

Data sheet for SIMOTICS S-1FT7

Article No. : **1FT7084-5AF71-1FG1-Z
J09**



Figure similar

Client order no. :
Order no. :
Offer no. :
Remarks :

Item no. :
Consignment no. :
Project :

Engineering data

Rated speed	3,000 rpm
Number of poles	10
Rated torque (100 K)	14.5 Nm
Rated current	8.50 A
Static torque (60 K)	16.8 Nm
Static torque (100 K)	20.0 Nm
Stall current (60 K)	9.20 A
Stall current (100 K)	11.00 A
Rotor moment of inertia	53.54 kgcm ²
Efficiency	93.0 %

Physical constants

Torque constant	1.82 Nm/A
Voltage constant at 20° C	115.5 V/1000*min ⁻¹
Winding resistance at 20° C	0.35 Ω
Rotary field inductance	6.0 mH
Electrical time constant	17.00 ms
Mechanical time constant	1.40 ms
Thermal time constant	55 min
Shaft torsional stiffness	88,000 Nm/rad
Net weight of the motor	38.0 kg

Mechanical data

Motor type	Permanent-magnet synchronous motor
Motor type	Compact
Shaft height	80
Cooling	Natural cooling
Radial runout tolerance	0.050 mm
Concentricity tolerance	0.100 mm
Axial runout tolerance	0.100 mm
Vibration severity grade	Grade A
Degree of protection	IP65
Design acc. to Code I	IM B5 (compatible with 1FT6)
Temperature monitoring	Pt1000 temperature sensor
Color of the housing	Standard (pearl dark gray similar to RAL 9023)
Shaft end type	Plain shaft
Sensor design	Encoder AM22DQ: absolute encoder 22 bits (resolution 4194304, encoder-internal 2048 S/R) + 12 bits multi-turn (traversing range 4096 revolutions)
Electrical connection	Connector turnable
Connector size	1

Optimum operating point

Optimum speed	3,000 rpm
Optimum power	4.5 kW

Limiting data

Max. permissible speed (mech.)	8,000 rpm
Max. permissible speed (inverter)	5,000 rpm
Maximum torque	81.0 Nm
Maximum current	55.00 A

Recommended Motor Module

Rated inverter current	18.00 A
Maximum inverter current	54.00 A
Maximum torque	79.5 Nm

Gearbox data

Gearbox type	Planetary gearbox
Designation	SP 140S-MF1
Gearbox ratio	10
Motor speed S3-60 %	5,000 rpm
Motor speed S1	2,600 rpm
Output torque S1	327.0 Nm
Rated output torque at duty type S3-60 %	636.0 Nm
Moment of inertia of gearbox	8.44 kgcm ²
Radial output shaft loading, max.	9,900 N
Axial output shaft load, max.	9,870 N
Efficiency of gearbox	0.97
Torsional backlash	3 '
Gearbox weight	17.20 kg

Special design

J09 Mounting of SP+ planetary gearbox