## Servo motor EMMT-AS-100-L-HS-RMYB Part number: 8160659

**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 -2.25% 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 ℃
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 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 shaft with rotary shaft seal 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	100A
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 trademark German Technical Control Board (TÜV) c UL us - Recognized (OL)

INEXA marking (see declaration of conformity)  INEXA marking (see a see	Feature	Value
UK (Instructions for EAVC   To UK (Instructions   To UK (Instruc	CE mark (see declaration of conformity)	To EU Low Voltage Directive
UE \$45973	UKCA marking (see declaration of conformity)	To UK instructions for EMC To UK RoHS instructions
Type of windling switch         Star inside           Number of pole pairs         5           Standsfill torque         10.4 Nm           Nominal torque         6.6 Nm           Peak torque         30.5 Nm           Nominal rotary speed         2700 rpm           Max. rectational speed         4530 rpm           Max. mechanical speed         13000 rpm           Angular acceleration         100000 rad/s²           Nominal power rating of motor         1870 W           Continuous stall current         6.7 A           Nominal motor current         4.3 A           Peak current         28.6 A           Motor constant         1.54 Nm/A           Standsfill torque constant         1.57 Nm/A           Voltage constant, phase to phase         106 m/min           Phase-phase winding inductance         1.49 Ohm           Phase-phase winding inductance         1.57 mH           Winding cross inductively I (a (phase)         3.7 mH           Winding cross inductively I (a (phase)         1.8 mk           Electric line constant         7 min           Thermal time constant         7 min           Thermal time constant         7 min           Thermal resisting and a shaft load         100 og <td>Certificate issuing authority</td> <td></td>	Certificate issuing authority	
Number of pole pairs Standstill torque 10.4 Nm Nominal torque 20.5 Nm Nominal torque 20.5 Nm Nominal torque 20.5 Nm Nominal torque 20.5 Nm Nominal torary speed 2700 rpm Max. rotational speed 3050 rpm Max. mechanical speed 3000 rpm Angular acceleration 4530 rpm Nominal power rating of motor 1870 W Continuous stall current 6.7 A Nominal motor current 8.6 A Nominal motor current 8.7 Nm/A Nominal motor current 8.8 A Nominal motor current 9.8 A Nomina	Nominal operating voltage DC	680 V
Standstill torque	Type of winding switch	Star inside
Standstill torque	Number of pole pairs	5
Peak torque 30.5 Nm Nominal rotary speed 7700 rpm Max. rotational speed 4530 rpm Max. mechanical speed 13000 rpm Angular acceleration 110000 rad/s² Nominal power rating of motor 1870 W Continuous stall current 6.7 A Nominal motor current 4.3 A Peak current 28.6 A Nominal motor current 1.154 Nm/A Standstill torque constant 1.54 Nm/A Standstill torque constant 1.54 Nm/A Standstill torque constant 1.75 Nm/A Voltage constant, phase-to-phase 106 m/min Phase-phase winding resistance 1.49 Ohm Phase-phase winding inductance 15.7 mH Winding cross inductivity Lq (phase) 8.7 mH Winding cross inductivity Lq (phase) 11.8 mH Electric time constant 1.18 ms Themal resistance 0.46 K/W Measuring flange 300 x 300 x 20 mm, steel Total mass moment of inertia of output 8.66 kgcm² Product weight 1010 8 Permissible radial shaft load 1110 N Rotor position sensor, absolute detectable revolutions 4096 Rotor position sensor, absolute detectable revolutions 4096 Rotor position sensor, absolute detectable revolutions 4096 Rotor position sensor, cenceder measuring principle inductive rotor position sensor, position values per revolution 124 Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sensor, position values per revolution 19 bit Nm Rotor position sens	Standstill torque	10.4 Nm
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Max. rotational speed  Max. mechanical speed  Max. mechanical speed  Aguilar acceleration  Nominal power rating of motor  1870 W  Continuous stall current  6.7 A  Nominal motor current  8.6 A  Motor constant  1.54 Nm/A  Standstill torque constant  1.55 Nm/A  Standstill torque constant  1.75 Nm/A  Standstill torque constant  1.75 Nm/A  Standstill torque constant  1.89 Ohm  Phase-phase winding resistance  1.49 Ohm  Phase-phase winding resistance  1.49 Ohm  Phase-phase winding inductance  1.5.7 mH  Winding longitudinal inductivity Ld (phase)  1.8. mH  Electric time constant  1.9. mH  Thermal time constant  1.9. mH  Thermal time constant  Thermal time constant  Thermal tresistance  0.46 K/W  Measuring flange  300 x 300 x 20 mm, steel  Total mass moment of inertia of output  Permissible axial shaft load  200 N  Permissible axial shaft load  200 N  Permissible radial shaft load  1110 N  Rotor position sensor, manufacturer designation  Electric time sensor, encoder measuring principle  rotor position sensor, manufacturer designation  Electric time constance and permission sensor, bod operating voltage  804 V  Rotor position sensor, conder measuring principle  rotor position sensor, conder measuring principle  rotor position sensor, position values per revolution  Rotor position sensor, position values per revolution  Rotor position sensor, position values per revolution  Rotor position transducer resolution  19 bit  Rotor position transducer resolution  19 bit  Power consumption, brake  20 V  Brake culrent consumption  1 A  Power consumption, brake  20 Mm  Brake coll residence  20 Mm  Brake coll residence  20 Mm	·	2700 rpm
