



Optional Accessories

TPI offers a complete line of...

Handheld Oscilloscopes

Digital Multimeters

Digital Clamp-on Meters

Gas Detection Instruments

Combustion Analyzers

Refrigeration Leak Detectors

Digital Manometers

Contact and Infrared Temperature Instruments

Oscilloscope Probes

Surface Mount Test Clips

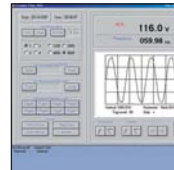
BNC-BNC Molded Coax Cables

F-series Cables

Full Line of Accessories



Protective Boot A403
Protect against impact and wear.
Hanging Boot Hook A103
Work hands free with the 440's protective boot and hook.



PC Software & RS232 Cable A402
Download data and waveforms from the 460 to any PC using Microsoft Windows.



Soft Zipper Case A900
Keep your 440, AC/DC charger, test leads and optional accessories at the ready. Moveable partitions and adjustable shoulder strap.



Clamp-on Adapters A251
Measure up to 400 AC amps.
A256
Measure up to 400 AC/DC amps.
A296
Measure up to 1,000 AC/DC amps.



Low Current Adapter A254
Measures from 10mA to 60 amps AC/DC.



Current Shunt Adapter A130
Allows any DMM with AC/DC millivolt range to measure up to 30 amps.



Temperature Adapter A301
Measure -40° to 500° F.
For K-type thermocouple probes.



Fused Test Leads FTLK1
Reduce your risk of electrical shocks and/or instrument damage.



High Voltage Probe HV40C
Measure up to 40 KV DC.



Test Lead Kits w/Silicone Insulation TLS2000B
Shuttered plug
TLS2000RB
Right angle plug



Pressure Adapter A620
Measure up to 500 PSI.
A630
Measure up to 10,000 PSI.



Cigarette Lighter DC Adapter A408
Charge the 440 while on the road or in remote locations.



To learn about the entire TPI product line visit www.tpi-thevalueleader.com

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Your Tools at Work

True RMS DMM & Handheld Oscilloscope

6 INSTRUMENTS IN 1

The versatile handheld TPI 440... a customer winner!

Rechargeable Battery and Adapter included

COMPARE!

| | TPI 440 | FLUKE 87-5 | FLUKE 867BE |
|---|---------|------------|-------------|
| 1. 4,000 Count True RMS DMM w/ waveform display | Yes | No | Yes |
| 2. 1 MHz Oscilloscope | Yes | No | Yes |
| 3. Trend Mode | Yes | No | Yes |
| 4. Component Test | Yes | No | Yes |
| 5. Logic Test | Yes | No | Yes |
| 6. Frequency Counter | Yes | Yes | Yes |

The above information is provided to the best of TPI's knowledge and is not guaranteed. The above information is subject to change at any time.

6 Instruments in 1...

- 1 Auto Ranging 4,000 Count True RMS DMM**
TPI's 440 has 9 measurement functions and 0.3% basic DC accuracy.
 - 2 1 MHz Oscilloscope**
View industrial power signals such as motor controls, UPS, switching power supplies, and PLC controls with detail and clarity.
 - 3 Trend Mode**
Graph readings over a predetermined time period to check for surges or dropouts.
 - 4 Component Test**
Check voltage-current signatures on resistors, capacitors, and semiconductors.
 - 5 Logic Test**
Indicates transitions up to 2 MHz.
 - 6 Frequency Counter**
Measure low frequency signals from 1Hz to 2 MHz and display duty cycle, pulse width and period.
- PC/Printer Compatibility to RS-232C Port** Optional accessory A402 allows user to download data or waveforms to PC for archiving, processing, and report generation. Ideal for extended monitoring.

TPI 440 Applications

Power Quality

Variable Speed Drives

Industrial Motor Controls

Battery Testing

Programmable Logic Controls

NC/CNC Machines

Uninterruptable Power Supplies

Audio

Video

Industrial Lighting Controls

Factory Automation

Line Conditioners

Voltage Regulators

Inverters

Gaming Industry

See page two for technical information.

The Value Leader™

Advanced Capabilities for the Troubleshooter...

- POWER QUALITY**
- INDUSTRIAL MOTOR CONTROLS**
- View waveform to verify power quality delivered to variable speed drives.**
- Measure voltage and frequency at the same time.**
- 400µF to check motor start and run capacitors.**
- DC µAmps for checking flame safety controls.**
- DC mV for checking thermocouples.**

Waveform analysis is a key troubleshooting technique for quickly locating electronic system problems. An oscilloscope provides a picture of voltage with respect to time. Voltage is displayed vertically and time horizontally.

The TPI 440 combines the features of a Digital Multimeter with the waveform capability of a 1 Mhz bandwidth oscilloscope. This easy-to-use instrument features Continuous autoselect for operating simplicity and a separate T-Base Button to manually adjust the sweep rate. See reverse inside and reverse for further details.



4,000 Count True RMS DMM with waveform capabilities

Applications and Frequently Asked Questions



Included: Insulated Test Leads with Alligator Clips, Power Supply, NiCad Battery, and Instruction Manual

6 INSTRUMENTS IN 1

- ❶ **Auto Ranging 4,000 Count True RMS DMM**
TPI's 440 has 9 measurement functions and 0.3% basic DC accuracy.
- ❷ **1 MHz Oscilloscope**
View industrial power signals such as motor controls, UPS, switching power supplies, and PLC controls with detail and clarity.
- ❸ **Trend Mode**
Graph readings over a predetermined time period to check for surges or dropouts.
- ❹ **Component Test**
Check voltage-current signatures on capacitors, resistors, semiconductors and much more.
- ❺ **Logic Test**
Indicates transitions up to 2 MHz.
- ❻ **Frequency Counter**
Measure low frequency signals from 1Hz to 2MHz and display duty cycle, pulse width and period.

