

Hysteresis Brake Dynamometer

Allows measurements even in the
unstable ranges of AC motors

More compact than motor brakes or
other brake types



U.S. and International Patented System

Measurements of the speed and torque characteristics of a wide range of motors

Features and Benefits

- ◆ **Uses hysteresis brake for measurement devices**
Sugawara Laboratories boasts many years of brake development and manufacturing experience. In addition to minimizing the magnetic field aperture in which the hysteresis cup rotates, this component minimizes the cup's moment of inertia, enabling improved torque-control precision and controlling vibrations at high RPMs.
- ◆ **Enables stable measurements from low through high RPMs**
Torque is detected by the force exerted by the brake stator, enabling stable torque measurements from low through high RPM ranges. This component features a maximum speed of 30,000 rpm (depending on torque rating). In addition, optional components can be used to improve speed resolution for use with low-speed motors of 100 rpm or less.
- ◆ **Compatible with broad range of torque ratings from 5 mN·m through 50 N·m**
Measurement components can be selected to suit motor power to ensure high-precision measurements. Users can select from 14 models of TA/TB torque measurement components offering differing torque ratings.
- ◆ **Long-lasting non-contact brake**
Hysteresis brakes are non-contact devices and offer long service life. Except for bearings, hysteresis brakes have virtually no maintenance requirements.
- ◆ **Superior heat resistance**
Another hysteresis brake advantage is its resistance to changes in torque values due to increases in brake temperature or surrounding temperature.
- ◆ **Features air bearings for low-torque use**

