# B&R 8LSP Series Service Manual

8LSP93.ee013ffgg-3

## 1. Description

8LSP three-phase synchronous servo motor (special variant). Permanent-magnet, electronically commutated synchronous motor designed for high dynamics and positioning precision with compact size and reduced weight, featuring large overload capacity and optimized torque rippling.

## 2. Technical Parameters

| Parameter | Value |
|---|---|
| Nominal speed nN [rpm] | 1300 |
| Number of pole pairs | 4 |
| Nominal torque Mn [Nm] | 160 |
| Nominal power PN [W] | 21782 |
| Nominal current IN [A] | 43 |
| Stall torque M0 [Nm] | 180 |
| Stall current I0 [A] | 49 |
| Maximum torque Mmax [Nm] | 407 |
| Maximum current Imax [A] | 138 |
| Maximum speed nmax [rpm] | 3000 |
| Torque constant KT [Nm/A] | 3.64 |
| Voltage constant KE [V/1000rpm] | 219.91 |
| Stator resistance R2ph [Ohm] | 0.194 |
| Stator inductance L2ph [mH] | 5.39 |
| Electrical time constant tel [ms] | 28 |
| Thermal time constant ttherm [min] | 63 |
| Moment of inertia J [kg·cm2] | 290 |
| Mass m (without brake) [kg] | 128 |
| Holding torque of brake MBr [Nm] | |
| Brake mass [kg] | 0 |
| Moment of inertia of brake JBr [kg·cm2] | 0 |
| Cable cross-section [mm2] | 10 |
| Connector size/type | Terminal box |
| Recommended servo drive (ACOPOS) | 0660 |

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## 3. Product Information

Order number: 8LSP93.ee013ffgg-3

Additional information from the manufacturer's manual:

Compliance: NOT C-UR-US listed; 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 F; cooling externally fan-cooled with machine-mounted independent fan component, IC4A0A6; thermal protection max winding temp 155 degC; vibration severity A1; bearing life per DIN ISO 281; coating water-based RAL 9005.

Mounting per EN 60034-7 (IM): IM 3001 / IM 3011 / IM 3031. Power connection via terminal box (M10 or M12); encoder via speedtec/itec.

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

Shaft loads: permissible radial/axial forces are speed-dependent (Fr/Fa diagrams per model). Noise: only fan module noise specified (size 9: -).

Feedback: resolver or EnDat (inductive/optical, incl. safety variants); 32-line single-/multi-turn.

Safety: encoders for functional safety available; STO implemented by ACOPOS servo drive.