- T-Base Button**
Use feature to manually adjust sweep speed (time/division) to shrink or enlarge the viewable waveform for analysis.
- Continuous Autoset**
Feature automatically determines the correct vertical and horizontal settings for optimum waveform viewing. Autoset provides hands free operation while moving between test points.
- PC/Printer Compatibility to RS-232C Port**
Optional accessory A402 allows user to download data or waveforms to a PC for archiving, processing, and report generation. Perfect for extended monitoring. Eight waveform storage locations enables remote data acquisition for later viewing.

SPECIFICATIONS

| DMM | |
|-------------------|-------------------|
| True RMS | Yes |
| Basic DC Accuracy | 0.3% |
| DCV / ACV | Up to 1,000 volts |
| DCA / ACA | Up to 10 amps |
| Ohms | Up to 40 Meg ohm |
| Capacitance | Up to 400uF |
| Frequency | Up to 2 MHz |

| OSCILLOSCOPE | |
|-----------------|---------------------------------------|
| Bandwidth | 1 MHz |
| Sample Rate | 20 Megasamples per Second Single Shot |
| Channels | Single |
| Glitch Capture | Yes |
| Trend Mode | Yes |
| Auto Set | Continuous |
| Waveform Memory | 8 locations |
| Set-up Memory | 8 locations |
| Viewing Area | 160 x 240 pixels |
| Contrast | Adjustable |

True RMS DMM
True RMS allows the user to obtain accurate measurements of non-sinusoidal AC voltage and current waveform found in controls and circuits.

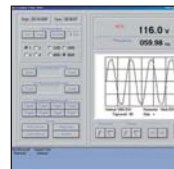
International Version: 220 volt 50/60Hz AC/DC adapter is included when specifying model no. **440X**.

440E1: Comes with 440 Oscilloscope and A403 protective boot.

440E2: Comes with 440 Oscilloscope, A403 protective boot, and A402 PC software with RS232 cable



Protective Boot A403
Protect against impact and wear.
Hanging Boot Hook A103
Work hands free with the 440's protective boot and hook.



PC Software & RS232 Cable A402
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Soft Zipper Case A900
Keep your 440, AC/DC charger, test leads and optional accessories at the ready. Moveable partitions and adjustable shoulder strap.



Clamp-on Adapter A256
Measures up to 400 AC/DC amps.
A296
Measure up to 1,000 AC/DC amps.



Low Current Adapter A254
Measures from 10mA to 60 amps AC/DC.



Deluxe Test Lead Kits TLS2000B & TLS2000RB
High-quality silicone-rubber test leads with 700-wire strand.



Cigarette Lighter DC Adapter A408
Charge the 440 while on the road or in remote locations.

APPLICATIONS

- Industrial motor control**
View start-up in rush currents, waveform symmetry, SCR trigger pulses, variable frequency drive signals, pulse width modulation, noise, miscellaneous AC/DC speed control signals, and synchronous motor and generator field excitation controls.
- Power quality**
Define AC voltage wave shapes, current waveforms, machine start-up and power quality interference, and noise on industrial feeds and/or general noise.
- Battery testing**
Measure voltage drops in Gel-Cell type batteries when connected in circuit. Measure stationary battery charger float and equalize voltages and individual cell voltages in DC backup power systems.
- Programmable logic controls**
Read PLC input and output signals, control signals, signal conditioning circuits, communication lines and power supplies.
- NC/CNC machines**
Check power quality, sensor outputs, control circuits, safety circuits, calibration and adjustments of components, relays and switches. Troubleshoot axis drives.
- Uninterruptable power supplies**
Sense and monitor circuits, switching circuits, output waveforms and current waveforms.
- Audio**
Locate noise spikes and voltage/current drops on all home/auto amplifiers, mixers, preamps, and paging system amplifiers.
- Video**
Analyze horizontal and vertical scan rates, z-axis blanking, sync pulses and luminance.
- Industrial lighting controls**
Troubleshoot SCR and Triac dimming controls and photo sensors. Measure lamp ballast voltages.
- Factory automation**
Robot control signals, machine vision, machine control and sensing circuits, calibration of positioning systems, analog controllers, and servo controls.
- Line conditioners**
Detect noise and monitor waveform distortion.
- Voltage regulators**
Define noise and stability.
- Inverters**
Define waveform quality.
- Gaming Industry**
Troubleshoot for component and capacitor degrading which causes noise to appear as periodic waveforms or rapid fluctuations. Most meters cannot catch these anomalies due to a slow sampling frequency. The 440 samples at 20 million times per second. This offers a visual graph of the voltage making it fast and simple for you to detect the noise.

FAQ

Where do I use the 440?
The 440 is ideal for viewing industrial power signals, UPS systems, power supplies and PLC controls. Use anywhere a DMM is used.

Does the 440 measure capacitance?
Yes, the 440 can measure up to 400uF (microfarads).

What is the highest voltage the 440 can measure?
The 440 can measure up to 1,000 DCV and 1,000 ACV.

What is the lowest voltage the 440 can measure?
The 440 can measure down to 0.1 millivolts on both DCV and ACV. The scope also has a volts/division setting of 0.1 volts.

How is the RS232 port used?
With the optional A402 cable and software you can acquire data and download it to a spreadsheet.

Can the 440 measure more than 10 DCA or ACA?
Yes, TPI offers a number of amp adapters to extend the range up to 1,000 amps. TPI has a wide range of optional accessories that enables the user to measure amps, temperature, pressure, or CO.

CERTIFICATION OF CALIBRATION, CERTIFICATE OF COMPLIANCE
For details and related fees, call 800-368-5719.