

# DUAL-TEST 7

## MOTOR TESTING SOFTWARE

### SPECIFIC FEATURES

- DSP7002 Programmable Controller Support
- Full independent dual channels control software
- Supports the optional Analog and Digital I/O Modules on the DSP7002 Programmable Controller.
- Expanded power analyzer and power supply selections.
- Programmable analog and digital outputs per step
- Test speed, torque, amps, watts input, watts output and open loop parameters.
- Capable of adjusting sampling rate and using step or ramp from one load point to the next.
- Displays 63 Tested and Calculated Parameters: Torque, speed and auxiliary input are displayed from the DSP7002 Controller; amps, volts and watts from an (optional) power analyzer. Calculated values including horsepower, efficiency, power factor, output watts and time can also be displayed. Optional analog and digital inputs can also be displayed.
- Three-Phase Power Analyzer Data Acquisition: Obtain data on each individual phase and/or the sum used in the chosen parameters (amps, volts, input watts and power factor).
- Motor Shaft Direction Indicator: Indicates if the motor is turning clockwise or counterclockwise.
- USB Interface : Computer interface USB2.0 available with DSP7002. Optional IEEE-488 or RS-232 can be added.
- PID Adjustment Routines: Helps user adjust the system for ramp and step functions.
- Graphing Capabilities: Display up to 5 test curves in a single graph; easy-to-read colored and labeled plots with several graph formatting options; manual or auto scaling.
- Curve Fitting: A curve fitting routine can be applied to most motor test curves. Raw data and curve fit data can also be displayed simultaneously.
- Save/Load Setup Function: Test procedure configurations may be stored and recalled using standard Windows® file structure.

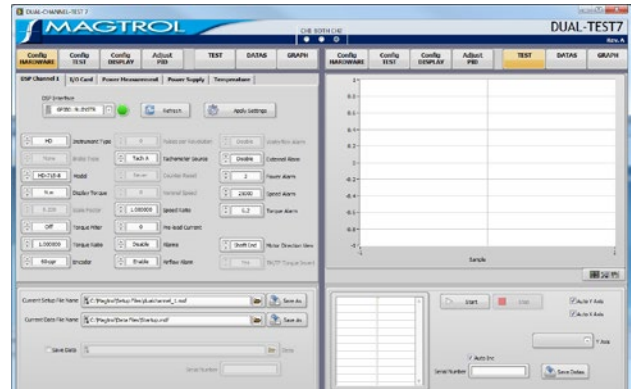


Fig.1 : DUAL-TEST 7 Motor Testing Software

### DESCRIPTION

Magtrol's DUAL-TEST7 is a state-of-the-art motor testing software for PC (Windows® XP sp3/7/8) based data acquisition. Used with a Magtrol Programmable Dynamometer Controller DSP7002, DUAL-TEST7 works on two channels independently with any Magtrol Dynamometer or In-Line Torque Transducer to help determine the performance characteristics of a motors under test. Up to 63 parameters are calculated and displayed utilizing DUAL-TEST7's feature-rich testing and graphing capabilities.

An integral component of any Magtrol Motor Test System, DUAL-TEST7 performs curve tests in a manner best suited to the overall efficiency of the test rig. Written in LabVIEW™, DUAL-TEST7 has the flexibility to test a variety of motors in a multitude of configurations. The data generated from this user-friendly program can be stored, displayed and printed in tabular or graphical formats, and is easily imported into a spreadsheet.

Magtrol can also make custom modifications to the software to meet additional motor testing requirements.

### APPLICATIONS

DUAL-TEST7—besides being well-suited for simulating loads, cycling the unit under test and motor ramping—is also ideal for production line, due to the full dual channels tests functions. Another time-saving feature, that engineering labs will benefit from, is the ability to duplicate tests and run them automatically. This versatile program is extremely valuable to anyone involved in motor testing..

**ANALOG INPUT MEASUREMENT**

Up to 128 thermocouples or analog sensors can be read and monitored during a motor test. Heat rise curves on the bearings, windings and housing of a motor can be performed and air flow/exhaust efficiencies can be measured with an air tool or

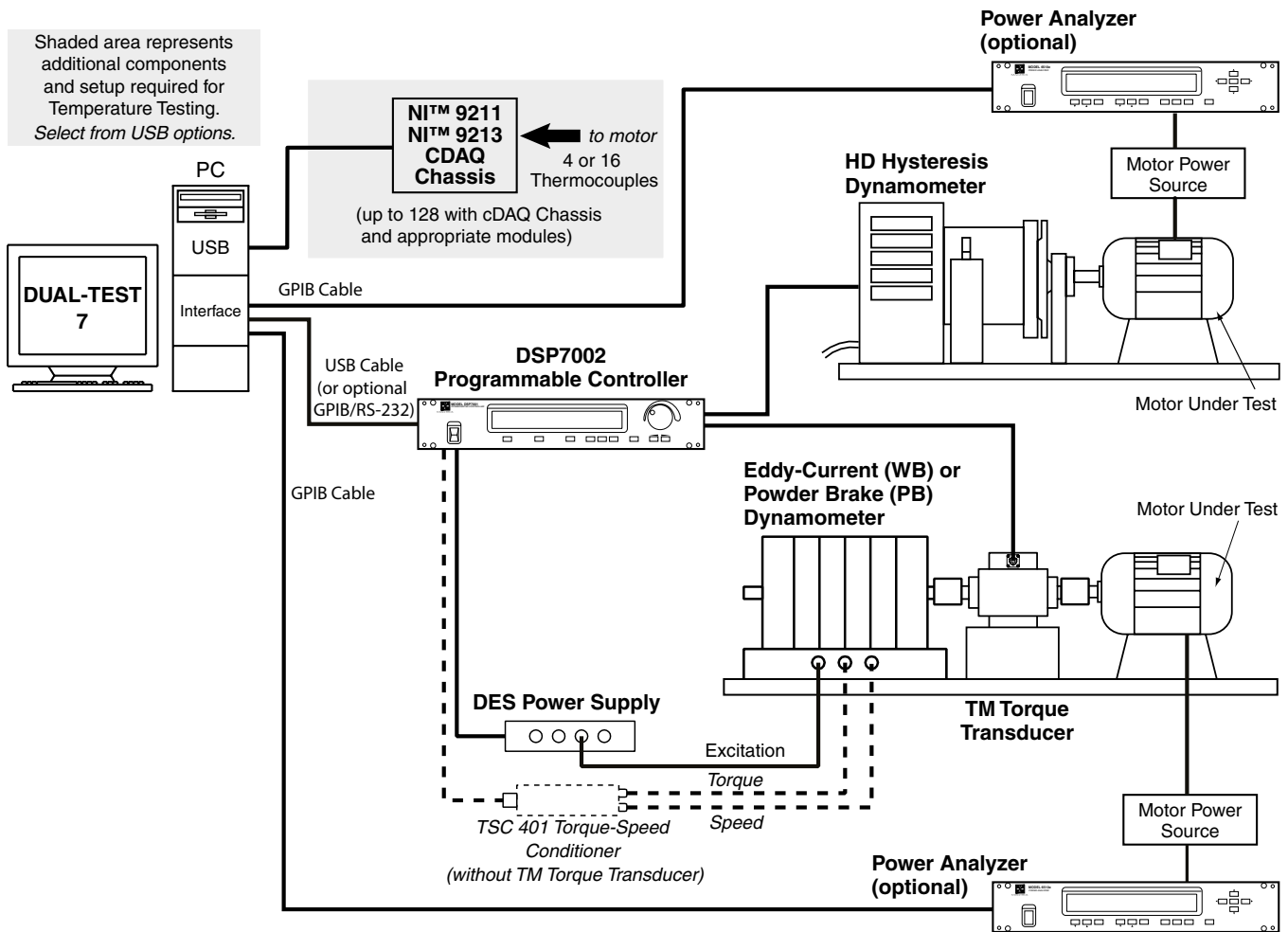
internal combustion engine. DUAL-TEST7, with its complete dynamometer control, even allows for analog measurement while performing load simulation for duty cycle and life testing.

