

## Data sheet for SIMOTICS S-1FT7

Article No. : **1FT7082-5AH74-1MH1-Z  
J09**



Figure similar

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

Item no. :  
Consignment no. :  
Project :

Engineering data	
Rated speed	4,500 rpm
Number of poles	10
Rated torque (100 K)	8.0 Nm
Rated current	7.80 A
Static torque (60 K)	10.6 Nm
Static torque (100 K)	13.0 Nm
Stall current (60 K)	10.30 A
Stall current (100 K)	12.30 A
Rotor moment of inertia	50.34 kgcm <sup>2</sup>
Efficiency	93.0 %

Physical constants	
Torque constant	1.03 Nm/A
Voltage constant at 20° C	65.5 V/1000*min <sup>-1</sup>
Winding resistance at 20° C	0.23 Ω
Rotary field inductance	3.5 mH
Electrical time constant	15.00 ms
Mechanical time constant	1.70 ms
Thermal time constant	40 min
Shaft torsional stiffness	76,000 Nm/rad
Net weight of the motor	35.5 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 AM2048S/R: absolute encoder 2048 S/R, 4096 revolutions multi-turn, with EnDat interface
Electrical connection	Connector turnable
Connector size	1

Optimum operating point	
Optimum speed	4,500 rpm
Optimum power	3.8 kW

Limiting data	
Max. permissible speed (mech.)	8,000 rpm
Max. permissible speed (inverter)	8,000 rpm
Maximum torque	52.0 Nm
Maximum current	63.00 A

Recommended Motor Module	
Rated inverter current	18.00 A
Maximum inverter current	54.00 A
Maximum torque	48.0 Nm

Holding brake	
Holding brake version	Permanent-magnet brake
Holding torque	48.0 Nm
Braking torque	25.0 Nm
Power supply voltage	DC 24 V
Coil current	1.00 A
Permissible brake work	1,900 J
Opening time	220 ms
Closing time	65 ms

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 <sup>2</sup>
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