Servo motor
EMMT-AS-80-S-HS-RSB

Part number: 5255431

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	Digital motor temperature transmission via EnDat® 2.2
Motor type to EN 60034-7	IM V1 IM V3
Mounting position	Any
Degree of protection	IP40
Note on degree of protection	IP67 for motor housing including connection components
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	80P
Electrical connection 1, connection type	Hybrid plug
Electrical connection 1, connector system	M23x1
Electrical connection 1, number of connections/cores	15
Electrical connection 1, connection pattern	00995913
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 To EU Low Voltage 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	680 V
Type of winding switch	Star inside
Number of pole pairs	5
Standstill torque	1.46 Nm
Nominal torque	1.3 Nm
Peak torque	2.8 Nm
Nominal rotary speed	3000 rpm
Max. rotational speed	8950 rpm
Max. mechanical speed	14000 rpm
Angular acceleration	≤100000 rad/s²
Nominal power rating of motor	408 W
Continuous stall current	2 A
Nominal motor current	1.76 A
Peak current	5.4 A
Motor constant	0.74 Nm/A
Standstill torque constant	0.89 Nm/A
Voltage constant, phase-to-phase	53.6 mVmin
Phase-phase winding resistance	12.4 Ohm
Phase-phase winding inductance	39.8 mH
Winding longitudinal inductivity Ld (phase)	25 mH
Winding cross inductivity Lq (phase)	29.8 mH
Electric time constant	4.8 ms
Thermal time constant	42 min
Thermal resistance	0.95 K/W
Measuring flange	250 x 250 x 15 mm, steel
Total mass moment of inertia of output	0.897 kgcm²
Product weight	2720 g
Permissible axial shaft load	120 N
Permissible radial shaft load	620 N
Rotor position sensor	Absolute encoder, single turn
rotor position sensor, manufacturer designation	ECI 1118
rotor position sensor, absolute detectable revolutions	1
Rotor position encoder interface	EnDat 22
Rotor position sensor, encoder measuring principle	Inductive
rotor position sensor, DC operating voltage	5 V
rotor position sensor, DC operating voltage range	3.6 V ... 14 V
rotor position sensor, position values per revolution	262144
Rotor position transducer resolution	18 bit
rotor position sensor, system accuracy of angle measurement	-120 arcsec ... 120 arcsec
Brake holding torque	4.5 Nm
Operating voltage DC for brake	24 V
Brake current consumption	0.5 A
Power consumption, brake	12 W
Brake coil resistance	48 Ohm
Brake coil inductivity	1000 mH
Brake separation time	≤55 ms
Brake closing time	≤15 ms
DC brake response delay	≤3 ms
Max. brake no-load speed	10000 rpm
Max. friction per braking process	8200 J

Feature	Value
Number of emergency stops per hour	1
Total brake friction	580 kJ
Mass moment of inertia of brake	0.249 kgcm²
Switching cycles holding brake	10 million idle actuations (without friction work!)
Mean time to failure (MTTF), subcomponent	190 years, rotor position encoder