

DSP7000 SERIE

CONTROLLORE PROGRAMMABILE

CARATTERISTICHE

- **DSP7001 Single Channel:** Low cost and easy to use
- **DSP7002 Dual Channel:** Enables the support of two testing instruments with independent or tandem configurations and two fully independent control loops
- **Built-in Alarm System:** For power, speed, torque, temperature, air flow, water flow, electrical overload and external inputs
- **High Speed Data Acquisition:** Up to 500 torque and speed points per second of both channels with time stamp
- **High Quality, Easy-to-Read Vacuum Fluorescent Readout:** Displays torque, speed, power, auxiliary and PID (proportional gain, integral and derivative) values
- **Fast Full-Curve Data Acquisition:** Free-run to locked rotor in seconds
- **Speed & Torque Operating Modes:** PID settings for exceptional dynamometer control
- **Programmable Digital PID Values:** Controlled and stored via M-Test Software or controlled manually
- **Built-in Current-Regulated Supply:** For use with Hysteresis Dynamometer or brakes up to 1amp
- **Adjustable Torque Units:** English, Metric and SI are standard
- **Digital Filter:** Removes undesired noise from torque signals
- **Saving:** Currently used configuration can be saved and recalled at power up
- **Single or Multi-point Torque and Speed Stabilized Testing:** Via M-TEST 7.0 Software
- Closed Box Calibration
- **Rack Mounting:** 19" (482.6 mm) with handles
- Backwards Compatible: Compatible with the DSP6001 (in DSP6001 mode)
- **HD5 dynamometers:** Supported
- **USB:** Standard
- **Low RPM:** calculation from angle (quadrature signal) and time designed to capture RPM's as low as .001 RPM
- **Position Measurement:** Two quadrature decoders



Fig.1 : DSP7000 Series Programmable Controller

OPZIONI

- Interfaces: RS-232 and IEEE-488
- I/O card accessible programmatically (LabVIEW™, Visual C)

DESCRIZIONE

Programmabile ad alta velocità il modello DSP7000 Magtrol è il controllore del dinamometro, utilizza un segnale digitale all'avanguardia con Tecnologia superiore di elaborazione per fornire test su motori. Progettato per l'uso con qualsiasi freno a isteresi Magtrol, a Correnti Parassite o a Polvere, misurazione della coppia in linea Magtrol con trasduttore o strumentazione ausiliaria, il DSP7000 può fornire il controllo completo al PC tramite USB o IEEE-488 o RS-232 interfacce opzionali. Con un massimo di 500 letture al secondo, il DSP7000 è ideale sia per il laboratorio di prova che per la linea di produzione.

APPLICAZIONI

In laboratorio, l'elevata frequenza di campionamento del DSP7000 garantisce una risoluzione superiore per l'acquisizione dei dati e il tracciamento delle curve. Ciò consente di acquisire più dati di test del motore utilizzabili per confronto, ripartizione e altre aree transitorie della curva di prova del motore. Per il controllo di produzione in entrata, il DSP7000 visualizza in ogni momento coppia, velocità e potenza, consentendo al controllore di essere utilizzato come unità manuale autonoma o come parte di un sistema PC completo.

SOFTWARE DI PROVA MOTORE

Il software M-TEST 7 Magtrol (venduto separatamente) è un programma di test motori all'avanguardia per l'acquisizione di dati basato su Windows®. Utilizzato con il controller Magtrol DSP7000, il software M-TEST 7 fornisce il controllo a qualsiasi dinamometro Magtrol e esegue sequenze di test nel modo più adatto alla precisione e all'efficienza complessiva del sistema di test motori. I dati generati dal software di test motori Magtrol possono essere archiviati, visualizzati e stampati in formati tabellari o grafici e possono essere facilmente importati in un foglio di calcolo.

Scritto in LabVIEW™, M-TEST 7 ha la flessibilità necessaria per testare la maggior parte dei motori in vari modi. Grazie la versatilità LabVIEW, si ottengono dati da altre fonti (ad esempio termocoppie), controllando la potenza del motore e fornendo indicatori audio/visivi è relativamente facile.

Il software M-TEST 7 Magtrol è ideale per simulare carichi ciclati e a rampa al motore. E' facile raccogliere dati e duplicare i test, il software è ideale per l'uso nei laboratori di ingegneria, test di produzione e ispezioni in entrata/uscita.

