Servo motor
EMMT-EC-40-M-ES-R1SCB

Part number: 8171406

General operating condition

Data sheet

Feature	Value
Ambient temperature	-40 °C ... 40 °C
Note on ambient temperature	Up to 80°C with derating of -1.5% per degree Celsius
Max. installation height	4000 m
Note on max. installation height	As of 1,000 m: only with derating of -1.0% per 100 m
Storage temperature	-40 °C ... 70 °C
Relative air humidity	0 - 90%
Conforms to standard	IEC 60034
Temperature class as per EN 60034-1	F
Max. winding temperature	155 °C
Rating class as per EN 60034-1	S1
Motor type to EN 60034-7	IM V1 IM V3
Mounting position	Any
Degree of protection	IP40
Note on degree of protection	IP40 for motor shaft without rotary shaft seal IP65 for motor housing, incl. connection technology IP65 for motor shaft with rotary shaft seal
Concentricity, coaxiality, axial runout to DIN SPEC 42955	N
Balance quality	G 2.5
Detent torque	‹1.0% of peak torque
Bearing lifetime under nominal conditions	20000 h
Interface code, motor out	40P
Electrical connection 1, connection type	Hybrid plug
Electrical connection 1, connector system	M17x0.75
Electrical connection 1, number of connections/cores	12
Electrical connection 1, connection pattern	00997532
Pollution degree	2
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 to FN 942017-4 and EN 60068-2-6
Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Approval	RCM c UL us - Recognised (Oil)
CE mark (see declaration of conformity)	To EU EMC Directive In accordance with EU RoHS Directive

Feature	Value
UKCA marking (see declaration of conformity)	To UK RoHS instructions To UK regulations for electrical equipment
Certificate issuing authority	UL E342973
Nominal operating voltage DC	48 V
Type of winding switch	Star inside
Number of pole pairs	5
Standstill torque	0.45 Nm
Nominal torque	0.44 Nm
Peak torque	1.32 Nm
Nominal rotary speed	3000 rpm
Max. rotational speed	5770 rpm
Max. mechanical speed	15000 rpm
Angular acceleration	≤100000 rad/s²
Nominal power rating of motor	138 W
Continuous stall current	5.2 A
Nominal motor current	5.2 A
Peak current	20 A
Motor constant	0.085 Nm/A
Standstill torque constant	0.1 Nm/A
Voltage constant, phase-to-phase	5.8 mVmin
Phase-phase winding resistance	0.87 Ohm
Phase-phase winding inductance	0.89 mH
Winding longitudinal inductivity Ld (phase)	0.34 mH
Winding cross inductivity Lq (phase)	0.45 mH
Electric time constant	1.02 ms
Thermal time constant	21.4 min
Thermal resistance	1.35 K/W
Measuring flange	200 x 200 x 15 mm, steel
Total mass moment of inertia of output	0.076 kgcm²
Product weight	800 g
Permissible axial shaft load	30 N
Permissible radial shaft load	150 N
Rotor position sensor	Absolute encoder, single turn
rotor position sensor, manufacturer designation	Festo iC-MHM
rotor position sensor, absolute detectable revolutions	1
Rotor position encoder interface	BiSS-C
Rotor position sensor, encoder measuring principle	magnetic
rotor position sensor, DC operating voltage	5 V
rotor position sensor, DC operating voltage range	4.5 V ... 5.5 V
rotor position sensor, position values per revolution	65536
Rotor position transducer resolution	16 bit
rotor position sensor, system accuracy of angle measurement	-1800 arcsec ... 1800 arcsec
Brake holding torque	0.45 Nm
Operating voltage DC for brake	24 V
Brake current consumption	0.34 A
Power consumption, brake	8.2 W
Brake coil resistance	70.9 Ohm
Brake coil inductivity	146 mH
Brake separation time	≤28 ms
Brake closing time	41 ms
DC brake response delay	≤8 ms
Max. brake no-load speed	12000 rpm
Max. friction per braking process	1500 J

Feature	Value
Number of emergency stops per hour	1
Total brake friction	1.5 kJ
Mass moment of inertia of brake	0.0058 kgcm²
Switching cycles holding brake	10 million idle actuations (without friction work!)
Mean time to failure (MTTF), subcomponent	190 years, rotor position encoder