4 QUADRANT
DYNAMOMETER TEST SYSTEM

FEATURES

- Horizontal or Vertical orientation
- Full four quadrant operation
- Full Torque at Zero Speed – Hold Position / Hold Zero Speed
- True Zero Torque, (no load)
- Steel Table
- Up to 48 thermocouple inputs
- Blower Cooled Motor
- Magtrol standard M-Test software
- Stall-torque capability
- Line Voltage Surge Protection - Transients to 6000V - Meets IEEE C62.41-1991 Cat B
- Low Inertia
- Fast response
- Line Regenerative

Fig. 1: 4Q Active Dynamometer Test System

DESCRIPTION

Magtrol's 4 quadrant motorized dynamometers provides expanded testing flexibility over a typical braking dynamometer. With the ability to bring the motor under test (MUT) to synchronous RPM before beginning a test, repeatability is improved. Since the motor windings are at ambient temperature before starting a ramp test, wattage is more consistent.

Custom Software required in order meet the specific needs of each individual customer's application.

Since Magtrol's TM series torque transducers are used between the dynamometer motor and the MUT, we are able to measure the friction and windage of the MUT. Additional features:

- Scalable torque ranges and improved accuracy is achievable through interchangeable TM torque transducers.
- Reversible operation
- Dynamic performance testing AND long term durability testing can be conducted
- Back EMF can be measured in DC motors
- Adjustable motor mounting platform for optimum flexibility
- AC Vector drive for dynamometer motor with optional regenerative feature.
- Various MUT power supplies can be integrated
- Temperature testing available
- Analog and digital I/O is standard
- Unattended / automated temperature testing is optional
- Meets IEEE 112 and UL standards
- Improved response time to load over that of the highly inductive HD, WB or PB series dynamometers.

DATASHEET

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SPECIFICATIONS

SYSTEM TYPE	POWER		TORQUE		SPEED
	hp	kW	N·m	lb·ft	RPM
AC Induction	20	14	50	36	3 600
	7	5	20	14	3 600
	10	7	50	36	2 000
	10	7	200	147	2 000
Servo Motor	6	5	1	0.7	27
	10	7	20	14	4 000
	20	15	10	7	3 000

APPLICATIONS

Motor Simulation: Precise simulation of torque load and speed allows the AC Dynamometer to replace expensive durability stands and run in chambers.

Inertia Simulation: Simulate in process operations.

Full Torque Stall: Application of full torque including overload at zero RPMs.

Low Speed: Provide tight control at very low speeds (> 5 RPM).

In-Line Torque Measurement: Allows for high accuracy torque control at different ranges.

DATASHEET

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