SPECIFICATIONS

MEASUREMENT CHARACTERISTICS

Maximum Torque	99,999 units
Maximum Speed	199,999 rpm
Accuracy	Speed: 0.01% of reading from 5 rpm to 200,000 rpm Torque: 2 volt range $\pm 0.05\%$ of range (± 1 mV) <i>(used on all HD Series other than HD5 Series)</i> 10 volt range $\pm 0.05\%$ of range (± 5 mV) <i>(used on all except HD Series)</i>

DIMENSIONS

Width	19.0 in	483 mm
Height	3.5 in	89 mm
Depth	12.4 in	315 mm
with handles	13.8 in	351 mm
Weight	15.2 lb	6.9 kg

ELECTRICAL CHARACTERISTICS

Voltage Requirements	85-264 VAC 50/60 Hz
Power Requirements	210 VA
Fuses (5 × 20 mm)	Brake: IEC .25 A 250 V T Main Power: IEC 2.5 A 250 V T
Max. Compliance Voltage	48 VDC, Brake Output
Max. Brake Output Current	1 Amp, Calibrated that 100% OL = 1 Amp
TSC1 and TSC2 User Power Supplies	24 Volt DC 450 mA (power supply fault protected) 5 Volt DC 200 mA (internal fuse at 500 mA)

ENVIRONMENT

Operating Temperature	5 °C to 40 °C
Relative Humidity	< 80%
Temperature Coefficient	0.004% of range/°C of 5 VDC for both channels

Optional equipment may be factory installed or purchased separately and user installed.

OPTIONAL EQUIPMENT

COMMUNICATIONS

RS-232 Interface

The RS-232 Interface provides backwards compatibility for older systems. 300, 600, 1200, 2400, 4800, 9600, 19200 and 115200 Baud rates are supported.

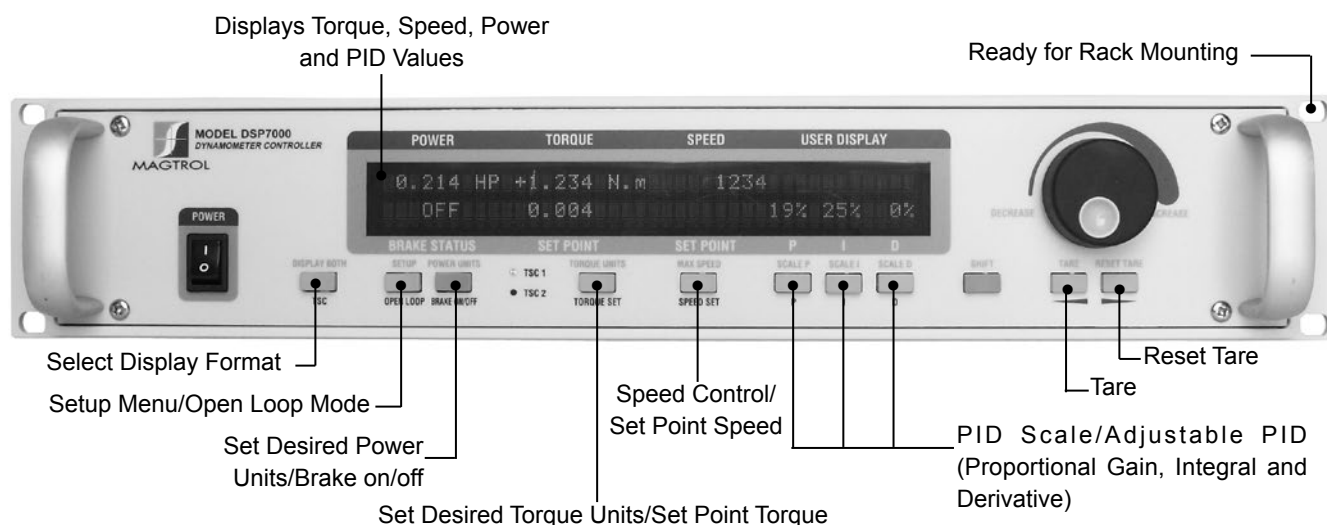
GPIB IEEE-488 Interface

The GPIB IEEE-488 Interface provides standard GPIB communications.

