

2.5 General motor data

| General information | | Cooling type A |
|--|--|---|
| CE certification | | Yes |
| C-UR-US listed | | Yes |
| UL file number | | PRHZ2.E235396 |
| Electrical characteristics | | |
| DC bus voltage on the ACOPOSmicro | | 80VDC ¹⁾ |
| Conventional connection type (power connection / encoder connection) | | ytec circular connector from Intercontec |
| Connection type - Single-cable solution (hybrid) | | htec circular connector from Intercontec |
| Thermal characteristics | | |
| Insulation class in accordance with EN 60034-1 | | F |
| Methods of cooling in accordance with EN 60034-6 (IC code) | | Self-cooling, no separate surface cooling (IC4A0A0) |
| Thermal motor protection in accordance with EN 60034-11 | | Size 1: No, size 2 and 3: KTY 83-110 Maximum winding temperature 155°C (limited by the thermal motor protection in the ACOPOSmicro drive system to 110°C with EnDat feedback and 130°C with resolver feedback) |
| Mechanical characteristics | | |
| Roller bearing, dynamic load ratings and nominal service life | | Based on DIN ISO 281 |
| Shaft end in accordance with DIN 748 | | Form E |
| Oil seal in accordance with DIN 3760 | | Form A |
| Key and keyway in accordance with DIN 6885-1 | | Form A keys, form N1 keyway |
| Balancing the shaft in accordance with ISO 1940/1, G6.3 | | Half-key arrangement |
| Mounting flange | | IEC 72-1 |
| Smooth rotation of shaft end, coaxial properties and mounting flange plane in accordance with DIN 42955 | | Tolerance R |
| Coating | | Water-based coating |
| Color | | RAL 9005 flat |
| Operating conditions | | |
| Rating class, operating mode in accordance with EN 60034-1 | | S1 - Continuous operation |
| Ambient temperature during operation | | -15°C to +40°C |
| Maximum ambient temperature during operation | | +50°C ²⁾ |
| Relative humidity during operation | | 5 to 95%, non-condensing |
| Reduction of the nominal current and stall current at temperatures above 40°C | | 5% per 5°C |
| Reduction of the nominal current and stall current at installation elevations starting at 1000 m above sea level | | 10% per 1000 m |
| Maximum installation elevation | | 2000 m ³⁾ |
| Max. flange temperature | | 65°C |
| EN 60034-5 protection (IP code) | | IP54 ⁴⁾ |
| With optional oil seal | | IP65 ^{4) 5)} |
| Construction and mounting arrangement type in accordance with EN 60034-7 (IM code) | | Horizontal (IM3001) Vertical, motor hangs on the machine (IM3011) Vertical, motor stands on the machine (IM3031) |
| Storage and transport conditions | | |
| Storage temperature | | -20 to +60°C |
| Relative humidity during storage | | Max. 90%, non-condensing |
| Transport temperature | | -20 to +60°C |
| Relative humidity during transport | | Max. 90%, non-condensing |

¹⁾ Permitted DC bus voltage on the ACOPOS single-phase: 320 VDC

²⁾ Continuous operation at ambient temperatures ranging from +40°C to max. +50°C is possible, but this will result in a shorter service life.

³⁾ Requirements that go beyond this must be arranged with B&R.

⁴⁾ The protection ratings are only achieved if the power and signal connections are installed properly.

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⁶⁾ Only available for size 2 and 3!

