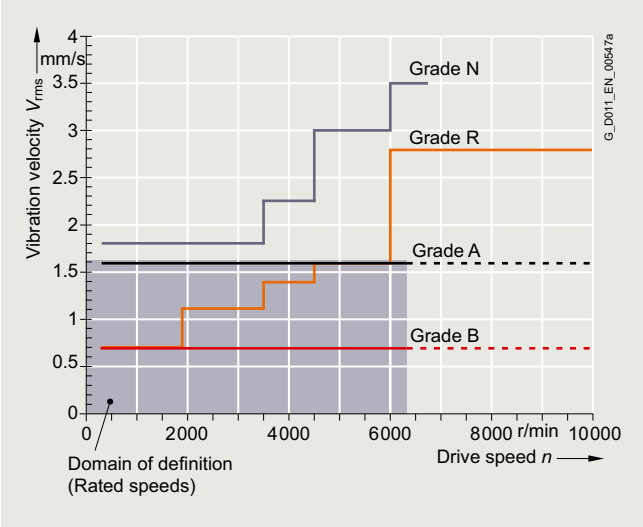


Technical specifications

Vibration severity grades and vibration severity grades A and B according to EN 60034-14

The vibration severity is the root-mean square value (rms value) of the vibration velocity (frequency range from 10 Hz to 1000 Hz). The vibration severity is measured using electrical measuring devices according to DIN 45666.

The specified values refer only to the motor. The system vibration behavior as a result of the installation can increase these values.



Vibration severity limit values

The speeds of 1800 r/min and 3600 r/min and the corresponding limits are specified in accordance with IEC 60034-14.
The speeds of 4500 r/min and 6000 r/min and the specified values have been determined by the motor manufacturer.

The motors maintain vibration severity grade A up to the rated speed.

Balancing in accordance with ISO 21940-32

Apart from the balance quality of the motor, the vibrational quality of motors with attached belt pulleys is mainly determined by the balance state of the mounted component. If the motor and the mounted component are balanced separately before being assembled together, the balancing process of the belt pulley should be adapted to the balancing type of the motor.

The motors with feather key are always half-key balanced. In general, motors with a plain shaft are recommended for systems with the most stringent vibrational quality requirements.

Vibration stress, immitted vibration values

To function correctly and to ensure the bearing lifetime, the requirements of environmental class 3M8 (according to EN 60721-3-3 Table 6) must be complied with. The following limits are valid for (immitted) vibration values introduced into the motor from outside:

- Vibration velocity V_{rms} in accordance with ISO 10816, max. 4.5 mm/s (0.18 in/s)
- Vibration acceleration a_{peak}:

Vibration acceleration a_{peak}:		
	1F□7	1F□2
Axial	25 m/s² (82 ft/s²)	50 m/s² (164 ft/s²)
Radial	50 m/s² (164 ft/s²)	50 m/s² (164 ft/s²)

During transport, the motors withstand single shocks (6 ms) of up to 250 m/s². Different values may apply to motors with mounted planetary gearboxes. More information is provided in the Configuration Manual of the particular product.

Ambient temperature and installation altitude

Operating range without restrictions:

Temperature range from -15 °C to +40 °C (5.0 °F to 104 °F), installation altitude up to 1000 m (3281 ft).

If deviating conditions are encountered, the S1 characteristic of the motor must be adapted with regard to speed and torque.

The reduced S1 characteristic should be calculated according to the following formula:
$S1_{red}(n) = x_D \bullet S1_{40°C;\ 1000m} \bullet (n / x_D)$

Factors x_D for derating depending on installation altitude and ambient temperature. (intermediate values should be interpolated)

Motor	Installation altitude above sea level	Ambient temperature in °C (°F)				
	m (ft)	30 (86)	40 (104)	45 (113)	50 (122)	55 (131)
1F□7	1000 (3281)	1.05	1	0.97	0.95	0.92
	2000 (6562)	1	0.95	0.92	0.89	0.87
	3000 (9843)	0.95	0.89	0.87	0.84	0.81
	4000 (13124)	0.89	0.84	0.81	0.77	0.74
1F□2	1000 (3281)	1.05	1	0.95	0.89	0.84
	2000 (6562)	1	0.95	0.86	0.8	0.73
	3000 (9843)	0.95	0.89	0.76	0.69	0.62
	4000 (13124)	0.89	0.84	0.65	0.57	0.47

Factors for derating depending on installation altitude and ambient temperature

Encoder systems

For motors with integrated DRIVE-CLiQ interface, the encoder signal is already digitally processed in the motor, and then transferred quickly and without loss to the drive system. Motors with DRIVE-CLiQ interface simplify commissioning and diagnostics by automatically identifying the motor parameters and the encoder system.
Motors without DRIVE-CLiQ interface are intended for converters with analog encoder evaluation (e.g. from third-party manufacturers).

Single-turn absolute encoder

This encoder outputs an absolute angular position between 0° and 360° in the specified resolution. In contrast to the multi-turn absolute encoder, it does not have a revolution counter, and can therefore only supply the position value within one revolution. It does not have a traversing range.

Multi-turn absolute encoder

This encoder outputs an absolute angular position between 0° and 360° in the specified resolution. It can also count 4096 revolutions. For a ball screw, for example, the absolute position of the slide can be determined over a longer distance.

Incremental encoder

This encoder senses relative movements and does not supply absolute position information. In combination with evaluation logic, a zero point can be determined using the integrated reference mark, which can be used to calculate the absolute position.

Resolver

A resolver provides sin/cos signal periods per motor revolution according to its number of pole pairs. 2-pole resolvers can be used for motors with any number of poles. For multi-pole resolvers, the number of motor pole pairs and the resolver are always identical.

Technical specifications

Short designation of the encoder systems

The first letters of the short designation define the encoder type. This is followed by the encoder resolution.

In the case of DRIVE-CLiQ encoders, the information is given in bits with the trailing identifier "DQ", "DQI" or "DQC".

For encoders without a DRIVE-CLiQ interface, the analog resolution follows in signals per revolution with the identifier "S/R".

Encoder type	
AM	Multi-turn absolute encoder
AS	Single-turn absolute encoder
IC	Incremental encoder sin/cos with commutation position (C/D track)
R	Resolver
Encoder resolution	
□□DQ, □□DQI, □□DQC	For encoders with DRIVE-CLiQ interface Resolution = □□ bit $=2^{□□}$ signals per revolution
□□□□S/R	For encoders without DRIVE-CLiQ interface Resolution = □□□□ signals per revolution

Paint finish

All motors can be painted over with commercially available paints. Up to 2 additional paint coats are permissible.

Holding brake

Many drives require a holding brake with an EMERGENCY STOP function for safety-related reasons or to comply with process requirements.

The brakes that are used operate according to the closed-circuit principle. A spring or permanent magnet exerts a tensile force on the brake armature disk, i.e. in a zero current state, the brake is closed and the motor shaft is held.

An electric current that flows through a coil generates an opposing field that counteracts the force effect of the spring or permanent magnet and releases or holds open the brake.

Only a limited number of braking operations can be performed for an EMERGENCY STOP or voltage failure without causing excessive wear on the holding brake.

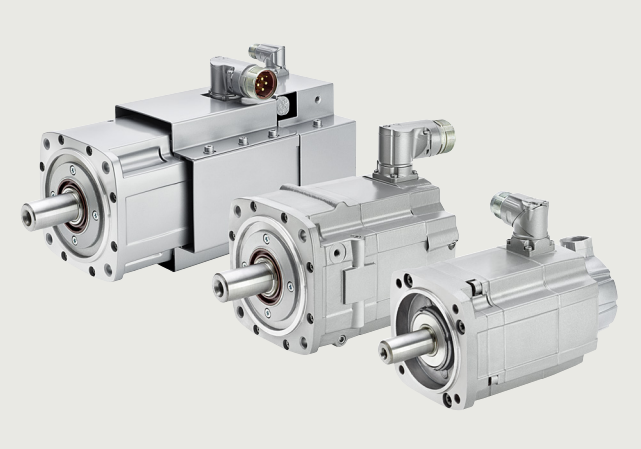
The holding brake is not an operational brake.

Regular dynamic braking leads to increased wear and premature brake failure. In order to ensure the functionality and specification of the brake, neither the total operating energy nor the maximum operating energy per braking operation may be exceeded.

The brake control is already fully integrated into the SINAMICS S120 converter system, so that an external circuit is not necessary.

SIMOTICS S-1FT7

Overview



SIMOTICS S-1FT7 motors, forced ventilation, water cooling and natural cooling

SIMOTICS S-1FT7 servomotors are permanent-magnet synchronous motors with very compact dimensions and an optically attractive design.

S-1FT7 motors fulfill the highest standards in terms of dynamic response, speed control range, shaft and flange accuracy. They are equipped with state-of-the-art encoder technology and optimized for operation with our fully digital drive and control systems.

Natural cooling, forced ventilation or water cooling are available as cooling methods. For natural cooling, heat is dissipated through the surface of the motor, while for forced ventilation, heat is dissipated using mounted fans. Maximum cooling, and thus maximum power can be achieved using water cooling.

Configuration

You can find the Configuration Manual for SIMOTICS S-1FT7 for SINAMICS S120 at:

https://support.industry.siemens.com/cs/ww/en/view/109482538

Characteristic curves

Characteristics for the SIMOTICS motors are available via selectors through to the exact article number with the Siemens Product Configurator.

The Siemens Product Configurator can be accessed without having to register or log in:

www.siemens.com/spc

→ SIMOTICS S-1FT7 in the SPC

Dimensional drawings

Dimensional drawings for SIMOTICS motors are provided in the Siemens Product Configurator.

The Siemens Product Configurator can be accessed without having to register or log in:

www.siemens.com/spc

→ SIMOTICS S-1FT7 in the SPC

Benefits

- Excellent dynamic response over a wide speed range thanks to high overload capability ~ 4 × M_0 with natural cooling
- Wide speed control range
- High degree of ruggedness with respect to vibration and shock loads thanks to vibration-isolated encoder mounting
- High degree of protection – permits operation even under challenging ambient conditions
- Quick and easy mounting due to cross-profile (up to SH 100) and rotatable connectors with quick-release locks
- Zero-backlash holding brake
- Extremely high efficiency

SIMOTICS S-1FT7 Compact motors

S-1FT7 Compact motors have a low torque ripple so that they are ideal for use in machine tool applications that require extremely high surface quality and optimum machining results. Their compact dimensions permit mounting in areas where space is restricted.

SIMOTICS S-1FT7 High Dynamic motors

S-1FT7 High Dynamic motors have very low rotor moments of inertia to achieve extremely good dynamic response and very short cycle times. The motors are available with forced ventilation or water cooling as cooling methods and have high continuous output ratings as a result.

Application

- High performance machine tools
- Machines with high requirements regarding dynamic response and precision, e.g.:
  - Packaging machines
  - Foil drawing systems
  - Printing machines
  - Handling equipment

More information

Some SIMOTICS S-1FT7 Compact motors are available as core types. These core types can be express-delivered as replacement motors in the event of plant outages and offer the advantage of a quicker spare parts supply. This is the reason that core types should be used whenever possible when configuring.

The selection and ordering data for SINAMICS S120 Motor Modules are based on the booksize format by way of example. Other formats are also possible. The SIZER engineering tool is available in the TIA Selection Tool for detailed configuration.

More information and download:

www.siemens.com/tst

Technical specifications

General technical specifications

SIMOTICS S-1FT7 Compact/S-1FT7 High Dynamic	
Motor type	Permanent-magnet synchronous motor
Cooling	Natural cooling, forced ventilation, water cooling
Temperature monitoring	Temperature sensor in the stator winding
Type of construction according to EN 60034-7 (IEC 60034-7)	IM B5 (IM V1, IM V3)
Degree of protection according to EN 60034-5 (IEC 60034-5)	IP64, optional IP65, optional IP67
Shaft end according to DIN 748-3 (IEC 60072-1)	Plain shaft, optional feather key and keyway (half-key balancing)
Shaft and flange accuracy according to DIN 42955 (IEC 60072-1)	Tolerance N optional tolerance R in each case for radial eccentricity of the shaft end, concentricity of the centering ring, and axial eccentricity of the mounting flange to the axis of the shaft end
Vibration severity grade according to EN 60034-14 (IEC 60034-14)	Grade A, optional, Grade R is maintained up to the rated speed
Sound pressure level L_{pA} (1 m), max. according to EN ISO 1680 tolerance + 3 dB(A)	
Natural cooling/water cooling	
1FT703 ... 1FT706	65 dB(A)
1FT708 ... 1FT713	70 dB(A)
Forced ventilation	
1FT708 ... 1FT713	73 dB(A)
Connection	Connectors for signals and power, rotatable
Color of the paint finish	Pearl dark grey, similar to RAL 9023
Holding brake	optional integrated holding brake
Certificate of suitability	cURus, CE, EAC, CEL
Encoder system with DRIVE-CLiQ	
AS24DQI	Absolute encoder single-turn, 24-bit
AM24DQI	Absolute encoder 24-bit + 12-bit multi-turn
Encoder system without DRIVE-CLiQ	
IC2048S/R	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks
AM2048S/R	Absolute encoder 2048 S/R, 4096 revolutions multi-turn

S/R = signals/revolution

Options

Order code	Description
J..	Mounting SP+ planetary gearbox (See SIMOTICS geared motors)
K20	Reinforced bearing (information about validity and specifications can be found in the latest Configuration Manual)
L03	Version for increased vibration stress (information about validity and specification can be found in the latest Configuration Manual)
N05	Alternative shaft geometry
N16	Version for increased chemical resistance
N40	Stainless steel shaft and coating for increased chemical resistance (information about validity and specification can be found in the latest Configuration Manual)
Q12	Sealing air connection (Only in conjunction with IP67 degree of protection. Not in conjunction with terminal box.)
Q13	Customer-specific additional seal, encoder flange, An encoder cannot be replaced in the field (information regarding the validity and specification in the current Configuration Manual)
Y84	Customer specifications on rating plate (max. 30 characters) [1]
	Paint finish
K23	Special paint finish for "Worldwide" climate group: Primer and paint finish in pearl dark grey, similar to RAL 9023
K23+X..	Special paint finish for "Worldwide" climate group: Primer and paint finish can be selected from X01 to X09
K24	Primer (unpainted)
X01	Paint finish jet black, matt RAL 9005
X02	Paint finish cream white RAL 9001
X03	Paint finish reseda green RAL 6011
X04	Paint finish pebble gray RAL 7032
X05	Paint finish sky blue RAL 5015
X06	Paint finish light ivory RAL 1015
X08	Paint finish white aluminum
X09	Paint finish anthracite, similar to RAL 7016

The paint finish in standard and special colors meets the requirements for environmental conditions of climate class 3K4 according to IEC 60721-3-3 with the exception of the influencing variables "low air temperature", "condensation" and "low air pressure".

-Z must be added to the article number to order a motor with options.

[1] Additional plain text required.

Options

N05
Alternative shaft geometry

The following versions are delivered for shaft ends with smaller dimensions:

- 1FT7034-5A.71-.... /1FT7042-5A.71-....
- 1FT7062-5A.71-.... /1FT7064-5A.71-....
- 1FT7082-5A.71-.... /1FT7084-5A.71-.... /1FT7086-5A.71-....
- 1FT7102-5A.71-.... /1FT7105-5A.71-.... /1FT7108-5A.71-....

Shaft dimensions (diameter × length) according to shaft height (SH):

- SH 36: 11 × 23 mm (0.43 × 0.91 in)
- SH 48: 14 × 30 mm (0.55 × 1.18 in)
- SH 63: 19 × 40 mm (0.75 × 1.57 in)
- SH 80: 24 × 50 mm (0.94 × 1.97 in)
- SH 100: 32 × 58 mm (1.26 × 2.28 in)

N16
Version for increased chemical resistance

Additional information is provided in the current Configuration Manual.

Option N16 is available only for naturally cooled and water-cooled SIMOTICS S-1FT7 motors with the following encoders:

- Encoder AS24DQI (DRIVE-CLiQ absolute encoder 24 bit single-turn)
- Encoder AM24DQI (DRIVE-CLiQ absolute encoder 24 bit + 12 bit multi-turn)
- Encoder AM2048S/R (absolute encoder 2048 S/R, 4096 revolutions multi-turn, with EnDat interface)

Option N16 is only available for motors with rotatable connector (connector sizes 1 and 1.5).

Option N16 is not available for SIMOTICS S-1FT7 motors SH 132.

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	**SIMOTICS S-1FT7 synchronous motors Compact**	Number of pole pairs	Moment of inertia Rotor (without brake)	Weight (without brake)
n_N	SH	P_N at ΔT=100 K	M_0 at ΔT=100 K	M_N at ΔT=100 K	I_N at ΔT=100 K	Core type	p	J	m
r/min		kW (hp)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Article No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
SIMOTICS S-1FT7 Compact for DC link voltages 510 ... 720 V DC – natural cooling									
2000	100	5.03 (6.75)	30 (22.1)	24 (17.7)	10	**1FT7102-1AC7■-1 ■ ■ 1**	5	91.4 (80.9)	26.1 (57.6)
		7.96 (10.67)	50 (36.9)	38 (28.0)	15	**1FT7105-1AC7■-1 ■ ■ 1**	5	178 (158)	44.2 (97.5)
3000	48	1.35 (1.81)	5 (3.69)	4.3 (3.2)	2.6	**1FT7044-1AF7■-1 ■ ■ 1**	3	5.43 (4.81)	7.2 (15.9)
	63	1.7 (2.3)	6 (4.43)	5.4 (4.0)	3.9	**1FT7062-1AF7■-1 ■ ■ 1**	5	7.36 (6.51)	7.1 (15.7)
		2.39 (3.20)	9 (6.64)	7.6 (5.6)	5.2	**1FT7064-1AF7■-1 ■ ■ 1**	5	11.9 (10.5)	9.7 (21.4)
	80	3.24 (4.34)	13 (9.59)	10.3 (7.6)	6.6	**1FT7082-1AF7■-1 ■ ■ 1**	5	26.5 (23.5)	14 (30.9)
		4.56 (6.11)	20 (14.8)	14.5 (10.7)	8.5	**1FT7084-1AF7■-1 ■ ■ 1**	5	45.1 (39.9)	20.8 (45.9)
		5.65 (7.58)	28 (20.7)	18 (13.3)	11	**1FT7086-1AF7■-1 ■ ■ 1**	5	63.6 (56.3)	27.5 (60.6)
4500	80	4.82 (3.56) [1]	20 (14.8)	11.5 (8.48) [1]	10.1 [1]	**1FT7084-1AH7■-1 ■ ■ 1**	5	45.1 (39.9)	20.8 (45.9)
		4.71 (6.32)	28 (20.7)	10 (7.38)	10	**1FT7086-1AH7■-1 ■ ■ 1**	5	63.6 (56.3)	27.5 (60.6)
6000	36	0.88 (1.18)	2 (1.48)	1.4 (1.0)	2.1	**1FT7034-1AK7■-1 ■ ■ 1**	3	0.85 (0.75)	3.8 (8.4)
	63	2.13 (1.57) [2]	6 (4.43)	3.7 (2.73) [2]	5.9 [2]	**1FT7062-1AK7■-1 ■ ■ 1**	5	7.36 (6.51)	7.1 (15.7)
		2.59 (1.91) [3]	9 (6.64)	5.5 (4.06) [3]	6.1 [3]	**1FT7064-1AK7■-1 ■ ■ 1**	5	11.9 (10.5)	9.7 (21.4)

With DRIVE-CLiQ interface:					
	Flange:	Classic (compatible with 1FT6/1FK7)		1	
		Recessed (more compact)		0	
	Encoder:	AS24DQI encoder	RJ45 signal port		B
			M17 signal port		K
		AM24DQI encoder	RJ45 signal port		C
			M17 signal port		L
Without DRIVE-CLiQ interface:					
	Flange:	Classic (compatible with 1FT6/1FK7)		4	
		Recessed (more compact)		5	
	Encoder:	IC2048S/R encoder	M23 signal port		N
		AM2048S/R encoder	M23 signal port		M
Shaft end:		**Shaft and flange accuracy:**	**Holding brake:**		
Plain shaft		Tolerance N	Without		G
Plain shaft		Tolerance N	With		H
Vibration severities:		**Degree of protection:**			
Grade A		IP65			1

For footnotes, see next page.

Motor type (repeated)	Effi-ciency [4]	Stall current	Calculated power [8]	SINAMICS S120 Motor Module		Power cable with complete shield		
				Rated output current [5]	**Booksize format** Internal air cooling For further components, see SINAMICS S120 drive system	Motor connection (and brake connection) via power connector		
	η	I_0 at M_0 ΔT=100 K	P_{calc} at M_0 ΔT=100 K	I_N		Power connec-tors	Cable cross-section [6]	Pre-assembled cable
	%	A	kW (hp)	A	Article No.	Size	mm^2	Article No.
1FT7102-1AC7...	93	12.5	6.28 (8.42)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■N26-....**
1FT7105-1AC7...	93	18	10.47 (14.04)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7044-1AF7...	92	2.8	1.57 (2.11)	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7062-1AF7...	91	3.9	1.88 (2.52)	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7064-1AF7...	93	5.7	2.83 (3.80)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7082-1AF7...	93	7.6	4.08 (5.47)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7084-1AF7...	93	11	6.28 (8.42)	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7086-1AF7...	93	15.5	8.8 (11.8)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7084-1AH7...	93	15.6	9.42 (12.63)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7086-1AH7...	91	24	13.19 (17.69)	24	**6SL3120-1 TE22-4AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7034-1AK7...	90	2.7	1.26 (1.69)	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7062-1AK7...	90	8.4	3.77 (5.06)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7064-1AK7...	91	9	5.65 (7.58)	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 800PLUS **8**
MOTION-CONNECT 500 **5**

Without brake cores **C**
With brake cores [7] **D**

Length code **....**

For more information about cables, see MOTION-CONNECT connection systems

8 1

1) These values refer to n = 4000 r/min.
2) These values refer to n = 5500 r/min.
3) These values refer to n = 4500 r/min.
4) Optimum efficiency in continuous duty.
5) With default setting of the pulse frequency.
6) The current-carrying capacity of the power cables complies with EN 60204-1 for installation type C, under continuous operating conditions at an ambient air temperature of 40 °C (104 °F).
7) Cable cross-section for brake connection 2 × 1.5 mm^2.
8)

$$P_{calc}[kW] = \frac{M_0[Nm] \times n_N}{9550} \qquad P_{calc}[hp] = \frac{M_0[lb_f\text{-}ft] \times n_N}{5250}$$

SIMOTICS S-1FT7 Compact – natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 synchronous motors Compact	Number of pole pairs	Moment of inertia Rotor (without brake)	Weight (without brake)
n_N	SH	P_N at ΔT=100 K	M_0 at ΔT=100 K	M_N at ΔT=100 K	I_N at ΔT=100 K		p	J	m
r/min		kW (hp)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Article No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
SIMOTICS S-1FT7 Compact for DC link voltages 510 ... 720 V DC – natural cooling									
1500	100	4.08 (5.47)	30 (22.1)	26 (19.2)	8	**1FT7102-5AB7■-1 ■ ■ ■**	5	91.4 (80.9)	26.1 (57.6)
		6.6 (8.9)	50 (36.9)	42 (31.0)	13	**1FT7105-5AB7■-1 ■ ■ ■**	5	178 (158)	44.2 (97.5)
		9.58 (12.85)	70 (51.6)	61 (45.0)	16	**1FT7108-5AB7■-1 ■ ■ ■**	5	248 (220)	59 (130)
	132	10.52 (14.11)	90 (66.4)	67 (49.4)	17.4	**1FT7132-5AB7■-1 ■ ■ ■**	4	459 (406)	76 (168)
		12.88 (17.27)	118 (87.0)	82 (60.5)	22.0	**1FT7134-5AB7■-1 ■ ■ ■**	4	604 (535)	92 (203)
		14.45 (19.38)	140 (103)	92 (67.9)	25.0	**1FT7136-5AB7■-1 ■ ■ ■**	4	748 (662)	108 (238)
		16.96 (22.74)	170 (125)	108 (79.7)	28.5	**1FT7138-5AB7■-■ ■ ■ ■**	4	896 (793)	124 (273)
2000	80	2.39 (3.20)	13 (9.59)	11.4 (8.4)	4.9	**1FT7082-5AC7■-1 ■ ■ ■**	5	26.5 (23.5)	14 (30.9)
		3.54 (4.75)	20 (14.8)	16.9 (12.5)	8.4	**1FT7084-5AC7■-1 ■ ■ ■**	5	45.1 (39.9)	20.8 (45.9)
		4.71 (6.32)	28 (20.7)	22.5 (16.6)	9.2	**1FT7086-5AC7■-1 ■ ■ ■**	5	63.6 (56.3)	27.5 (60.6)
	100	5.03 (6.75)	30 (22.1)	24 (17.7)	10	**1FT7102-5AC7■-1 ■ ■ ■**	5	91.4 (80.9)	26.1 (57.6)
		7.96 (10.67)	50 (36.9)	38 (28.0)	15	**1FT7105-5AC7■-1 ■ ■ ■**	5	178 (158)	44.2 (97.5)
		10.5 (14.1)	70 (51.6)	50 (36.9)	18	**1FT7108-5AC7■-1 ■ ■ ■**	5	248 (220)	59 (130)
	132	11.52 (15.45)	90 (66.4)	55 (40.6)	18.7	**1FT7132-5AC7■-1 ■ ■ ■**	4	459 (406)	76 (168)
		13.82 (18.53) [5]	118 (87.0)	66 (48.7) [5]	21 [5]	**1FT7134-5AC7■-1 ■ ■ ■**	4	604 (535)	92 (203)
		14.87 (19.94) [5]	140 (103)	71 (52.4) [5]	23.0 [5]	**1FT7136-5AC7■-■ ■ ■ ■**	4	748 (662)	109 (240)

With DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7)		1 0
	Recessed (more compact) [7]		
Encoder:	AS24DQI encoder	RJ45 signal port	B
		M17 signal port	K
	AM24DQI encoder	RJ45 signal port	C
		M17 signal port	L

Without DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7)		4 5
	Recessed (more compact) [7]		
Encoder:	IC2048S/R encoder	M23 signal port	N
	AM2048S/R encoder	M23 signal port	M

Connector outlet direction:	Connector sizes 1 and 1.5	Rotatable connector	1
	Connector size 3 [1]	Transverse right	1
		Transverse left	2
		Axial NDE	3
		Axial DE	4
Terminal box/ cable entry: [1]	Top/transverse from right		5
	Top/transverse from left		6
	Top/axial from NDE		7
	Top/axial from DE		8

Shaft end:	**Shaft and flange accuracy:**	**Holding brake:**	
Feather key and keyway	Tolerance N	Without	A
Feather key and keyway	Tolerance N	With	B
Feather key and keyway	Tolerance R	Without	D
Feather key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration severity:	**Degree of protection:**	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67	2
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67	5

For footnotes, see next page.

