Servo motor
EMMT-EC-40-S-ES-R1MCB

Part number: 8171403

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
Temperature monitoring	Dig. motor temp. via BiSS-C
Motor type to EN 60034-7	IM B5 IM V1 IM V3
Mounting position	optional
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 trademark c UL us - Recognized (OL)

Feature	Value
CE mark (see declaration of conformity)	To EU EMC Directive In accordance with EU RoHS Directive
UKCA marking (see declaration of conformity)	To UK instructions for EMC 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	0.24 Nm
Nominal torque	0.23 Nm
Peak torque	0.85 Nm
Nominal rotary speed	4000 rpm
Max. rotational speed	9100 rpm
Max. mechanical speed	15000 rpm
Angular acceleration	≤100000 rad/s²
Nominal power rating of motor	96 W
Continuous stall current	4.4 A
Nominal motor current	4.2 A
Peak current	20 A
Motor constant	0.055 Nm/A
Standstill torque constant	0.06 Nm/A
Voltage constant, phase-to-phase	3.6 mVmin
Phase-phase winding resistance	1.1 Ohm
Phase-phase winding inductance	0.9 mH
Winding longitudinal inductivity Ld (phase)	0.35 mH
Winding cross inductivity Lq (phase)	0.45 mH
Electric time constant	0.82 ms
Thermal time constant	4.6 min
Thermal resistance	1.58 K/W
Measuring flange	200 x 200 x 15 mm, steel
Total mass moment of inertia of output	0.045 kgcm²
Product weight	600 g
Permissible axial shaft load	30 N
Permissible radial shaft load	150 N
Rotor position sensor	Absolute multi-turn encoder
rotor position sensor, manufacturer designation	KCD-BC33B-1617-JP4F-GRQ-009
rotor position sensor, absolute detectable revolutions	4096
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	131072
Rotor position transducer resolution	17 bit
rotor position sensor, system accuracy of angle measurement	-320 arcsec ... 320 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

Feature	Value
Max. brake no-load speed	12000 rpm
Max. friction per braking process	1500 J
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 sensor