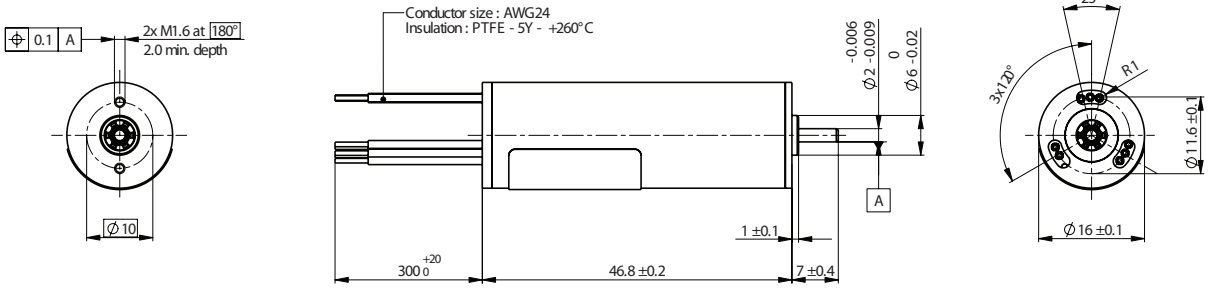
Electronically Commutated Motor




dimensions in mm
mass: 125 g

**16BHL 8B ⊙⊙ • 01**

**With Hall effect sensors**

| Color | Designation |
|---|---|
| Grey | phase 1 |
| Violet | phase 2 |
| Blue | phase 3 |
| Green | 3.5 to 27 VDC |

| Color | Designation |
|---|---|
| Yellow | GND |
| Orange | sensor 1 |
| Red | sensor 2 |
| Brown | sensor 3 |

**16BHL 3C ⊙⊙ • 01**

**Sensorless**

| Color | Designation |
|---|---|
| Grey | phase 1 |
| Violet | phase 2 |
| Blue | phase 3 |

| **Winding Type** | ⊙⊙ | **-C** |
|---|---|---|
| **Coil Dependent Parameters** | | |
| **Phase/phase resistance** | ohm | 0.78 |
| **Phase/phase inductance** | mH | 0.06 |
| **Back-EMF constant** | V/1000 rpm | 0.54 |
| **Torque Constant** | mNm/A (oz.-in/A) | 5.2 (0.74) |
| **Dynamic Parameters** | | |
| **Rated Voltage** | V | 12 |
| **No-load Current** | mA | 120 |
| **No-load Speed** | rpm | 21'600 |
| **Max. continuous stall torque** | mNm (oz-in) | 12.1 (1.7) |
| **Max. continuous stall current** | A | 2.3 |
| **Max. continuous torque at 10 krpm** | mNm (oz-in) | 11.3 (1.6) |
| **Max. continuous current at 10 krpm** | A | 2.2 |
| **Max. continuous power at 10 krpm** | W | 11.9 |
| **Intrinsic Parameters** | | |
| **Motor constant** | mNm/W½ (oz-in/W½) | 5.9 (0.83) |
| **Rotor inertia** | kgm² $10^{-7}$ | 0.95 |
| **Mechanical time constant** | ms | 2.7 |
| **Electrical time constant** | ms | 0.08 |
| **Thermal resistance** | °C/W | 17 |

The 16BHL 8B is a motor with Hall Effect sensor. It is intended to use with a driver such as the EBL driver (see page 263)

The 16BHL 3C is a sensorless motor with a Delta connection winding. It is intended to use with a sensorless driver.

Recommended planetary gearhead: R16 (see page 238)

- Motor with preloaded ball bearings
- Typical preload = 2 N
- Maximum external load:
  - axial static 25 N
  - axial dynamic 2 N
  - radial dynamic 5 N
- Operating temperature range: -30°C to 100°C
- Max. rated coil temperature: 125°C