Motor type (repeated)	Efficiency [2]	Stall current	Calculated power [8]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current [3]	**Booksize format** Internal air cooling For further components, see SINAMICS S120 drive system	Power connectors	Cable cross-section [4]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} at M_0 ΔT=100 K	I_N				
	%	A	kW (hp)	A	Article No.	Size	mm^2	Article No.
1FT7102-5AB7...	93	9	4.71 (6.32)	9	**6SL3120-■TE21-0AD0**	1.5	4 × 1.5	**6FX■002-5■N26-....**
1FT7105-5AB7...	93	15	7.85 (10.53)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■N26-....**
1FT7108-5AB7...	93	18	10.99 (14.74)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7132-5AB7...	94	22.5	14.14 (18.96)	24	**6SL3120-1TE22-4AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7134-5AB7...	95	30.0	18.53 (24.85)	30	**6SL3120-1TE23-0AD0**	1.5	4 × 6	**6FX■002-5■N54-....**
1FT7136-5AB7...	94	36.0	21.99 (29.49)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 6	**6FX■002-5■N54-....**
1FT7138-5AB7...	94	43.0	26.7 (35.8)	45	**6SL3120-1TE24-5AC0**	3	4 × 10	**6FX■002-5■S14-....**
1FT7082-5AC7...	93	5	2.72 (3.65)	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7084-5AC7...	93	9	4.19 (5.62)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7086-5AC7...	93	10.6	5.86 (7.86)	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7102-5AC7...	93	12.5	6.28 (8.42)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■N26-....**
1FT7105-5AC7...	93	18	10.47 (14.04)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7108-5AC7...	93	25	14.66 (19.66)	30	**6SL3120-1TE23-0AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7132-5AC7...	94	29.5	18.85 (25.28)	30	**6SL3120-1TE23-0AD0**	1.5	4 × 6	**6FX■002-5■N56-....**
1FT7134-5AC7...	95	36.0	24.71 (33.14)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 6	**6FX■002-5■N54-....**
1FT7136-5AC7...	94	43.0	29.32 (39.32)	45	**6SL3120-1TE24-5AC0**	3	4 × 10	**6FX■002-5■S14-....**

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

Power cable:	
MOTION-CONNECT 800PLUS	**8**
MOTION-CONNECT 500	**5**
Without brake cores	**C**
With brake cores [6]	**D**
Length code	**....**

For more information about cables, see MOTION-CONNECT connection systems

1) Connector size 3 not rotatable. An alternative terminal box can be selected for connector size 3 only.

2) Optimum efficiency in continuous duty.

3) With default setting of the pulse frequency.

4) The current-carrying capacity of the power cables complies with EN 60204-1 for installation type C, under continuous operating conditions at an ambient air temperature of 40 °C (104 °F).

5) Rated data are applicable with a DC link voltage of 600 to 720 V DC.

6) Cable cross-section for brake connection 2 × 1.5 mm^2.

7) Only up to SH 100.

8) $$P_{calc}[kW] = \frac{M_0[Nm] \times n_N}{9550} \qquad P_{calc}[hp] = \frac{M_0[lb_f\text{-}ft] \times n_N}{5250}$$

SIMOTICS S-1FT7 Compact – natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 synchronous motors Compact	Number of pole pairs	Moment of inertia Rotor (without brake)	Weight (without brake)
n_N	SH	P_N at ΔT=100 K	M_0 at ΔT=100 K	M_N at ΔT=100 K	I_N at ΔT=100 K		p	J	m
r/min		kW (hp)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Article No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
SIMOTICS S-1FT7 Compact for DC link voltages 510 ... 720 V DC – natural cooling									
3000	48	0.85 (1.14)	3 (2.21)	2.7 (2.0)	2.1	**1FT7042-5AF7■-1 ■ ■ ■**	3	2.81 (2.49)	4.6 (10.1)
		1.35 (1.81)	5 (3.69)	4.3 (3.2)	2.6	**1FT7044-5AF7■-1 ■ ■ ■**	3	5.43 (4.81)	7.2 (15.9)
		1.76 (2.36)	7 (5.16)	5.6 (4.1)	3.5	**1FT7046-5AF7■-1 ■ ■ ■**	3	7.52 (6.66)	9.3 (20.5)
	63	1.7 (2.3)	6 (4.43)	5.4 (4.0)	3.9	**1FT7062-5AF7■-1 ■ ■ ■**	5	7.36 (6.51)	7.1 (15.7)
		2.39 (3.20)	9 (6.64)	7.6 (5.6)	5.2	**1FT7064-5AF7■-1 ■ ■ ■**	5	11.9 (10.5)	9.7 (21.4)
		2.92 (3.92)	12 (8.85)	9.3 (6.9)	7.2	**1FT7066-5AF7■-1 ■ ■ ■**	5	16.4 (14.5)	12.3 (27.1)
		3.42 (4.59)	15 (11.1)	10.9 (8.0)	6.7	**1FT7068-5AF7■-1 ■ ■ ■**	5	23.2 (20.5)	16.3 (35.9)
	80	3.24 (4.34)	13 (9.59)	10.3 (7.6)	6.6	**1FT7082-5AF7■-1 ■ ■ ■**	5	26.5 (23.5)	14 (30.9)
		4.55 (6.10)	20 (14.8)	14.5 (10.7)	8.5	**1FT7084-5AF7■-1 ■ ■ ■**	5	45.1 (39.9)	20.8 (45.9)
		5.65 (7.58)	28 (20.7)	18 (13.3)	11	**1FT7086-5AF7■-1 ■ ■ ■**	5	63.6 (56.3)	27.5 (60.6)
	100	6.28 (8.42)	30 (22.1)	20 (14.8)	12	**1FT7102-5AF7■-1 ■ ■ ■**	5	91.4 (80.9)	26.1 (57.6)
		8.8 (11.8)	50 (36.9)	28 (20.7)	15	**1FT7105-5AF7■-1 ■ ■ ■**	5	178 (158)	44.2 (97.5)
		6.28 (8.42)	70 (51.6)	20 (14.8)	12	**1FT7108-5AF7■-1 ■ ■ ■**	5	248 (220)	59 (130)
	132	8.48 (11.37)	90 (66.4)	27 (19.9)	14	**1FT7132-5AF7■-■ ■ ■ ■**	4	459 (406)	77 (170)

With DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7) Recessed (more compact) [6]		**1 0**
Encoder:	AS24DQI encoder	RJ45 signal port M17 signal port	**B K** **C L**
	AM24DQI encoder	RJ45 signal port M17 signal port	**C L**

Without DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7) Recessed (more compact) [6]		**4 5**
Encoder:	IC2048S/R encoder AM2048S/R encoder	M23 signal port M23 signal port	**N M**

Connector outlet direction:	Connector sizes 1 and 1.5 Rotatable connector	**1**
	Connector size 3 [1] Transverse right	**1**
	Transverse left	**2**
	Axial NDE	**3**
	Axial DE	**4**
Terminal box/ cable entry: [1]	Top/transverse from right	**5**
	Top/transverse from left	**6**
	Top/axial from NDE	**7**
	Top/axial from DE	**8**

Shaft end:	**Shaft and flange accuracy:**	**Holding brake:**	
Feather key and keyway	Tolerance N	Without	**A**
Feather key and keyway	Tolerance N	With	**B**
Feather key and keyway	Tolerance R	Without	**D**
Feather key and keyway	Tolerance R	With	**E**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**
Plain shaft	Tolerance R	Without	**K**
Plain shaft	Tolerance R	With	**L**

Vibration severity:	**Degree of protection:**	
Grade A	IP64	**0**
Grade A	IP65	**1**
Grade A	IP67	**2**
Grade R	IP64	**3**
Grade R	IP65	**4**
Grade R	IP67	**5**

For footnotes, see next page.

Motor type (repeated)	Effi-ciency [2]	Stall current	Calculated power [7]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current [3]	**Booksize format** Internal air cooling For further components, see SINAMICS S120 drive system	Power connec-tors	Cable cross-section [4]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} at M_0 ΔT=100 K	I_N				
	%	A	kW (hp)	A	Article No.	Size	mm^2	Article No.
1FT7042-5AF7...	92	2.1	0.94 (1.26)	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7044-5AF7...	92	2.8	1.57 (2.11)	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7046-5AF7...	92	4	2.2 (3.0)	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7062-5AF7...	91	3.9	1.88 (2.52)	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7064-5AF7...	93	5.7	2.83 (3.80)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7066-5AF7...	92	8.4	3.77 (5.06)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7068-5AF7...	92	8.3	4.71 (6.32)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7082-5AF7...	93	7.6	4.08 (5.47)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7084-5AF7...	93	11	6.28 (8.42)	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7086-5AF7...	93	15.5	8.8 (11.8)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7102-5AF7...	93	18	9.42 (12.63)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7105-5AF7...	94	26	15.71 (21.07)	30	**6SL3120-1 TE23-0AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7108-5AF7...	93	36	21.99 (29.49)	45	**6SL3120-1 TE24-5AC0**	1.5	4 × 6	**6FX■002-5■N54-....**
1FT7132-5AF7...	94	43.5	28.27 (37.91)	45	**6SL3120-1 TE24-5AC0**	3	4 × 10	**6FX■002-5■S14-....**

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

Power cable:
MOTION-CONNECT 800PLUS **8**
MOTION-CONNECT 500 **5**

Without brake cores **C**
With brake cores [5] **D**

Length code **....**

For more information about cables, see MOTION-CONNECT connection systems

8 1

1) Connector size 3 not rotatable. An alternative terminal box can be selected for connector size 3 only.
2) Optimum efficiency in continuous duty.
3) With default setting of the pulse frequency.
4) The current-carrying capacity of the power cables complies with EN 60204-1 for installation type C, under continuous operating conditions at an ambient air temperature of 40 °C (104 °F).
5) Cable cross-section for brake connection 2 × 1.5 mm^2.
6) Only up to SH 100.
7) $P_{calc}[kW] = \frac{M_0[Nm] \times n_N}{9550}$ $P_{calc}[hp] = \frac{M_0[lb_f\text{-}ft] \times n_N}{5250}$

SIMOTICS S-1FT7 Compact – natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 synchronous motors Compact	Number of pole pairs	Moment of inertia Rotor (without brake)	Weight (without brake)
n_N	SH	P_N at ΔT=100 K	M_0 at ΔT=100 K	M_N at ΔT=100 K	I_N at ΔT=100 K		p	J	m
r/min		kW (hp)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Article No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
SIMOTICS S-1FT7 Compact for DC link voltages 510 ... 720 V DC – natural cooling									
4500	48	1.32 (1.77) [1]	7 (5.16)	3.6 (2.66) [1]	4.7 [1]	**1FT7046-5AH7■-1 ■■■**	3	7.52 (6.66)	9.3 (20.5)
	63	2.55 (3.42) [2]	12 (8.85)	6.1 (4.50)[2]	7.5 [2]	**1FT7066-5AH7■-1 ■■■**	5	16.4 (14.5)	12.3 (27.1)
	80	3.77 (5.06)	13 (9.59)	8 (5.90)	7.8	**1FT7082-5AH7■-1 ■■■**	5	26.5 (23.5)	14 (30.9)
		4.82 (6.46) [2]	20 (14.8)	11.5 (8.48) [2]	10.1 [2]	**1FT7084-5AH7■-1 ■■■**	5	45.1 (39.9)	20.8 (45.9)
		4.71 (6.32)	28 (20.7)	10 (7.38)	10	**1FT7086-5AH7■-1 ■■■**	5	63.6 (56.3)	27.5 (60.6)
6000	36	0.88 (1.18)	2 (1.48)	1.4 (1.0)	2.1	**1FT7034-5AK7■-1 ■■■**	3	0.85 (0.75)	3.8 (8.4)
		1.07 (1.43)	3 (2.21)	1.7 (1.3)	2.4	**1FT7036-5AK7■-1 ■■■**	3	1.33 (1.18)	5.0 (11.0)
	48	1.26 (1.69)	3 (2.21)	2 (1.48)	3	**1FT7042-5AK7■-1 ■■■**	3	2.81 (2.49)	4.6 (10.1)
		1.41 (1.89) [3]	5 (3.69)	3 (2.21) [3]	3.6 [3]	**1FT7044-5AK7■-1 ■■■**	3	5.43 (4.81)	7.2 (15.9)
	63	2.13 (2.86) [4]	6 (4.43)	3.7 (2.73) [4]	5.9 [4]	**1FT7062-5AK7■-1 ■■■**	5	7.36 (6.51)	7.1 (15.7)
		2.59 (3.47)[3]	9 (6.64)	5.5 (4.06) [3]	6.1 [3]	**1FT7064-5AK7■-1 ■■■**	5	11.9 (10.5)	9.7 (21.4)

With DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7)		1
	Recessed (more compact)		0
Encoder:	AS24DQI encoder	RJ45 signal port	B
		M17 signal port	K
	AM24DQI encoder	RJ45 signal port	C
		M17 signal port	L

Without DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7)		4
	Recessed (more compact)		5
Encoder:	IC2048S/R encoder	M23 signal port	N
	AM2048S/R encoder	M23 signal port	M

Shaft end:	Shaft and flange accuracy:	Holding brake:	
Feather key and keyway	Tolerance N	Without	A
Feather key and keyway	Tolerance N	With	B
Feather key and keyway	Tolerance R	Without	D
Feather key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration severity:	Degree of protection:	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67	2
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67	5

For footnotes, see next page.

Motor type (repeated)	Effi-ciency [5]	Stall current	Calculated power [9]	**SINAMICS S120 Motor Module**		**Power cable with complete shield** Motor connection (and brake connection) via power connector		
				Rated output current [6]	**Booksize format** Internal air cooling For further components, see SINAMICS S120 drive system			
	η	I_0 at M_0 ΔT=100 K	P_{calc} at M_0 ΔT=100 K	I_N		Power connec-tors	Cable cross-section [7]	Pre-assembled cable
	%	A	kW (hp)	A	Article No.	Size	mm^2	Article No.
1FT7046-5AH7...	90	8.1	3.3 (4.4)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7066-5AH7...	90	13.6	5.65 (7.58)	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7082-5AH7...	93	12.3	6.13 (8.22)	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7084-5AH7...	93	15.6	9.42 (12.63)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7086-5AH7...	91	22.4	13.19 (17.69)	24	**6SL3120-1TE22-4AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7034-5AK7...	90	2.7	1.26 (1.69)	3	**6SL3120-■TE13-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7036-5AK7...	90	4.0	1.88 (2.52)	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7042-5AK7...	91	3.9	1.88 (2.52)	5	**6SL3120-■TE15-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7044-5AK7...	91	5.7	3.14 (4.21)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7062-5AK7...	90	8.4	3.77 (5.06)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7064-5AK7...	91	9	5.65 (7.58)	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 800PLUS	**8**
MOTION-CONNECT 500	**5**
Without brake cores	**C**
With brake cores [7] [8]	**D**
Length code	**....**

For more information about cables, see MOTION-CONNECT connection systems

1) These values refer to n = 3500 r/min.
2) These values refer to n = 4000 r/min.
3) These values refer to n = 4500 r/min.
4) These values refer to n = 5500 r/min.
5) Optimum efficiency in continuous duty.
6) With default setting of the pulse frequency.
7) The current-carrying capacity of the power cables complies with EN 60204-1 for installation type C, under continuous operating conditions at an ambient air temperature of 40 °C (104 °F).
8) Cable cross-section for brake connection 2 × 1.5 mm^2.
9) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_N}{9550}$ $\quad P_{calc}\,[hp] = \frac{M_0\,[lb_f\text{-}ft] \times n_N}{5250}$

SIMOTICS S-1FT7 Compact – forced ventilation

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	**SIMOTICS S-1FT7 synchronous motors Compact**	Number of pole pairs	Moment of inertia Rotor (without brake)	Weight (without brake)
n_N	SH	P_N at ΔT=100 K	M_0 at ΔT=100 K	M_N at ΔT=100 K	I_N at ΔT=100 K		p	J	m
r/min		kW (hp)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Article No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
SIMOTICS S-1FT7 Compact for DC link voltage 510 ... 720 V DC – forced ventilation									
1500	132	20.5 (27.5)	140 (103)	132 (97.4)	45	**1FT7132-5SB7■-■ ■ ■ ■**	4	459 (406)	81 (179)
		31.4 (42.1)	235 (173)	200 (148)	60	**1FT7136-5SB7■-■ ■ ■ ■**	4	748 (662)	113 (249)
		39 (52.3)	280 (207)	250 (184)	79	**1FT7138-5SB7■-■ ■ ■ ■**	4	896 (793)	129 (284)
2000	80	5.0 (6.7)	27 (19.9)	24 (17.7)	13.5	**1FT7084-5SC7■-1 ■ ■ ■**	5	45 (39.8)	25 (55.1)
		6.7 (9.0)	36 (26.6)	32 (23.6)	17	**1FT7086-5SC7■-1 ■ ■ ■**	5	64 (56.6)	36 (79.4)
	100	11.7 (15.7)	65 (47.9)	56 (41.3)	29	**1FT7105-5SC7■-1 ■ ■ ■**	5	178 (158)	50 (110)
		15.3 (20.5)	91 (67.1)	73 (53.8)	33	**1FT7108-5SC7■-1 ■ ■ ■**	5	248 (220)	64 (141)
	132	26.5 (35.5)	140 (103)	126 (92.9)	55	**1FT7132-5SC7■-■ ■ ■ ■**	4	459 (406)	81 (179)
		33.5 (44.9)	190 (140)	160 (118)	73	**1FT7134-5SC7■-■ ■ ■ ■**	4	604 (535)	97 (214)
		39.8 (53.4)	235 (173)	190 (140)	81	**1FT7136-5SC7■-■ ■ ■ ■**	4	748 (662)	113 (249)
3000	80	7.2 (9.7)	27 (19.9)	23 (17.0)	18.5	**1FT7084-5SF7■-1 ■ ■ ■**	5	45 (39.8)	25 (55.1)
		9.1 (12.2)	36 (26.6)	29 (21.4)	24	**1FT7086-5SF7■-1 ■ ■ ■**	5	64 (56.6)	36 (79.4)
	100	15.1 (20.2)	65 (47.9)	48 (35.4)	35	**1FT7105-5SF7■-■ ■ ■ ■**	5	178 (158)	50 (110)
		18.8 (25.2)	91 (67.1)	60 (44.3)	38	**1FT7108-5SF7■-■ ■ ■ ■**	5	248 (220)	64 (141)
	132	35.5 (47.6)	140 (103)	113 (83.3)	69	**1FT7132-5SF7■-■ ■ ■ ■**	4	459 (406)	81 (179)
		45.5 (61.0)	190 (140)	145 (107)	91	**1FT7134-5SF7■-■ ■ ■ ■**	4	604 (535)	97 (214)
4500	80	9.9 (13.3)	27 (19.9)	21 (15.5)	24.5	**1FT7084-5SH7■-1 ■ ■ ■**	5	45 (39.8)	25 (55.1)
		11.8 (15.8)	36 (26.6)	25 (18.4)	25	**1FT7086-5SH7■-1 ■ ■ ■**	5	64 (56.6)	36 (79.4)

With DRIVE-CLiQ interface:				
	Flange:	Classic (compatible with 1FT6/1FK7)	1	
		Recessed (more compact)	0	
	Encoder:	AS24DQI encoder	RJ45 signal port	B
		AM24DQI encoder	RJ45 signal port	C
Without DRIVE-CLiQ interface:				
	Flange:	Classic (compatible with 1FT6/1FK7)	4	
		Recessed (more compact)	5	
	Encoder:	IC2048S/R encoder	M23 signal port	N
		AM2048S/R encoder	M23 signal port	M

Connector outlet direction:	Connector sizes 1 and 1.5	Rotatable connector	1
	Connector size 3 [1]	Transverse right	1
		Transverse left	2
		Axial NDE	3
		Axial DE	4
Terminal box/ cable entry: [1]	Top/transverse from right		5
	Top/transverse from left		6
	Top/axial from NDE		7
	Top/axial from DE		8

Shaft end:	**Shaft and flange accuracy:**	**Holding brake:** [8]	
Feather key	Tolerance N	Without	A
Feather key	Tolerance N	With	B
Feather key	Tolerance R	Without	D
Feather key	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration severity:	**Degree of protection:** [2]	
Grade A	IP64	0
Grade A	IP65	1
Grade R	IP64	3
Grade R	IP65	4

For footnotes, see next page.

Motor type (repeated)	Effi-ciency [3]	Stall current	Calculated power [9]	**SINAMICS S120 Motor Module**		**Power cable with complete shield** Motor connection (and brake connection) via power connector		
				Rated output current [4]	**Booksize format** Internal air cooling For further components, see SINAMICS S120 drive system	Power connec-tors	Cable cross-section [5]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} at M_0 ΔT=100 K	I_N		Size	mm^2	
	%	A	kW (hp)	A	Article No.			Article No.
1FT7132-5SB7...	94	48	22 (29.5)	45	**6SL3120-1TE24-5AC0**	3	4 × 10	**6FX■0■2-5DS17-....**
1FT7136-5SB7...	95	70	36.9 (49.5)	85	**6SL3120-1TE28-5AA3**	3	4 × 25	**6FX■002-5DG33-....**
1FT7138-5SB7...	95	85	44 (59.0)	85	**6SL3120-1TE28-5AA3**	3	4 × 35	**6FX■002-5DG53-....**
1FT7084-5SC7...	93	15	5.7 (7.6)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■N26-....**
1FT7086-5SC7...	93	19.5	7.5 (10.1)	24	**6SL3120-1TE22-4AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7105-5SC7...	93	31	13.6 (18.2)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 6	**6FX■002-5■N54-....**
1FT7108-5SC7...	93	39	19.1 (25.6)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 10	**6FX■002-5■N64-....**
1FT7132-5SC7...	95	60	29.3 (39.3)	60	**6SL3120-1TE26-0AC0**	3	4 × 16	**6FX■002-5DS23-....**
1FT7134-5SC7...	95	85	39.8 (53.4)	85	**6SL3120-1TE28-5AA3**	3	4 × 35	**6FX■002-5DG53-....**
1FT7136-5SC7...	95	98	49.2 (66.0)	132	**6SL3120-1TE31-3AA3**	b. w. [7]	4 × 35	**6FX5002-5CR73-....**
1FT7084-5SF7...	94	21	8.5 (11.4)	24	**6SL3120-1TE22-4AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7086-5SF7...	93	29	11.3 (15.2)	30	**6SL3120-1TE23-0AD0**	1.5	4 × 6	**6FX■002-5■N56-....**
1FT7105-5SF7...	94	45	20.4 (27.4)	45	**6SL3120-1TE24-5AC0**	3	4 × 10	**6FX■002-5■S14-....**
1FT7108-5SF7...	94	57	28.6 (38.4)	60	**6SL3120-1TE26-0AC0**	3	4 × 16	**6FX■002-5■S23-....**
1FT7132-5SF7...	95	85	44 (59.0)	85	**6SL3120-1TE28-5AA3**	3	4 × 35	**6FX■002-5DG53-....**
1FT7134-5SF7...	96	115	59.7 (80.1)	132	**6SL3120-1TE31-3AA3**	b. w. [7]	4 ×50	**6FX5002-5CR83-....**
1FT7084-5SH7...	94	30.5	12.7 (17.0)	30	**6SL3120-1TE23-0AD0**	1.5	4 × 6	**6FX■002-5■N56-....**
1FT7086-5SH7...	93	34	17.0 (22.8)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 6	**6FX■002-5■N54-....**

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

Power cable:	
MOTION-CONNECT 800PLUS MOTION-CONNECT 500	**8** **5**
Without brake cores With brake cores [6] [8]	**C** **D**
Length code	**....**

For more information about cables, see MOTION-CONNECT connection systems

1) Connector size 3 not rotatable. An alternative terminal box can be selected for connector size 3 only. 1FT7136-5SC7.-.... and 1FT7134-5SF7.-.... only with terminal box.

