magnetic particle BRAKE B1   0.6 to 16 oz.-in.
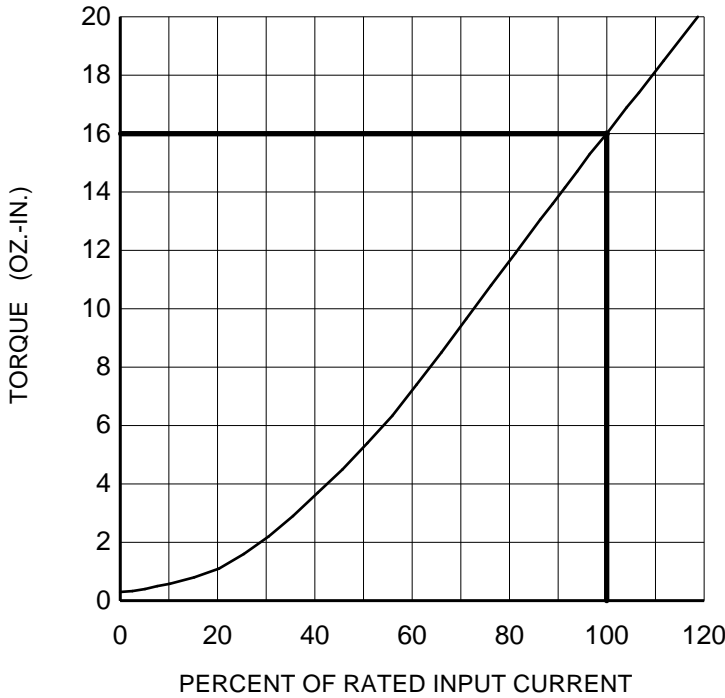
DATA SHEET

PERCENT OF RATED INPUT CURRENT

CHARACTERISTICS - With no electrical excitation, the shaft freely rotates. With electrical excitation, the shaft becomes coupled to the housing. Torque is proportional to input current (see torque graph), and independent of RPM. While the load torque is less than the output torque, the shaft won't rotate. When the load torque is increased, the brake will slip smoothly at the torque level set by the coil input current.

Torque range . . . . 0.6 to 16 oz.-in.
Maximum RPM . . . . 3000 RPM
Maximum heat dissipation . . . . 3.5 watts
Maximum case temperature . . . . . 160 degrees F
Maximum overhung load . . . . . . 4 lb.
Shaft inertia . . . . 11×10^{-7} lb.-in.-sec^2
Response (unforced) . . . . 8 mSec.
Response (forced) . . . . 4 mSec.
Weight . . . . 9 oz.

⟵ 0% thru 100% of rated input current can be dialed in directly on a Placid Ind. 12 volt constant current power supply (P/N PS-12-MC). The output torque can be determined using the graph.

	6 V	12 V	24 V	90 V
COIL RESISTANCE (ohms)	20	87	305	3000
100% INPUT CURRENT (amps)	0.29	0.13	0.075	0.029

⟵ Rated D.C. coil voltages available: 6 VDC, 12 VDC, 24 VDC. (90 VDC at extra cost)

BRAKE PERFORMANCE

TORQUE: At the rated voltage, the brake will draw 100% of the rated input current. Output torque will be 16 oz.-in.

POWER SUPPLY: A "constant-current" D.C. power supply is recommended for the best accuracy in open-loop control systems. This type of power supply will maintain a fixed (but adjustable) output current, regardless of the temperature of the brake, so output torque is constant (but adjustable).

HEAT DISSIPATION: The brake can dissipate 3.5 slip (thermal) watts continuously. For continuous slip, calculate the heat input by the formula :

   HEAT (watts) = RPM x TORQUE (oz.-in.) / 1356

Using the above formula: At rated torque, the maximum continuous slip RPM is 296. The brake can dissipate higher amounts of heat for short periods of time, but the average must not exceed 3.5 watts. The case temperature must never exceed 160 degrees F.

INSTALLATION INFORMATION

Do not drop, or strike with a hammer. Keep away from fine metal filings and fine metal chips. Shield from liquids.

Do not attempt to remove the brake shaft or retaining rings.

All pulleys, sprockets, couplings, etc. must mount as slide fits. Use a puller to remove stuck components. Never pry or hammer to install or remove components.

Shaft without a flat: Use a clamp-type coupling.

Shaft with a flat: Center your set-screw on the flat.

Always use a flexible coupling when connecting the shaft of a rigidly mounted brake to the shaft of another rigidly mounted device. Precisely align both shafts.

Always electrically ground the brake.

To connect wires to solder terminals: Strip and tin your wire. Then wrap your wire around the terminal and solder.

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