2.9 8LVA1 - Technical data

Size 1

| Model number | 8LVA13.ee015ffgg-0 | 8LVA13.ee030ffgg-0 |
|---|--------------------|--------------------|
| Motor | | |
| Nominal speed n_N [rpm] | 1500 | 3000 |
| Number of pole pairs | 4 | |
| Nominal torque M_n [Nm] | 0.34 | 0.32 |
| Nominal power P_N [W] | 53 | 101 |
| Nominal current I_N [A] | 0.8 | 1.4 |
| Stall torque M_0 [Nm] | 0.36 | |
| Stall current I_0 [A] | 0.9 | 1.6 |
| Maximum torque M_{max} [Nm] | 1 | |
| Maximum current I_{max} [A] | 2.8 | 5.2 |
| Maximum speed n_{max} [rpm] | 6600 | |
| Torque constant K_T [Nm/A] | 0.42 | 0.23 |
| Voltage constant K_E [V/1000 rpm] | 25.13 | 13.61 |
| Stator resistance R_{2ph} [Ω] | 17.4 | 5.8 |
| Stator inductance L_{2ph} [mH] | 30.7 | 10.2 |
| Electrical time constant t_{el} [ms] | 1.8 | |
| Thermal time constant t_{therm} [min] | 15 | |
| Moment of inertia J [kgcm ²] | 0.03 | |
| Mass without brake m [kg] | 0.6 | |
| Holding brake | | |
| Holding torque of the brake M_{Br} [Nm] | 0.35 | |
| Brake mass [kg] | 0.1 | |
| Moment of inertia for the brake J_{Br} [kgcm ²] | 0.013 | |
| Recommendations | | |
| ACOPOS 8Vxxxx.xx... | 1010.50 | |
| ACOPOS P3 8EI... | 2X2M | |
| ACOPOSmicro 80VD100Px.xxxx-01 | C0XX | |
| Cross section for B&R motor cables [mm ²] | 0.75 | |
| Connector size | 1.0 | |

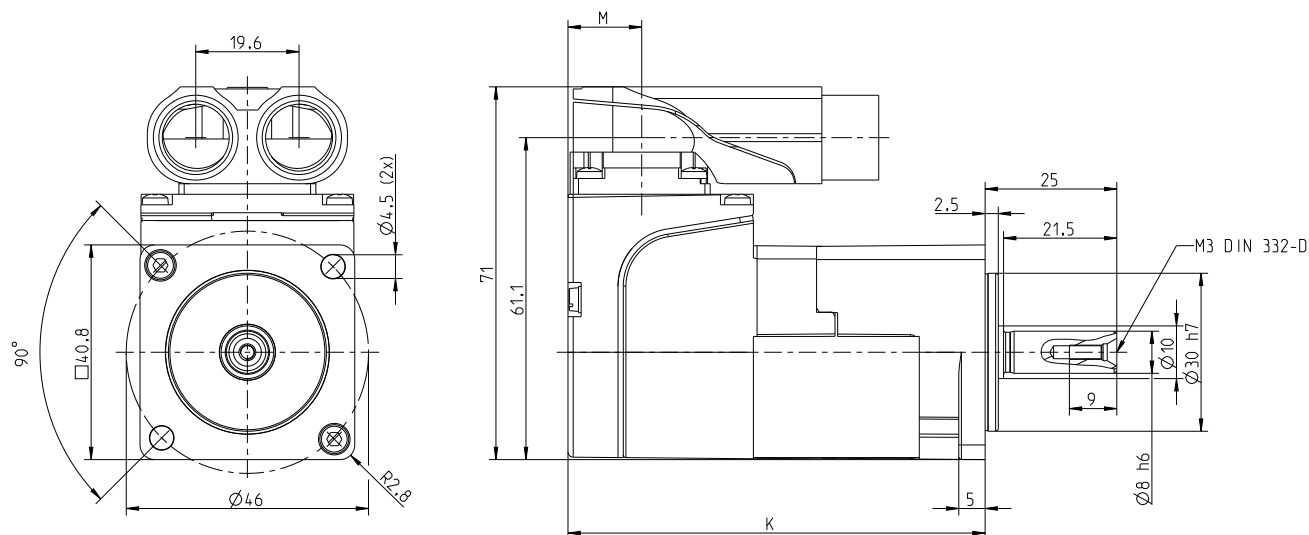
Servo drive: The recommended servo drive / inverter module is designed for 1.1x the stall current. If more than double the amount is needed during the acceleration phase, the next larger servo drive should be selected. This recommendation is only a guideline; detailed inspection of the corresponding speed/torque characteristic curve can result in deviations of the servo drive size (larger or smaller).

ACOPOS missing information: The DC bus voltage must be reduced in order to operate this device with an ACOPOS drive (max. 325 VDC).

ACOPOSmulti: Operating this device with ACOPOSmulti inverter module is not possible due to the high DC bus voltage when powered from the mains.

NOTE cable: The suitable cables can be found in the catalog (Book 1) chapter ACOPOSmicro servo drive.