2) The degree of protection refers to the motor. The built-in fan has degree of protection IP54/IP55 (shaft height 132).

3) Optimum efficiency in continuous duty.

4) With default setting of the pulse frequency.

5) The current-carrying capacity of the power cables complies with EN 60204-1 for installation type C, under continuous operating conditions at an ambient air temperature of 40 °C (104 °F).

6) Cable cross-section for brake connection 2 × 1.5 mm^2.

7) b. w. bare wire ends. Only in conjunction with terminal boxes.

8) Holding brake not for 1FT7138-5SB7.-....

9) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_N}{9550}$ $\quad P_{calc}\,[hp] = \frac{M_0\,[lb_f\text{-}ft] \times n_N}{5250}$

SIMOTICS S-1FT7 Compact – water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	**SIMOTICS S-1FT7 synchronous motors Compact**	Number of pole pairs	Moment of inertia Rotor (without brake)	Weight (without brake)
n_N	SH	P_N at ΔT=100 K	M_0 at ΔT=100 K	M_N at ΔT=100 K	I_N at ΔT=100 K		p	J	m
r/min		kW (hp)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Article No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
SIMOTICS S-1FT7 Compact for DC link voltage 510 ... 720 V DC – water cooling									
1500	100	7.9 (10.6)	50 (36.9)	50 (36.9)	20.3	**1FT7102-5WB7■-1 ■ ■ ■**	5	98.9 (87.5)	36.6 (80.7)
		14.1 (18.9)	90 (66.4)	90 (66.4)	29.5	**1FT7105-5WB7■-1 ■ ■ ■**	5	191 (169)	54.8 (120.8)
		19.6 (26.3)	125 (92.2)	125 (92.2)	40.3	**1FT7108-5WB7■-1 ■ ■ ■**	5	265 (235)	68.6 (151.3)
2000	80	4.4 (5.9)	21 (15.5)	21 (15.5)	11	**1FT7082-5WC7■-1 ■ ■ ■**	5	28.9 (25.6)	20.7 (45.6)
		7.33 (9.83)	35 (25.8)	35 (25.8)	17	**1FT7084-5WC7■-1 ■ ■ ■**	5	48.3 (42.8)	27.5 (60.6)
		10.5 (14.1)	50 (36.9)	50 (36.9)	24	**1FT7086-5WC7■-1 ■ ■ ■**	5	67.8 (60.0)	34.1 (75.2)
	100	10.4 (13.9)	50 (36.9)	49.5 (36.5)	29.3	**1FT7102-5WC7■-1 ■ ■ ■**	5	98.9 (87.5)	36.6 (80.7)
		18.8 (25.2)	90 (66.4)	90 (66.4)	40.8	**1FT7105-5WC7■-1 ■ ■ ■**	5	191 (169)	54.8 (120.8)
		26.2 (35.1)	125 (92.2)	125 (92.2)	47.5	**1FT7108-5WC7■-■ ■ ■**	5	265 (235)	69.6 (153.5)

With DRIVE-CLiQ interface:				
	Flange:	Classic (compatible with 1FT6/1FK7)	1	
		Recessed (more compact)	0	
	Encoder:	AS24DQI encoder	RJ45 signal port	B
			M17 signal port	K
		AM24DQI encoder	RJ45 signal port	C
			M17 signal port	L
Without DRIVE-CLiQ interface:				
	Flange:	Classic (compatible with 1FT6/1FK7)	4	
		Recessed (more compact)	5	
	Encoder:	IC2048S/R encoder	M23 signal port	N
		AM2048S/R encoder	M23 signal port	M
Connector outlet direction:		Connector sizes 1 and 1.5	Rotatable connector	1
		Connector size 3 [1]	Transverse right	1
			Transverse left	2
			Axial NDE	3
			Axial DE	4
Terminal box/ cable entry: [1]		Top/transverse from right		5
		Top/transverse from left		6
		Top/axial from NDE		7
		Top/axial from DE		8

Shaft end:	**Shaft and flange accuracy:**	**Holding brake:**	
Feather key and keyway	Tolerance N	Without	A
Feather key and keyway	Tolerance N	With	B
Feather key and keyway	Tolerance R	Without	D
Feather key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration severity:	**Degree of protection:**	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67	2
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67	5

For footnotes, see next page.

Motor type (repeated)	Effi-ciency [2]	Stall current	Calculated power [6]	**SINAMICS S120 Motor Module**		**Power cable with complete shield** Motor connection (and brake connection) via power connector		
				Rated output current [3]	**Booksize format** Internal air cooling For further components, see SINAMICS S120 drive system	Power connec-tors	Cable cross-section [4]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} at M_0 ΔT=100 K	I_N				
	%	A	kW (hp)	A	Article No.	Size	mm^2	Article No.
1FT7102-5WB7...	93	17.8	7.9 (10.6)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7105-5WB7...	94	28	14.1 (18.9)	30	**6SL3120-1TE23-0AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7108-5WB7...	94	39	19.6 (26.3)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 10	**6FX■002-5■N64-....**
1FT7082-5WC7...	93	10.7	4.4 (5.9)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■N26-....**
1FT7084-5WC7...	94	16.5	7.3 (9.8)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7086-5WC7...	94	23	10.5 (14.1)	24	**6SL3120-1TE22-4AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7102-5WC7...	94	25.5	10.5 (14.1)	30	**6SL3120-1TE23-0AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7105-5WC7...	94	39	18.8 (25.2)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 10	**6FX■002-5■N64-....**
1FT7108-5WC7...	95	45.3	26.2 (35.1)	45	**6SL3120-1TE24-5AC0**	3	4 × 10	**6FX■002-5■S14-....**

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

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

For more information about cables, see MOTION-CONNECT connection systems

[1] Connector size 3 not rotatable. An alternative terminal box can be selected for connector size 3 only.

[2] Optimum efficiency in continuous duty.

[3] With default setting of the pulse frequency.

[4] The current-carrying capacity of the power cables complies with EN 60204-1 for installation type C, under continuous operating conditions at an ambient air temperature of 40 °C (104 °F).

[5] Cable cross-section for brake connection 2 × 1.5 mm^2.

[6] $$P_{calc}[kW] = \frac{M_0[Nm] \times n_N}{9550} \qquad P_{calc}[hp] = \frac{M_0[lb_f\text{-}ft] \times n_N}{5250}$$

SIMOTICS S-1FT7 Compact – water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 synchronous motors Compact	Number of pole pairs	Moment of inertia Rotor (without brake)	Weight (without brake)
n_N	SH	P_N at ΔT=100 K	M_0 at ΔT=100 K	M_N at ΔT=100 K	I_N at ΔT=100 K		p	J	m
r/min		kW (hp)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Article No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
SIMOTICS S-1FT7 Compact for DC link voltage 510 ... 720 V DC – water cooling									
3000	63	3.1 (4.2)	10 (7.38)	10 (7.38)	7.8	**1FT7062-5WF7■-1 ■ ■ ■**	5	8.1 (7.2)	11 (24.3)
		5 (6.71)	16 (11.8)	16 (11.8)	12.5	**1FT7064-5WF7■-1 ■ ■ ■**	5	12.9 (11.4)	13.7 (30.2)
		6.2 (8.3)	20 (14.8)	19.6 (14.5)	14.4	**1FT7066-5WF7■-1 ■ ■ ■**	5	17.7 (15.7)	16.3 (35.9)
		9.3 (12.5)	30 (22.1)	29.5 (21.8)	19.6	**1FT7068-5WF7■-1 ■ ■ ■**	5	24.8 (22.0)	20.1 (44.3)
	80	6.4 (8.6)	21 (15.5)	20.5 (15.1)	16	**1FT7082-5WF7■-1 ■ ■ ■**	5	28.9 (25.6)	20.7 (45.6)
		11 (14.8)	35 (25.8)	35 (25.8)	24.2	**1FT7084-5WF7■-1 ■ ■ ■**	5	48.3 (42.8)	27.5 (60.6)
		15.4 (20.7)	50 (36.9)	49 (36.1)	36	**1FT7086-5WF7■-1 ■ ■ ■**	5	67.8 (60.0)	34.1 (75.2)
	100	14.3 (19.2)	50 (36.9)	45.5 (33.6)	38.8	**1FT7102-5WF7■-1 ■ ■ ■**	5	98.9 (87.5)	36.6 (80.7)
		24.8 (33.3)	90 (66.4)	79 (58.3)	49.5	**1FT7105-5WF7■-■ ■ ■ ■**	5	164 (145)	55.9 (123.3)
		34.2 (45.9)	125 (92.2)	109 (80.4)	60	**1FT7108-5WF7■-■ ■ ■ ■**	5	265 (235)	69.6 (153.5)
4500	63	9.1 (12.2)	20 (14.8)	19.4 (14.3)	20.8	**1FT7066-5WH7■-1 ■ ■ ■**	5	17.7 (15.7)	16.3 (35.9)
	80	8.95 (12.00)	21 (15.5)	19 (14.0)	23.9	**1FT7082-5WH7■-1 ■ ■ ■**	5	28.9 (25.6)	20.7 (45.6)
		15.08 (20.22)	35 (25.8)	32 (23.6)	34.5	**1FT7084-5WH7■-1 ■ ■ ■**	5	48.3 (42.8)	27.5 (60.6)
		20.3 (27.2)	50 (36.9)	43 (31.7)	38	**1FT7086-5WH7■-1 ■ ■ ■**	5	67.8 (60.0)	34.1 (75.2)
6000	63	5.8 (7.8)	10 (7.38)	9.2 (6.8)	12.7	**1FT7062-5WK7■-1 ■ ■ ■**	5	8.1 (7.2)	11 (24.3)
		8.9 (11.9)	16 (11.8)	14.2 (10.5)	20	**1FT7064-5WK7■-1 ■ ■ ■**	5	12.9 (11.4)	13.7 (30.2)

With DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7) Recessed (more compact)		1 0
Encoder:	AS24DQI encoder	RJ45 signal port M17 signal port	B K
	AM24DQI encoder	RJ45 signal port M17 signal port	C L

Without DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7) Recessed (more compact)		4 5
Encoder:	IC2048S/R encoder AM2048S/R encoder	M23 signal port M23 signal port	N M

Connector outlet direction:	Connector sizes 1 and 1.5	Rotatable connector	1
	Connector size 3 [1]	Transverse right	1
		Transverse left	2
		Axial NDE	3
		Axial DE	4
Terminal box/ cable entry: [1]	Top/transverse from right		5
	Top/transverse from left		6
	Top/axial from NDE		7
	Top/axial from DE		8

Shaft end:	**Shaft and flange accuracy:**	**Holding brake:**	
Feather key and keyway	Tolerance N	Without	A
Feather key and keyway	Tolerance N	With	B
Feather key and keyway	Tolerance R	Without	D
Feather key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration severity:	**Degree of protection:**	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67	2
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67	5

For footnotes, see next page.

Motor type (repeated)	Efficiency [2]	Stall current	Calculated power [7]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current [3]	**Booksize format** Internal air cooling For further components, see SINAMICS S120 drive system			
	η	I_0 at M_0 ΔT=100 K	P_{calc} at M_0 ΔT=100 K	I_N		Power connectors	Cable cross-section [4]	Pre-assembled cable
	%	A	kW (hp)	A	Article No.	Size	mm²	Article No.
1FT7062-5WF7...	91	7.4	3.1 (4.2)	9	**6SL3120-■TE21-0AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7064-5WF7...	91	11.9	5.0 (6.7)	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7066-5WF7...	91	14	6.3 (8.4)	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7068-5WF7...	93	19	9.4 (12.6)	18 [5]	**6SL3120-■TE21-8AD0**	1	4 × 2.5	**6FX■002-5■N16-....**
1FT7082-5WF7...	94	16	6.6 (8.9)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■N36-....**
1FT7084-5WF7...	94	24	11.0 (14.8)	24	**6SL3120-1TE22-4AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7086-5WF7...	94	34	15.7 (21.1)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 6	**6FX■002-5■N54-....**
1FT7102-5WF7...	95	40	15.7 (21.1)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 10	**6FX■002-5■N64-....**
1FT7105-5WF7...	94	53.2	28.3 (38.0)	60	**6SL3120-1TE26-0AC0**	3	4 × 16	**6FX■002-5■S23-....**
1FT7108-5WF7...	95	65	39.3 (52.7)	85	**6SL3120-1TE28-5AA3**	3	4 × 16	**6FX■002-5■G23-....**
1FT7066-5WH7...	91	19.7	9.4 (12.6)	24	**6SL3120-1TE22-4AD0**	1	4 × 2.5	**6FX■002-5■N16-....**
1FT7082-5WH7...	94	24	9.9 (13.3)	24	**6SL3120-1TE22-4AD0**	1.5	4 × 4	**6FX■002-5■N46-....**
1FT7084-5WH7...	94	34.3	16.5 (22.1)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 6	**6FX■002-5■N54-....**
1FT7086-5WH7...	94	40.5	23.6 (31.6)	45	**6SL3120-1TE24-5AC0**	1.5	4 × 10	**6FX■002-5■N64-....**
1FT7062-5WK7...	92	12.5	6.3 (8.4)	18	**6SL3120-■TE21-8AD0**	1	4 × 1.5	**6FX■002-5■N06-....**
1FT7064-5WK7...	92	20.2	10.1 (13.5)	24	**6SL3120-1TE22-4AD0**	1	4 × 2.5	**6FX■002-5■N16-....**

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

Power cable:
MOTION-CONNECT 800PLUS **8**
MOTION-CONNECT 500 **5**

Without brake cores **C**
With brake cores [6] **D**

Length code ....

For more information about cables, see MOTION-CONNECT connection systems

8 1

1) Connector size 3 is not rotatable. An alternative terminal box can be selected for connector size 3 only.

2) Optimum efficiency in continuous duty.

3) With default setting of the pulse frequency.

4) The current-carrying capacity of the power cables complies with EN 60204-1 for installation type C, under continuous operating conditions at an ambient air temperature of 40 °C (104 °F).

5) With the specified Motor Module, the motor cannot be fully utilized at M_0 with a winding temperature rise of ΔT = 100 K. If a Motor Module with a higher rating is used, you must carefully check whether the specified power cable can be connected to the larger Motor Module.

6) Cable cross-section for brake connection 2 × 1.5 mm².

7) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_N}{9550}$ $\quad P_{calc}\,[hp] = \frac{M_0\,[lb_f\text{-}ft] \times n_N}{5250}$

SIMOTICS S-1FT7 High Dynamic – forced ventilation/water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 synchronous motors High Dynamic	Number of pole pairs	Moment of inertia Rotor (without brake)	Weight (without brake)
n_N	SH	P_N at ΔT=100 K	M_0 at ΔT=100 K	M_N at ΔT=100 K	I_N at ΔT=100 K		p	J	m
r/min		kW (hp)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Article No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
SIMOTICS S-1FT7 High Dynamic for DC link voltage 510 ... 720 V DC – forced ventilation									
3000	63	3.8 (5.1)	14 (10.3)	12 (8.85)	10.5	**1FT7065-7SF7■-1 ■ ■ ■**	5	6.4 (5.7)	19 (41.9)
		4.4 (5.9)	17 (12.5)	14 (10.3)	13	**1FT7067-7SF7■-1 ■ ■ ■**	5	8.3 (7.3)	23 (50.7)
	80	7.2 (9.7)	34 (25.1)	23 (17.0)	20	**1FT7085-7SF7■-1 ■ ■ ■**	5	20.7 (18.3)	34 (75.0)
		10.4 (13.9)	48 (35.4)	33 (24.3)	29	**1FT7087-7SF7■-1 ■ ■ ■**	5	27.4 (24.3)	42 (92.6)
4500	63	5.2 (7.0)	14 (10.3)	11 (8.11)	13.5	**1FT7065-7SH7■-1 ■ ■ ■**	5	6.4 (5.7)	19 (41.9)
		6.1 (8.2)	17 (12.5)	13 (9.59)	15	**1FT7067-7SH7■-1 ■ ■ ■**	5	8.3 (7.3)	23 (50.7)
	80	8.2 (11.0)	34 (25.1)	17.5 (12.9)	22.5	**1FT7085-7SH7■-1 ■ ■ ■**	5	20.7 (18.3)	34 (75.0)
		10.8 (14.5)	48 (35.4)	23 (17.0)	24	**1FT7087-7SH7■-■ ■ ■ ■**	5	27.4 (24.3)	43 (94.8)
SIMOTICS S-1FT7 High Dynamic for DC link voltage 510 ... 720 V DC – water cooling									
3000	63	5.7 (7.6)	19 (14.0)	18 (13.3)	15	**1FT7065-7WF7■-1 ■ ■ ■**	5	6.4 (5.7)	16 (35.3)
		7.4 (9.9)	25 (18.4)	23.5 (17.3)	21	**1FT7067-7WF7■-1 ■ ■ ■**	5	8.3 (7.3)	22 (48.5)
	80	11.9 (16.0)	43 (31.7)	38 (28.0)	32	**1FT7085-7WF7■-1 ■ ■ ■**	5	20.7 (18.3)	32 (70.6)
		16.0 (21.5)	61 (45.0)	51 (37.6)	43	**1FT7087-7WF7■-■ ■ ■ ■**	5	27.4 (24.3)	41 (90.4)
4500	63	7.8 (10.5)	19 (14.0)	16.5 (12.2)	20	**1FT7065-7WH7■-1 ■ ■ ■**	5	6.4 (5.7)	16 (35.3)
		10.4 (13.9)	25 (18.4)	22 (16.2)	25	**1FT7067-7WH7■-1 ■ ■ ■**	5	8.3 (7.3)	22 (48.5)
	80	15.6 (20.9)	43 (31.7)	33 (24.3)	48	**1FT7085-7WH7■-■ ■ ■ ■**	5	20.7 (18.3)	32 (70.6)
		21.7 (29.1)	61 (45.0)	46 (33.9)	53	**1FT7087-7WH7■-■ ■ ■ ■**	5	27.4 (24.3)	41 (90.4)

With DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7) Recessed (more compact)		1 0
Encoder:	AS24DQI encoder	RJ45 signal port M17 signal port (only for water cooling)	B K
	AM24DQI encoder	RJ45 signal port M17 signal port (only for water cooling)	C L

Without DRIVE-CLiQ interface:

Flange:	Classic (compatible with 1FT6/1FK7) Recessed (more compact)		4 5
Encoder:	IC2048S/R encoder AM2048S/R encoder	M23 signal port M23 signal port	N M

Connector outlet direction:

Connector sizes 1 and 1.5	Rotatable connector	1
Connector size 3 [1]	Transverse right	1
	Transverse left	2
	Axial NDE	3
	Axial DE	4

Terminal box/ cable entry: [1]

Top/transverse from right	5
Top/transverse from left	6
Top/axial from NDE	7
Top/axial from DE	8

Shaft end:	Shaft and flange accuracy:	Holding brake:	
Feather key and keyway	Tolerance N	Without	A
Feather key and keyway	Tolerance N	With	B
Feather key and keyway	Tolerance R	Without	D
Feather key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration severity:	Degree of protection:	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67 (only for water cooling)	2
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67 (only for water cooling)	5

For footnotes, see next page.

Motor type (repeated)	Efficiency [2]	Stall current	Calculated power [6]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current [3]	**Booksize format** Internal air cooling For further components, see SINAMICS S120 drive system	Power connectors	Cable cross-section [4]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} at M_0 ΔT=100 K	I_N				
	%	A	kW (hp)	A	Article No.	Size	mm²	Article No.
1FT7065-7SF7...	92	12	4.4 (5.9)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■ N26-....**
1FT7067-7SF7...	94	15	5.3 (7.1)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 1.5	**6FX■002-5■ N26-....**
1FT7085-7SF7...	92	28	10.7 (14.3)	30	**6SL3120-1 TE23-0AD0**	1.5	4 × 4	**6FX■002-5■ N46-....**
1FT7087-7SF7...	93	40	15.1 (20.2)	45	**6SL3120-1 TE24-5AC0**	1.5	4 × 10	**6FX■002-5■ N64-....**
1FT7065-7SH7...	92	16	6.6 (8.9)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■ N36-....**
1FT7067-7SH7...	94	19	8.0 (10.7)	24	**6SL3120-1 TE22-4AD0**	1.5	4 × 2.5	**6FX■002-5■ N36-....**
1FT7085-7SH7...	92	40	16.0 (21.5)	45	**6SL3120-1 TE24-5AC0**	1.5	4 × 10	**6FX■002-5■ N64-....**
1FT7087-7SH7...	93	45	22.6 (30.3)	45	**6SL3120-1 TE24-5AC0**	3	4 × 10	**6FX■002-5■ S14-....**
1FT7065-7WF7...	92	16	6.0 (8.0)	18	**6SL3120-■TE21-8AD0**	1.5	4 × 2.5	**6FX■002-5■ N36-....**
1FT7067-7WF7...	94	22	7.9 (10.6)	24	**6SL3120-1 TE22-4AD0**	1.5	4 × 4	**6FX■002-5■ N46-....**
1FT7085-7WF7...	93	36	13.5 (18.1)	45	**6SL3120-1 TE24-5AC0**	1.5	4 × 6	**6FX■002-5■ N54-....**
1FT7087-7WF7...	94	51	19.2 (25.7)	60	**6SL3120-1 TE26-0AC0**	3	4 × 16	**6FX■002-5■ S23-....**
1FT7065-7WH7...	92	22	9.0 (12.1)	24	**6SL3120-1 TE22-4AD0**	1.5	4 × 4	**6FX■002-5■ N46-....**
1FT7067-7WH7...	94	28	11.8 (15.8)	30	**6SL3120-1 TE23-0AD0**	1.5	4 × 4	**6FX■002-5■ N46-....**
1FT7085-7WH7...	94	58	20.3 (27.2)	60	**6SL3120-1 TE26-0AC0**	3	4 × 16	**6FX■002-5■ S23-....**
1FT7087-7WH7...	94	67	28.7 (38.5)	85	**6SL3120-1 TE28-5AA3**	3	4 × 25	**6FX■002-5DG33-....**

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

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

For more information about cables, see MOTION-CONNECT connection systems

[1] Connector size 3 is not rotatable. An alternative terminal box can be selected for connector size 3 only.

[2] Optimum efficiency in continuous duty.

[3] With default setting of the pulse frequency.

[4] The current-carrying capacity of the power cables complies with EN 60204-1 for installation type C, under continuous operating conditions at an ambient air temperature of 40 °C (104 °F).

[5] Cable cross-section for brake connection 2 × 1.5 mm².

[6] $P_{calc}[kW] = \frac{M_0[Nm] \times n_N}{9550}$ $P_{calc}[hp] = \frac{M_0[lb_f\text{-}ft] \times n_N}{5250}$

Built-in holding brakes for SIMOTICS S-1FT7 motors

Overview

Many drives require a holding brake with an EMERGENCY STOP function for safety-related reasons or to comply with process requirements.

The permanent magnet brakes used for SIMOTICS S-1FT7 motors function according to the closed-circuit principle. The magnetic field of the permanent magnet pulls on the brake armature disk, i.e. in a condition of zero current, the brake is closed and the motor shaft is held. When the rated voltage of 24 V DC ± 10 % is applied to the brake, current flows through the coil and produces a counter-field that cancels the pull of the permanent magnet, causing the brake to release.

In the event of an emergency stop or voltage failure, approximately 2000 braking operations can be performed with the maximum operating energy without causing excessive wear on the holding brake (condition: maximum external moment of inertia = moment of inertia of motor and n_{max} type-specific).

The holding brake is not an operational or safety brake.

To avoid switching overvoltages and any related impact on the system environment, a varistor must be externally connected to brake connecting cables. The connection is established using a power connector or terminal box.

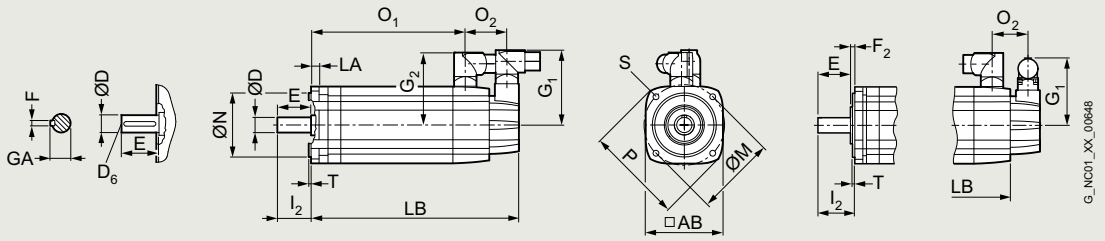
When connected to the SINAMICS S120 drive system, this overvoltage protection is already provided.

Technical specifications

Motor		Built-in holding brake					
Shaft height SH	Type	Holding torque [1]	DC current	Opening time with varistor	Closing time with varistor	Moment of inertia	Maximum operating energy per braking operation from n = 3000 r/min
		Nm (lb_f-ft)	A	ms	ms	10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	J
SIMOTICS S-1FT7 with permanent magnet brake, zero-backlash							
36	1FT703	3 (2.21)	0.3	60	25	0.12 (0.11)	30
48	1FT704	8 (5.90)	0.6	90	30	0.87 (0.77)	270
63	1FT706	18 (13.3)	0.8	150	50	2.84 (2.51)	880
80	1FT708	48 (35.4)	1.0	220	65	15.4 (13.6)	1900
100	1FT710	85 (62.7)	1.6	250	70	27.6 (24.4)	5300
132	1FT713	140 (103)	1.8	350	70	51.0 (45.1)	9800

[1] The holding torque is the highest permissible torque with which the closed brake can be loaded in steady-state operation without slip (holding function when the motor is stationary).

