

Magnetic particle brake MPB100



Field of application

- Brake and over load protection applications
- Applications where an adjustable torque is required

Advantages and properties

- Torque is easy to adjust and control
- High running smoothness at low speed
- Easy and reproducible control
- Fast and easy to mount
- Almost wear and maintenance free
- Compact design

How the magnetic particle brake works

To create a moment, a DC voltage must be applied to the component. The resulting moment is proportional to voltage. There is an air gap between the rotor and the housing. In this air gap, a special abrasion-resistant iron powder is filled. In the housing a coil is installed. This coil generates a magnetic field as a function of the applied voltage. In this magnetic field, the iron powder is aligned and forms chains. These chains transmit the moment between housing and rotor. The higher the current (voltage) the longer and more stable the powder chains become and the more moment can be transferred. When the transmittable torque is exceeded, slip occurs between the housing and the rotor. The brakes are designed for continuous slip. However, the permissible slip power must not be exceeded.

Before using the brake, the required slip power must be calculated and compared with the data sheet. Too high average slip power overheats the brake and can damage the brake

Technical data	unit	value ^[1]
Rated current	A	0,69
Rated voltage	V (DC)	24
Rated torque	Nm	100 ^[2]
Torque at zero current	Nm	<2
Max. speed	U/min	400
Max. power loss (with heat sink)	W	100 (250) ^[3]
Max. operating temperature	°C	80
Moment of inertia	Kgm ²	5,5 x 10 ⁻³
Weight (with heat sink)	kg	ca. 15,3 (ca. 20,3)

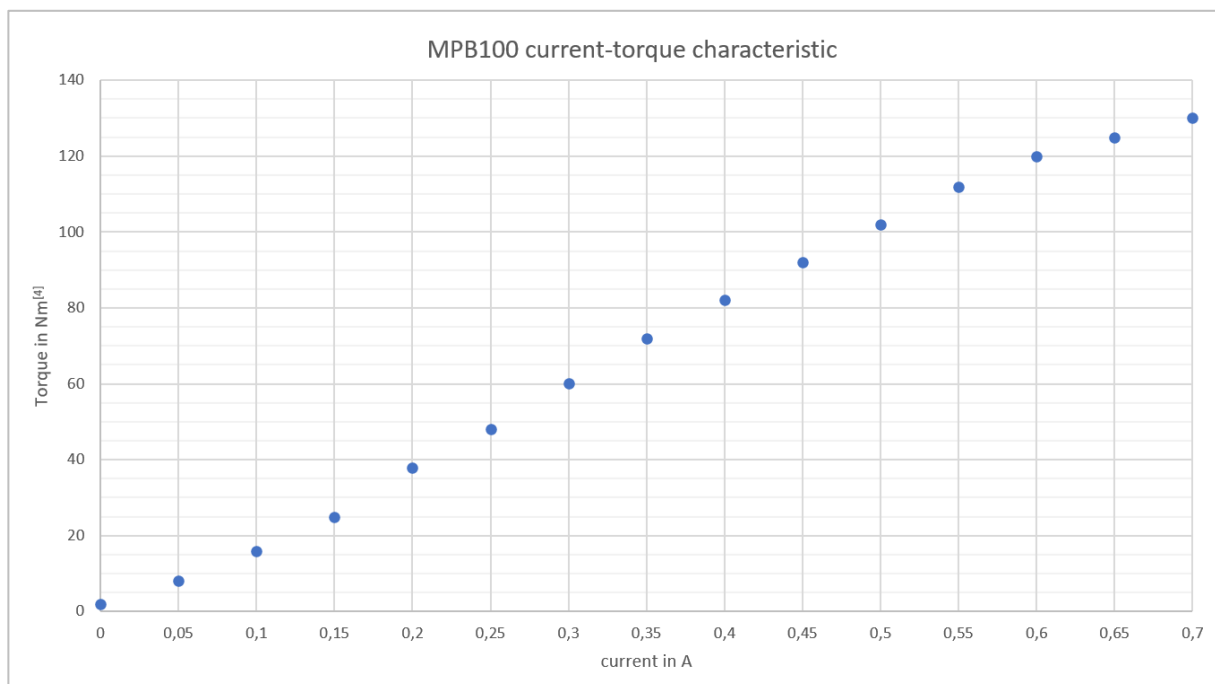
All values at 20°C

^[1] Tolerance of all values +/-10%.

^[2] The value for torque is a minimum value. Brakes can also be over 10% stronger.

^[3] Power loss should not be exceeded. The power loss is reduced at higher ambient temperatures.

