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Model TI-5000EX Servo Motor Repair System

FEATURES

- Quickly test feedback and check or set feedback alignment for brushless permanent magnet servomotors
- Checkout quadrature incremental encoders, serial encoders, resolvers, and Hall effects without an oscilloscope
- Easy to interpret display on your desktop or notebook PC
- WinTI5000EX PC interface software runs on Windows versions from 95 to XP included.
- Cable compatible with TI-3000, TI-5250, & TI-7000
- Powered by wall mount power supply
- PC not included
- One year limited warranty

GENERAL

Your TI-5000EX is your competitive advantage by giving your servo tech the support he needs in your shop or on the road. Quickly checkout:

- Incremental quadrature pulse encoders
- Serial encoders
- Resolvers
- Hall effect sensor commutation signals
- Verify or set feedback alignment

The WinTI5000EX PC interface software puts the TI-5000EX test results and information on a large easy to read Windows PC screen. Equipment under test connects using a removable 14 pin terminal block. The equipment under test may be powered by the TI-5000EX 5V source or an external source.

PART OF THE FAMILY

The TI-5000EX fits right in working independently or in conjunction with your other products from the Mitchell test equipment family. Use the TI-5000EX for big display results on the bench and the TI-7000 for field service or shop work. Test run motors with the TI-3000 on the bench or in the field. Feedback test cables are compatible among the TI-3000, TI-5000EX, TI-5250 and TI-7000.

FEEDBACK ALIGNMENT

The TI-5000EX makes it simple to check feedback alignment. Too often servomotor users replace feedback devices without realizing the need for correct alignment. With the TI-5000EX you check, and if necessary, set the alignment to get these motors up and running. If correct alignment information is not available, you can use the TI-5000EX to get alignment from a good spare. Downtime is expensive, and you can help minimize it by having the right tools to solve the problem.

QUADRATURE PULSE ENCODERS

The TI-5000EX accepts encoders with single ended or differential output lines, with or without an index pulse (although some tests require an index pulse). Count, count rate, and line states are displayed. If commutation signals are available, their states are displayed. Testing of the encoder outputs includes measuring counts between index pulses and measuring three different phase and symmetry angles for the A and B pulses.

In addition to checking counting functions and pulse phase angles, the TI-5000EX can check for correct line levels on the encoder A, B, Z true and complement lines. The use can verify that each line is switching to the correct voltage state, and that true and complement lines are always in the opposite state from each other.

SERIAL ENCODERS

The input functions and testing for the serial encoders are very similar to the quadrature encoders. The user enters the model of the encoder in use, and the TI-5000EX displays the pertinent information. In addition to the count, other important information contained in the data stream is displayed for the operator. Consult factory or representative for models currently supported.

SINE WAVE ENCODERS

With the TI-5101 Sine Wave Interface Board (included), the TI-5000EX supports 1V p-p sine wave output encoders, such as Heidenhain products. The TI-5101 converts the sine wave output levels to 5V level pulses which can be checked by the TI-5000EX just like other quadrature pulse encoders. In addition to the normal A, B, and Z encoder outputs, it can accept C and D outputs which provide sine and cosine signals of one period per revolution. The C and D levels are displayed as well as the angle, from 0 - 360 degrees, represented by these levels.

RESOLVER CHECKOUT

The TI-5000EX provides support for resolver checkout using built-in resolver circuitry. This new DSP based resolver support represents an advance in resolver checkout capability.

The unit generates its own resolver excitation, and both frequency and level are adjustable from the WinTI5000EX setup screen. The frequency is adjustable from 1,000 Hz. to 20,000 Hz. A built-in frequency counter provides a reading of the exact frequency. The excitation level is adjustable from 0 to 8 volts peak (16V peak to peak, 5.6V RMS).

Convenient test points on a breakout board allow easy connection to an oscilloscope. The resolver rotation information is displayed as angle in degrees (to .1 degree). The operator is warned if the returned sine/cosine signal levels are too low or missing.

SYSTEM SPECIFICATIONS

QUADRATURE PULSE ENCODERS

INPUT -	
Rate	Up to 1,000,000 CPS (quad)
Max count	+/- 2,147,483,647 (quad)
PHASE -	
Rate	25 CPS to 400,000 CPS
Resolution	1 degree

SERIAL ENCODERS

Rate	Varies with encoder type

RESOLVERS

Excitation	1,000 - 20,000 Hz. 0.0 – 8.0 V peak
Speed	Up to 3,600 RPM
Angle resol.	0.1 degree
Sin/Cos	0.1 volt

ORDERING INFORMATION

TI-5000EXQ	Incremental encoder support and Hall effect support
Option R	Add resolver support
Option F	Add Fanuc serial support
Option M	Add Mitsubishi serial support
Option K	Add Kawasaki serial support
Option S	Add Sumtak/Sanyo Denki support
Option H	Add Heidenhain Endat support
Option I	Add Indramat Digital support

Check with factory for other options

AUTHORIZED REPRESENTATIVE: