

Stepper motor EMMB-ST-57-L-SSB

Part number: 8156147

FESTO



Data sheet

Feature	Value
Ambient temperature	-15 °C...40 °C
Note on ambient temperature	up to 80°C with derating -2%/°C
Max. installation height	4000 m
Information on max. installation height	with 1,000 m and longer only with derating of -1.0% per 100 m
Storage temperature	-20 °C...70 °C
Relative air humidity	0 - 90 % Non-condensing
Conforms to standard	IEC 60034
Thermal class according to EN 60034-1	B
Max. winding temperature	130 °C
Rating class according to EN 60034-1	S1
Motor type as per EN 60034-7	IM B5 IM V1 IM V3
Mounting position	Any
Degree of protection	IP20
Note on degree of protection	IP40 for motor shaft without rotary shaft seal
Interface code, motor out	57A
Electrical connection 1, connection type	Hybrid plug
Electrical connection 1, connection technology	Plug pattern L10
Electrical connection 1, number of pins/wires	14
Note on materials	RoHS-compliant
Corrosion resistance class (CRC)	0 - No corrosion stress
LABS (PWIS) conformity	VDMA24364 zone III
Vibration resistance	Transport application test with severity level 2 as per FN 942017-4 and EN 60068-2-6
Shock resistance	Shock test with severity level 2 as per FN 942017-5 and EN 60068-2-27
Certification	RCM compliance mark
CE marking (see declaration of conformity)	As per EU EMC directive As per EU RoHS directive
UKCA marking (see declaration of conformity)	To UK instructions for EMC To UK RoHS instructions
Nominal operating voltage DC	48 V

Feature	Value
Number of pole pairs	50
Motor holding torque	1800 Nm
Nominal torque	1580 Nm
Peak torque	2100 Nm
Nominal rotary speed	500 rpm
Max. rotational speed	1500 rpm
Max. mechanical speed	8000 rpm
Step angle with full step	1.8 deg
Step angle tolerance	±5%
Motor nominal power	83 W
Continuous stall current	5800 A
Motor nominal current	5 A
Peak current	8 A
Motor constants	320 Nm/A
Voltage constant, phase	22600 mV/min
Phase winding resistance	260 Ohm
Winding inductance phase	950 mH
Winding longitudinal inductivity Ld (phase)	1750 mH
Cross inductivity Lq (phase)	950 mH
Electric time constant	3700 ms
Thermal time constant	32 min
Thermal resistance	1500 K/W
Measuring flange	200 x 200 x 15 mm, steel
Total output inertia moment	0.504 kgcm ²
Product weight	1580 g
Permissible axial shaft load	15 N
Permissible radial shaft load	75 N
Rotor position sensor	Absolute encoder, single-turn
Rotor position sensor for manufacturer designation	Festo iC-MHM
Rotor position encoder for absolutely detectable revolutions	1
Rotor position sensor interface	BiSS-C
Rotor position sensor measuring principle	Magnetic
Rotor position encoder for DC operating voltage	5 V
Rotor position encoder for DC operating voltage range	4750 V...5250 V
Rotor position encoder, sinusoidal/cosinusoidal periods per revolution	2
Rotor position encoder for positional values per revolution	65536
Rotor position sensor resolution	16 bit
Rotor position encoder system accuracy angle measurement	-540 arcsec...540 arcsec
Brake holding torque	1740 Nm
Brake DC operating voltage	24 V
Brake current consumption	380 A
Brake power consumption	9 W
Brake coil resistance	63800 Ohm
Brake coil inductivity	107 mH
Brake separation time	32 ms
Brake closing time	97 ms
DC brake response delay	11 ms
Max. brake no-load speed	8000 rpm
Max. brake friction work	6000 J
	1
Brake mass moment of inertia	0.024 kgcm ²
Switching cycles, holding brake	10 million idle actuations (without friction work!)
MTTF, subcomponent	9666 years, rotor position encoder

