

# servo motor

## EMMT-AS-190-MKR-HS-R3MYB

Part number: 8148389

FESTO



### Data sheet

Feature	Value
Ambient temperature	-15 ... 40 °C
Note on ambient temperature	up to 80°C with derating -1.5%/°C
Max. installation height	4,000 m
Note on max. installation height	As of 1,000 m, only with derating of -1.0% per 100 m
Storage temperature	-20 ... 70 °C
Relative air humidity	0 - 90 %
Conforms to standard	IEC 60034
Thermal class according to EN 60034-1	F
Max. winding temperature	155 °C
Rating class according to EN 60034-1	S1
Temperature monitoring	Digital motor temperature transmission via EnDat® 2.2
Motor type to EN 60034-7	IM B5 IM V1 IM V3
Assembly position	Any
Protection class	IP21
Note on degree of protection	IP21 for motor shaft without rotary shaft seal IP65 motor shaft with RWDR IP67 for motor housing with connection technology
Concentricity, coaxiality, axial runout to DIN SPEC 42955	N
Balance quality	G 2,5
Detent torque	<1.0% of peak torque
Storage lifetime under nominal conditions	20,000 h
Shaft design Featherkey	DIN 6885 A 10 x 8 x 45
Interface code, motor out	190B
Electrical connection 1, connection type	Hybrid plugs
Electrical connection 1, connection technology	M40x1
Electrical connection 1, number of pins/wires	15
Degree of contamination	2
Materials note	Conforms to RoHS
Corrosion resistance classification CRC	0 - No corrosion stress
PWIS conformity	VDMA24364 zone III
Vibration resistance	as per EN 60068-2-6
Shock resistance	as per EN 60068-2-29 15 g/11 ms to EN 60068-2-27
Authorisation	c UL us - Recognized (OL)
CE mark (see declaration of conformity)	to EU directive for EMC to EU directive low-voltage devices in accordance with EU RoHS directive
UKCA marking (see declaration of conformity)	To UK instructions for electrical equipment To UK instructions for EMC To UK RoHS instructions
Certificate issuing department	TÜV 968/FSP 2317.00/21 UL E342973
Nominal operating voltage DC	680 V

Feature	Value
Type of winding switch	Star inside
Number of pole pairs	5
Standstill torque	76.7 Nm
Nominal torque	59.1 Nm
Peak torque	118.3 Nm
Nominal rotary speed	1,200 1/min
Max. speed	2,163 1/min
Max. mechanical speed	8,000 1/min
Nominal motor power	7,427 W
Continuous open-circuit current	25 A
Nominal motor current	19.2 A
Peak current	41.5 A
Motor constant	3.08 Nm/A
Standstill torque constant	3.56 Nm/A
Voltage constant, phase-to-phase	215.2 mVmin
Phase-phase winding resistance	0.285 Ohm
Phase-phase winding inductance	12.3 mH
Winding longitudinal inductivity Ld (phase)	5.65 mH
Winding cross inductivity Lq (phase)	6.15 mH
Electric time constant	39.6 ms
Thermal time constant	70 min
Thermal resistance	0.31 K/W
Measuring flange	450 x 450 x 30, steel
Overall mass moment of inertia at power take-off	160 kgcm <sup>2</sup>
Product weight	50,600 g
Permissible axial shaft load	500 N
Permissible radial shaft load	2,530 N
Rotor position sensor	Safety Enc. absolut multi turn
Rotor position sensor, manufacturer designation	EQI 1331
Rotor position sensor, absolute detectable revolutions	4,096
Rotary position encoder interface	EnDat 22
Rotary position encoder measuring principle	Inductive
Rotor position sensor, DC operating voltage	5 V
Rotor position sensor, DC operating voltage range	3.6 ... 14 V
Rotor position sensor, position values per revolution	524,288
Rotor position encoder resolution	19 Bit
Rotor position sensor, system accuracy of angle measurement	-65 ... 65 arcsec
Brake holding torque	115 Nm
Operating voltage DC for brake	24 V
Brake current consumption	2.08 A
Power consumption, brake	50 W
Brake separation time	190 ms
Brake closing time	65 ms
DC brake response delay	12 ms
Max. brake no-load speed	8,000 1/min
Mass moment of inertia of brake	50 kgcm <sup>2</sup>
Switching cycles, holding brake	5 million idle actuations (without work of friction!)
Safety Integrity Level (SIL), component parts	SIL 2, encoder
Performance Level (PL), component parts	Category 3, Performance Level d, encoder
PFHd, component parts	15 x 10E-9, encoder
Duration of use Tm, component parts	20 years, rotor position encoder
MTTF, subcomponent	190 years, rotor position sensor
Energy efficiency	ENEFF (CN) / Class 1