PCB PIEZOTRONICS
AN AMPHENOL COMPANY

MODEL **3210**

LABMASTER PORTABLE

- Portable data recorder with 4-channel high-speed data acquisition card
- Transducer signal conditioning card
- Durable hard shell case enclosure
- Includes LabMaster for Windows® fastener testing software for PC interfaced via USB port
- Accepts inputs for torque angle transducers and load cells
- Auxiliary channel accepts low-level and high-level outputs from sensors and other analog output devices

TYPICAL APPLICATIONS

- Torque-Tension Testing
- Bolted Joint Analysis
- Fastener Coatings, Lubrication, Finish and Plating Evaluation
- Power Tool Testing and Analysis
- Prevailing Torque Testing
- Yield Determination
- Bolt, Nut, Locknut, and Self-tapping Fastener Testing

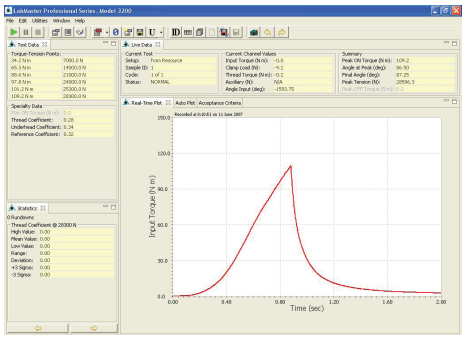
TEST, ANALYZE, CERTIFY

The LabMaster Portable is an advanced, multi-purpose system designed to test threaded fasteners, analyze bolted joints, and certify power tools. It's comprised of two components: the LabMaster Portable module that contains data acquisition and a laptop or desktop PC running the LabMaster for Windows® testing software. The module and computer interface using a USB port.

LabMaster for Windows® software provides a user-friendly graphic interface. The test setup directory simplifies testing by providing access to all pertinent setup files as well as previously recorded graphic and numeric data. Quickly retrieve or edit existing test setups, select different sensors, or adjust the built-in test modes to meet specific test requirements.

Once the test is set up, the system conducts all data acquisition operations. Recorded data is then displayed and managed via PC for access to network printers, archiving, and communications. Four analog inputs are available on the LabMaster Portable module to accept data signals from transducers, strain gages, load cells, torque cells, force washers, bolt extensiometers, ultrasonic devices, and any 10 V analog device.

SPECIFICATIONS	
Inputs	
Four Inputs for Transducers, Load Cells, and/or Other Devices	
USB Port for Connection to Desktop or Laptop Computer Running LabMaster for Windows® Software	
Analog Input	
Number of Channels	4
Signal Conditioning	Full Bridge, Strain Gage, Transducer Compatible
Sensitivity	1 mV/V to 4 mV/V, and ±10 VDC
Excitation	10 VDC
Encoder Input	
Number of Channels	1
Counter Resolution	32-bit
Input Frequency	1000 kHz Maximum
Excitation	5 VDC
Computer Requirements	
Windows® 7 or 10 64-BIT	
8 GB RAM	
60 GB Hard Drive	
USB 2.0 Port	
Power Requirement	
110 VAC / 220 VAC	
Supplied Accessories	
Power Cord, USB Cable, Testing Software Installation Media, Instruction Manual, A2LA Accredited Calibration Certificate	
Recommended Accessories	
Rotary Torque-Angle Transducer, Threaded Torque-Tension Fastener Load Cell, Fastener Force Washers	



Graphic Data Screen

COMPREHENSIVE DATA

A LabMaster Portable system, with a torque-tension research head and a torque-angle sensor, can measure and calculate the following metrics. Friction coefficients are calculated per DIN946 and ISO 16047.

- Input torque
- Clamp force
- Thread friction torque
- Underhead friction torque
- Angle of fastener rotation
- Torque tension coefficient (K from T=KDF)
- Thread friction coefficient
- Underhead friction coefficient
- Reference, or total, friction coefficient

MEASUREMENTS SIMPLIFIED

- **High-Speed Sampling** – The LabMaster Portable includes a data acquisition card which provides high-speed sampling of up to 4000 Hz (software selectable). Sampling can be done versus a time or angle basis.
- **Statistical Calculations** – A variety of statistical reports in numeric and graphic form are available. Statistical plots of ±3 sigma mean curves provide an insightful data summary.
- **Real-TIme Display** – The LabMaster Portable and the LabMaster for Windows® testing software provide real-time display during the test. A user-selectable automatic data save feature for both numeric and graphic data speeds testing time.
- **Variety of Plots** – After the test is completed, rundown data and plots may be viewed on the computer display, printed as hard copy, and/or saved for later data analysis. Numerous configurable plots can be generated.
- **Options** – Optional features include an auxiliary input for an ultrasonic interface, and a tabletop or mobile test cart.

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