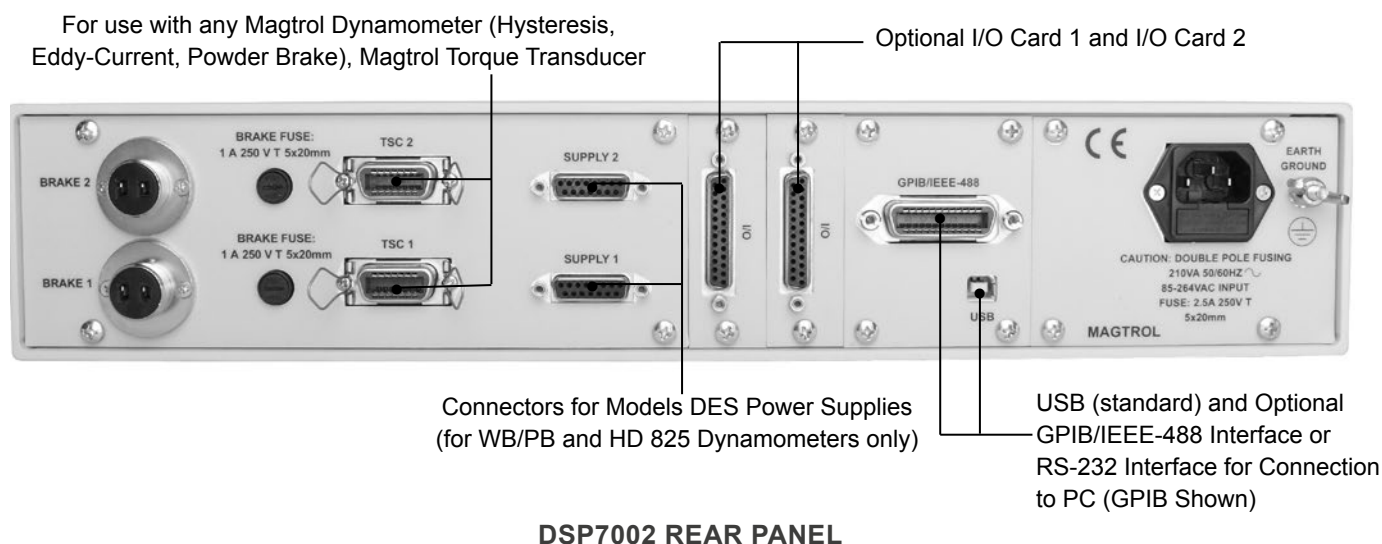
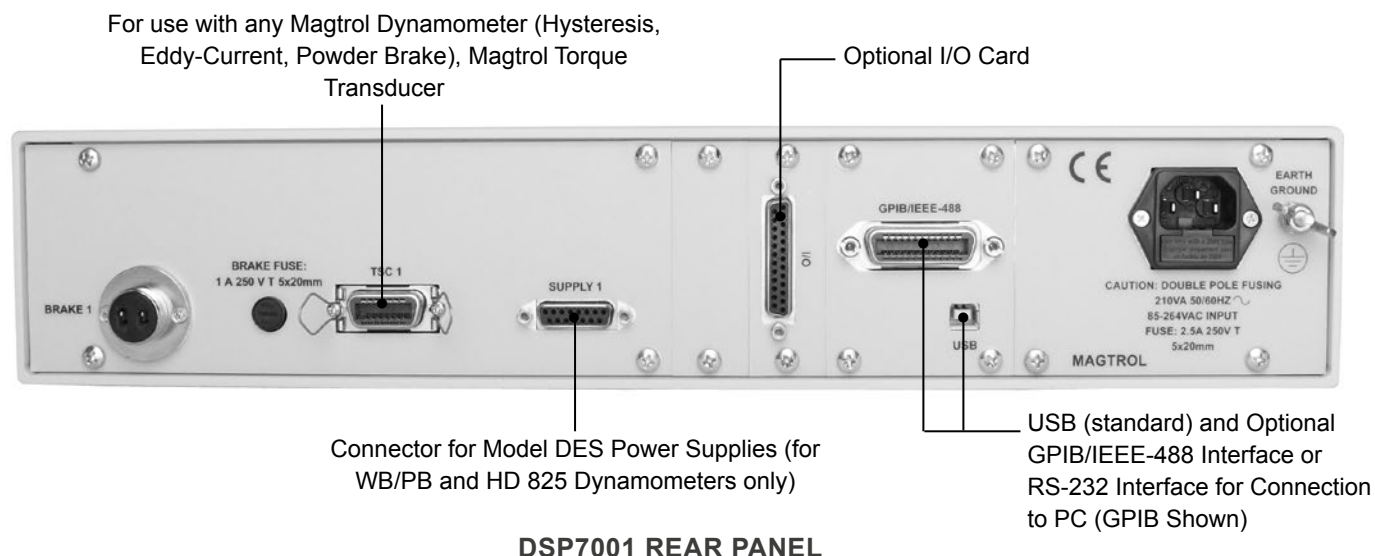
I/O CARD

