



Curriculum Coverage

- Photoelectric Characteristics
- Electromagnetic Proximity Characteristics
- DC Tachometer Generator Characteristics
- Magnetic Pickup & Fly Wheel Sensor Characteristics (with option)
- Speed Sensors Comparison

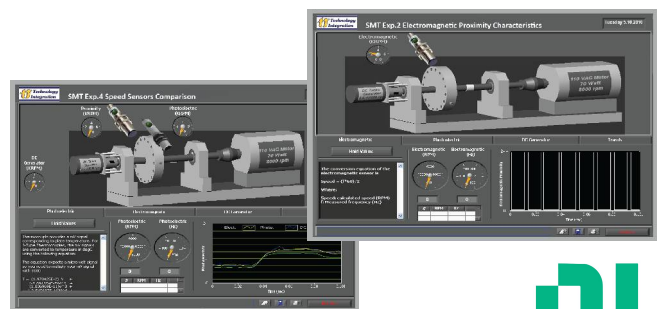
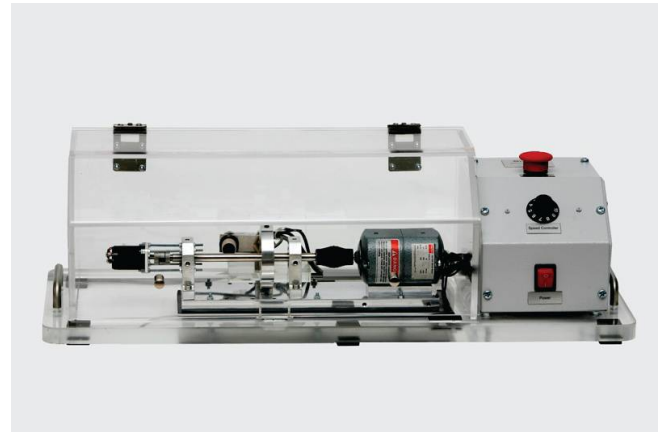
Features

- Computer based Speed Trainer used to teach students how to measure the speed of a rotating shaft
- Comprises all required sensors to measure shaft speed
- For use with NI's Data Acquisition & Control hardware

Description

Rotating components are basic parts in almost all industrial machinery; examples are generators, turbines, pumps... etc. The objective of this trainer is to teach students measuring the speed of a rotating shaft using different types of speed sensors and comparing between their different behaviors and characteristics.

The speed sensors used are: Photoelectric sensor, Electromagnetic Proximity sensor, DC Tachometer Generator, and Magnetic Pickup & Fly Wheel sensor (option). The different sensors are mounted in a position where they can measure the same speed of the rotating shaft; as a result the student will be able to note the differences between them.



Components

- Motor
- Variable Speed Drive
- Photoelectric Sensor
- Electromagnetic Sensor
- DC Tachometer Generator
- Mag. Pickup & Fly Wheel Sensor (Option)

NI¹ Compatible Platforms

- Compact RIO
 - Others²
- ¹ NI
² Please check with us about compatibility of other NI Platforms

Required NI Modules

- cRIO: NI-9229, NI-9422, NI-9474, NI-9263

Software

- User friendly with easy to use interface
- Developed using NI LabVIEW package
- Built-in safety features & limitations, and designed for students' use

Ordering Information Speed Measurement Trainer

SMT001 - A - B - C

NI* Platform

Power

Options

1... cRIO

1... 220 VAC

0... No Option

1... Magnetic Pickup & Fly Wheel Sensor

*Purchase NI Hardware Separately

For complete product specifications, pricing, and information:
e-mail: info@ti.jo / website: www.ti.jo



Technical Specifications

Speed Measurement Trainer Specifications:

Dimensions:

- Dimensions (LxWxH): 690 x 270 x 210 mm

Motor:

- Power: 1/10 hp
- Speed: 8,000 rpm
- Voltage: 115V / 60 Hz
- Load: 1.5 A

Photoelectric Sensor:

- Sensing distance: 7m
- Housing material: Plastic, nickel plated brass and stainless steel
- Enclosure rating: IP67
- Operating voltage range: 10 to 30 VDC

Electromagnetic Sensor:

- Sensing method: Inductive type
- Sensing distance: 16 mm $\pm 10\%$
- Sensing object: Ferrous metal
- Operating voltage range: 10 to 32 VDC
- Current consumption: 10 mA Max
- Control output: NPN open collector output

DC Tachometer Generator:

- Inertia: 1.23×10^{-4} oz-in-sec²
- V/1000 RPM: 2.6 V
- Speed: 12,000 rpm