B&R 8LSC Series Service Manual

8LSC53.ee022ffgg-4

1. Description

8LSC three-phase synchronous servo motor (externally fan-cooled). Permanent-magnet, electronically commutated synchronous motor for applications requiring excellent dynamic characteristics, positioning precision, compact size and reduced weight. Features a large overload capacity, single-cable (hybrid) solution option, encoders for functional safety and optimized torque rippling for good controllability.

2. Technical Parameters

Parameter	Value
Nominal speed nN [rpm]	2200
Number of pole pairs	5
Nominal torque Mn [Nm]	13.3
Nominal power PN [W]	3055
Nominal current IN [A]	6.0
Stall torque M0 [Nm]	15.6
Stall current I0 [A]	7.0
Maximum torque Mmax [Nm]	30.0
Maximum current Imax [A]	20.5
Maximum speed nmax [rpm]	5000
Torque constant KT [Nm/A]	2.22
Voltage constant KE [V/1000rpm]	134.04
Stator resistance R2ph [Ohm]	2.54
Stator inductance L2ph [mH]	29.6
Electrical time constant tel [ms]	11.6
Thermal time constant ttherm [min]	38
Moment of inertia J [kg·cm2]	6.8
Mass m (without brake) [kg]	10.60
Holding torque of brake MBr [Nm]	7
Brake mass [kg]	1.40
Moment of inertia of brake JBr [kg·cm2]	1.66
Cable cross-section [mm2]	0.75
Connector size/type	1
Recommended servo drive (ACOPOS)	8X8X

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3. Product Information

Order number: 8LSC53.ee022ffgg-4

Additional information from the manufacturer's manual:

Compliance: NOT C-UR-US listed (in this manual only the 8LSA series carries UL, file E360421); conforms to LVD 2014/35/EU, EMC 2014/30/EU and RoHS 2011/65/EU; standards EN 60034-1/7/11/14.

Life-cycle status not stated in the manual.

Rating & cooling: EN 60034-1 S1 continuous; insulation class IEC 60085 F; cooling externally fan-cooled with machine-mounted independent fan component, IC4A0A6; thermal protection KTY83-110 / AM-PTC1000, max winding temp 155 degC (110/130 degC via ACOPOS with EnDat/resolver); vibration severity A1 per EN 60034-14; bearing life per DIN ISO 281; coating water-based RAL 9005.

Mounting per EN 60034-7 (IM): IM 3001 horizontal / IM 3011 / IM 3031. Flange DIN 42948 Form A; shaft end DIN 748 Form E; key DIN 6885-1 Form A; runout DIN 42955 tolerance R.

Environment: operating -15..+40 degC (max +55 degC); derate 10%/10 K, 5%/1000 m; max. elevation 2000 m; max. flange temp 65 degC; IP64 per EN 60034-5, fan IP20 (IP65 / fan IP20 with optional oil seal DIN 3760); storage/transport -20..+60 degC, humidity max. 90% non-condensing.

Shaft loads: permissible radial/axial forces are speed-dependent (Fr/Fa diagrams per model); optional 'Reinforced A-side bearing' (sizes 4-8) increases allowable forces. Noise: only the fan module is specified - 24 VDC fan 57 dB(A) size 4 / 53 dB(A) sizes 5-6 / 52 dB(A) sizes 7-8; 230 VAC fan 37 dB(A) size 4 / 60 dB(A) sizes 5-8.

Feedback: resolver (R0/R2) or EnDat (inductive/optical, incl. safety-related variants); 32-line single-/multi-turn; built-in plug-in connectors; single-cable (hybrid) solution available.

Safety: encoders for functional safety available; STO implemented by ACOPOS servo drive (not motor-embedded in the manual).

Generation note (8LS...-4): general data as above, with these -4 generation updates - cooling externally fan-cooled IC4A0A6; 24 VDC fan IP68/IP65 (ebm-papst); fan noise 53 dB(A); elevation limit 2000 m with speedtec or 4000 m with ytec connectors; protection IP64 (IP65 with oil seal).