- Torque/Speed Analog Outputs: For interface with a data acquisition system
- Analog Signal such as tachometer can be routed to PID loop
- External alarm input
- Alarm relay contacts
- 2 Relays
- 3 Digital inputs
- 2 Digital outputs
- 2 Analog inputs
- 2 Analog outputs
- 5 Volts available to user fused at 500 mA. Nominal 200 mA
- All I/O data can be accessed by LabVIEW™

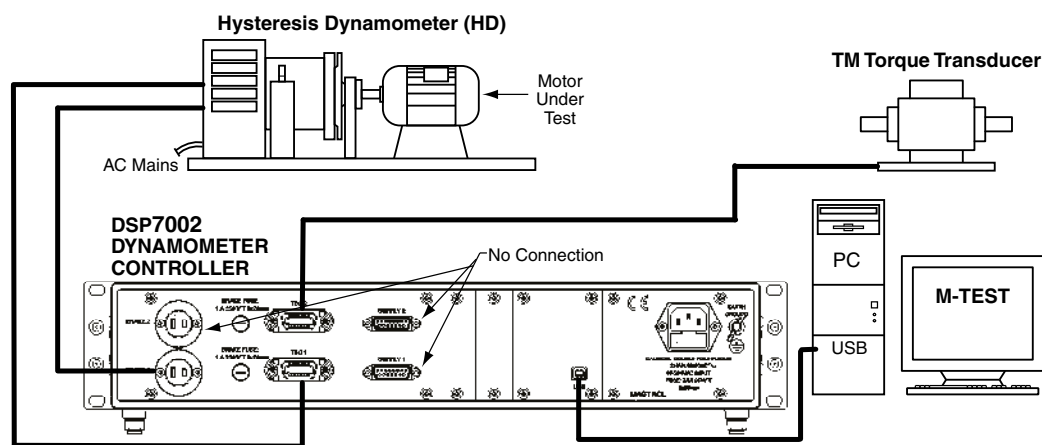
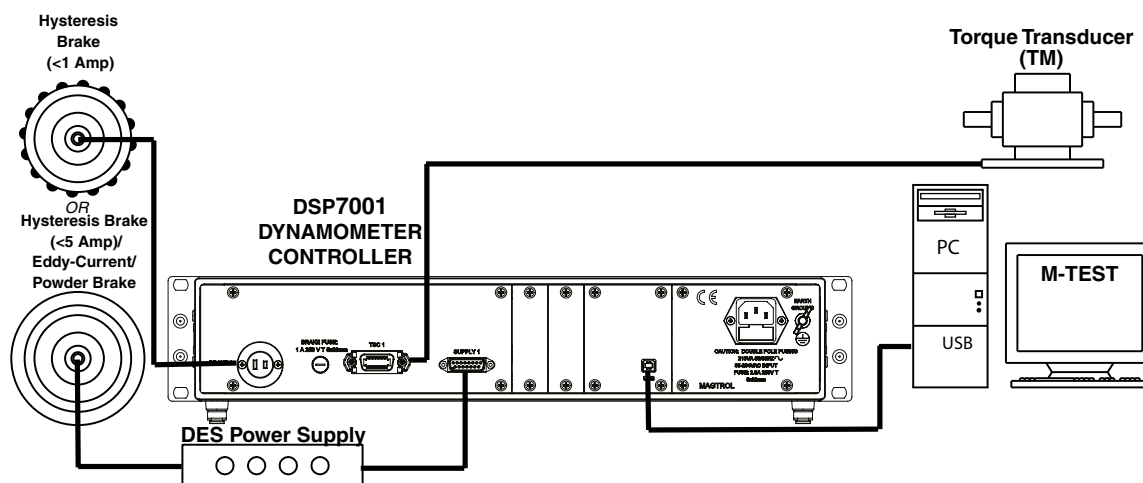
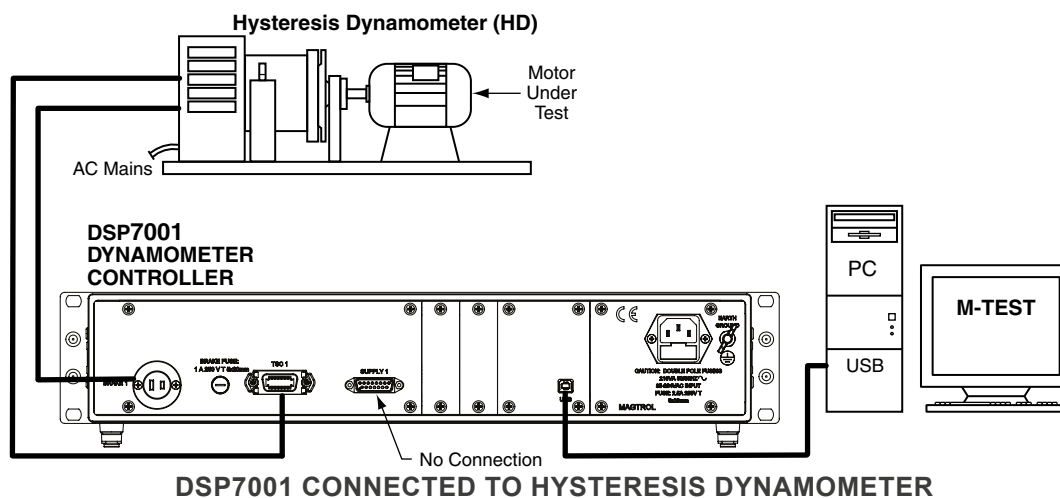
FRONT PANEL



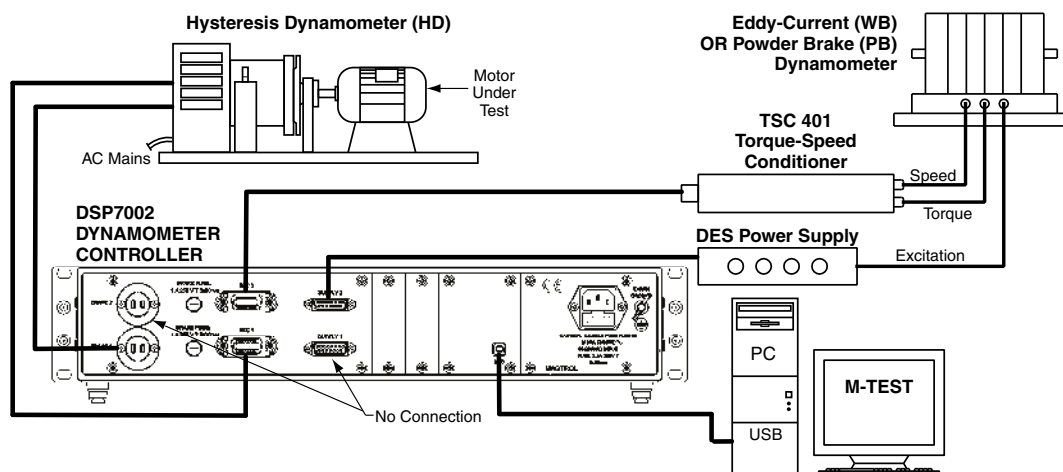
REAR PANELS



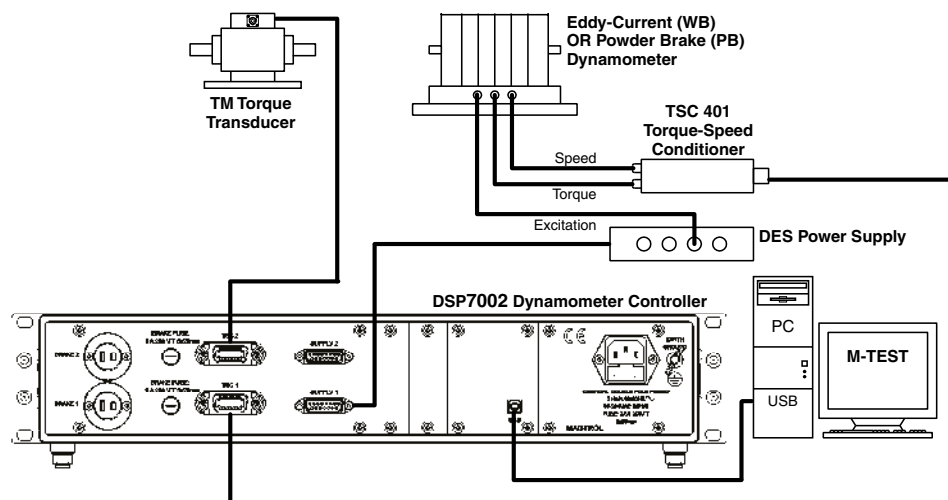
SYSTEM CONFIGURATIONS



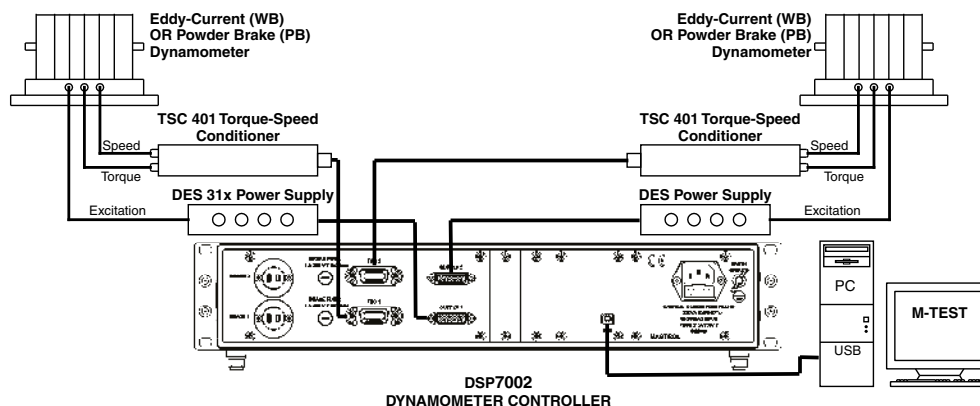
SYSTEM CONFIGURATIONS



DSP7002 CONNECTED TO HYSTERESIS DYNAMOMETER AND EDDY-CURRENT OR POWDER BRAKE DYNAMOMETER