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Thermal resistance 0.46 K/W  Measuring flange 300 x 300 x 20 mm, steel  Total mass moment of inertia of output 8.06 kgcm²  Product weight 10100 g  Permissible axial shaft load 200 N  Permissible radial shaft load 1110 N  Rotor position sensor Absolute multi-turn safety encoder  rotor position sensor, manufacturer designation EQI 1331  rotor position sensor, absolute detectable revolutions 4096  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 3.6 V 14 V  rotor position sensor, position values per revolution 524288  Rotor position transducer resolution 19 bit  rotor position sensor, system accuracy of angle measurement -65 arcsec  Brake holding torque 18 Nm  Operating voltage DC for brake 24 V  Brake coil resistance 24 W  Brake coil inductivity 900 mH		
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rotor position sensor, DC operating voltage range  3.6 V 14 V  rotor position sensor, position values per revolution  524288  Rotor position transducer resolution  19 bit  rotor position sensor, system accuracy of angle measurement  -65 arcsec 65 arcsec  Brake holding torque  18 Nm  Operating voltage DC for brake  24 V  Brake current consumption  1 A  Power consumption, brake  24 W  Brake coil resistance  24 Ohm  Brake coil inductivity  900 mH	Rotor position sensor, encoder measuring principle	Inductive
rotor position sensor, position values per revolution  Fotor position transducer resolution  19 bit  rotor position sensor, system accuracy of angle measurement  Fotor position sensor, system accuracy of angle measur	rotor position sensor, DC operating voltage	5 V
Rotor position transducer resolution 19 bit rotor position sensor, system accuracy of angle measurement -65 arcsec 65 arcsec  Brake holding torque 18 Nm Operating voltage DC for brake 24 V  Brake current consumption 1 A Power consumption, brake 24 W  Brake coil resistance 24 Ohm Brake coil inductivity 900 mH	rotor position sensor, DC operating voltage range	3.6 V 14 V
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Brake holding torque 18 Nm Operating voltage DC for brake 24 V  Brake current consumption 1 A Power consumption, brake 24 W  Brake coil resistance 24 Ohm Brake coil inductivity 900 mH	Rotor position transducer resolution	19 bit
Operating voltage DC for brake 24 V  Brake current consumption 1 A  Power consumption, brake 24 W  Brake coil resistance 24 Ohm  Brake coil inductivity 900 mH	rotor position sensor, system accuracy of angle measurement	-65 arcsec 65 arcsec
Brake current consumption 1 A Power consumption, brake 24 W Brake coil resistance 24 Ohm Brake coil inductivity 900 mH	Brake holding torque	18 Nm
Power consumption, brake 24 W  Brake coil resistance 24 Ohm  Brake coil inductivity 900 mH	Operating voltage DC for brake	24 V
Brake coil resistance 24 Ohm Brake coil inductivity 900 mH	Brake current consumption	1 A
Brake coil inductivity 900 mH	Power consumption, brake	24 W
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Brake separation time ≤80 ms	Brake coil inductivity	900 mH
	Brake separation time	≤80 ms

Feature	Value
Brake closing time	≤40 ms
DC brake response delay	≤5 ms
Max. brake no-load speed	10000 rpm
Max. friction per braking process	15000 J
Number of emergency stops per hour	1
Total brake friction	3600 kJ
Mass moment of inertia of brake	2.15 kgcm <sup>2</sup>
Switching cycles holding brake	10 million idle actuations (without friction work!)
Safety device	Safety device
Maximum SIL	Safety integrity level 3 See user documentation
Safety sub-functions up to SIL2	Reliable recording and transmission of single-turn position data
Safety sub-functions up to SIL3	Reliable recording and transmission of single-turn position data, only with additional software function in the servo drive
Maximum PL and category	Performance Level e, category 3 See user documentation
Safety sub-function up to PL d, Cat. 3	Reliable recording and transmission of single-turn position data
Safety sub-function up to PL e, Cat. 3	Reliable recording and transmission of single-turn position data, only with additional software function in the servo drive
PFHd, subcomponent	15 x 10E-9, encoder
Duration of use Tm, subcomponent	20 years, rotor position sensor
Energy efficiency	ENEFF (CN) / Class 2