Current-torque characteristic

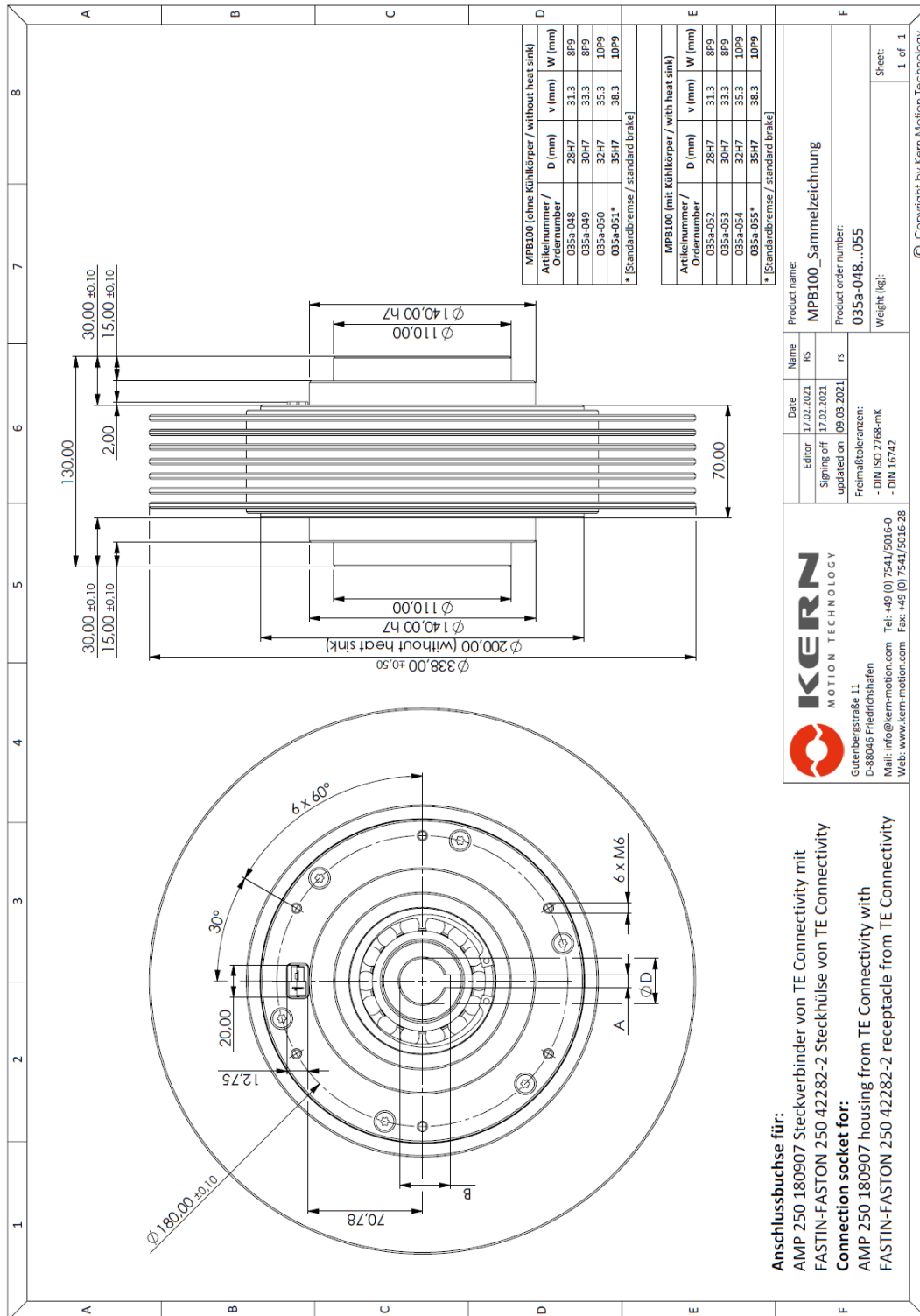


^[4] Torque corresponds to a new brake. Measured at 120 min⁻¹.

The values can decrease in the course of operating time. The reason for this is the wear and tear on the magnetic powder. If the brake falls below the nominal torque, the magnetic powder should be replaced. The brake can then be sent in for maintenance.

Installation advice: all magnetic particle brakes must be installed in a horizontal position (observe operating instructions).

Dimensional drawing MPB100



Anschlussbuchse für:
 AMP 250 180907 Steckverbinder von TE Connectivity mit FASTIN-FASTON 250 42282-2 Steckhülse von TE Connectivity
Connection socket for:
 AMP 250 180907 housing from TE Connectivity with FASTIN-FASTON 250 42282-2 receptacle from TE Connectivity

Drawings and data are for customer information only. For specific indications a separate quote is to be required. Kern Antriebstechnik GmbH is not responsible for possible errors in the data sheets. Subject to technical modifications.