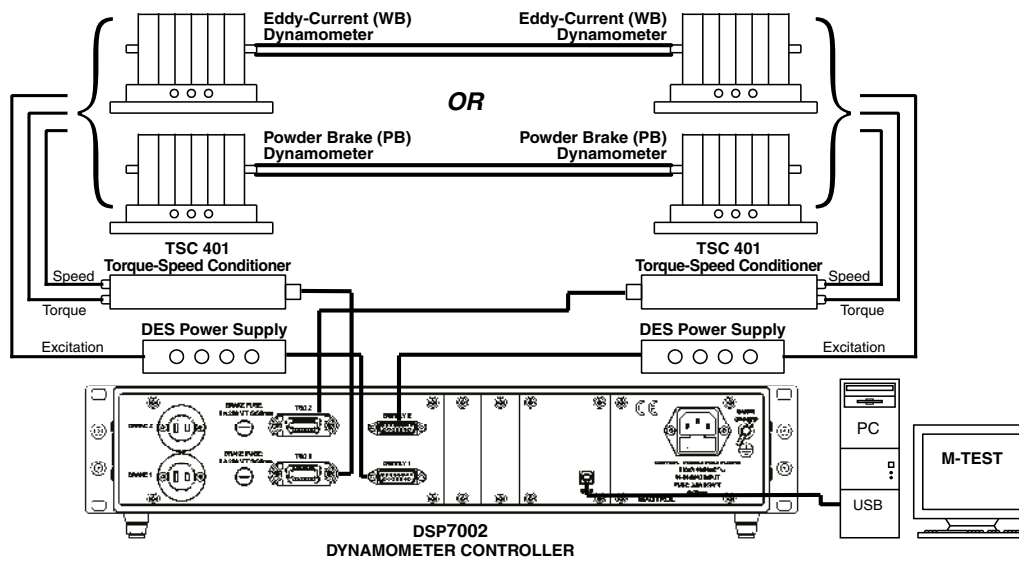


DSP7002 CONNECTED TO EDDY-CURRENT OR POWDER BRAKE DYNAMOMETER (WB/PB) WITH IN-LINE TORQUE TRANSDUCER

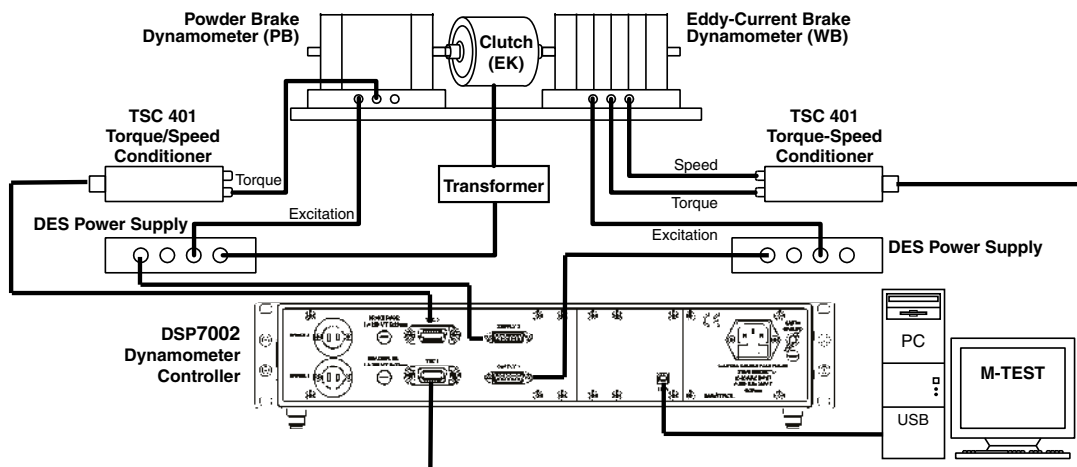


DSP7002 CONNECTED TO 2 EDDY-CURRENT OR POWDER BRAKE DYNAMOMETERS (INDEPENDENT SETUP)

