Stepper motor
EMMT-ST-42-L-RB

Part number: 8156170

General operating condition

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
Note on max. installation height	As of 1,000 m: only with derating of -1.0% per 100 m
Storage temperature	-20 °C ... 70 °C
Relative air humidity	Non-condensing
Conforms to standard	IEC 60034
Temperature class as per EN 60034-1	B
Max. winding temperature	130 °C
Rating class as per EN 60034-1	S1
Motor type to EN 60034-7	IM V1 IM V3
Mounting position	optional
Degree of protection	IP40
Note on degree of protection	IP40 Motor shaft IP65 for motor housing, incl. connection technology
Interface code, motor out	42A
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
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)
CE mark (see declaration of conformity)	To EU EMC Directive In accordance with EU RoHS Directive
UKCA marking (see declaration of conformity)	To UK RoHS instructions
Certificate issuing authority	UL E342973
Nominal operating voltage DC	48 V
Number of pole pairs	50
Motor holding torque	0.63 Nm
Peak torque	0.63 Nm

Feature	Value
Max. rotational speed	3200 rpm
Max. mechanical speed	9000 rpm
Stepper angle for complete step	1.8 deg
Stepping angle tolerance	±5%
Continuous stall current	3.7 A
Nominal motor current	3.4 A
Peak current	4 A
Motor constant	0.162 Nm/A
Voltage constant, phase	10.6 mVmin
Phase winding resistance	0.6 Ohm
Phase winding inductance	0.8 mH
Winding longitudinal inductivity Ld (phase)	1.45 mH
Winding cross inductivity Lq (phase)	0.8 mH
Electric time constant	1.3 ms
Thermal time constant	16 min
Thermal resistance	2 K/W
Measuring flange	200 x 200 x 15 mm, steel
Total mass moment of inertia of output	0.088 kgcm²
Product weight	770 g
Permissible axial shaft load	10 N
Permissible radial shaft load	28 N
Brake holding torque	0.63 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	9000 rpm
Max. friction per braking process	1500 J
Number of emergency stops per hour	1
Mass moment of inertia of brake	0.006 kgcm²
Switching cycles holding brake	10 million idle actuations (without friction work!)