**SYSTEM CONFIGURATION**

A Magtrol Dynamometer provides motor loading with a Magtrol Programmable Dynamometer Controller acting as the interface between the PC running DUAL-TEST7 and the dynamometer. If motor electrical parameters are to be measured or used to determine load points, a Magtrol Power Analyzer is also required. Interfacing between the computer and electronic instrumentation is via USB, the National Instruments™ GPIB card or RS-232 serial interface. Only the DSP7002 can work in dual channel, other additional option as like as Power Analyzer, power supply should be dubbed.

DUAL-TEST 7 is equipped to work in conjunction with any of the following Magtrol motor testing instruments:

- Dynamometer Controller (DSP7002)
- 2x Hysteresis, Eddy-Current or Powder Dynamometer (HD, HD5, WB, PB)
- 2x In-Line Torque Transducer (TM, TS, TF, TMB, TMHS)
- 2x Power Analyzer (7530, 7510, 6530, 6510e, 6510, 6550, 5100, 5300, 5310, 5330)



**SYSTEM REQUIREMENTS**

- Personal computer with Intel® Pentium® Core™2 Duo processor (or equivalent)
- Microsoft® Windows® XP sp3/7/8
- 2 GB of RAM
- 2 GB HDD of available hard drive space
- VGA color monitor with minimum screen resolution of 1280 × 768
- National Instruments™ PCI-GPIB card, GPIB-USB-HS Interface (available from Magtrol)
- RS-232 serial interface can be used, instead of GPIB card, for interfacing with Magtrol DSP7002 Controllers. In addition, a USB Interface can be used with the DSP7002 Controller.

**SYSTEM OPTIONS AND ACCESSORIES**

CATEGORY	DESCRIPTION	MODEL/PART #
TEMPERATURE TESTING HARDWARE	USB 4-Channel Isolated Input Module and USB Cable (1 m)	HW-TTEST-4
	USB 16-Channel Isolated Input Module and USB Cable (1 m)	HW-TTEST-16
	4-Channel TC Modules	73M231
	16-Channel TC Modules	73M233
	4-Slot cDAQ Chassis	73M224
CONTROLLERS	8-Slot cDAQ Chassis	73M229
	High Speed Programmable Controller	DSP7000
MOTOR TEST EQUIPMENT	Hysteresis Dynamometers	HD series
	Eddy-Current Dynamometers	WB series
	Powder Brake Dynamometers	PB series
	In-Line Torque Transducers	TM/TMHS/TMB series
	Micro Dyne Motor Testing System	006542
POWER ANALYZERS	High Speed Single-Phase Power Analyzer	7510
	High Speed Three-Phase Power Analyzer	7530
POWER SUPPLIES	Power Supply for WB & PB Dynamometers series 2.7 and 43	DES 410
	Power Supply for WB & PB Dynamometer series 65, 115 and 15	DES 411
	Power Amplifier—required for all HD-825 Dynamometers	5241
MISC	Torque/Speed Conditioner	TSC 401
CARDS	GPIB Interface Card (PCI)	73M023
	Relay Actuator Card (for controlling motor power via M-TEST 7)	73M052
	USB-6525	73M218
CABLES	GPIB Cable, 1 meter	88M047
	GPIB Cable, 2 meters	88M048
	Torque Transducer Connector Cable	ER 113/01

For information on the most current software release available, refer to Magtrol's Web site at <https://www.magtrol.com/product/em-test-2-0-endurance-motor-testing-software/>