SYSTEM CONFIGURATIONS



**DSP7002 CONNECTED TO 2 EDDY-CURRENT OR 2 POWDER BRAKE DYNAMOMETERS
(TANDEM SETUP)**

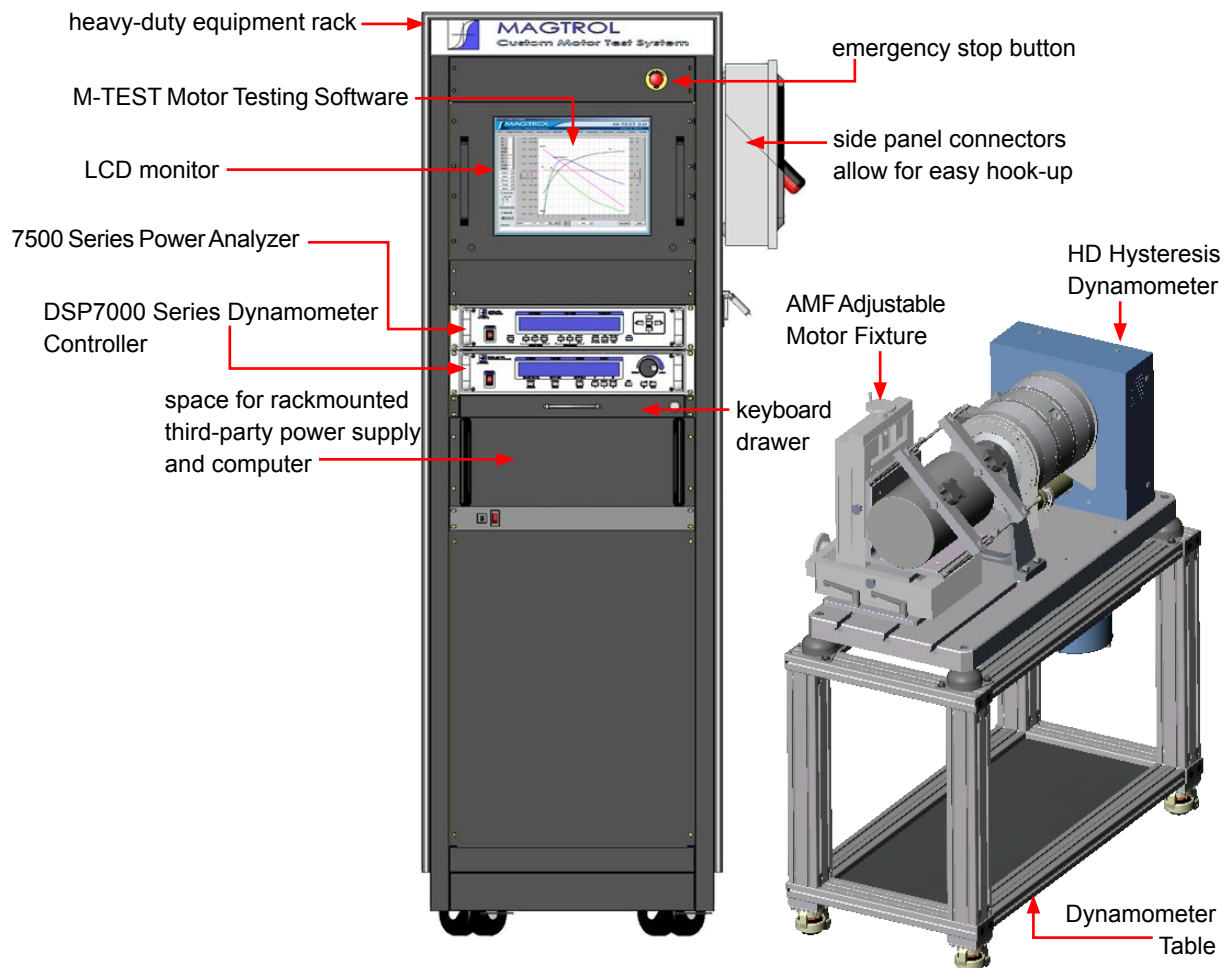


**DSP7002 CONNECTED TO EDDY-CURRENT AND POWDER BRAKE DYNAMOMETER
(TANDEM SETUP)**

SISTEMA DI PROVA MOTORE PERSONALIZZATO

I dinamometri a isteresi della serie HD possono essere incorporati in un sistema di prova motori personalizzato.

Questi sistemi basati su PC, chiavi in mano sono sistemi progettati e costruiti su misura per soddisfare le specifiche esigenze degli utenti.



ORDERING INFORMATION

DSP7001	High-Speed Programmable Dynamometer Controller - single channel
DSP7002	High-Speed Programmable Dynamometer Controller - dual channel

MODEL NUMBER

DSP700_ - - -

Channel Type

1 : Single Channel

2 : Dual Channel

Communications Options

0 : none (standard USB)

1 : USB port and GPIB

2 : USB port and RS-232

I/O Options

0 : none (standard)

1 : I/O card in slot 1 (7001)