Dynam. Hyst. Brake



SUGAWARA

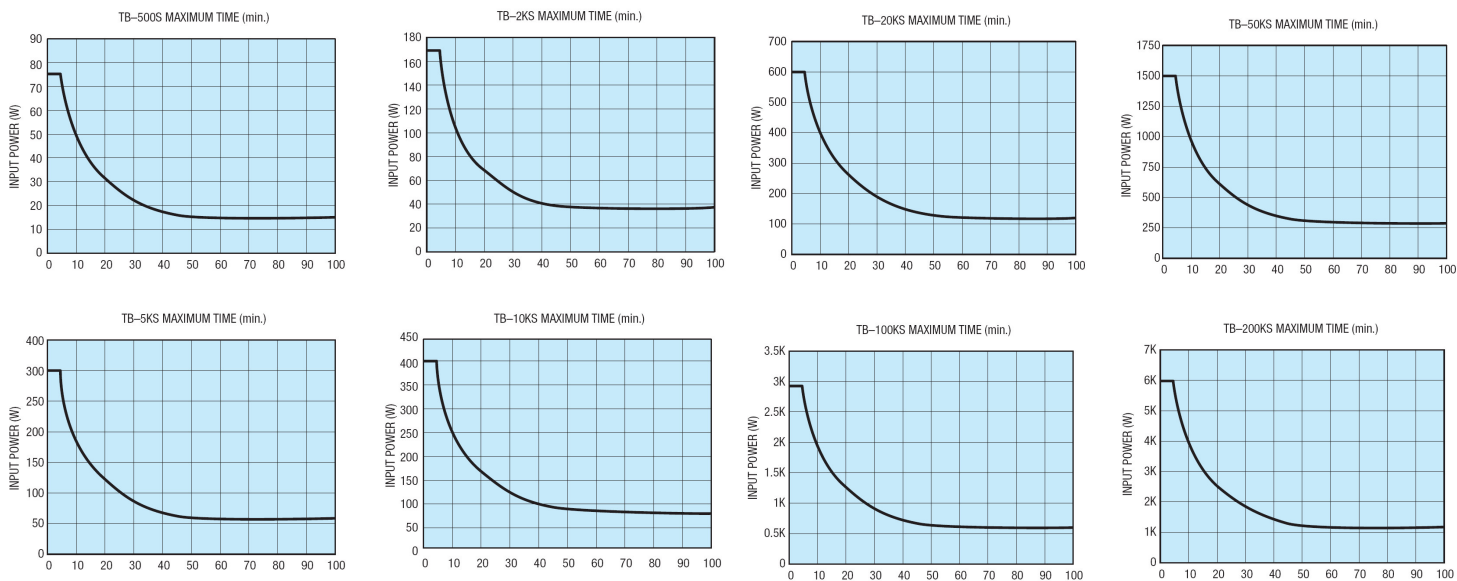


M.E.A. Testing Systems Ltd.
www.meatesting.com

Overall torque specifications

Model	TA-50S	TA-100S	TA-200S	TB-500S	TB-1KS	TB-2KS	TB-5KS	TB-10KS	TB-20KS	TB-50KS	TB-100KS	TB-200KS	TB-300KS	TB-500KS										
Torque rating	5 mN·m	10 mN·m	20 mN·m	50 mN·m	100 mN·m	200 mN·m	500 mN·m	1 N·m	2 N·m	5 N·m	10 N·m	20 N·m	30 N·m	50 N·m										
Torque measurement range*1	0.15–5 mN·m	0.3–10 mN·m	0.6–20 mN·m	1.5–50 mN·m	3–100 mN·m	6–200 mN·m	15–500 mN·m	0.03–1 N·m	0.06–2 N·m	0.15–5 N·m	0.3–10 N·m	0.6–20 N·m	0.9–30 N·m	1.5–50 N·m										
Torque measurement precision	Within ±0.5% of torque rating (using control component displayed values during calibration)																							
Brake support methods	Air bearings						Ball bearings																	
Torque detection methods	Brake-stator reaction force detected by strain-gauge load cell																							
RPM range*2	100–30,000 r/min				100–20,000 r/min				100–10,000 r/min			100–7,000 r/min		100–5,000 r/min										
RPM measurement precision	± (0.01% of range + 1 r/min)																							
RPM detection methods	Photoelectric transmission rotary encoder at 60 P/R (standard) or 600 P/R (optional)																							
Rotation-direction detection	Using two photoelectric transmission signals at 1 P/R with 90° phase difference																							
Brake temperature protection	Automatic cutoff of brake current at 80° or higher; also features buzzer and LED alarm																							
Brake-rotor moment of inertia	0.6 x 10 ⁻⁶ kg·m ²	0.8 x 10 ⁻⁶ kg·m ²	1 x 10 ⁻⁶ kg·m ²	2.4 x 10 ⁻⁶ kg·m ²	3.7 x 10 ⁻⁶ kg·m ²	9 x 10 ⁻⁶ kg·m ²	28 x 10 ⁻⁶ kg·m ²	185 x 10 ⁻⁶ kg·m ²	540 x 10 ⁻⁶ kg·m ²	1.8 x 10 ⁻³ kg·m ²	6.3 x 10 ⁻³ kg·m ²	17.5 x 10 ⁻³ kg·m ²	31 x 10 ⁻³ kg·m ²	61 x 10 ⁻³ kg·m ²										
Shaft diameter G	φ3			φ4		φ6		φ8		φ10		φ12		φ15		φ18		φ20		φ25				
Shaft shape (b x t x l)	Round						D-cut						Key channel											
Shaft height (h)	130 mm						160 mm						200 mm		230 mm		300 mm							
Dimensions (W x H x D)	200 x 240 x 350 mm				210 x 260 x 400 mm				210 x 300 x 500 mm				300 x 350 x 600 mm		500 x 500 x 1000 mm		500 x 520 x 1240 mm		600 x 700 x 1100 mm					
Weight	Approx. 15 kg				Approx. 19 kg				Approx. 26 kg		Approx. 29 kg		Approx. 56 kg		Approx. 63 kg		Approx. 180 kg		Approx. 210 kg		Approx. 400 kg		Approx. 450 kg	
Motor attachment hardware	MMJ-7B						MMJ-9B						MMJ-10B		MMJ-12B									
Diameter of attachable motor	φ25–100 mm						φ50–150 mm						φ60–180 mm		φ40–200 mm									
Compatible coupling	RC-type rubber coupling				BC-type metal coupling						SA-type metal coupling with attachments													
Coupling moment of inertia	—				0.8 x 10 ⁻⁶ kg·m ²		1.4 x 10 ⁻⁶ kg·m ²		3 x 10 ⁻⁶ kg·m ²		23 x 10 ⁻⁶ kg·m ²		72 x 10 ⁻⁶ kg·m ²		113 x 10 ⁻⁶ kg·m ²		308 x 10 ⁻⁶ kg·m ²		Subject to separate consultation					
Compatible control components	PC-EMA1/PC-EMA1-W2S/TM/PC-SAA2														PC-EMA1-U*									
Power supply	AC 100 V ±10%, 50/60 Hz (can be modified—AC 115 V, 200 V, 220 V)																							

Text Examples of Performance Graphs for models TB-20KS and TB-500KS



Dynam. Hyst. Brake

- Customized solutions
- Customer support
- Technical services
- 1-Year warranty
- Optional extended warranty program
- Local sales offices throughout the world



M.E.A. Testing Systems Ltd.
www.meatesting.com