Dimensional drawings

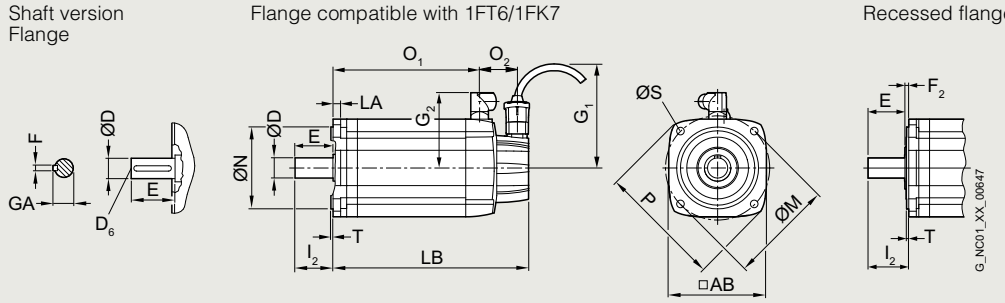


For motor			Dimensions in mm (inches)								Signal connector		Connector size		Shaft end DE				
											M17	M23	Size 1	Size 1.5					
Shaft height	Type	IEC	P	N	LA	M	AB	T	O_2	S	G_1	G_1	G_2	G_2	**D**	D_6	E	GA	F
SIMOTICS S-1FT7 natural cooling, with connector, without/with brake																			
36	1FT703.-5A		90 (3.54)	60 (2.36)	8 (0.31)	75 (2.95)	72 (2.83)	3 (0.12)	48 (1.89)	6.5 (0.26)	66 (2.60)	77 (3.03)	80 (3.15)	–	**14 (0.55)**	M5	30 (1.18)	16 (0.63)	5 (0.20)
48	1FT704.-5A		120 (4.72)	80 (3.15)	10 (0.39)	100 (3.94)	96 (3.78)	3 (0.12)	53 (2.09)	6.5 (0.26)	82 (3.23)	93 (3.66)	90 (3.54)	–	**19 (0.75)**	M6	40 (1.57)	21.5 (0.85)	6 (0.24)
63	1FT706.-5A		155 (6.10)	110 (4.33)	10 (0.39)	130 (5.12)	126 (4.96)	3.5 (0.14)	53 (2.09)	9 (0.35)	82 (3.23)	93 (3.66)	104 (4.09)	–	**24 (0.94)**	M8	50 (1.97)	27 (1.06)	8 (0.31)
80	1FT708.-5A		195 (7.68)	130 (5.12)	11.5 (0.45)	165 (6.50)	155 (6.10)	3.5 (0.14)	51 (2.01)	11 (0.43)	82 (3.23)	93 (3.66)	119 (4.69)	140 (5.51)	**32 (1.26)**	M12	58 (2.28)	35 (1.38)	10 (0.39)
100	1FT710.-5A		245 (9.65)	180 (7.09)	13 (0.51)	215 (8.46)	196 (7.72)	4 (0.16)	56 (2.20)	14 (0.55)	82 (3.23)	93 (3.66)	–	160 (6.30)	**38 (1.50)**	M12	80 (3.15)	41 (1.61)	10 (0.39)

			Recessed flange						Flange compatible with 1FT6/1FK7				
					without brake		with brake			without brake		with brake	
Shaft height	Type	IEC	F_2	I_2	LB	O_1	LB	O_1	I_2	LB	O_1	LB	O_1
36	1FT7034		5.5 (0.22)	36.5 (1.44)	189 (7.44)	127 (5.00)	216 (8.50)	154 (6.06)	30 (1.18)	195 (7.68)	133 (5.24)	222 (8.74)	160 (6.30)
	1FT7036				237 (9.33)	175 (6.89)	264 (10.39)	202 (7.95)		243 (9.57)	181 (7.13)	270 (10.63)	208 (8.19)
48	1FT7042		5.5 (0.22)	46 (1.81)	163 (6.42)	96 (3.78)	195 (7.68)	128 (5.04)	40 (1.57)	169 (6.65)	102 (4.02)	201 (7.91)	134 (5.28)
	1FT7044				213 (8.39)	146 (5.75)	245 (9.65)	178 (7.01)		219 (8.62)	152 (5.98)	251 (9.88)	184 (7.24)
	1FT7046				253 (9.96)	186 (7.32)	285 (11.22)	218 (8.58)		259 (10.20)	192 (7.56)	291 (11.46)	224 (8.82)
63	1FT7062		6 (0.24)	56.5 (2.22)	167 (6.57)	99 (3.90)	202 (7.95)	135 (5.31)	50 (1.97)	173 (6.81)	106 (4.17)	208 (8.19)	141 (5.55)
	1FT7064				198 (7.80)	131 (5.16)	233 (9.17)	166 (6.54)		205 (8.07)	137 (5.39)	240 (9.45)	173 (6.81)
	1FT7066				230 (9.06)	162 (6.38)	265 (10.43)	198 (7.80)		236 (9.29)	169 (6.65)	272 (10.71)	204 (8.03)
	1FT7068				277 (10.91)	210 (8.27)	312 (12.28)	245 (9.65)		284 (11.18)	216 (8.50)	319 (12.56)	252 (9.92)
80	1FT7082		6 (0.24)	64.5 (2.54)	184 (7.24)	124 (4.88)	241 (9.49)	176 (6.93)	58 (2.28)	196 (7.72)	130 (5.12)	248 (9.76)	183 (7.20)
	1FT7084				236 (9.29)	175 (6.89)	293 (11.54)	228 (8.98)		247 (9.72)	182 (7.17)	299 (11.77)	234 (9.21)
	1FT7086				287 (11.30)	227 (8.94)	345 (13.58)	279 (10.98)		299 (11.77)	234 (9.21)	351 (13.82)	286 (11.26)
100	1FT7102		6.5 (0.26)	87 (3.43)	209 (8.23)	144 (5.67)	266 (10.47)	196 (7.72)	80 (3.15)	221 (8.70)	151 (5.94)	273 (10.75)	203 (7.99)
	1FT7105				296 (11.65)	231 (9.09)	353 (13.90)	283 (11.14)		307 (12.09)	238 (9.37)	360 (14.17)	290 (11.42)
	1FT7108				365 (14.37)	300 (11.81)	422 (16.61)	352 (13.86)		377 (14.84)	307 (12.09)	429 (16.89)	359 (14.13)

SIMOTICS S-1FT7 up to SH 100 with RJ45 signal connector (DRIVE-CLiQ) – natural cooling

Dimensional drawings

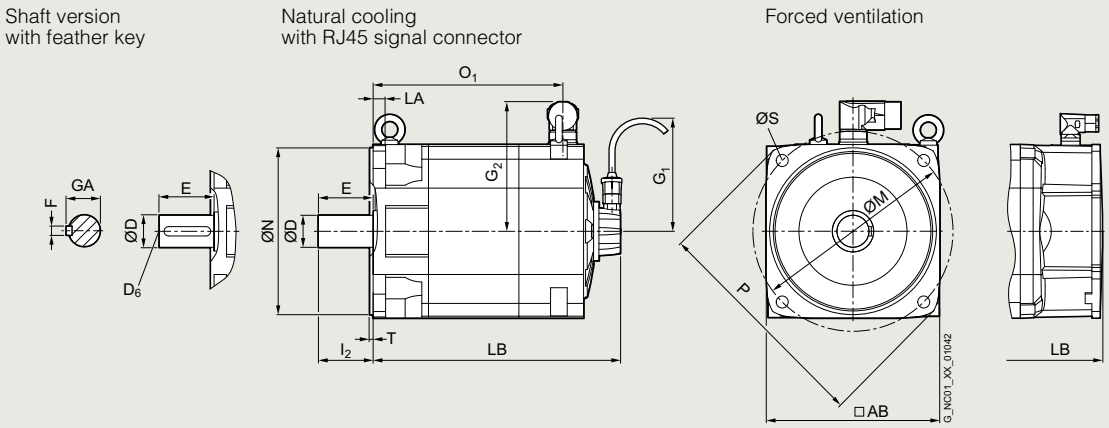


For motor			Dimensions in mm (inches)									Connector size		Shaft end DE				
												Size 1	Size 1.5					
Shaft height	Type	IEC	P	N	LA	M	AB	T	O_2	S	G_1	G_2	G_2	**D**	D_6	E	GA	F
SIMOTICS S-1FT7 natural cooling, with connector, without/with brake																		
36	1FT703.-5A		90 (3.54)	60 (2.36)	8 (0.31)	75 (2.95)	72 (2.83)	3 (0.12)	48 (1.89)	6.5 (0.26)	104.5 (4.11)	80 (3.15)	–	**14 (0.55)**	M5	30 (1.18)	16 (0.63)	5 (0.20)
48	1FT704.-5A		120 (4.72)	80 (3.15)	10 (0.39)	100 (3.94)	96 (3.78)	3 (0.12)	53 (2.09)	6.5 (0.26)	104.5 (4.11)	90 (3.54)	–	**19 (0.75)**	M6	40 (1.57)	21.5 (0.85)	6 (0.24)
63	1FT706.-5A		155 (6.10)	110 (4.33)	10 (0.39)	130 (5.12)	126 (4.96)	3.5 (0.14)	53 (2.09)	9 (0.35)	104.5 (4.11)	104 (4.09)	–	**24 (0.94)**	M8	50 (1.97)	27 (1.06)	8 (0.31)
80	1FT708.-5A		195 (7.68)	130 (5.12)	11.5 (0.45)	165 (6.50)	155 (6.10)	3.5 (0.14)	51 (2.01)	11 (0.43)	104.5 (4.11)	119 (4.69)	140 (5.51)	**32 (1.26)**	M12	58 (2.28)	35 (1.38)	10 (0.39)
100	1FT710.-5A		245 (9.65)	180 (7.09)	13 (0.51)	215 (8.46)	196 (7.72)	4 (0.16)	56 (2.20)	14 (0.55)	104.5 (4.11)	–	160 (6.30)	**38 (1.50)**	M12	80 (3.15)	41 (1.61)	10 (0.39)

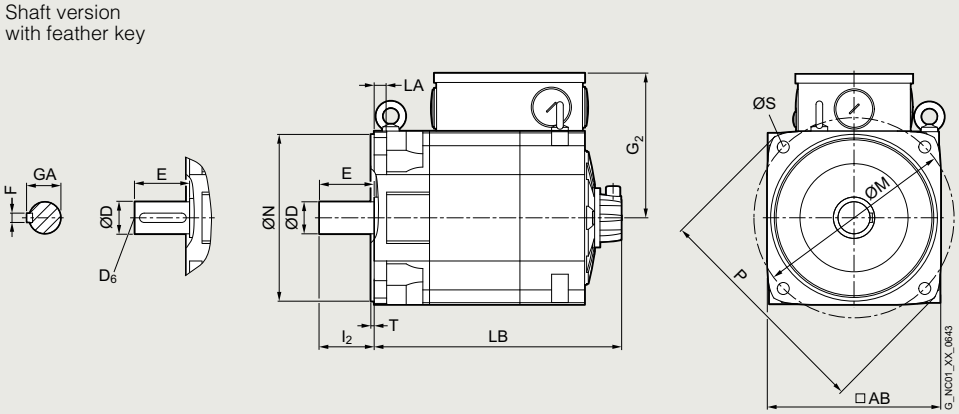
			Recessed flange						Flange compatible with 1FT6/1FK7				
					without brake		with brake			without brake		with brake	
Shaft height	Type	IEC	F_2	I_2	LB	O_1	LB	O_1	I_2	LB	O_1	LB	O_1
36	1FT7034		5.5 (0.22)	36.5 (1.44)	189 (7.44)	127 (5.00)	216 (8.50)	154 (6.06)	30 (1.18)	196 (7.72)	133 (5.24)	223 (8.78)	160 (6.30)
	1FT7036				237 (9.33)	175 (6.89)	264 (10.39)	202 (7.95)		244 (9.61)	181 (7.13)	271 (10.67)	208 (8.19)
48	1FT7042		5.5 (0.22)	46 (1.81)	158 (6.22)	96 (3.78)	190 (7.48)	128 (5.04)	40 (1.57)	164 (6.46)	102 (4.02)	196 (7.72)	134 (5.28)
	1FT7044				208 (8.19)	146 (5.75)	240 (9.45)	178 (7.01)		214 (8.43)	152 (5.98)	246 (9.69)	184 (7.24)
	1FT7046				248 (9.76)	186 (7.32)	280 (11.02)	218 (8.58)		254 (10.00)	192 (7.56)	286 (11.26)	224 (8.82)
63	1FT7062		6 (0.24)	56.5 (2.22)	161 (6.34)	99 (3.90)	197 (7.76)	135 (5.31)	50 (1.97)	168 (6.61)	106 (4.17)	203 (7.99)	141 (5.55)
	1FT7064				193 (7.60)	131 (5.16)	228 (8.98)	166 (6.54)		200 (7.87)	137 (5.39)	235 (9.25)	173 (6.81)
	1FT7066				225 (8.86)	162 (6.38)	260 (10.24)	198 (7.80)		231 (9.09)	169 (6.65)	267 (10.51)	204 (8.03)
	1FT7068				272 (10.71)	210 (8.27)	307 (12.09)	245 (9.65)		279 (10.98)	216 (8.50)	314 (12.36)	252 (9.92)
80	1FT7082		6 (0.24)	64.5 (2.54)	189 (7.44)	124 (4.88)	236 (9.29)	176 (6.93)	58 (2.28)	191 (7.52)	130 (5.12)	243 (9.57)	183 (7.20)
	1FT7084				236 (9.29)	175 (6.89)	288 (11.34)	228 (8.98)		242 (9.53)	182 (7.17)	294 (11.57)	234 (9.21)
	1FT7086				287 (11.30)	227 (8.94)	340 (13.39)	279 (10.98)		294 (11.57)	234 (9.21)	346 (13.62)	286 (11.26)
100	1FT7102		6.5 (0.26)	87 (3.43)	209 (8.23)	144 (5.67)	261 (10.28)	196 (7.72)	80 (3.15)	216 (8.50)	151 (5.94)	268 (10.55)	203 (7.99)
	1FT7105				296 (11.65)	231 (9.09)	348 (13.70)	283 (11.14)		303 (11.93)	238 (9.37)	355 (13.98)	290 (11.42)
	1FT7108				365 (14.37)	300 (11.81)	417 (16.42)	352 (13.86)		372 (14.65)	307 (12.09)	424 (16.69)	359 (14.13)

Dimensional drawings

Version with connector



Version with terminal box

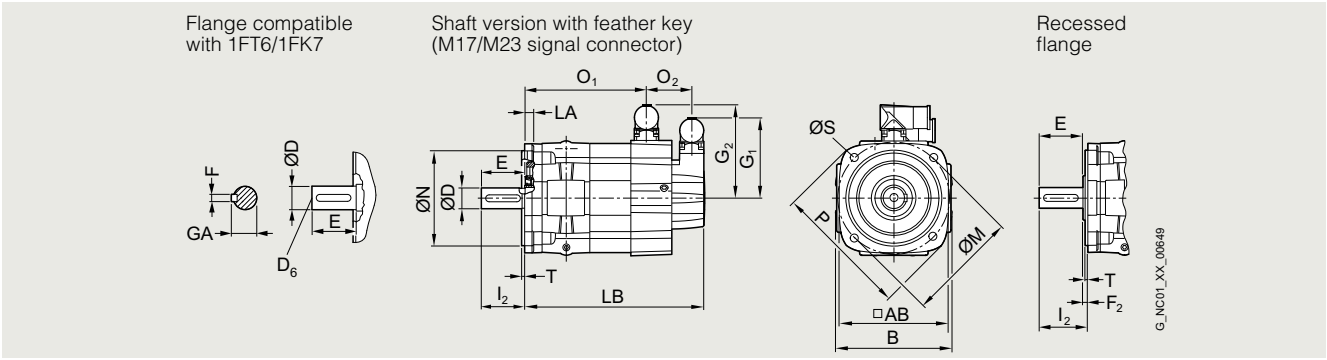


For motor		Dimensions in mm (inches)										Connector size		Terminal box	Shaft end DE				
												Size 1.5	Size 3						
Shaft height	Type	IEC	P	N	LA	M	AB	T	I_2	S		G_2	G_2	G_2	**D**	D_6	E	GA	F
SIMOTICS S-1FT7 natural cooling and forced ventilation, with connector/with terminal box, without/with brake																			
132	1FT713.-5(A/S)		340 (13.39)	250 (9.84)	18 (0.71)	300 (11.81)	260 (10.24)	5 (0.20)	82 (3.23)	18 (0.71)		193.5 (7.62)	203 (7.99)	215.5 (8.48)	**48 (1.89)**	M16	82 (3.23)	51.5 (2.03)	14 (0.55)

			Natural cooling							Forced ventilation		Natural cooling and forced ventilation			
			without brake		with brake					without brake	with brake	without brake		with brake	
			Signal connector									Connector size			
			RJ45	M17 M23	RJ45	M17 M23	RJ45	M17	M23			Size 1.5	Size 3	Size 1.5	Size 3
Shaft height	Type	IEC	LB	LB	LB	LB	G_1	G_1	G_1	LB	LB	O_1	O_1	O_1	O_1
132	1FT7132-5(A/S)		370.5 (14.59)	375.5 (14.78)	431 (16.97)	436 (17.97)	104.5 (4.11)	82 (3.23)	93 (3.65)	483.6 (19.04)	544.1 (21.42)	284.5 (11.20)	265.5 (10.45)	345 (13.58)	326 (12.83)
	1FT7134-5(A/S)		415.5 (16.36)	420.5 (16.56)	476 (18.74)	481 (18.94)				528.6 (20.81)	589.1 (23.19)	329.5 (12.97)	310.5 (12.22)	390 (15.35)	371 (14.61)
	1FT7136-5(A/S)		460.5 (18.13)	465.5 (18.53)	521 (20.51)	526 (20.71)				573.6 (22.58)	634.1 (24.96)	374.5 (14.74)	355.5 (14.00)	435 (17.13)	416 (16.38)
	1FT7138-5(A/S)		500.5 (19.70)	505.5 (19.90)	561 (22.09)	566 (22.28)				613.6 (24.16)	674.1 (26.54)	414.5 (16.32)	395.5 (15.57)	475 (18.70)	456 (17.95)

SIMOTICS S-1FT7 with M17 / M23 signal connector – water cooling

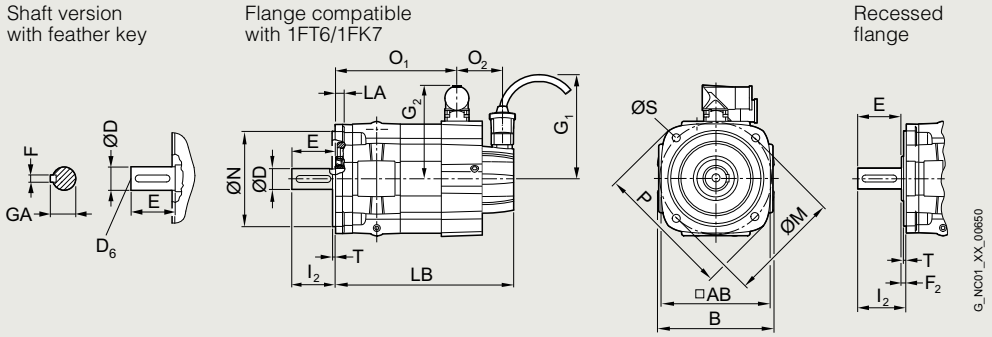
Dimensional drawings



For motor		Dimensions in mm (inches)									Signal connector		Power connectors			Connector		
											M17	M23	Size 1	Size 1.5	Size 3	Size 1	Size 1.5	Size 3
													G_2	G_2	G_2	O_2	O_2	O_2
Shaft height	Type	IEC	P	B	N	LA	M	AB	T	S								
SIMOTICS S-1FT7 water cooling, with connector, without/with brake																		
63	1FT706.-.W		155 (6.10)	135 (5.31)	110 (4.33)	10 (0.39)	130 (5.12)	126 (4.96)	3.5 (0.14)	9 (0.35)	82 (3.23)	93 (3.66)	108 (4.25)	132.5 (5.22)	–	52 (2.05)	57 (2.24)	–
80	1FT708.-.W		194 (7.68)	165 (6.50)	130 (5.12)	11.5 (0.45)	165 (6.50)	155 (6.10)	3.5 (0.14)	11 (0.43)	82 (3.23)	93 (3.66)	–	140.5 (5.53)	168.5. (6.63)	–	50 (1.97)	67 (2.64)
100	1FT710.-5W		245 (9.65)	206 (8.11)	180 (7.09)	13 (0.51)	215 (8.46)	196 (7.72)	4 (0.16)	14 (0.55)	82 (3.23)	93 (3.66)	–	159.5 (6.28)	187.5 (7.38)	–	55 (2.17)	72 (2.83)

			Flange compatible with 1FT6/1FK7 without/with brake					Recessed flange without/with brake						Shaft end DE				
					Power connectors						Power connectors							
					Size 1	Size 1.5	Size 3				Size 1	Size 1.5	Size 3					
Shaft height	Type	IEC	l_2	LB	O_1	O_1	O_1	F_2	l_2	LB	O_1	O_1	O_1	D	D_6	E	GA	F
63	1FT7062		50 (1.97)	208 (8.19)	141 (5.55)	–	–	6 (0.24)	56.5 (2.22)	202 (7.95)	135 (5.31)	–	–	**24 (0.94)**	M8	50 (1.97)	27 (1.06)	8 (0.31)
	1FT7064			240 (9.45)	173 (6.81)	–	–			233 (9.17)	166 (6.54)	–	–					
	1FT7065			292 (11.50)	220 (8.66)	–	–			286 (11.26)	214 (8.43)	–	–					
	1FT7066			272 (10.71)	204 (8.03)	–	–			265 (10.43)	198 (7.80)	–	–					
	1FT7067			332 (13.07)	260 (10.24)	–	–			325 (12.80)	254 (10.00)	–	–					
	1FT7068			319 (12.56)	252 (9.92)	–	–			312 (12.28)	245 (9.65)	–	–					
80	1FT7082		58 (2.28)	248 (9.76)	–	183 (7.20)	–	6 (0.24)	64.5 (2.54)	241 (9.49)	–	176 (6.93)	–	**32 (1.26)**	M12	58 (2.28)	35 (1.38)	10 (0.39)
	1FT7084			299 (11.77)	–	234 (9.21)	–			293 (11.54)	–	228 (8.98)	–					
	1FT7085			319 (12.56)	–	254 (10.00)	237 (9.33)			312.5 (12.30)	–	247 (9.72)	231 (9.09)					
	1FT7086			351 (13.82)	–	286 (11.26)	–			345 (13.58)	–	279 (10.98)	–					
	1FT7087			379 (14.92)	–	314 (12.36)	297 (11.69)			372.5 (14.67)	–	307 (12.09)	291 (11.46)					
100	1FT7102		80 (3.15)	273 (10.75)	–	203 (7.99)	187 (7.36)	6.5 (0.26)	87 (3.43)	266 (10.47)	–	196 (7.72)	180 (7.09)	**38 (1.50)**	M12	80 (3.15)	41 (1.61)	10 (0.39)
	1FT7105			360 (14.17)	–	290 (11.42)	273 (10.75)			353 (13.90)	–	283 (11.14)	266 (10.47)					
	1FT7108			429 (16.89)	–	359 (14.13)	342 (13.46)			422 (16.61)	–	352 (13.86)	335 (13.19)					

Dimensional drawings



For motor			Dimensions in mm (inches)									Signal connector	Power connectors Size 1	Power connectors Size 1.5	Power connectors Size 3	Connector Size 1	Connector Size 1.5	Connector Size 3
Shaft height	Type	IEC	P	B	N	LA	M	AB	T	S		G_1	G_2	G_2	G_2	O_2	O_2	O_2
SIMOTICS S-1FT7 water cooling, with connector, without/with brake																		
63	1FT706.-.W		155 (6.10)	135 (5.31)	110 (4.33)	10 (0.39)	130 (5.12)	126 (4.96)	3.5 (0.14)	9 (0.35)		104.5 (4.11)	108 (4.25)	132.5 (5.22)	–	50 (1.97)	55 (2.17)	–
80	1FT708.-.W		194 (7.68)	165 (6.50)	130 (5.12)	11.5 (0.45)	165 (6.50)	155 (6.10)	3.5 (0.14)	11 (0.43)		104.5 (4.11)	–	140.5 (5.53)	168.5. (6.63)	–	48 (1.89)	63 (2.48)
100	1FT710.-5W		245 (9.65)	206 (8.11)	180 (7.09)	13 (0.51)	215 (8.46)	196 (7.72)	4 (0.16)	14 (0.55)		104.5 (4.11)	–	159.5 (6.28)	187.5 (7.38)	–	53 (2.09)	69 (2.72)

