

**Commissioning
and Maintenance Instructions**

be in motion be in motion

TAM00719_eng

GDM1

DC-Disc-Motor

Version: 07/2016

Englisch

Initial Operation and Maintenance Instructions

1. General Information

1.1 Description

Baumüller Motors of the GDM product line are direct-current motors excited by permanent magnets. The permanent magnets are arranged in the stator (energizing field). The disk-shaped rotor consists of copper coils, which have been extrusion-coated with duroplastic.

1.2 Electrical Rating

The rating plates of the motors list the motor-specific nominal data referred to an ambient temperature of 25°C. Additional technical specifications are to be found in the specification sheets (if necessary, please request).

2. Construction and Application

2.1 Mechanical

The motors can be operated in any arbitrary position.

The ball bearings have been provided with lifetime lubrication.

The bearing loads given in the specification sheet must not be exceeded. In case of greater bearing load requirements, please inquire.

Important Note: The construction of these motors does not tolerate any impacts on the shaft's ends during mounting of apparatus (clutch, pulley, pinion, etc.) (support the shaft).

2.2 Electrical

The electrical connection is made directly to the brush holder using flat plugs or to the terminal box with cable shoes. Reversal of the rotational direction is achieved by reversing the polarity.

3. Protection Class

3.1 Mechanical

— IP 44 for the mechanical construction

— IP 00 or IP 44 for the electrical connection (see rating plate)

Electrical

Insulation class F

As the thermal heating capacity is limited, inadvertent electrical overloading can result in an unacceptable rotor temperature.

Therefore, we recommend that in all applications protective measures be implemented for the motor, such as thermal relays, quick-action fuses, current limitation, etc.

Operation at ambient temperatures above 25°C is possible with reduced ratings. Acceptable values available on request.

The electrical insulation test was performed at final inspection with at least 500 V / 50 Hz (2 x UN + 500 V). It is not advisable to repeat this test.

Electrical Power Supply:

The electrical data provided refer to operation with pure direct current. As a rule, these motors are supplied by an electronic speed regulator. The ripple of the generated direct current is defined by the form factor. The form factor is the quotient of the RMS value and the average value.

The form factor should be ≤ 1.05 .

— The RMS value of the direct current must not exceed the motor's allowed current rating (see the rating plate or the specification sheet).

— The improvement of the form factor is achieved by connecting an appropriate ripple filter choke in series with the armature circuit.

— The ratio of the nominal torsional moment to the form factor provides the maximum achievable torsional moment of the motor.

—The temporally restricted, allowed pulsed current can be several times greater than the rated current. The RMS value of the input motor current within a single working cycle must not exceed 0.9 times the motor's rated current ($I_{\text{eff}} \leq 0.9 I_{\text{rated}}$).

— Exceeding the acceptable pulsed current results in demagnetization of the stator and thus in a change in the motor's rated specifications. In this case, the motor must be remagnetized at the factory or new magnets must be installed.

5. Disassembly

Some versions of the motor lose their magnetization when the magnet system is opened.

Consequently, the motors may only be opened at the factory (loss of warranty coverage).

6. Maintenance

6.1 Bearings

— No maintenance is required.

6.2 Brushes

Brush wear is a function of the operational cycle of the motor. In order to check for brush wear, the following steps are to be performed (in some models, checks are not possible.)

— Remove all the electrical connections.

— Unscrew the brush holder caps

— Remove the brushes from the tubular brush holders.

— Measure the length of the graphite brushes.

— If the length is ≤ 6 mm, install new graphite brushes.

Use only original brushes of the same quality.

— Allow the new graphite brushes to run in for 2 to 3 hours at approx. 1500 min. ⁻¹.

7. Replacement parts

To avoid checkbacks and delays, it is necessary to list the specifications given on the rating plate of the motor and the motor number when ordering replacement parts and replacement motors. If the motor has not been operated in accordance with the established rated and limiting specifications, and in cases of unauthorized opening of the motor, no warranty claims will be recognized, unless they have previously been confirmed in writing.