

# Servo motor EMMT-AS-60-L-HS-RSB

Part number: 5242218

FESTO



 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
Information on max. installation height	with 1,000 m and longer 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
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 as per EN 60034-7	IM V1 IM V3
Mounting position	Any
Degree of protection	IP40
Note on degree of protection	IP67 for motor housing, incl. connection technology
Concentricity, coaxiality, axial runout according to DIN SPEC 42955	N
Balancing quality	G 2.5
Detent torque	<1.0% of peak torque
Bearing lifetime, under nominal conditions	20000 h
Interface code, motor out	60P
Electrical connection 1, connection type	Hybrid plug
Electrical connection 1, connection technology	M23x1
Electrical connection 1, number of pins/wires	15
Electrical connection for input 1, connection pattern	00995913
Contamination level	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 as per FN 942017-4 and EN 60068-2-6
Shock resistance	Shock test with severity level 2 as per FN 942017-5 and EN 60068-2-27
Certification	RCM compliance mark c UL us - recognized (OL)
CE marking (see declaration of conformity)	As per EU EMC directive As per EU low voltage directive As per EU RoHS directive

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UKCA marking (see declaration of conformity)	To UK RoHS instructions To UK instructions 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
Stall torque	1.56 Nm
Nominal torque	1.3 Nm
Peak torque	5.6 Nm
Nominal rotary speed	3000 rpm
Max. rotational speed	14300 rpm
Max. mechanical speed	16000 rpm
Angular acceleration	$\leq 100000 \text{ rad/s}^2$
Motor nominal power	410 W
Continuous stall current	3.5 A
Motor nominal current	3 A
Peak current	18.3 A
Motor constants	0.44 Nm/A
Standstill torque constant	0.52 Nm/A
Voltage constant, phase-to-phase	31.2 mV/min
Phase-phase winding resistance	2.68 Ohm
Winding inductance phase-phase	12 mH
Winding longitudinal inductivity Ld (phase)	5 mH
Cross inductivity Lq (phase)	6 mH
Electric time constant	3 ms
Thermal time constant	44 min
Thermal resistance	1.2 K/W
Measuring flange	250 x 250 x 15 mm, steel
Total output inertia moment	0.49 kgcm <sup>2</sup>
Product weight	2230 g
Permissible axial shaft load	70 N
Permissible radial shaft load	350 N
Rotor position sensor	Absolute single-turn encoder
Rotor position sensor for manufacturer designation	ECl 1118
Rotor position encoder for absolutely detectable revolutions	1
Rotor position sensor interface	EnDat 22
Rotor position sensor measuring principle	Inductive
Rotor position encoder for DC operating voltage	5 V
Rotor position encoder for DC operating voltage range	3.6 V ... 14 V
Rotor position encoder for positional values per revolution	262144
Rotor position sensor resolution	18 bit
Rotor position encoder system accuracy angle measurement	-120 arcsec ... 120 arcsec
Brake holding torque	2.5 Nm
Brake DC operating voltage	24 V
Brake current consumption	0.46 A
Brake power consumption	11 W
Brake coil resistance	52.4 Ohm
Brake coil inductivity	700 mH
Brake separation time	$\leq 35 \text{ ms}$
Brake closing time	10 ms
DC brake response delay	$\leq 2 \text{ ms}$
Max. brake no-load speed	10000 rpm
Max. friction work per braking operation	5600 J

Feature	Value
Number of emergency stops per hour	1
Total brake friction work	615 kJ
Brake mass moment of inertia	0.074 kgcm <sup>2</sup>
Switching cycles, holding brake	10 million idle actuations (without friction work!)
MTTF, subcomponent	190 years, rotor position encoder