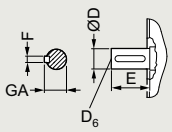
			Recessed flange without/with brake					Flange compatible with 1FT6/1FK7 without/with brake						Shaft end DE				
			Power connectors					Power connectors										
			Size 1	Size 1.5	Size 3			Size 1	Size 1.5	Size 3								
Shaft height	Type	IEC	I_2	LB	O_1	O_1	O_1	F_2	I_2	LB	O_1	O_1	O_1	D	D_6	E	GA	F
63	1FT7062		50 (1.97)	204 (8.03)	141 (5.55)	–	–	6 (0.24)	56.5 (2.22)	197 (7.76)	135 (5.31)	–	–	**24 (0.94)**	M8	50 (1.97)	27 (1.06)	8 (0.31)
	1FT7064			235 (9.25)	173 (6.81)	–	–			229 (9.02)	166 (6.54)	–	–					
	1FT7065			287 (11.30)	220 (8.66)	–	–			281 (11.06)	214 (8.43)	–	–					
	1FT7066			267 (10.51)	204 (8.03)	–	–			260 (10.24)	198 (7.80)	–	–					
	1FT7067			327 (12.87)	260 (10.24)	–	–			321 (12.64)	254 (10.00)	–	–					
	1FT7068			314 (12.36)	252 (9.92)	–	–			308 (12.13)	245 (9.65)	–	–					
80	1FT7082		58 (2.28)	243 (9.57)	–	183 (7.20)	–	6 (0.24)	64.5 (2.54)	237 (9.33)	–	176 (6.93)	–	**32 (1.26)**	M12	58 (2.28)	35 (1.38)	10 (0.39)
	1FT7084			295 (11.61)	–	234 (9.21)	–			288 (11.34)	–	228 (8.98)	–					
	1FT7085			314 (12.36)	–	254 (10.00)	237 (9.33)			308 (12.13)	–	247 (9.72)	231 (9.09)					
	1FT7086			346 (13.62)	–	286 (11.26)	–			340 (13.39)	–	279 (10.98)	–					
	1FT7087			374 (14.72)	–	314 (12.36)	297 (11.69)			368 (14.49)	–	307 (12.09)	291 (11.46)					
100	1FT7102		80 (3.15)	267 (10.51)	–	203 (7.99)	187 (7.36)	6.5 (0.26)	87 (3.43)	262 (10.31)	–	196 (7.72)	180 (7.09)	**38 (1.50)**	M12	80 (3.15)	41 (1.61)	10 (0.39)
	1FT7105			355 (13.98)	–	290 (11.42)	273 (10.75)			348 (13.70)	–	283 (11.14)	266 (10.47)					
	1FT7108			424 (16.69)	–	359 (14.13)	342 (13.46)			417 (16.42)	–	352 (13.86)	335 (13.19)					

SIMOTICS S-1FT7 with RJ45 (DRIVE-CLiQ) and M23 signal connector – forced ventilation

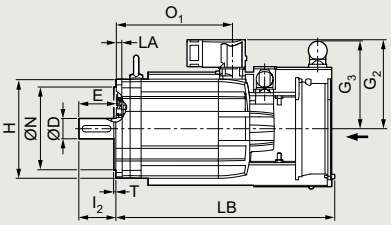
Dimensional drawings

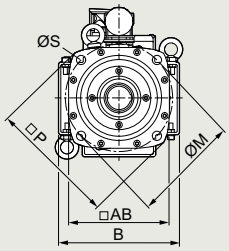
1FT706
1FT708
1FT710

Shaft version with feather key

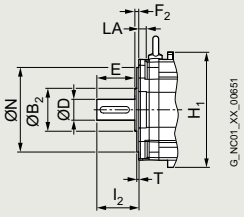


Flange compatible with 1FT6/1FK7





Recessed flange

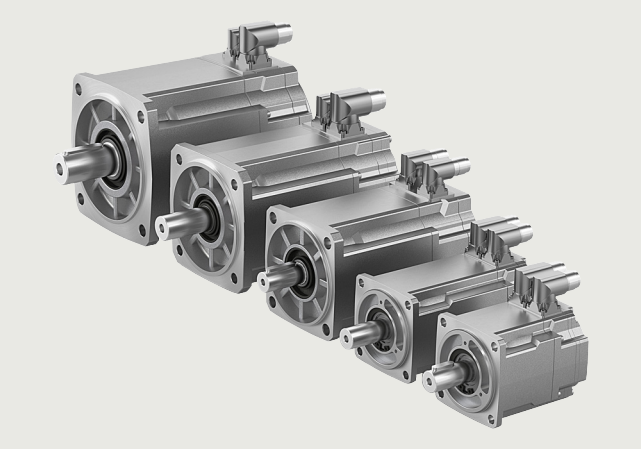


For motor			Dimensions in mm (inches)														
											Connector size					Fan	
											Size 1.5	Size 3					
Shaft height	Type	IEC	P	B	N	LA	M	AB	T	S	G_2	G_2	G_3	H	H_1	H_2	
SIMOTICS S-1FT7 forced ventilation, with connector, without/with brake																	
63	1FT706.-.S		155 (6.10)	158 (6.22)	110 (4.33)	10 (0.39)	130 (5.12)	126 (4.96)	3.5 (0.14)	11 (0.43)	125 (4.92)	–	102 (4.02)	26 (1.02)	143 (5.36)	135 (5.31)	
80	1FT708.-.S		194 (7.68)	186 (7.32)	130 (5.12)	11.5 (0.45)	165 (6.50)	155 (6.10)	3.5 (0.14)	11 (0.43)	139 (5.47)	167 (6.57)	137.5 (5.41)	27 (1.06)	177 (6.97)	186.5 (7.34)	
100	1FT710.-5S		245 (9.65)	224 (8.82)	180 (7.09)	13 (0.51)	215 (8.46)	196 (7.72)	4 (0.16)	14 (0.55)	159 (6.26)	187 (7.36)	151 (5.94)	27 (1.06)	220 (8.66)	222 (8.74)	

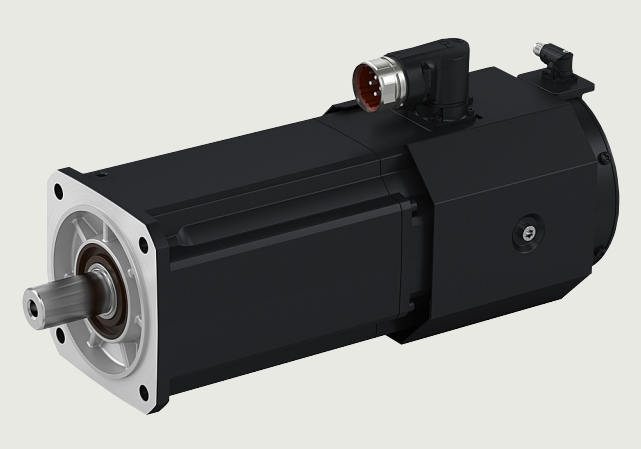
			Flange compatible with 1FT6/1FK7					Recessed flange						Shaft end DE				
				without brake		with brake				without brake		with brake						
Shaft height	Type	IEC	I_2	LB	O_1	LB	O_1	F_2	I_2	LB	O_1	LB	O_1	D	D_6	E	GA	F
63	1FT7065-7S		50 (1.97)	380 (14.96)	220 (8.66)	380 (14.96)	220 (8.66)	6 (0.24)	56.5 (2.22)	373.5 (14.70)	214 (8.43)	373.5 (14.70)	214 (8.43)	24 **(0.94)**	M8	50 (1.97)	27 (1.06)	8 (0.31)
	1FT7067-7S			420 (16.54)	260 (10.24)	420 (16.54)	260 (10.24)			413.5 (16.28)	254 (10.00)	413.5 (16.28)	254 (10.00)					
80	1FT7084-5S		58 (2.28)	342 (13.46)	182 (7.17)	394 (15.51)	234 (9.21)	6 (0.24)	64.5 (2.54)	336 (13.23)	175 (6.89)	387 (15.24)	228 (8.98)	**32 (1.26)**	M12	58 (2.28)	35 (1.38)	10 (0.39)
	1FT7085-7S			414 (16.30)	254 (10.00)	414 (16.30)	254 (10.00)			408 (16.06)	247 (9.72)	408 (16.06)	247 (9.72)					
	1FT7086-5S			394 (15.51)	234 (9.21)	446 (17.56)	286 (11.26)			387 (15.24)	227 (8.94)	440 (17.32)	379 (14.92)					
	1FT7087-7S			474 (18.66)	314 (12.36)	474 (18.66)	314 (12.36)			468 (18.43)	307 (12.09)	468 (18.43)	307 (12.09)					
100	1FT7105		80 (3.15)	404 (15.91)	238 (9.37)	456 (17.95)	290 (11.42)	6.5 (0.26)	87 (3.43)	397 (15.63)	231 (9.09)	449 (17.68)	283 (11.14)	**38 (1.50)**	M12	80 (3.15)	41 (1.61)	10 (0.39)
	1FT7108			473 (18.62)	307 (12.09)	525 (20.67)	359 (14.13)			466 (18.35)	300 (11.81)	518 (20.39)	352 (13.86)					

SIMOTICS S-1FT2

Overview



SIMOTICS S-1FT2 motors natural cooling



SIMOTICS S-1FT2 motors forced ventilation

SIMOTICS S-1FT2 servomotors are compact and highly dynamic synchronous motors to address a wide range of applications in an industrial environment. They are characterized by a high power density, degree of protection and overload capability. You can select between natural cooling or forced ventilation as cooling method. For natural cooling, the resulting heat loss is dissipated through the surface, while for forced ventilation, a mounted fan dissipates the heat loss and significantly increases the continuous power rating of the motor.

1FT2 servomotors are finely scaled in terms of torque and rated speed and have numerous variations and options. This makes it possible to create customized solutions to address the wide range of challenges in drive technology. Even more demanding tasks or applications in harsh environments can be mastered with 1FT2 servomotors.

SIMOTICS S-1FT2 High Dynamic motors

- Highest dynamic response through low inertia for highly dynamic applications with low moved masses.

SIMOTICS S-1FT2 Compact motors

- Precise, stable control with medium to high masses to be moved with medium moment of inertia.

Benefits

SIMOTICS S-1FT2 servomotors fully exploit their strengths in a system with converters from the SINAMICS S120 family:

- Short adjustment and positioning times
- Quick and precise compensation of disturbances
- Stable closed-loop control with high dynamic response
- Maximum flexibility in the selection
- Increased ruggedness
- Best accuracy

This is achieved by:

- Rapid control cycle
- High pulse frequency
- Complex rule algorithms
- Highest resolution optical encoder
- Low moment of inertia of the motors
- High overload capability

Application

- Feed axes and auxiliary axes in machine tools
- Robots and handling equipment
- Packaging machines
- Feed and withdrawal devices
- Automatic assembly machines
- Laboratory automation
- Woodworking, glass and ceramic industries
- Digital printing machines

More information

Detailed dimensional drawings, 3D models, data sheets and characteristic curves are available on the internet via the Siemens Product Configurator:

www.siemens.com/spc

→ SIMOTICS S-1FT2 in the SPC

Technical specifications

General technical specifications

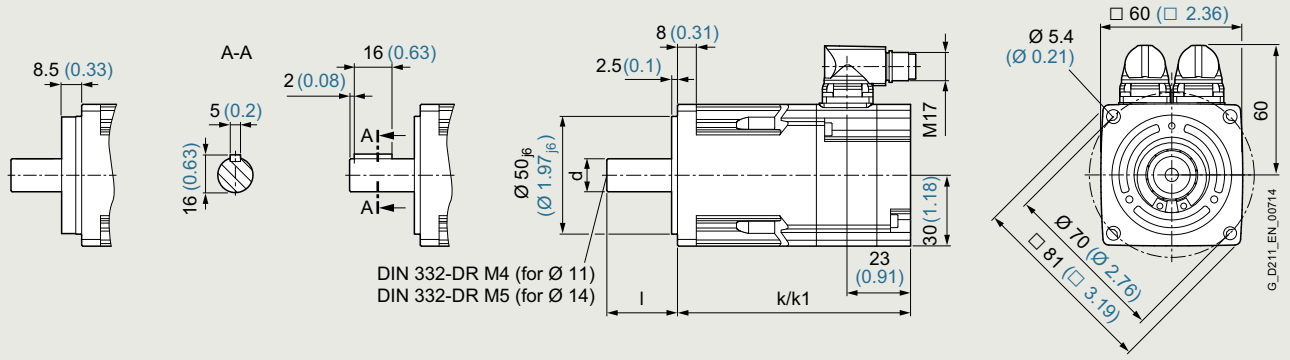
SIMOTICS S-1FT2	
Motor type	Permanent-magnet synchronous motor
Cooling	Natural cooling, forced ventilation
Type of construction according to EN 60034-7 (IEC 60034-7)	IM B5 (IM V1, IM V3)
Degree of protection according to EN 60034-5 (IEC 60034-5)	IP64, IP65 optional or retrofittable, IP67 optional
Shaft end according to DIN 748-3 (IEC 60072-1)	Plain shaft, optional shaft with keyway (half-key balancing)
Shaft and flange accuracy according to DIN 42955 (IEC 60072-1)	Tolerance N in each case for radial eccentricity of the shaft end, concentricity of the centering ring, and axial eccentricity of the mounting flange to the axis of the shaft end
Vibration severity grade according to EN 60034-14 (IEC 60034-14)	Grade A is maintained up to rated speed
Sound pressure level L_{pA} (1 m), max. according to EN ISO 1680, tolerance +3 dB(A)	
Natural cooling	
1FT2.03 and 1FT2.04	55 dB(A)
1FT2.05 and 1FT2.06	65 dB(A)
1FT2.08 and 1FT2.10	70 dB(A)
Forced ventilation	
1FT2.08	73 dB(A)
Connection	Connectors for signals and power, rotatable
Color of the paint finish	Anthracite, RAL 7016
Holding brake	Optional integrated holding brake
Certificates of suitability	cURus, CE, EAC, CEL
Encoder system	
AS22DQC	Absolute encoder single-turn 22-bit
AM22DQC	Absolute encoder 22-bit + 12-bit multi-turn
AS26DQC	Absolute encoder single-turn 26-bit
AM26DQC	Absolute encoder 26-bit + 12-bit multi-turn

SIMOTICS S-1FT2

Technical specifications

SIMOTICS S-1FT2 shaft height 30

IP65, IP67



Dimensions in mm (inches)

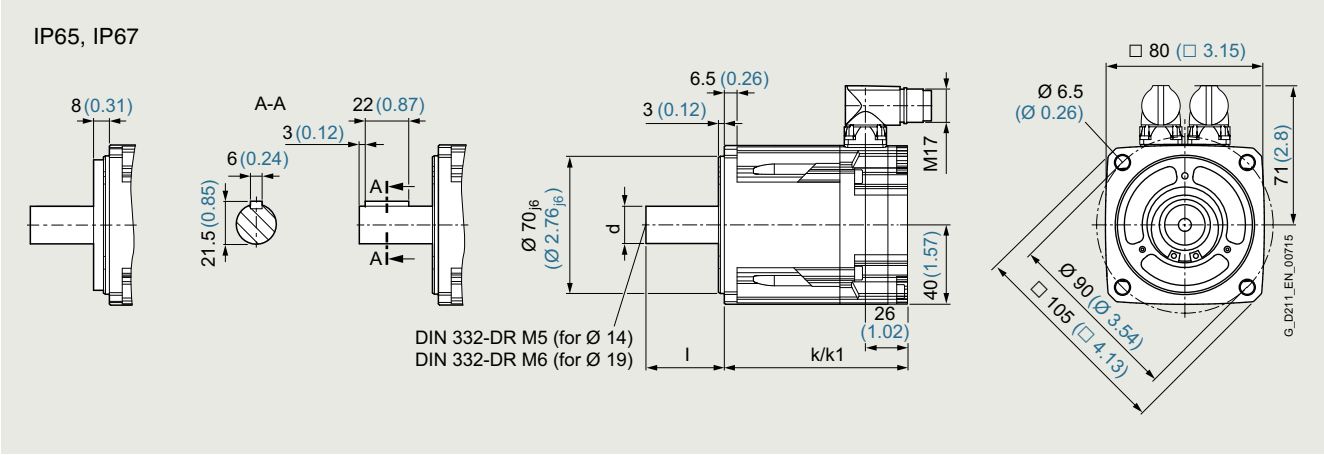
SIMOTICS S-1FT2	without brake k	with brake k1
1FT2 . 03-2	99 (3.90)	131 (5.16)
1FT2 . 03-4	123 (4.84)	155 (6.10)

Shaft end	Ø d × l
Shaft end 0 / 1	$Ø11_{k6} \times 23$ ($Ø0.43_{k6} \times 0.91$)
Shaft end 2	$Ø14_{h6} \times 30$ ($Ø0.55_{h6} \times 1.18$)

SIMOTICS S-1FT2 servomotors		High Dynamic		Compact	
Shaft height 30		**1FT2103-2AH**	**1FT2103-4AH**	**1FT2203-2AK**	**1FT2203-4AK**
Static torque M_0	Nm (lb_f-ft)	0.64 (0.47)	1.27 (0.94)	0.64 (0.47)	1.27 (0.94)
Stall current I_0	A	1.06	1.87	1.05	2.05
Maximum torque M_{max}	Nm (lb_f-ft)	1.95 (1.44)	4.05 (2.99)	1.85 (1.36)	3.75 (2.77)
Maximum current I_{max}	A	3.95	7.1	3.4	6.7
Maximum speed n_{max}	r/min	8000	8000	8000	8000
Rotor moment of inertia J_{Mot}	kg cm² (lb_f-in²)	0.093 (0.032)	0.139 (0.047)	0.2 (0.068)	0.35 (0.120)
Moment of inertia (with brake) $J_{Mot\ Br}$	kg cm² (lb_f-in²)	0.112 (0.038)	0.158 (0.054)	0.22 (0.075)	0.37 (0.126)
Weight m_{Mot}	kg (lb)	1.18 (2.60)	1.65 (3.64)	1.16 (2.56)	1.49 (3.29)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	1.55 (3.42)	1.99 (4.39)	1.53 (3.37)	1.97 (4.34)
Rated data 380 ... 480 V 3 AC					
Rated speed n_N	r/min	4500	4500	6000	6000
Rated torque M_N	Nm (lb_f-ft)	0.59 (0.44)	1.01 (0.74)	0.405 (0.299)	0.68 (0.50)
Rated current I_N	A	1.05	1.56	0.75	1.24
Rated power P_N	kW	0.28	0.48	0.255	0.43
Connection system					
Connector size, power		M17	M17	M17	M17
Recommended cross-section	mm²	1.5	1.5	1.5	1.5
Connector, signal		M17 signal connector, DRIVE-CLiQ			

Technical specifications

SIMOTICS S-1FT2 shaft height 40



Dimensions in mm (inches)

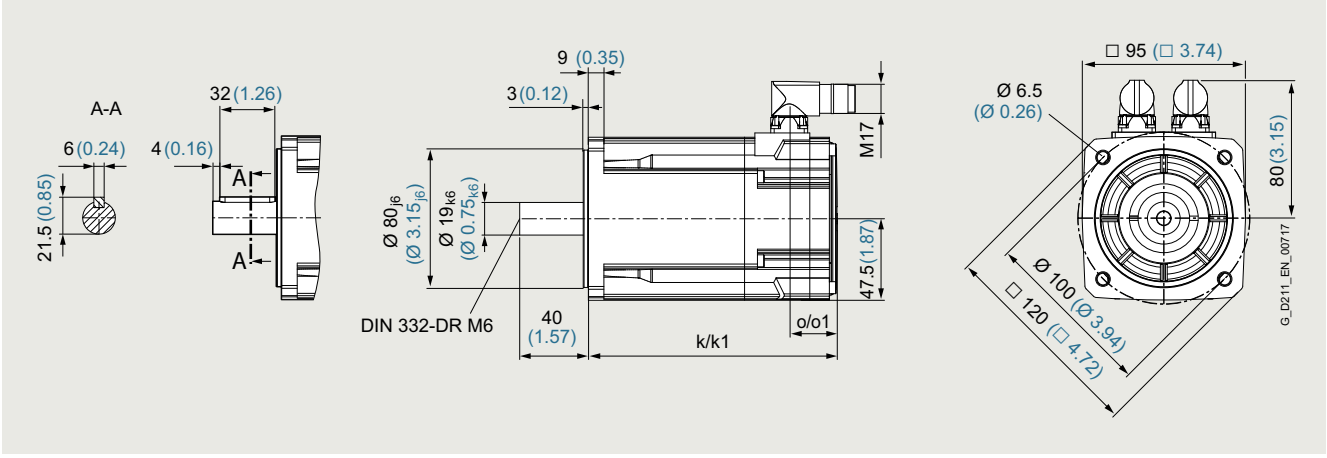
SIMOTICS S-1FT2	without brake k	with brake k1
1FT2 . 04-4	98 (3.86)	142 (5.59)
1FT2 . 04-5	126 (4.96)	170 (6.69)
1FT2 . 04-6	144 (5.67)	188 (7.40)

Shaft end	Ø d × l
Shaft end 0 / 1	$Ø19_{k6} \times 40$ ($Ø0.75_{k6} \times 1.57$)
Shaft end 2	$Ø14_{k6} \times 30$ ($Ø0.55_{k6} \times 1.18$)

SIMOTICS S-1FT2 servomotors		High Dynamic					Compact		
Shaft height 40		**1FT2104-4AF**	**1FT2104-4AK**	**1FT2104-5AF**	**1FT2104-5AK**	**1FT2104-6AF**	**1FT2204-5AF**	**1FT2204-5AK**	**1FT2204-6AF**
Static torque M_0	Nm (lb_f-ft)	1.27 (0.94)	1.27 (0.94)	2.4 (1.77)	2.4 (1.77)	3.2 (2.36)	2.4 (1.77)	2.4 (1.77)	3.2 (2.36)
Stall current I_0	A	1.19	2.4	2.1	4.4	3	2.25	4.4	3
Maximum torque M_{max}	Nm (lb_f-ft)	3.75 (2.77)	3.85 (2.84)	7.5 (5.53)	7.6 (5.61)	10 (7.38)	7.1 (5.24)	7.1 (5.24)	9.5 (7.01)
Maximum current I_{max}	A	4.2	8.7	7.6	16	10.9	7.1	14.2	9.9
Maximum speed n_{max}	r/min	7200	8000	6700	8000	7200	7500	8000	7600
Rotor moment of inertia J_{Mot}	kg cm^2 (lb_f-in^2)	0.35 (0.120)	0.35 (0.120)	0.56 (0.191)	0.56 (0.191)	0.76 (0.260)	1.23 (0.420)	1.23 (0.420)	1.61 (0.550)
Moment of inertia (with brake) $J_{Mot\ Br}$	kg cm^2 (lb_f-in^2)	0.43 (0.147)	0.43 (0.147)	0.65 (0.222)	0.65 (0.222)	0.84 (0.287)	1.31 (0.448)	1.31 (0.448)	1.69 (0.577)
Weight m_{Mot}	kg (lb)	2.05 (4.52)	2.05 (4.52)	2.9 (6.39)	2.9 (6.39)	3.4 (7.50)	2.9 (6.39)	2.9 (6.39)	3.5 (7.72)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	2.9 (6.39)	2.9 (6.39)	3.7 (8.16)	3.7 (8.16)	4.3 (9.48)	3.75 (8.27)	3.75 (8.27)	4.25 (9.37)
Rated data 380 ... 480 V 3 AC									
Rated speed n_N	r/min	3000	6000	3000	6000	3000	3000	6000	3000
Rated torque M_N	Nm (lb_f-ft)	1.27 (0.94)	0.95 (0.70)	2.4 (1.77)	1.7 (1.25)	3.2 (2.36)	2.4 (1.77)	0.9 (0.66)	3.2 (2.36)
Rated current I_N	A	1.19	1.88	2.1	3.20	3	2.25	1.95	3
Rated power P_N	kW	0.4	0.6	0.75	1.07	1	0.75	0.57	1
Connection system									
Connector size, power		M17	M17	M17	M17	M17	M 17	M17	M17
Recommended cross-section	mm^2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Connector, signal		M17 signal connector, DRIVE-CLiQ							

Technical specifications

SIMOTICS S-1FT2 shaft height 48, Compact



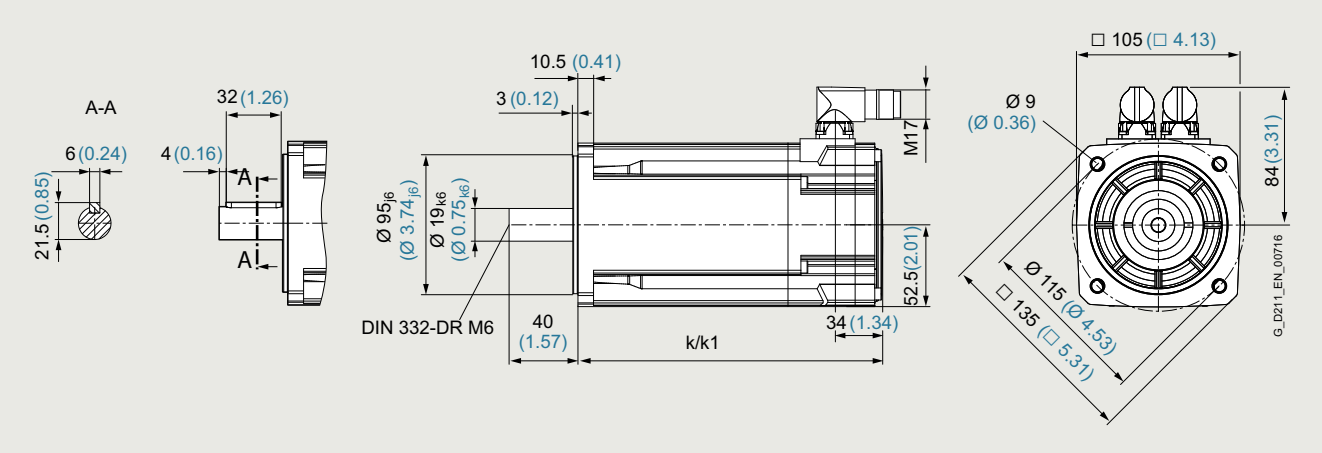
Dimensions in mm (inches)

