



Curriculum Coverage

- Introduction to Signal Processing
- Acquiring Physical Phenomena
- Vibrations Fundamentals
- Shaft Balancing & Bearing Faults
- Voltage & Current Waveforms
- Phasor Diagrams
- Power Fundamentals & Calculations
- Harmonics
- Temperature Monitoring

Features

- Computer based Machine Health Monitoring Trainer used to teach vibration, power and temperature monitoring in rotary motors
- Includes all required sensors to measure vibration, temperature and power parameters
- For use with NI's Data Acquisition & Control hardware

Description

The Machine Health Monitoring Trainer is used to demonstrate “Intelligent Maintenance” concepts. Through a series of experiments and investigations that study mechanical and electrical components of a machine, the student is introduced to machine health monitoring main parameters; vibration, power and temperature.

Learning to monitor these parameters helps the student better understand machine and components’ degradation that lead to failure.

Students will learn what vibration parameters to monitor for detecting motor balance and bearings status. They will also be introduced to power quality measures contributing to machine health including voltage and current waveforms, harmonics, frequency, active and reactive power, power factor, etc...



Components

- Accelerometer
- Speed Sensor
- High Speed Motor
- Speed Controller
- Bearings
- Unbalancing Screws
- Thermocouple

NI¹ Compatible Platforms

- Compact RIO
- Others²

¹ NI

² Please check with us about compatibility of other NI Platforms

Required NI Modules

- cRIO: NI-9225, NI-9211, NI-9234

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 Machine Health Monitoring Trainer

MHMT001 - A - B

NI* Platform

1... cRIO

Power

1... 220 VAC

*Purchase NI Hardware Separately

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

and Images are subject to change at anytime without prior notice.



Technical Specifications

Machine Health Measurement Trainer Specifications:

Dimensions:

- Dimensions (LxWxH): 590 x 270 x 210 mm

Motor:

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

Speed Sensor:

- Output Signal: TTL compatible pulse, 0-5V or 5-0V
- Power: Built in rechargeable battery pack (NiMH), 4.8 VDC

Accelerometer:

- Sensitivity: ($\pm 10\%$) 10.2 mV/(m/s²)
- Measurement Range: ± 490 m/s²
- Settling Time (within 1% of bias): ≤ 2.0 sec
- Excitation Voltage: 18 to 28 VDC
- Constant Current Excitation: 2 to 20 mA

Thermocouple:

- T-Type thermocouple
- Temp. Range: 0°C to 260°C