2.9.1 8LVA13 - Dimensions

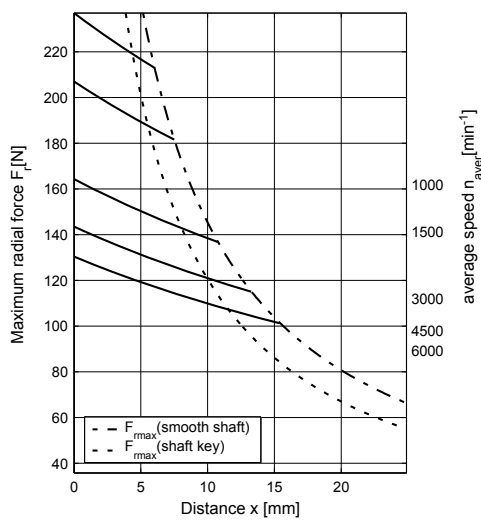


Double angular built-in connector

| EnDat/Resolver feedback | | | Extension of K depending on motor option |
|-------------------------|--------|--------|--|
| Encoder assignments | K | M | Holding brake |
| 8LVA13 | R0, B1 | R0, B1 | 28 |

2.9.2 Maximum shaft load

The values in the diagram below are based on a mechanical service life of the bearings of 20,000 operating hours.



maximum allowed axial force: $F_{amax} = 22 \text{ N}$

F_r Radial force

F_a Axial force

x Distance between the motor flange and the point where radial force F_r is applied

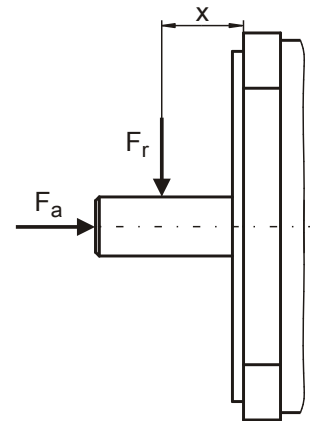
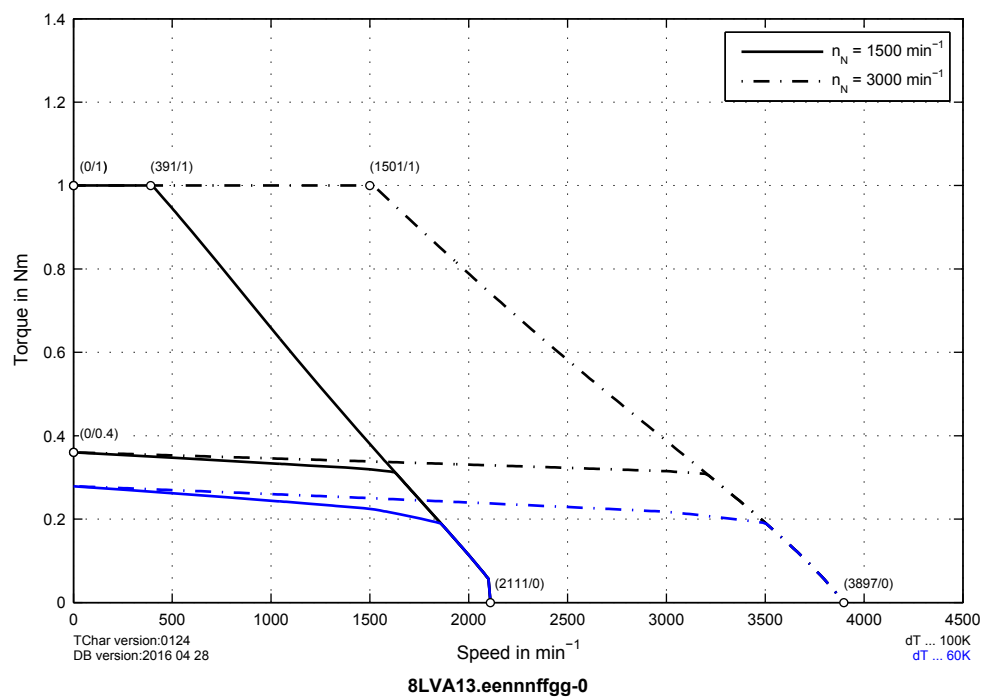


Figure 1: Definition of shaft load

2.9.3 Speed-Torque characteristic curve at 80 VDC DC bus voltage

ACOPOSmicro



2.9.4 Speed-Torque characteristic curve at 325 VDC DC bus voltage

ACOPOS (single phase)