3 : I/O card in slot 1 and 2 (7002)

SYSTEM OPTIONS AND ACCESSORIES

CATEGORY	DESCRIPTION	MODEL/PART #
TESTING DEVICES	Hysteresis Dynamometers	HD Series
	Eddy-Current Dynamometers	WB Series
	Powder Brake Dynamometers	PB Series
	In-Line Torque Transducers	TM Series
POWER ANALYZERS	High-Speed Single-Phase Power Analyzer	7510
	High-Speed Three-Phase Power Analyzer	7530
SOFTWARE	M-TEST 7 Motor Testing Software	M-TEST 7
POWER SUPPLIES	Power Supply	5200
	Current-Regulated Power Supply	5210
	Power Amplifier (required for HD-825 Dynamometer only)	5241
	Power Supply for WB & PB Dynamometers	DES 410 & DES 411
MISC.	Torque/Speed Conditioner (required for connecting WB/PB Series Dynamometers to DSP6001)	TSC 401
	Temperature Testing Hardware	HW-TTEST
CARDS & CABLES	GPIB Interface Card (PCI)	73M023
	GPIB Cable, 1 meter	88M047
	GPIB Cable, 2 meters	88M048
	Torque Transducer Connector Cable	ER 113/01
	DSP7000 GPIB Card	006579
	DSP7000 RS-232 Card	006578
	DSP7000 I/O Card	006577