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Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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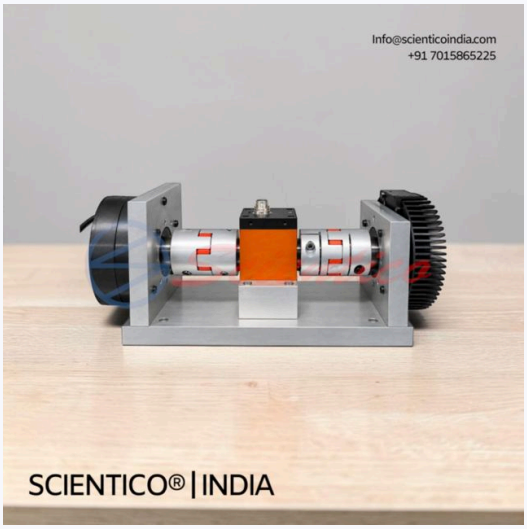
Magnetic Powder Brake with Torque and Speed Measurement | SC-MPB 1079

Category: TVET Equipments · **Order Code:** MPB 1079 · **Country of Origin:** India

Product Overview

The Magnetic Powder Brake with Torque and Speed Measurement – SC-MPB 1079 is a 1 kW brake with 0.5–5 Nm braking torque and speeds up to 3,000 rpm. It includes a strain-gauge torsion bar for torque (0–10 Nm, ±1 percent) and an optical encoder for speed (60 PPR). Torque and speed are output as 0–10 V signals. An excitation controller provides constant-torque and constant-speed modes. The brake is forced-air cooled, with 1 kW continuous and 1.5 kW for 10 minutes. A calibration certificate, English manual, and wiring diagrams are included. It complies with IEC/EN 60034, IEC 61010-1, and CE standards.

View this product online: https://scienticoindia.com/product/magnetic-powder-brake-with-torque-and-speed-measurement-sc-mpb-1079/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Magnetic Powder Brake with Torque and Speed Measurement – SC-MPB 1079: Technical Specifications

Category	Specification
Power Rating	1 kW
Braking Torque	0.5–5 Nm
Maximum Speed	3,000 rpm
Thermal Rating	1 kW continuous; 1.5 kW for 10 min
Duty Cycle	100% duty at full torque up to 1,500 rpm
Cooling	Forced-air
Excitation	0–24 V DC, up to 2 A
Torque Measurement	Strain-gauge torsion bar, 0–10 Nm, ±1%
Speed Measurement	Optical encoder, 0–3,000 rpm, 1 rpm resolution, 60 PPR
Signal Outputs	Torque 0–10 V; speed 0–10 V on 4 mm sockets
Controller	Excitation controller with torque setpoint; constant-torque and constant-speed modes
Controller Supply	230 V, 50–60 Hz
Shaft	Two ends; flexible coupling

Category	Specification
Base	Aluminium
Insulation Class	F
Enclosure	IP20
Standards	IEC/EN 60034; IEC 61010-1; CE marked
Calibration	Calibration certificate supplied

Key Features

Key Features

- **Magnetic Powder Brake:** 1 kW braking with 0.5–5 Nm torque range
- **Integrated Torque Sensing:** strain-gauge torsion bar, 0–10 Nm, ±1%
- **Integrated Speed Sensing:** optical encoder, 60 PPR, 1 rpm resolution
- **Analogue Outputs:** torque and speed on 0–10 V signals
- **Two Control Modes:** constant-torque and constant-speed operation
- **Torque Setpoint:** excitation controller with direct torque adjustment
- **Forced-Air Cooling:** 1 kW continuous, 1.5 kW for 10 minutes
- **Full-Torque Duty:** 100% duty at full torque up to 1,500 rpm
- **Calibration Certificate:** supplied with the unit
- **Compliance:** IEC/EN 60034, IEC 61010-1, CE standards

Experiments

- Torque-speed characteristic of a motor under variable braking load
- Constant-torque loading and speed response observation
- Constant-speed control and torque response observation
- Measurement of motor output power from torque and speed
- Efficiency measurement of a motor at different load points
- Torque calibration check against the torsion bar reference
- Speed measurement using optical encoder pulses
- Dynamic response of motor to load step changes
- Thermal behaviour during sustained braking at full torque
- Comparison of torque and speed signals using 0–10 V outputs

Construction and Design

The Magnetic Powder Brake with Torque and Speed Measurement – SC-MPB 1079 has two shaft ends connected by a flexible coupling. The brake mounts on an aluminium base. A strain-gauge torsion bar measures torque, and an optical encoder measures speed. Excitation is supplied at 0–24 V DC through the controller. Forced-air cooling is fitted to manage heat during braking. Torque and speed signals are routed to 4 mm sockets as 0–10 V outputs.

Scope of Delivery

- Powder brake with torque and speed sensors
- Excitation controller
- Calibration certificate
- English manual and wiring diagrams

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

Q: What is the braking torque range?
A: The Magnetic Powder Brake with Torque and Speed Measurement – SC-MPB 1079 provides braking torque from 0.5 to 5 Nm, up to 3,000 rpm.

Q: How are torque and speed measured?
A: Torque is measured by a strain-gauge torsion bar rated 0–10 Nm, ±1 percent. Speed is measured by an optical encoder from 0 to 3,000 rpm with 1 rpm resolution and 60 PPR.

Q: What control modes are available?
A: The excitation controller offers constant-torque and constant-speed modes, with a torque setpoint for direct adjustment.

Q: How are the measurement signals output?
A: Torque and speed are output as 0–10 V signals on 4 mm sockets.

Q: What is the thermal rating?
A: The brake is rated at 1 kW continuous and 1.5 kW for 10 minutes, with forced-air cooling. It runs at 100 percent duty at full torque up to 1,500 rpm.

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