SIMOTICS S-1FT2 Compact	without brake		with brake	
	k	o	k1	o1
1FT2205-2	145 (5.71)	28 (1.10)	188 (7.40)	34 (1.34)
1FT2205-4	177 (6.97)		220 (8.66)	

SIMOTICS S-1FT2 servomotors		Compact			
Shaft height 48		**1FT2205-2AC**	**1FT2205-2AF**	**1FT2205-2AH**	**1FT2205-4AF**
Static torque M_0	Nm (lb_f-ft)	3.6 (2.66)	3.6 (2.66)	3.6 (2.66)	6 (4.43)
Stall current I_0	A	1.84	2.9	3.8	4.7
Maximum torque M_{max}	Nm (lb_f-ft)	10.8 (7.97)	10.8 (7.97)	10.8 (7.97)	18 (13.28)
Maximum current I_{max}	A	6	9.5	12.1	15.1
Maximum speed n_{max}	r/min	4850	6500	8300	6200
Rotor moment of inertia J_{Mot}	kg cm^2 (lb_f-in^2)	3.15 (1.076)	3.15 (1.076)	3.15 (1.076)	5.1 (1.743)
Moment of inertia (with brake) $J_{Mot\ Br}$	kg cm^2 (lb_f-in^2)	4.05 (1.384)	4.05 (1.384)	4.05 (1.384)	6 (2.050)
Weight m_{Mot}	kg (lb)	3.75 (8.27)	3.75 (8.27)	3.75 (8.27)	5.2 (11.47)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	4.75 (10.47)	4.75 (10.47)	4.75 (10.47)	6.2 (13.67)
Rated data 380 ... 480 V 3 AC					
Rated speed n_N	r/min	2000	3000	4500	3000
Rated torque M_N	Nm (lb_f-ft)	3.3 (2.43)	3 (2.21)	2.25 (1.66)	4.6 (3.39)
Rated current I_N	A	1.74	2.5	2.55	3.75
Rated power P_N	kW	0.69	0.94	1.06	1.45
Connection system					
Connector size, power		M17	M17	M17	M17
Recommended cross-section	mm^2	1.5	1.5	1.5	1.5
Connector, signal		M17 signal connector, DRIVE-CLiQ			

Technical specifications

SIMOTICS S-1FT2 shaft height 52, High Dynamic



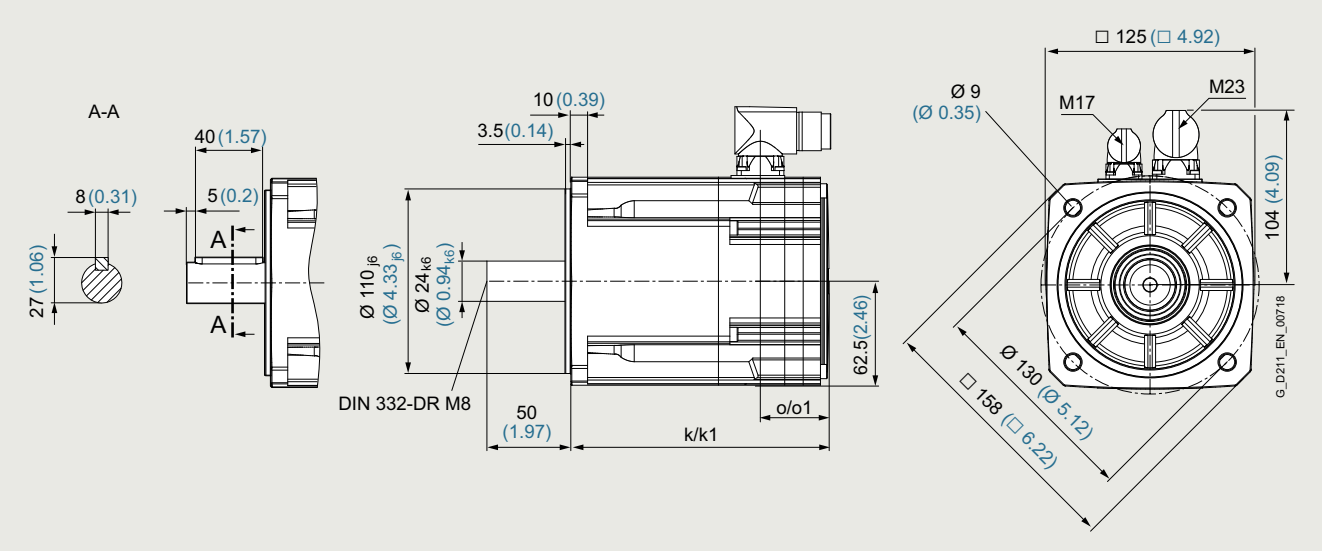
Dimensions in mm (inches)

SIMOTICS S-1FT2 High Dynamic	without brake k	with brake k1
1FT2105-4	173 (6.81)	200 (7.87)
1FT2105-6	215 (8.46)	242 (9.53)

SIMOTICS S-1FT2 servomotors		High Dynamic		
Shaft height 52		**1FT2105-4AF**	**1FT2105-4AH**	**1FT2105-6AF**
Static torque M_0	Nm (lb_f-ft)	5 (3.69)	5 (3.69)	8 (5.90)
Stall current I_0	A	4.65	6.9	6.7
Maximum torque M_{max}	Nm (lb_f-ft)	15 (11.06)	15 (11.06)	24 (17.70)
Maximum current I_{max}	A	18	27	24
Maximum speed n_{max}	r/min	7400	9000	6600
Rotor moment of inertia J_{Mot}	kg cm^2 (lb_f-in^2)	1.71 (0.584)	1.71 (0.584)	2.65 (0.906)
Moment of inertia (with brake) $J_{Mot\ Br}$	kg cm^2 (lb_f-in^2)	2.55 (0.871)	2.55 (0.871)	3.5 (1.196)
Weight m_{Mot}	kg (lb)	5.6 (12.35)	5.6 (12.35)	7.7 (16.98)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	6.6 (14.55)	6.6 (14.55)	8.7 (19.18)
Rated data 380 ... 480 V 3 AC				
Rated speed n_N	r/min	3000	4500	3000
Rated torque M_N	Nm (lb_f-ft)	4.6 (3.39)	3.7 (2.73)	6.6 (4.87)
Rated current I_N	A	4.35	5.4	5.6
Rated power P_N	kW	1.45	1.74	2.1
Connection system				
Connector size, power		M17	M17	M17
Recommended cross-section	mm^2	1.5	1.5	1.5
Connector, signal			M17 signal connector, DRIVE-CLiQ	

Technical specifications

SIMOTICS S-1FT2 shaft height 63



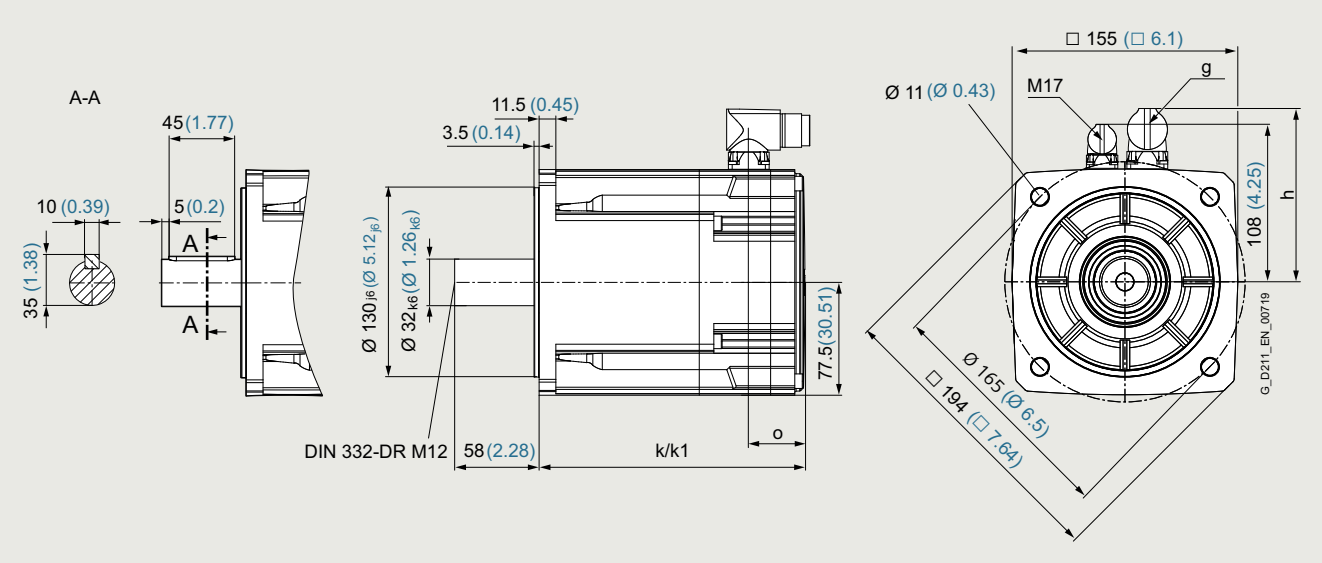
Dimensions in mm (inches)

SIMOTICS S-1FT2	without brake		with brake	
	k	o	k1	o
1FT2 . 06-2	154 (6.06)	41 (1.61)	205 (8.07)	53 (2.09)
1FT2 . 06-3	174 (6.85)		225 (8.86)	
1FT2 . 06-4	193 (7.60)		244 (9.61)	
1FT2 . 06-6	232 (9.13)		283 (11.14)	

SIMOTICS S-1FT2 servomotors Shaft height 63		High Dynamic			Compact							
		1FT21 06-3AF	1FT21 06-4AF	1FT21 06-6AF	1FT22 06-2AC	1FT22 06-2AF	1FT22 06-2AH	1FT22 06-3AB	1FT22 06-3AF	1FT22 06-4AC	1FT22 06-4AF	1FT22 06-4AH
Static torque M_0	Nm (lb_f-ft)	9 (6.64)	12 (8.85)	16 (11.80)	6 (4.43)	6.5 (4.79)	6.5 (4.79)	9 (6.64)	9 (6.64)	12 (8.85)	12 (8.85)	12 (8.85)
Stall current I_0	A	9.2	10.7	14.3	2.8	5	6.5	3.15	5.4	4.5	7.9	12
Maximum torque M_{max}	Nm (lb_f-ft)	26 (19.18)	33 (24.34)	45.5 (33.56)	18 (18.28)	18 (13.28)	18 (13.28)	27 (19.92)	27 (19.92)	38 (28.03)	36 (26.55)	36 (26.55)
Maximum current I_{max}	A	43	42	49	10.3	17.8	22.5	11.4	19.7	17	29.5	44
Maximum speed n_{max}	r/min	8000	7800	7600	4300	6800	8000	3300	5700	3300	5800	8000
Rotor moment of inertia J_{Mot}	kg cm^2 (lb_f-in^2)	4.6 (1.572)	6.0 (2.050)	8.7 (2.973)	7.8 (2.665)	7.8 (2.665)	7.8 (2.665)	11.5 (3.930)	11.5 (3.930)	15.1 (5.160)	15 (5.126)	15 (5.126)
Moment of inertia (with brake) $J_{Mot\ Br}$	kg cm^2 (lb_f-in^2)	6.3 (2.153)	7.6 (2.597)	10 (3.417)	9.4 (3.212)	9.4 (3.212)	9.4 (3.212)	13.1 (4.476)	13.1 (4.476)	16.8 (5.741)	16.8 (5.741)	16.8 (5.741)
Weight m_{Mot}	kg (lb)	7.4 (16.32)	9,0 (19.85)	11.8 (26.02)	6.3 (13.89)	6.3 (13.89)	6.3 (13.89)	7.4 (16.32)	7.4 (16.32)	8.9 (19.62)	8.9 (19.62)	8.9 (19.62)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	9,0 (19.85)	10.6 (23.37)	13.4 (29.55)	7.9 (17.42)	7.9 (17.42)	7.9 (17.42)	9 (19.85)	9 (19.85)	10.6 (23.37)	10.6 (23.37)	10.6 (23.37)
Rated data 380 ... 480 V 3 AC												
Rated speed n_N	r/min	3000	3000	3000	2000	3000	4500	1500	3000	2000	3000	4500
Rated torque M_N	Nm (lb_f-ft)	7.3 (5.38)	8.6 (6.34)	10.6 (7.82)	5.5 (4.06)	5.4 (3.98)	3.85 (2.84)	8.3 (6.12)	7.5 (5.53)	10.5 (7.74)	9.1 (6.71)	4.7 (3.47)
Rated current I_N	A	7.9	8.1	9.7	2.8	4.35	4.1	2.9	4.65	4.1	6.2	5.2
Rated power P_N	kW	2.3	2.7	3.3	1.15	1.71	1.8	1.3	2.35	2.2	2.85	2.2
Connection system												
Connector size, power		M23	M23	M23	M23	M23	M23	M23	M23	M23	M23	M23
Recommended cross-section	mm^2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Connector, signal		M17 signal connector, DRIVE-CLiQ										

Technical specifications

SIMOTICS S-1FT2 shaft height 80, High Dynamic



Dimensions in mm (inches)

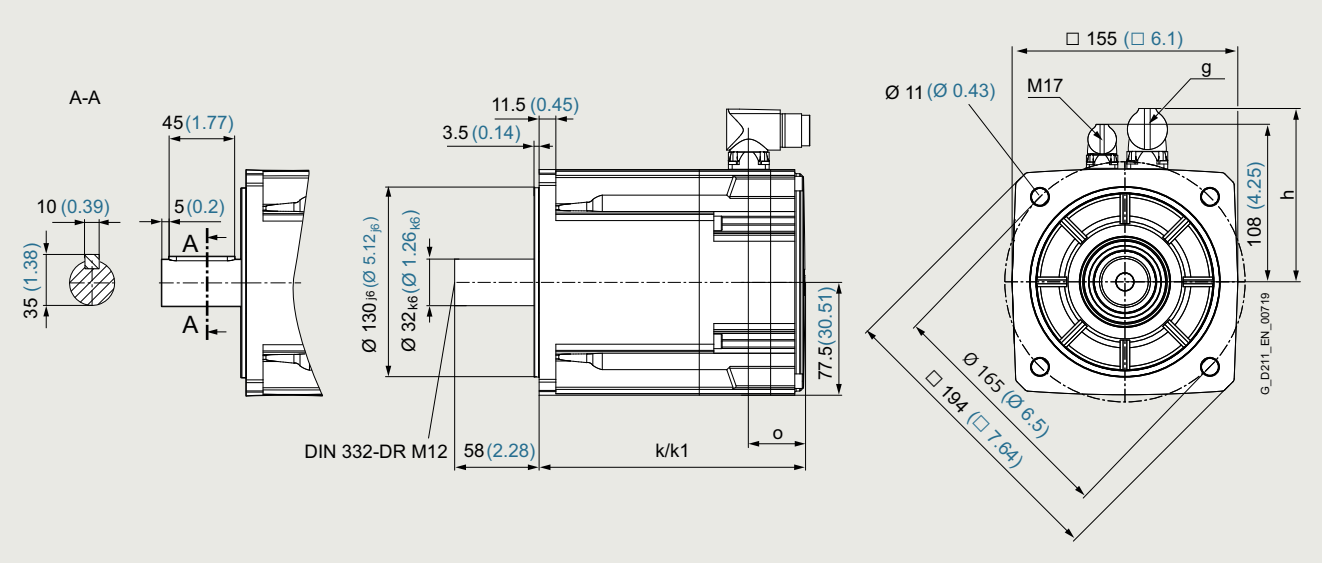
SIMOTICS S-1FT2 High Dynamic	without brake k	with brake k1
1FT2108-4	227 (8.94)	280 (11.02)
1FT2108-5	247 (9.72)	300 (11.81)
1FT2108-7	287 (11.30)	340 (13.39)

g	h	o
M23	119 (4.69)	39 (1.54)
M40	139 (5.47)	45 (1.77)

SIMOTICS S-1FT2 servomotors Shaft height 80		High Dynamic 1FT21 08-4AC	1FT21 08-5AB	1FT21 08-5AC	1FT21 08-7AB	1FT21 08-7AC	1FT21 08-7AE
Static torque M_0	Nm (lb_f-ft)	25 (18.44)	30 (22.13)	30 (22.13)	37.5 (27.66)	37.5 (27.66)	37.5 (27.66)
Stall current I_0	A	14.8	11.8	18.4	14	22	28
Maximum torque M_{max}	Nm (lb_f-ft)	87 (64.17)	105 (77.45)	105 (77.45)	140 (103.26)	140 (103.26)	140 (103.26)
Maximum current I_{max}	A	77	61	96	78	123	155
Maximum speed n_{max}	r/min	5600	3750	5800	3550	5600	6500
Rotor moment of inertia J_{Mot}	kg cm² (lb_f-in²)	18.3 (6.253)	21.6 (7.381)	21.6 (7.381)	28.2 (9.636)	28.2 (9.636)	28.2 (9.636)
Rotor moment of inertia (with brake) $J_{Mot\ br}$	kg cm² (lb_f-in²)	22.3 (7.620)	25.6 (8.748)	25.6 (8.748)	32.2 (11.003)	32.2 (11.003)	32.2 (11.003)
Rotor moment of inertia (with reinforced brake) $J_{Mot\ br}$	kg cm² (lb_f-in²)	23.9 (8.167)	27.2 (9.294)	27.2 (9.294)	33.8 (11.549)	33.8 (11.549)	33.8 (11.549)
Weight m_{Mot}	kg (lb)	17 ((37.49))	19.7 (43.44)	20 (44.10)	24.5 (54.02)	25 (55.13)	25.2 (55.57)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	19.7 (43.44)	22.4 (49.39)	22.7 (50.05)	27.2 (59.98)	27.7 (61.08)	27.9 (61.52)
Weight (with reinforced brake) $m_{Mot\ Br}$	kg (lb)	19.9 (43.88)	22.5 (49.61)	22.9 (50.49)	27.4 (60.42)	27.9 (61.52)	28 (61.74)
Rated data 380 ... 480 V 3 AC							
Rated speed n_N	r/min	2000	1500	2000	1500	2000	2500
Rated torque M_N	Nm (lb_f-ft)	20.5 (15.12)	25.5 (18.81)	23.5 (17.33)	30 (22.13)	26 (19.18)	21 (15.49)
Rated current I_N	A	12.8	10.3	15.2	11.5	16	17
Rated power P_N	kW	4.3	4	4.9	4.7	5.4	5.5
Connection system							
Connector size, power		M23	M23	M40	M23	M40	M40
Recommended cross-section	mm²	1.5	1.5	2.5	1.5	4	4
Connector, signal		M17 signal connector, DRIVE-CLiQ					

Technical specifications

SIMOTICS S-1FT2 shaft height 80, Compact



Dimensions in mm (inches)

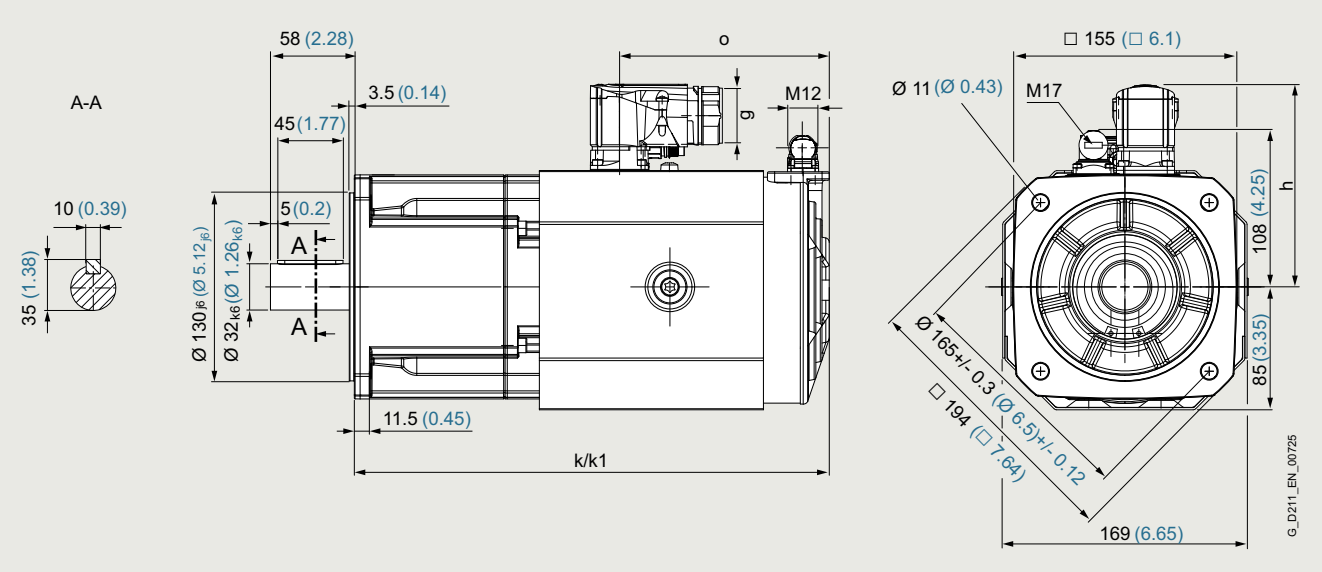
SIMOTICS S-1FT2 Compact	without brake k	with brake k1
1FT2208-2	168 (6.61)	221 (8.70)
1FT2208-3	183 (7.20)	236 (9.29)
1FT2208-4	203 (7.99)	256 (10.08)
1FT2208-5	223 (8.78)	276 (10.87)

g	h	o
M23	119 (4.69)	39 (1.54)
M40	139 (5.47)	45 (1.77)

SIMOTICS S-1FT2 servomotors Shaft height 80		Compact 1FT2208-2AF	1FT2208-3AB	1FT2208-3AC	1FT2208-3AF	1FT2208-4AB	1FT2208-4AC	1FT2208-4AF	1FT2208-5AB	1FT2208-5AC
Static torque M_0	Nm (lb_f-ft)	12.5 (9.22)	18 (13.28)	18 (13.28)	18 (13.28)	22 (16.23)	22 (16.23)	22 (16.23)	27 (19.92)	27 (19.92)
Stall current I_0	A	8.3	6.2	8.4	11.9	7.1	11.7	15	8.6	14.6
Maximum torque M_{max}	Nm (lb_f-ft)	38 (28.03)	51 (37.62)	51 (37.62)	51 (37.62)	66 (48.68)	66 (48.68)	66 (48.68)	80 (59.01)	80 (59.01)
Maximum current I_{max}	A	31	20.5	29.5	40	25	43.5	55	29.5	51.5
Maximum speed n_{max}	r/min	6000	3000	4100	5600	3000	4600	5900	3000	4700
Rotor moment of inertia J_{Mot}	kg cm² (lb_f-in²)	22.5 (7.688)	29.6 (10.114)	29.6 (10.114)	29.6 (10.114)	38.8 (13.258)	38.8 (13.258)	38.8 (13.258)	48.1 (16.436)	48.1 (16.436)
Rotor moment of inertia (with brake) $J_{Mot\ br}$	kg cm² (lb_f-in²)	25.5 (8.713)	32.6 (11.139)	32.6 (11.139)	32.6 (11.139)	44.4 (15.171)	44.4 (15.171)	44.4 (15.171)	53.6 (18.315)	53.6 (18.315)
Rotor moment of inertia (with reinforced brake) $J_{Mot\ br}$	kg cm² (lb_f-in²)	28 (9.568)	35.1 (11.994)	35.1 (11.994)	35.1 (11.994)	-	-	-	-	-
Weight m_{Mot}	kg (lb)	10.4 (22.93)	12.6 (27.78)	12.6 (27.78)	12.6 (27.78)	14.6 (32.19)	14.6 (32.19)	14.6 (32.19)	16.6 (36.60)	16.6 (36.60)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	12.6 (27.78)	14.6 (32.19)	14.6 (32.19)	14.6 (32.19)	17.3 (38.15)	17.3 (38.15)	17.3 (38.15)	19.3 (42.56)	19.3 (42.56)
Weight (with reinforced brake) $m_{Mot\ Br}$	kg (lb)	13.2 (29.11)	15.2 (33.52)	15.2 (33.52)	15.2 (33.52)	-	-	-	-	-
Rated data 380 ... 480 V 3 AC										
Rated speed n_N	r/min	3000	1500	2000	3000	1500	2000	3000	1500	2000
Rated torque M_N	Nm (lb_f-ft)	9 (6.64)	16 (11.80)	14.5 (10.70)	11.1 (8.19)	18.6 (13.72)	17 (12.54)	11.8 (8.70)	22 (16.23)	19.1 (14.09)
Rated current I_N	A	6.5	5.7	7	7.7	6.4	9.3	8.5	7.2	10.8
Rated power P_N	kW	2.85	2.5	3.05	3.5	2.9	3.55	3.7	3.45	4
Connection system										
Connector size, power		M23	M23	M23	M23	M23	M23	M23	M23	M23
Recommended cross-section	mm²	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Connector, signal		M17 signal connector, DRIVE-CLiQ								

