

- 20MHz [820], 40MHz [840], 60MHz [860] bandwidths
- Built in High accuracy 6000 count True RMS DMM
- 200MS/s sampling rate single channel and 100MS per channel in dual channel [840, 860], 100MS/s [820]
- 2.5GHz Equivalent sampling [840] and 5GHz Equivalent sampling [860]
- 20 automatic waveform Measurements
- Self test and Self calibration
- Help menu
- Models 840 and 860 include FFT
- 125KB record length for each channel
- 10 waveforms and setups may be stored and recalled
- USB interface and optional flash memory port [840, 860]
- High Resolution 320x 240 pixel Monochrome LCD
- Edge/Pulse width, TV/Pattern and Delay trigger modes

**820, 840, 860****SPECIFICATIONS****Vertical**

No inputs: 2
 Analog bandwidth: [820] 20MHz, [840] 40MHz, [860] 60MHz
 Rise Time: [820] <17.5ns, [840] <8.75ns, [860] <5.83ns
 Sensitivity: 5mV to 100V/div (in a 1,2,5 sequence)
 Resolution: 8 bit
 Offset: ± 5 div from the center
 Vertical Accuracy: $\pm 3\%$
 Input Impedance: $1\text{M}\Omega \pm 1\%$ and $20\text{pF} \pm 1.3\text{pF}$
 Max input V: 300V DC or AC peak
 Probe Attenuation: x1 and x10

Horizontal:

Sweep rates: [820] 50ns/Div to 50s/Div, [840] 10ns/Div to 50s/Div, [860] 5ns/Div to 50s/Div
 Time base Accuracy: $\pm 0.01\%$

Acquisition system:

Acquisition Modes: Sample, Peak detect, Envelope, Average
 Sampling: Real Time and Equivalent [840, 860]
 Sample Rates: [820] 100MS/s, [840, 860] 200MS/s single channel and 100MS/s per channel Dual channel
 Equivalent Sampling: [840] 2.5GS/s, [860] 5GS/s
 Sample Rate Accuracy: 100ppm
 Record Length: 125KB/Channel
 Waveform Interpolation: Dot, Linear, Sine, and Pulse
 Peak Detect: 10ns minimum
 Averages: 2 to 256

Trigger

Sensitivity: 0.5 Div (DC to 5MHz)
 Trigger Types: Edge, Pulse width, Video
 Coupling: AC, DC HF-Reject, LF-Reject, Noise Reject

Modes: Normal, Single, Roll, Auto

Trigger Level Range: ± 20 Div from the center of the screen

Trigger Level accuracy: ± 0.4 Div

Trigger sources: CHA and CHB

Video Trigger

Video Trigger sensitivity: 0.7 Div

Video Type: NTSC, PAL, Secam

Measurements:

Types: P-P, Max, Amplitude, Top, Base, Pos/Neg over shoot, Pre-shoot, RMS, Mean, One cycle mean, Freq., Period, \pm Width, \pm Duty cycle, Rise/Fall time, Delay and Phase shift

Math Operations:

CHA+CHB, CHA-CHB, CHB-CHA, FFT [840, 860]

Cursors: ΔV , ΔT

FFT: [840, 860]

Weighting:

Rectangular, Hamming, Hanning and Blackman-Harris

Amplitude display: 1, 2, 5, 10dB/Div

Maximum Frequency: 1.25GHz

Memory: 10 waveforms and settings saved and recalled

DMM**DC Volts:**

Range: 600mV to 1000V

Accuracy: $\pm(0.3\% + 10\text{d})$

Best Resolution: 100 μ V

Impedance: $10\text{M}\Omega$

Overload protection: 1000VDC or AC peak

AC Volts:

Range: 6V to 600V

Accuracy: $\pm(0.75\% + 10\text{d})$ 50Hz to 1KHz;

$\pm(2.0\% + 10\text{d})$ 1KHz to 30KHz

Best Resolution: 1mV

Impedance: $10\text{M}\Omega$

Overload protection: 1000VDC or AC peak

Resistance

Range: 600 Ω to 60M Ω

Accuracy: $\pm(0.5\% + 10\text{d})$

Best Resolution: 100m Ω

Overload Protection: 250V DC or AC peak

Capacitance

Range: 60nF to 300 μ F; Accuracy: $\pm(2.0\% + 10\text{d})$

Other measurements

Diode test accuracy: $\pm 2\%$

Continuity: Buzzer will sound < 60 Ω

dBm with reference impedances of

2, 4, 8, 16, 50, 75, 93, 110, 125, 135, 150, 300, 600, 900, 1K or 1.2K Ω

High current: to 600A with external current Clamp

Temperature (with Probe): to 600°C (1112°F)