Technical specifications

SIMOTICS S-1FT2 shaft height 80, High Dynamic – forced ventilation



Dimensions in mm (inches)

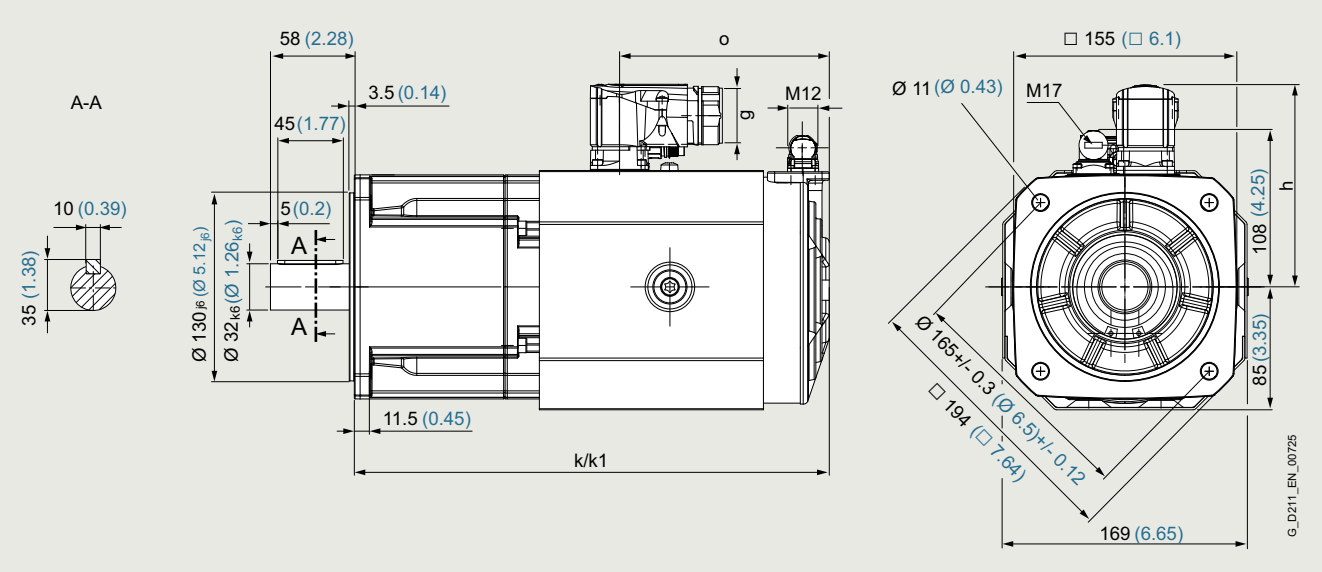
SIMOTICS S-1FT2 High Dynamic	without brake k	with brake k1
1FT2108-4	327 (12.87)	380 (14.96)
1FT2108-5	347 (13.66)	400 (15.75)
1FT2108-7	387 (15.24)	440 (17.32)

g	h	o
M23	119 (4.69)	139 (5.47)
M40	139 (5.47)	145 (5.71)

SIMOTICS S-1FT2 servomotors Shaft height 80		High Dynamic 1FT21 08-4SC	1FT21 08-5SB	1FT21 08-5SC	1FT21 08-7SB	1FT21 08-7SC	1FT21 08-7SE
Static torque M_0	Nm (lb_f-ft)	33 (24.34)	40 (29.50)	40 (29.50)	50 (36.88)	50 (36.88)	49.5 (36.51)
Stall current I_0	A	19.2	15.5	24	18.2	29	36
Maximum torque M_{max}	Nm (lb_f-ft)	87 (64.17)	105 (77.45)	105 (77.45)	140 (103.26)	140 (103.26)	140 (103.26)
Maximum current I_{max}	A	77	61	96	78	123	155
Maximum speed n_{max}	r/min	5500	3700	5800	3450	5500	6500
Rotor moment of inertia J_{Mot}	kg cm² (lb_f-in²)	18.3 (6.253)	21.6 (7.381)	21.6 (7.381)	28.2 (9.636)	28.2 (9.636)	28.2 (9.636)
Rotor moment of inertia (with brake) $J_{Mot\ br}$	kg cm² (lb_f-in²)	22.3 (7.620)	25.6 (8.748)	25.6 (8.748)	32.2 (11.003)	32.2 (11.003)	32.2 (11.003)
Rotor moment of inertia (with reinforced brake) $J_{Mot\ br}$	kg cm² (lb_f-in²)	23.9 (8.167)	27.2 (9.294)	27.2 (9.294)	33.8 (11.549)	33.8 (11.549)	33.8 (11.549)
Weight m_{Mot}	kg (lb)	19.8 (43.66)	22.1 (48.73)	22.4 (49.39)	27.3 (60.20)	27.4 (60.42)	27.6 (60.86)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	22.5 (49.61)	24.8 (54.68)	25.1 (55.35)	30 (66.15)	30.1 (66.37)	30.3 (66.81)
Weight (with reinforced brake) $m_{Mot\ Br}$	kg (lb)	22.7 (50.05)	24.9 (54.90)	25.3 (55.79)	30.2 (66.59)	30.3 (66.81)	30.4 (67.03)
Rated data 380 ... 480 V 3 AC							
Rated speed n_N	r/min	2000	1500	2000	1500	2000	2500
Rated torque M_N	Nm (lb_f-ft)	28.5 (21.02)	35.5 (26.18)	34 (25.08)	44 (32.45)	42 (30.98)	39 (28.77)
Rated current I_N	A	17.4	14.9	21.5	16.8	26	31
Rated power P_N	kW	6	5.6	7.1	6.9	8.8	10.2
Connection system							
Connector size, power		M40	M23	M40	M40	M40	M40
Recommended cross-section	mm²	2.5	2.5	4	2.5	6	6
Connector, signal		M17 signal connector, DRIVE-CLiQ					

Technical specifications

SIMOTICS S-1FT2 shaft height 80, Compact – forced ventilation



Dimensions in mm (inches)

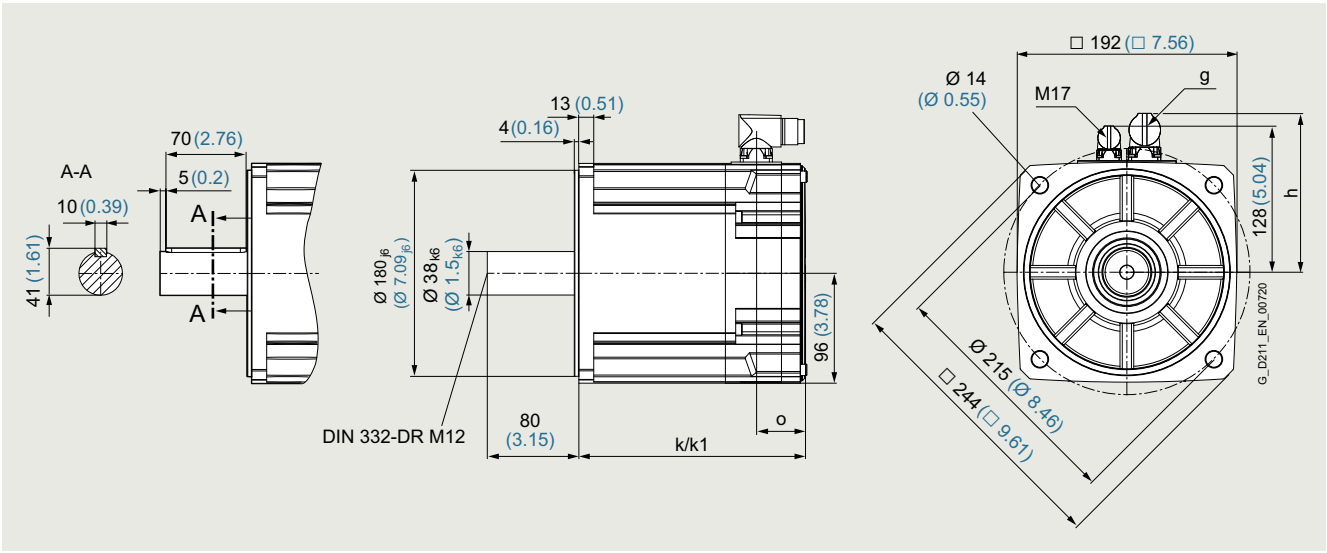
SIMOTICS S-1FT2 Compact	without brake k	with brake k1
1FT2208-3	283 (11.14)	336 (13.23)
1FT2208-4	303 (11.93)	356 (14.02)
1FT2208-5	323 (12.72)	376 (14.80)

g	h	o
M23	119 (4.69)	139 (5.47)
M40	139 (5.47)	145 (5.71)

SIMOTICS S-1FT2 servomotors Shaft height 80		Compact 1FT22 08-3SB	1FT22 08-3SC	1FT22 08-3SF	1FT22 08-4SB	1FT22 08-4SC	1FT22 08-4SF	1FT22 08-5SB	1FT22 08-5SC
Static torque M_0	Nm (lb_f-ft)	22 (16.23)	22 (16.23)	22 (16.23)	28 (20.65)	28 (20.65)	28 (20.65)	35 (25.82)	35 (25.82)
Stall current I_0	A	7.8	10.4	14.1	9.3	14.6	18.7	10.7	18.8
Maximum torque M_{max}	Nm (lb_f-ft)	51 (37.62)	51 (37.62)	51 (37.62)	66 (48.68)	66 (48.68)	66 (48.68)	80 (59.01)	80 (59.01)
Maximum current I_{max}	A	20.5	29.5	40	25	43.5	55	29.5	51.5
Maximum speed n_{max}	r/min	3350	4500	6000	3150	4950	6000	2900	5100
Rotor moment of inertia J_{Mot}	kg cm² (lb_f-in²)	29.6 (10.114)	29.6 (10.114)	29.6 (10.114)	38.8 (13.258)	38.8 (13.258)	38.8 (13.258)	48.1 (16.436)	48.1 (16.436)
Rotor moment of inertia (with brake) $J_{Mot\ br}$	kg cm² (lb_f-in²)	32.6 (11.139)	32.6 (11.139)	32.6 (11.139)	44.4 (15.171)	44.4 (15.171)	44.4 (15.171)	53.6 (18.315)	53.6 (18.315)
Rotor moment of inertia (with reinforced brake) $J_{Mot\ br}$	kg cm² (lb_f-in²)	35.1 (11.994)	35.1 (11.994)	35.1 (11.994)	-	-	-	-	-
Weight m_{Mot}	kg (lb)	14.9 (32.85)	14.9 (32.85)	14.9 (32.85)	17.5 (38.59)	17.5 (38.59)	17.9 (39.47)	20 (44.10)	20.4 (44.98)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	17.1 (37.71)	17.1 (37.71)	17.1 (37.71)	20.3 (44.76)	20.3 (44.76)	20.7 (45.64)	22.8 (50.27)	23.2 (51.16)
Weight (with reinforced brake) $m_{Mot\ Br}$	kg (lb)	17.7 (39.03)	17.7 (39.03)	17.7 (39.03)	-	-	-	-	-
Rated data 380 ... 480 V 3 AC									
Rated speed n_N	r/min	1500	2000	3000	1500	2000	3000	1500	2000
Rated torque M_N	Nm (lb_f-ft)	19.9 (14.68)	19.1 (14.09)	17.6 (12.98)	25.5 (18.81)	24 (17.70)	22.5 (16.60)	32 (23.60)	30 (22.13)
Rated current I_N	A	7.3	9.5	12.2	8.8	13.3	16.3	10.2	17.1
Rated power P_N	kW	3.1	4	5.5	4	5.1	7.1	5	6.3
Connection system									
Connector size, power		M23	M23	M23	M23	M23	M40	M23	M40
Recommended cross-section	mm²	1.5	1.5	1.5	1.5	1.5	2.5	1.5	2.5
Connector, signal		M17 signal connector, DRIVE-CLiQ							

Technical specifications

SIMOTICS S-1FT2 shaft height 100



Dimensions in mm (inches)

SIMOTICS S-1FT2	without brake k	with brake k1
1FT2210-2	174 (6.85)	233 (9.17)
1FT2210-3	198 (7.80)	257 (10.12)
1FT2210-4	223 (8.78)	282 (11.10)
1FT2210-5	248 (9.76)	307 (12.09)

g	h	o
M23	139 (5.47)	37 (1.46)
M40	159 (6.26)	43 (1.69)

SIMOTICS S-1FT2 servomotors Shaft height 100		Compact									
		1FT22 10-2AC	1FT22 10-2AF	1FT22 10-3AB	1FT22 10-3AC	1FT22 10-3AF	1FT22 10-4AB	1FT22 10-4AC	1FT22 10-4AF	1FT22 10-5AB	1FT22 10-5AC
Static torque M_0	Nm (lb$_f$-ft)	22 (16.23)	22 (16.23)	30 (22.13)	30 (22.13)	30 (22.13)	40 (29.50)	40 (29.50)	40 (29.50)	50 (36.88)	50 (36.88)
Stall current I_0	A	9.3	12.9	8.5	15	19.8	11.8	15	22.5	15	22.5
Maximum torque M_{max}	Nm (lb$_f$-ft)	60 (44.26)	60 (44.26)	90 (66.38)	90 (66.38)	90 (66.38)	120 (88.51)	120 (88.51)	120 (88.51)	150 (110.64)	150 (110.64)
Maximum current I_{max}	A	32	44.5	31.5	55	74	43.5	55	84	55	83
Maximum speed n_{max}	r/min	4050	5000	2500	4400	5000	2500	3300	4950	2850	4000
Rotor moment of inertia J_{Mot}	kg cm^2 (lb$_f$-in^2)	61.7 (21.083)	61.7 (21.083)	88.8 (30.343)	88.8 (30.343)	88.8 (30.343)	117 (39.979)	117 (39.979)	117 (39.979)	145 (49.547)	145 (49.547)
Rotor moment of inertia (with brake) $J_{Mot\ br}$	kg cm^2 (lb$_f$-in^2)	67.7 (23.133)	67.7 (23.133)	94.8 (32.393)	94.8 (32.393)	94.8 (32.393)	133 (45.446)	133 (45.446)	133 (45.446)	161 (55.014)	161 (55.014)
Rotor moment of inertia (with reinforced brake) $J_{Mot\ br}$	kg cm^2 (lb$_f$-in^2)	77.3 (26.413)	77.3 (26.413)	104 (35.537)	104 (35.537)	104 (35.537)	-	-	-	-	-
Weight m_{Mot}	kg (lb)	16.7 (36.82)	16.7 (36.82)	22 (48.51)	22 (48.51)	22 (48.51)	27 (59.54)	27 (59.54)	27 (59.54)	32 (70.56)	32 (70.56)
Weight (with brake) $m_{Mot\ Br}$	kg (lb)	20.1 (44.32)	20.1 (44.32)	25 (55.13)	25 (55.13)	25 (55.13)	31 (68.36)	31 (68.36)	31 (68.36)	36 (79.38)	36 (79.38)
Weight (with reinforced brake) $m_{Mot\ Br}$	kg (lb)	21.4 (47.19)	21.4 (47.19)	26.3 (57.99)	26.3 (57.99)	26.3 (57.99)	-	-	-	-	-
Rated data 380 ... 480 V 3 AC											
Rated speed n_N	r/min	2000	3000	1500	2000	3000	1500	2000	3000	1500	2000
Rated torque M_N	Nm (lb$_f$-ft)	18.4 (13.57)	16.2 (11.95)	28.5 (21.02)	26 (19.18)	18.5 (13.65)	34.5 (25.45)	30.5 (22.50)	18 (13.28)	39 (28.77)	33.5 (24.71)
Rated current I_N	A	8.1	10.1	8.3	13.5	13.6	10.4	11.8	11.1	12.1	15.8
Rated power P_N	kW	3.85	5.1	4.5	5.5	5.8	5.4	6.4	5.7	6.1	7.1
Connection system											
Connector size, power		M23	M23	M23	M23	M40	M23	M23	M40	M23	M40
Recommended cross-section	mm^2	1.5	1.5	1.5	1.5	2.5	1.5	1.5	4	1.5	4
Connector, signal		M17 signal connector, DRIVE-CLiQ									

Options

SIMOTICS S-1FT2 motors can be expanded with numerous options.

Holding brake

The holding brake is used to hold the motor shaft when the motor is stationary and is designed for at least 5 million switching cycles. The holding brake is not a working brake for braking a rotating motor. A limited number of Emergency Off operations is permitted: The specified maximum operating energy for each emergency braking operation as well as the total operating energy over the service life must not be exceeded. For the 1FT2108, 1FT2208-2, 1FT2208-3, 1FT2210-2 and 1FT2210-3 motors, a reinforced holding brake can also be selected.

The following table contains technical specifications of the holding brakes for operation with a SINAMICS S120:

Motor	Holding torque at 120 °C (248 °F)	Dynamic braking torque at 120 °C (248 °F)	Maximum permissible (single operating energy [1])	Total operating energy (lifetime)	Opening time	Closing time	Rated current
	Nm (lb_f-ft)	Nm (lb_f-ft)	J	kJ	ms	ms	A
Spring-loaded brake, maximum play 1°							
1FT2.03	1.3 (0.96)	1.3 (0.96)	62	5	90	30	0.4
1FT2.04	3.3 (2.43)	3.3 (2.43)	270	35	110	40	0.5
Permanent magnet brake, zero-backlash							
1FT2.05	8 (5.90)	5 (3.69)	570	284	90	25	0.6
1FT2106	16 (11.80)	9 (6.64)	1065	774	100	50	0.7
1FT2206	13 (9.59)	6.5 (4.79)	1550	774	100	50	0.7
1FT2208-2	19 (14.01)	12 (8.85)	2000	1800	100	40	0.8
1FT2208-3							
1FT2108	36 (26.55)	12 (8.85)	1300	2400	200	60	0.9
1FT2208-4							
1FT2208-5							
1FT2210-2	32 (23.60)	17 (12.54)	6600	2400	200	60	0.9
1FT2210-3							
1FT2210-4	55 (40.57)	26 (19.18)	8700	3800	220	80	1.0
1FT2210-5							
Reinforced permanent magnet brake, zero-backlash							
1FT2108	32 (23.60)	17 (12.54)	4800	2400	200	60	0.9
1FT2208-2							
1FT2208-3							
1FT2210-2	55 (40.57)	26 (19.18)	8700	3800	220	80	1.0
1FT2210-3							

Degree of protection

SIMOTICS S-1FT2 motors have degree of protection IP64 as standard. Optionally, the motor can be supplied with an IP65 or IP67 degree of protection.

Recommended degree of protection, see page 8.1/2

For 1FT2x03 and 1FT2x04 motors, the optional IP65 and IP67 shaft sealing ring shortens the shaft end that can be used. These motors can also be upgraded from IP64 to IP65 using the separately available degree of protection kit.

Shaft end

SIMOTICS S-1FT2 motors have a cylindrical shaft end. This can optionally be realized with keyway and feather key (half-key balancing).

For the 1FT2.03 and 1FT2.04 motors, an alternative shaft geometry (smaller diameter and shorter length of the shaft) is optionally available. The alternative shaft geometry is only available without feather key and for IP64 motors. It is suitable, for example, for mounting planetary gears with a small, low-inertia clamping system or for mounting small diameter pinions.

[1] Maximum three EMERGENCY STOP operations in sequence with a maximum of 25 % total operating energy

Options

Encoder

SIMOTICS S-1FT2 motors are equipped with digital absolute encoders with DRIVE-CLiQ interface.

The following encoders are available for 1FT2:

- AS22DCQ: Absolute encoder single-turn 22-bit
- AM22DQC: Absolute encoder 22-bit + 12-bit multi-turn (with rotation counter for 4096 revolutions)
- AS26DQC: Absolute encoder single-turn 26-bit
- AM26DQC: Absolute encoder 26-bit + 12-bit multi-turn (with rotation counter for 4096 revolutions)

Planetary gearbox

SIMOTICS S-1FT2 motors can optionally be supplied as coaxial or angular planetary geared motors. The geared motors are specified as unit; interaction between the motor and gearbox thermal situation has been taken into account. More information about planetary geared motors: See page 8.1/60

Paint finish

If a special color and paint finish are not specified, then 1FT2 motors are painted in the standard anthracite color (RAL 7016). Optionally, various special colors are possible. Special colors are ordered by adding an order code to the article number.

Order code	Description
X00	unpainted
X01	Paint finish jet black RAL 9005
X02	Paint finish cream white RAL 9001
X03	Paint finish reseda green RAL 6011
X04	Paint finish pebble gray RAL 7032
X05	Paint finish sky blue RAL 5015
X06	Paint finish light ivory RAL 1015
X08	Paint finish white aluminum

The paint finish in standard and special colors meets the requirements for environmental conditions of climate class 3K4 according to IEC 60721-3-3 with the exception of the influencing variables "low air temperature", "condensation" and "low air pressure". It meets corrosivity category C1 according to EN ISO 12944-2.

Resistance

Options relating to resistance are ordered by adding an order code to the article number.

Order code	Description
K23	**Special paint finish with additional primer** Additional primer, paint finish in standard color RAL 7016, anthracite grey Properties same as standard paint finish, in addition, condensation is permitted on the external surfaces of the motor. Combination with special color X■■ according to color table is permissible. However, a combination with X00 is not permissible.
N16	**Motors with increased chemical resistance** (Includes the properties of the paint with additional primer K23) • 4-layer paint system (PS Premium paint system) • Nickel-plated plug connectors • Resistant to greases, mineral oils, aliphatic solvents (10 %), caustic soda (10 %) With this option, the motor meets the requirements of corrosivity category C4(M) according to EN ISO 12944-2. A certificate regarding resistance against common ECOLAB cleaning agents and disinfectants is available here: https://support.industry.siemens.com/cs/document/58657336
Q31	**Metal rating plate** The rating plate of the motor is designed as an adhesive label as standard. With this option, an aluminum rating plate can be ordered instead. The labeling is lasered on. This ensures legibility for a long time even under poor ambient conditions.
Q20	**Pressure equalization** If a motor with degree of protection IP67 cools down after operation, a vacuum may build up in the motor. This may result in moisture ingress. Moisture ingress of this kind can be prevented by using a defined air supply via a connected pressure equalization tube.

Options

Low temperature -30 °C (-22 °F) – Q30

The permissible temperature range is defined as -15 °C to +40 °C (5 °F to 104 °F) (without power reduction).

Optionally, 1FT2 motors can be designed for an extended temperature range down to -30 °C (-22 °F) by adding order code **Q30** to the article number. Application e.g. in cold storage facilities.

The extended operating temperature range is not possible for the following variants:

- Degree of protection IP67
- Motors with gearbox
- Motors with forced ventilation

Suitability for dry room environments and certification for clean rooms – Q40

The permissible range for relative ambient air humidity is 5 % to 95 % as standard, suitability for use in clean rooms is not certified.

The 1FT2 motors can optionally be designed for use in extremely dry environments and with certification for use in clean rooms by adding order code **Q40** to the article number:

The following clean room classes are achieved according to ISO 156441-14, and have been certified accordingly by the TÜV (German Technical Inspectorate):

- Motors without gearbox, with degree of protection IP64: ISO Class 7 or better
- Motors without gearbox, with degree of protection IP65: ISO Class 6 or better
- Motors with gearbox NRB(W), NRK(W) or NLC(W): ISO Class 7 or better

Certificates are available here:
https://support.industry.siemens.com/cs/document/109815586

These motors feature extended specifications for use in relative air humidity: Operation from a relative humidity level of 0.3 % (dew point -50 °C at 20 °C (-58 F at 68 °F) ambient temperature) is permitted.

Customer-specific text on the rating plate – Y84

A text selected by the customer (maximum 20 characters) can be optionally printed on the rating plate of 1FT2 motors. For example, inscriptions for the name of the axis, the installation location or customer-specific spare part numbers can be provided. The order is entered using supplementary order code **Y84** and the plain text for the required inscription.

Ordering options using order codes

When ordering a motor with one or more order codes, the 16 position article number must be supplemented once with "-Z". Different order codes can be separated by spaces or "+".

Example for order codes X01 and N16:
1FT2■■■-■■■■-■■■■-Z X01 + N16

Accessories

Description	For motor	Article No.
Shaft sealing ring		
Degree of protection kit to achieve degree of protection IP65 for mounting on the motor. For retrofitting or as a spare part.	1FT2.03	**1FY2903-0GC00**
	1FT2.04	**1FY2904-0GC00**

Selection and ordering data

Structure of the article number of SIMOTICS S-1FT2 servomotors

Data position of the Article No.		1	2	3	4	5	6	7		8	9	10	11	12		13	14	15	16
		1	**F**	**T**	**2**	■	■	■	**-**	■	■	■	■	■	**-**	■	■	**A**	**0**
1st to 4th position: Digit, letter, letter, digit	**Motor**	1	F	T	2														
5th position: Digit	**Moment of inertia**																		
	High Dynamic					1													
	Compact					2													
6th and 7th position: Digit, digit	**Shaft height**																		
	20						0	2											
	30						0	3											
	40						0	4											
	52					1	0	5											
	48					2	0	5											
	63						0	6											
	80						0	8											
	100						1	0											
8th position: Digit	**Overall length**																		
	See specific technical specifications									0 ... 8									
9th position: Letter	Natural cooling										A								
	Forced ventilation										S								
10th position: Letter	**Winding/rated speed**																		
	1500 r/min											B							
	2000 r/min											C							
	2500 r/min											E							
	3000 r/min											F							
	4500 r/min											H							
	6000 r/min											K							
11th position: Digit	**Brake**																		
	Without												0						
	Holding brake												1						
	Reinforced holding brake												2						
12th position: Digit	**Degree of protection**																		
	IP64 (without shaft sealing ring)													0					
	IP65 (with shaft sealing ring)													1					
	IP67 (with shaft sealing ring and spring lock washer)													2					
13th position: Digit	**Shaft end, feather key**																		
	Plain shaft															0			
	Shaft with feather key															1			
	Plain shaft, reduced shaft diameter • Ø11 × 23 mm (0.43 × 0.91 in) (for 1FT2.03 and IP64), • Ø14 × 30 mm (0.55 × 1.18 in) (for 1FT2.04 and IP64)													0		2			
14th position: Letter	**Encoder**																		
	Absolute encoder single-turn 22-bit (AS22DQC)																S		
	Absolute encoder 22-bit + 12-bit multi-turn (AM22DQC)																M		
	Absolute encoder single-turn 26-bit (AS26DQC)																B		
	Absolute encoder 26-bit + 12-bit multi-turn (AM26DQC[)]																C		
15th position: Letter	**2 CC (dual cable technology) for SINAMICS S120**																	B	
16th position: Digit	Reserved																		0

SIMOTICS S-1FT2 High Dynamic

Selection and ordering data

SIMOTICS S-1FT2 servomotors for SINAMICS S120 with line connection 380 ... 480 V 3 AC

SIMOTICS S-1FT2 servomotor											SINAMICS S120
Shaft height	Static torque	Stall current	Maximum torque	Rated speed	Rated power	Rated torque	Rotor moment of inertia		Cable connector	Recommended cross-section [1] of the power cable	SINAMICS S120 rated output current
	M_0 Nm (lb$_f$-ft)	I_0 A	M_{max} Nm (lb$_f$-ft)	n_N r/min	P_N kW	M_N Nm (lb$_f$-ft)	J_{Mot} kg cm^2 (lb$_f$-in^2)	Article No.	Size	4 × mm^2	Booksize I_N A
High Dynamic for highly dynamic applications											
30	0.64 (0.47)	1.06	1.95 (1.44)	4500	0.28	0.59 (0.44)	0.093 (0.008)	**1FT2103-2AH■■-■■B0**	M17	4 × 1.5	3
30	1.27 (0.94)	1.87	4.05 (2.99)	4500	0.48	1.01 (0.74)	0.139 (0.012)	**1FT2103-4AH■■-■■B0**	M17	4 × 1.5	3
40	1.27 (0.94)	1.19	3.75 (2.77)	3000	0.4	1.27 (0.94)	0.35 (0.03)	**1FT2104-4AF■■-■■B0**	M17	4 × 1.5	3
40	1.27 (0.94)	2.4	3.85 (2.84)	6000	0.6	0.95 (0.70)	0.35 (0.03)	**1FT2104-4AK■■-■■B0**	M17	4 × 1.5	3
40	2.4 (1.8)	2.1	7.5 (5.5)	3000	0.75	2.4 (1.8)	0.56 (0.05)	**1FT2104-5AF■■-■■B0**	M17	4 × 1.5	3
40	2.4 (1.8)	4.4	7.6 (5.6)	6000	1.07	1.7 (1.3)	0.56 (0.05)	**1FT2104-5AK■■-■■B0**	M17	4 × 1.5	5
40	3.2 (2.4)	3	10 (7.38)	3000	1	3.2 (2.4)	0.76 (0.07)	**1FT2104-6AF■■-■■B0**	M17	4 × 1.5	3
52	5 (3.69)	4.65	15 (11.1)	3000	1.45	4.6 (3.4)	1.71 (0.15)	**1FT2105-4AF■■-■■B0**	M17	4 × 1.5	5
52	5 (3.69)	6.9	15 (11.1)	4500	1.74	3.7 (2.7)	1.71 (0.15)	**1FT2105-4AH■■-■■B0**	M17	4 × 1.5	9
52	8 (5.90)	6.7	24 (17.7)	3000	2.1	6.6 (4.9)	2.65 (0.23)	**1FT2105-6AF■■-■■B0**	M17	4 × 1.5	9
63	9 (6.64)	9.2	26 (19.2)	3000	2.3	7.3 (5.4)	4.6 (0.4)	**1FT2106-3AF■■-■■B0**	M23	4 × 1.5	9
63	12 (8.85)	10.7	33 (24.3)	3000	2.7	8.6 (6.3)	6 (0.53)	**1FT2106-4AF■■-■■B0**	M23	4 × 1.5	18
63	16 (11.8)	14.3	45.5 (33.6)	3000	3.3	10.6 (7.8)	8.7 (0.8)	**1FT2106-6AF■■-■■B0**	M23	4 × 1.5	18
80	25 (18.4)	14.8	87 (64.2)	2000	4.3	20.5 (15.1)	18.3 (1.6)	**1FT2108-4AC■■-■■B0**	M23	4 × 1.5	18
80	30 (22.1)	11.8	105 (77.4)	1500	4	25.5 (18.8)	21.6 (1.9)	**1FT2108-5AB■■-■■B0**	M23	4 × 1.5	18
80	30 (22.1)	18.4	105 (77.4)	2000	4.9	23.5 (17.3)	21.6 (1.9)	**1FT2108-5AC■■-■■B0**	M40	4 × 2.5	18
80	37.5 (27.7)	14	140 (103)	1500	4.7	30 (22.1)	28.2 (2.5)	**1FT2108-7AB■■-■■B0**	M23	4 × 1.5	18
80	37.5 (27.7)	22	140 (103)	2000	5.4	26 (19.2)	28.2 (2.5)	**1FT2108-7AC■■-■■B0**	M40	4 × 4	24
80	37.5 (27.7)	28	140 (103)	2500	5.5	21 (15.5)	28.2 (2.5)	**1FT2108-7AE■■-■■B0**	M40	4 × 4	30

Article No. supplements

Holding brake											
Without brake	**0**										
With brake	**1**										
With reinforced holding brake (1FT2108 only)	**2**										
Degree of protection											
IP64 (without shaft sealing ring)		**0**									
IP65 (with shaft sealing ring)		**1**									
IP67 (with shaft sealing ring with annular spring)		**2**									
Shaft end / feather key											
Plain shaft			**0**								
Shaft with feather key			**1**								
Plain shaft, reduced shaft diameter		**0**	**2**								
• Ø11 × 23 mm (0.43 × 0.91 in) (only for 1FT2.03 and IP64)											
• Ø14 × 30 mm (0.55 × 1.18 in) (only for 1FT2.04 and IP64)											
Encoder											
AS22DQC (absolute encoder 22-bit single-turn)				**S**							
AM22DQC (absolute encoder 22-bit + 12-bit multi-turn)				**M**							
AS26DQC (absolute encoder 26-bit single-turn)				**B**							
AM26DQC (absolute encoder 22-bit + 12-bit multi-turn)				**C**							

Power cable

	Article No.	for I_0 motor
M17	6FX ■ 002-5 ■ N27-...	4 × 1.5 for max. 15.2 A
M23	6FX ■ 002-5 ■ N06-...	4 × 1.5 for max. 15.2 A
M23	6FX ■ 002-5 ■ N16-...	4 × 2.5 for max. 21 A
M40	6FX ■ 002-5 ■ N36-...	4 × 2.5 for max. 21 A
M40	6FX ■ 002-5 ■ N46-...	4 ×4 for max. 28 A
M40	6FX ■ 002-5 ■ N56-...	4 × 6 for max. 36 A

... Length code

C Without brake cores
D With brake cores [2]

8 MOTION-CONNECT 800PLUS
5 MOTION-CONNECT 500

For more information about cables, see MOTION-CONNECT connection systems

[1] For installation type "C" and 40 °C (104 °F).

[2] Cable cross-section for brake connection 2 × 1.5 mm^2.

Selection and ordering data

SIMOTICS S-1FT2 servomotors for SINAMICS S120 with line connection 380 ... 480 V 3 AC

SIMOTICS S-1FT2 servomotor											SINAMICS S120
Shaft height	Static torque	Stall current	Maximum torque	Rated speed	Rated power	Rated torque	Rotor moment of inertia		Cable connector	Recommended cross-section [1] of the power cable	SINAMICS S120 rated output current Booksize
	M_0	I_0	M_{max}	n_N	P_N	M_N	J_{Mot}		Size		I_N
	Nm (lb_f-ft)	A	Nm (lb_f-ft)	r/min	kW	Nm (lb_f-ft)	kg cm^2 (lb_f-in^2)	Article No.		4 × mm^2	A
Compact for high precision applications											
30	0.64 (0.47)	1.05	1.85 (1.36)	6000	0.255	0.405 (0.299)	0.2 (0.1)	**1FT2203-2AK■■-■■B0**	M17	4 × 1.5	3
30	1.27 (0.94)	2.05	3.75 (2.77)	6000	0.43	0.68 (0.50)	0.35 (0.12)	**1FT2203-4AK■■-■■B0**	M17	4 × 1.5	3
40	2.4 (1.8)	2.25	7.1 (5.2)	3000	0.75	2.4 (1.8)	1.23 (0.42)	**1FT2204-5AF■■-■■B0**	M17	4 × 1.5	3
40	2.4 (1.8)	4.4	7.1 (5.2)	6000	0.57	0.9 (0.7)	1.23 (0.42)	**1FT2204-5AK■■-■■B0**	M17	4 × 1.5	5
40	3.2 (2.4)	3	9.5 (7.0)	3000	1	3.2 (2.4)	1.61 (0.55)	**1FT2204-6AF■■-■■B0**	M17	4 × 1.5	3
48	3.6 (2.7)	1.84	10.8 (8.0)	2000	0.69	3.3 (2.4)	3.15 (1.08)	**1FT2205-2AC■■-■■B0**	M17	4 × 1.5	5
48	3.6 (2.7)	2.9	10.8 (8.0)	3000	0.94	3 (2.21)	3.15 (1.08)	**1FT2205-2AF■■-■■B0**	M17	4 × 1.5	3
48	3.6 (2.7)	3.8	10.8 (8.0)	4500	1.06	2.25 (1.66)	3.15 (1.08)	**1FT2205-2AH■■-■■B0**	M17	4 × 1.5	5
48	6 (4.43)	4.7	18 (13.3)	3000	1.45	4.6 (3.4)	5.1 (1.7)	**1FT2205-4AF■■-■■B0**	M17	4 × 1.5	5
63	6 (4.43)	2.8	18 (13.3)	2000	1.15	5.5 (4.1)	7.8 (2.7)	**1FT2206-2AC■■-■■B0**	M23	4 × 1.5	3
63	6.5 (4.8)	5	18 (13.3)	3000	1.71	5.4 (4.0)	7.8 (2.7)	**1FT2206-2AF■■-■■B0**	M23	4 × 1.5	5
63	6.5 (4.8)	6.5	18 (13.3)	4500	1.8	3.85 (2.84)	7.8 (2.7)	**1FT2206-2AH■■-■■B0**	M23	4 × 1.5	9
63	9 (6.64)	3.15	27 (19.9)	1500	1.3	8.3 (6.1)	11.5 (3.9)	**1FT2206-3AB■■-■■B0**	M23	4 × 1.5	5
63	9 (6.64)	5.4	27 (19.9)	3000	2.35	7.5 (5.5)	11.5 (3.9)	**1FT2206-3AF■■-■■B0**	M23	4 × 1.5	9
63	12 (8.85)	4.5	38 (28.0)	2000	2.2	10.5 (7.7)	15.1 (5.2)	**1FT2206-4AC■■-■■B0**	M23	4 × 1.5	5
63	12 (8.85)	7.9	36 (26.6)	3000	2.85	9.1 (6.7)	15.1 (5.2)	**1FT2206-4AF■■-■■B0**	M23	4 × 1.5	9
63	12 (8.85)	12	36 (26.6)	4500	2.2	4.7 (3.5)	15.1 (5.2)	**1FT2206-4AH■■-■■B0**	M23	4 × 1.5	18

Article No. supplements

Holding brake						
Without brake	**0**					
With brake	**1**					
Degree of protection						
IP64 (without shaft sealing ring)		**0**				
IP65 (with shaft sealing ring)		**1**				
IP67 (with shaft sealing ring with annular spring)		**2**				
Shaft end / feather key						
Plain shaft			**0**			
Shaft with feather key			**1**			
Plain shaft, reduced shaft diameter		**0**	**2**			
•Ø11 × 23 mm (0.43 × 0.91 in) (only for 1FT2.03 and IP64)						
•Ø14 × 30 mm (0.55 × 1.18 in) (only for 1FT2.04 and IP64)						
Encoder						
AS22DQC (absolute encoder 22-bit single-turn)				**S**		
AM22DQC (absolute encoder 22-bit + 12-bit multi-turn)				**M**		
AS26DQC (absolute encoder 26-bit single-turn)				**B**		
AM26DQC (absolute encoder 22-bit + 12-bit multi-turn)				**C**		

Power cable

	Article No.	for I_0 motor
M17	**6FX ■ 002-5 ■ N27-...**	4 × 1.5 for max. 15.2 A
M23	**6FX ■ 002-5 ■ N06-...**	4 × 1.5 for max. 15.2 A
M23	**6FX ■ 002-5 ■ N16-...**	4 × 2.5 for max. 21 A
M40	**6FX ■ 002-5 ■ N36-...**	4 × 2.5 for max. 21 A
M40	**6FX ■ 002-5 ■ N46-...**	4 × 4 for max. 28 A
M40	**6FX ■ 002-5 ■ N56-...**	4 × 6 for max. 36 A

... Length code

C Without brake cores
D With brake cores [2]

8 MOTION-CONNECT 800PLUS
5 MOTION-CONNECT 500

For more information about cables, see MOTION-CONNECT connection systems

[1] For installation type "C" and 40 °C (104 °F).

[2] Cable cross-section for brake connection 2 × 1.5 mm^2.

SIMOTICS S-1FT2 Compact

Selection and ordering data

SIMOTICS S-1FT2 servomotors for SINAMICS S120 with line connection 380 ... 480 V 3 AC

SIMOTICS S-1FT2 servomotor											SINAMICS S120
Shaft height	Static torque	Stall current	Maximum torque	Rated speed	Rated power	Rated torque	Rotor moment of inertia		Cable connector	Recommended cross-section [1] of the power cable	SINAMICS S120 rated output current Booksize
	M_0	I_0	M_{max}	n_N	P_N	M_N	J_{Mot}		Size		I_N
	Nm (lb$_f$-ft)	A	Nm (lb$_f$-ft)	r/min	kW	Nm (lb$_f$-ft)	kg cm^2 (lb$_f$-in^2)	Article No.		4 × mm^2	A
Compact for high precision applications											
80	12.5 (9.2)	8.3	38 (28.0)	3000	2.85	9 (6.64)	22.5 (7.7)	**1FT2208-2AF■■-■■B0**	M23	4 × 1.5	9
80	18 (13.3)	6.2	51 (37.6)	1500	2.5	16 (11.8)	29.6 (10.1)	**1FT2208-3AB■■-■■B0**	M23	4 × 1.5	9
80	18 (13.3)	8.4	51 (37.6)	2000	3.05	14.5 (10.7)	29.6 (10.1)	**1FT2208-3AC■■-■■B0**	M23	4 × 1.5	9
80	18 (13.3)	11.9	51 (37.6)	3000	3.5	11.1 (8.2)	29.5 (10.1)	**1FT2208-3AF■■-■■B0**	M23	4 × 1.5	18
80	22 (16.2)	7.1	66 (48.7)	1500	2.9	18.6 (13.7)	38.8 (13.3)	**1FT2208-4AB■■-■■B0**	M23	4 × 1.5	9
80	22 (16.2)	11.7	66 (48.7)	2000	3.55	17 (12.5)	38.8 (13.3)	**1FT2208-4AC■■-■■B0**	M23	4 × 1.5	18
80	22 (16.2)	15	66 (48.7)	3000	3.7	11.8 (8.7)	38.8 (13.3)	**1FT2208-4AF■■-■■B0**	M23	4 × 1.5	18
80	27 (19.9)	8.6	80 (59.0)	1500	3.45	22 (16.2)	48.1 (16.4)	**1FT2208-5AB■■-■■B0**	M23	4 × 1.5	9
80	27 (19.9)	14.6	80 (59.0)	2000	4	19.1 (14.1)	48.1 (16.4)	**1FT2208-5AC■■-■■B0**	M23	4 × 1.5	18
100	22 (16.2)	9.3	60 (44.3)	2000	3.85	18.4 (13.6)	61.7 (21.1)	**1FT2210-2AC■■-■■B0**	M23	4 × 1.5	9
100	22 (16.2)	12.9	60 (44.3)	3000	5.1	16.2 (11.9)	61.7 (21.1)	**1FT2210-2AF■■-■■B0**	M23	4 × 1.5	18
100	30 (22.1)	8.5	90 (66.4)	1500	4.5	28.5 (21.0)	88.8 (30.3)	**1FT2210-3AB■■-■■B0**	M23	4 × 1.5	9
100	30 (22.1)	15	90 (66.4)	2000	5.5	26 (19.2)	88.8 (30.3)	**1FT2210-3AC■■-■■B0**	M23	4 × 1.5	18
100	30 (22.1)	19.8	90 (66.4)	3000	5.8	18.5 (13.6)	88.8 (30.3)	**1FT2210-3AF■■-■■B0**	M23	4 × 2.5	24
100	40 (29.5)	11.8	120 (88.5)	1500	5.4	34.5 (25.4)	117 (40.0)	**1FT2210-4AB■■-■■B0**	M23	4 × 1.5	18
100	40 (29.5)	15	120 (88.5)	2000	6.4	30.5 (22.5)	117 (40.0)	**1FT2210-4Ac■■-■■B0**	M23	4 × 1.5	18
100	40 (29.5)	22.5	120 (88.5)	3000	5.7	18 (13.3)	117 (40.0)	**1FT2210-4AF■■-■■B0**	M40	4 × 4	24
100	50 (36.9)	15	150 (111)	1500	6.1	39 (28.8)	145 (49.5)	**1FT2210-5AB■■-■■B0**	M23	4 × 1.5	18
100	50 (36.9)	22.5	150 (111)	2000	7.1	33.5 (24.7)	145 (49.5)	**1FT2210-5AC■■-■■B0**	M40	4 × 4	24

Article No. supplements

Holding brake	
Without brake	**0**
With brake	**1**
With reinforced holding brake (1FT2208-2, 1FT2208-3, 1FT2210-2, 1FT2210-3 only)	**2**
Degree of protection	
IP64 (without shaft sealing ring)	**0**
IP65 (with shaft sealing ring)	**1**
IP67 (with shaft sealing ring with annular spring)	**2**
Shaft end / feather key	
Plain shaft	**0**
Shaft with feather key	**1**
Encoder	
AS22DQC (absolute encoder 22-bit single-turn)	**S**
AM22DQC (absolute encoder 22-bit + 12-bit multi-turn)	**M**
AS26DQC (absolute encoder 26-bit single-turn)	**B**
AM26DQC (absolute encoder 22-bit + 12-bit multi-turn)	**C**

Power cable		
	Article No.	**for I_0 motor**
M17	**6FX ■ 002-5 ■ N27-...**	4 × 1.5 for max. 15.2 A
M23	**6FX ■ 002-5 ■ N06-...**	4 × 1.5 for max. 15.2 A
M23	**6FX ■ 002-5 ■ N16-...**	4 × 2.5 for max. 21 A
M40	**6FX ■ 002-5 ■ N36-...**	4 × 2.5 for max. 21 A
M40	**6FX ■ 002-5 ■ N46-...**	4 × 4 for max. 28 A
M40	**6FX ■ 002-5 ■ N56-...**	4 × 6 for max. 36 A

... Length code

C Without brake cores
D With brake cores [2]

8 MOTION-CONNECT 800PLUS
5 MOTION-CONNECT 500

For more information about cables, see MOTION-CONNECT connection systems

[1] For installation type "C" and 40 °C (104 °F).

[2] Cable cross-section for brake connection 2 × 1.5 mm^2.

Selection and ordering data

SIMOTICS S-1FT2 servomotors for SINAMICS S120 with line connection 380 ... 480 V 3 AC

SIMOTICS S-1FT2 servomotor											SINAMICS S120
Shaft height	Static torque	Stall current	Maximum torque	Rated speed	Rated power	Rated torque	Rotor moment of inertia		Cable connector	Recommended cross-section [1] of the power cable	SINAMICS S120 rated output current Booksize
	M_0	I_0	M_{max}	n_N	P_N	M_N	J_{Mot}		Size		I_N
	Nm (lb_f-ft)	A	Nm (lb_f-ft)	r/min	kW	Nm (lb_f-ft)	kg cm^2 (lb_f-in^2)	Article No.		4 × mm^2	A
Forced ventilation: High Dynamic for highly dynamic applications											
80	33 (24.3)	19.2	87 (64.2)	2000	6	28.5 (21.0)	18.3 (6.3)	**1FT2108-4SC■■-■■B0**	M40	4 × 2.5	24
80	40 (29.5)	15.5	105 (77.4)	1500	5.6	35.5 (26.2)	21.6 (7.4)	**1FT2108-5SB■■-■■B0**	M23	4 × 2.5	18
80	40 (29.5)	24	105 (77.4)	2000	7.1	34 (25.1)	21.6 (7.4)	**1FT2108-5SC■■-■■B0**	M40	4 × 4	24
80	50 (36.9)	18.2	140 (103)	1500	6.9	44 (32.5)	28.2 (9.6)	**1FT2108-7SB■■-■■B0**	M40	4 × 2.5	18
80	50 (36.9)	29	140 (103)	2000	8.8	42 (31.0)	28.2 (9.6)	**1FT2108-7SC■■-■■B0**	M40	4 × 6	30
80	49.5 (36.5)	36	140 (103)	2500	10.2	39 (28.8)	28.2 (9.6)	**1FT2108-7SE■■-■■B0**	M40	4 × 6	45
Forced ventilation: Compact for high precision applications											
80	22 (16.2)	7.8	51 (37.6)	1500	3.1	19.9 (14.7)	29.6 (10.1)	**1FT2208-3SB■■-■■B0**	M23	4 × 1.5	9
80	22 (16.2)	10.4	51 (37.6)	2000	4	19.1 (14.1)	29.6 (10.1)	**1FT2208-3SC■■-■■B0**	M23	4 × 1.5	18
80	22 (16.2)	14.1	51 (37.6)	3000	5.5	17.6 (13.0)	29.6 (10.1)	**1FT2208-3SF■■-■■B0**	M23	4 × 1.5	18
80	28 (20.7)	9.3	66 (48.7)	1500	4	25.5 (18.8)	38.8 (13.3)	**1FT2208-4SB■■-■■B0**	M23	4 × 1.5	9
80	28 (20.7)	14.6	66 (48.7)	2000	5.1	24 (17.7)	38.8 (13.3)	**1FT2208-4SC■■-■■B0**	M23	4 × 1.5	18
80	28 (20.7)	18.7	66 (48.7)	3000	7.1	22.5 (16.6)	38.8 (13.3)	**1FT2208-4SF■■-■■B0**	M40	4 × 2.5	18
80	35 (25.8)	10.7	80 (59.0)	1500	5	32 (23.6)	48.1 (16.4)	**1FT2208-5SB■■-■■B0**	M23	4 × 1.5	18
80	35 (25.8)	18.8	80 (59.0)	2000	6.3	30 (22.1)	48.1 (16.4)	**1FT2208-5SC■■-■■B0**	M40	4 × 2.5	18

Article No. supplements

Holding brake				
Without brake	**0**			
With brake	**1**			
With reinforced holding brake (only for 1FT2108, 1FT2208-2, 1FT2208-3)	**2**			
Degree of protection				
IP64 (without shaft sealing ring)		**0**		
IP65 (with shaft sealing ring)		**1**		
IP67 (with shaft sealing ring with annular spring)		**2**		
Shaft end / feather key				
Plain shaft			**0**	
Shaft with feather key			**1**	
Encoder				
AS22DQC (absolute encoder 22-bit single-turn)				**S**
AM22DQC (absolute encoder 22-bit + 12-bit multi-turn)				**M**
AS26DQC (absolute encoder 26-bit single-turn)				**B**
AM26DQC (absolute encoder 26-bit + 12-bit multi-turn)				**C**

Power cable

Cable connector Size	Article No.	for I_0 motor
M17	**6FX ■ 002-5 ■ N27-...**	4 × 1.5 for max. 15.2 A
M23	**6FX ■ 002-5 ■ N06-...**	4 × 1.5 for max. 15.2 A
M23	**6FX ■ 002-5 ■ N16-...**	4 × 2.5 for max. 21 A
M40	**6FX ■ 002-5 ■ N36-...**	4 × 2.5 for max. 21 A
M40	**6FX ■ 002-5 ■ N46-...**	4 × 4 for max. 28 A
M40	**6FX ■ 002-5 ■ N56-...**	4 × 6 for max. 36 A

... Length code

C Without brake cores
D With brake cores [2]

8 MOTION-CONNECT 800PLUS
5 MOTION-CONNECT 500

For more information about cables, see MOTION-CONNECT connection systems

[1] For installation type "C" and 40 °C (104 °F).
[2] Cable cross-section for brake connection 2 × 1.5 mm^2.

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