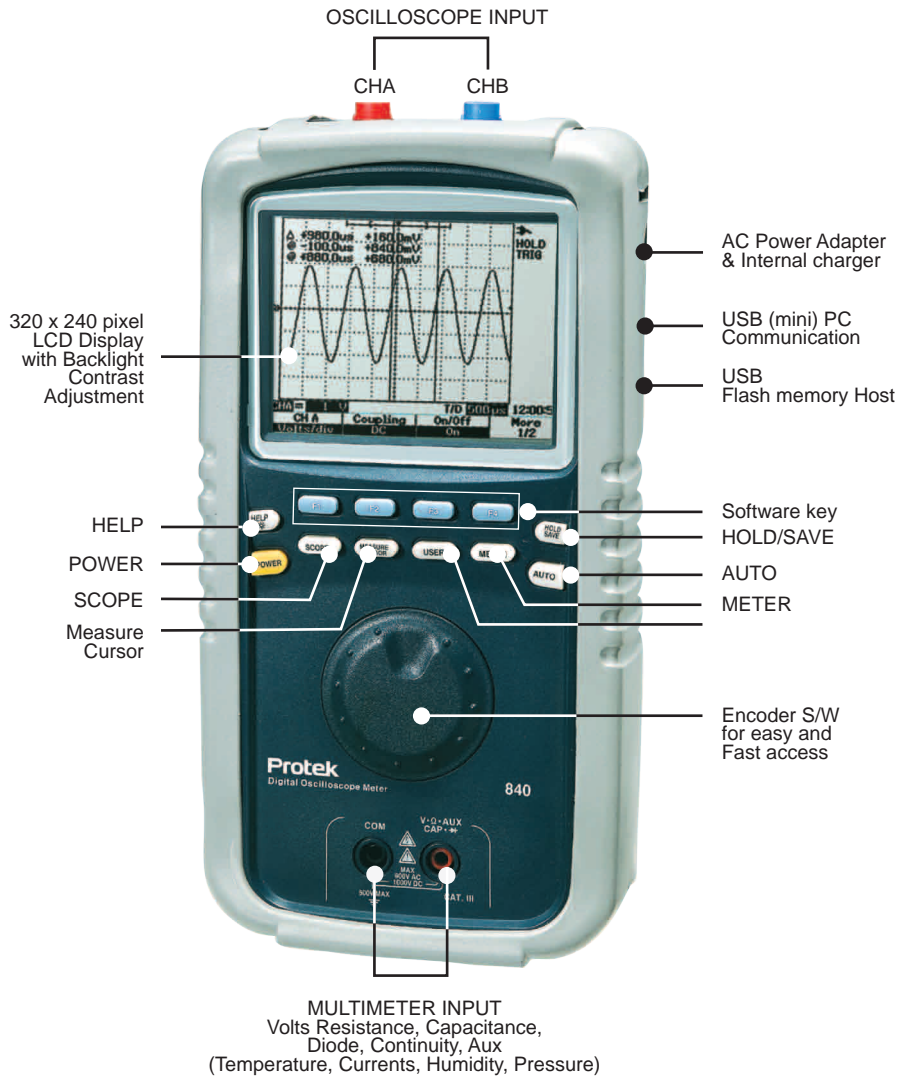
General Specifications

Size: 8.3" (H) x 4.2" (W) x 2.2" (D); Weight: 2.6 lbs

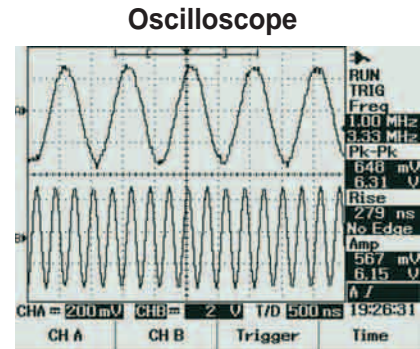
Power: 9VDC @ 1A AC/DC adapter, 7.2V NiMH rechargeable battery pack

Standard accessories: AC/DC adapter, User's manual, Scope probe (2), Holster, Test Leads, USB cable and software

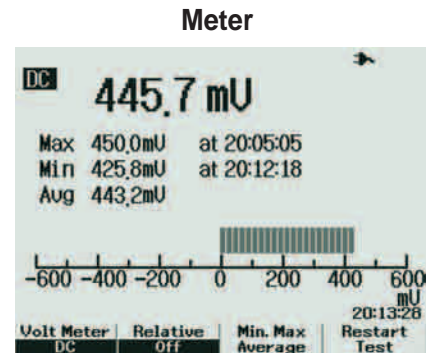
Optional accessories: Battery pack, Temperature adapter, Clamp-on current probe, Carrying Bag and USB flash memory



Main Display waveforms and indicators



CH1 and CH2 waveforms, along with the Dual channel Math waveform, trigger levels, horizontal positions, offsets, V/div and Time/division settings are displayed.

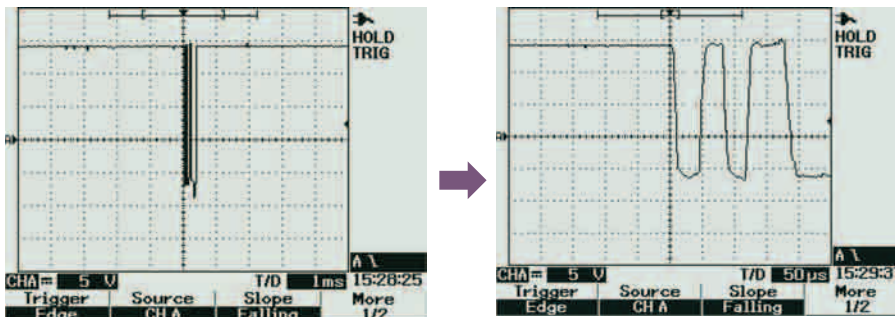


Analog Bargraph, MIN, MAX, AVG VOLT, DC, etc.

FEATURES

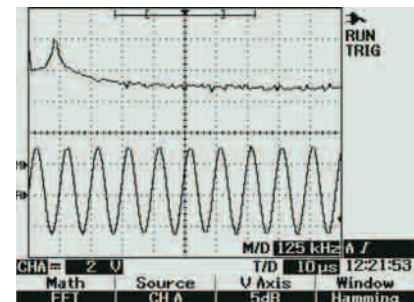
Record Length

A long record length and high-speed sampling rates allows the user to capture and view a more detailed "picture" of a complex Waveform and its components. Up to 125kB samples of waveform information may be captured and accurately displayed on the LCD screen as shown in the illustration below.



Math

Dual channel Math functions are available for adding and subtracting waveforms applied to the CHA and CHB inputs. The FFT allows you to view a waveform spectrum using a Rectangular, Hamming, Hanning or Black Man-Harris window.



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