

Digital Sampling Oscilloscopes

TDS 820

This product is discontinued.

Characteristics

SIGNAL Acquisition System	TDS 820	TDS 820 Opt. 1D
Channels	2	2
Rise time	58.3 ps	43.8 ps
Bandwidth (0.35/rise time)	6 GHz	8 GHz
Max operating input voltage	2 V _{p-p} ; ±3 V DC	1 V _{p-p} ; ±1.5 V DC
Sensitivity	2 mV/div to 200 mV/div	1 mV/div to 100 mV/div
Random noise	1.2 mV max, 600 µV typical	600 µV max, 300 µV typical

DC Gain Accuracy - ±0.7% after user-initiated automatic vertical calibration.

Vertical Resolution - 14-Bits (Approx. 16,384 levels over 10.24 vertical divisions).

Input Impedance - 50 Ohm.

Acquisition Modes

Normal - One sample acquired with each trigger event.

Envelope - Max/min values acquired over one or more acquisitions.

Average - Waveform averages selectable from 2 to 10,000.

Time Base System

Time Bases - Main, Delayed.



TDS 820

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Time/Division Range - 20 ps/division to 5 ms/division in 1-2-5 steps or settable from the numeric keypad in 5 ps steps.

Delta time measurement accuracy -

Time interval	Accuracy
$T_i \geq 1$ ns	0.1% x interval +15ps
100 ps	5 ps
10 ps	2 ps

Channel Deskew - Up to 100 ns (each channel).

Record Length - 500, 1000, 2000, and 5000, and 15,000 samples per channel.

Pre -Trigger View Time - 1.5 ns.

Triggering System

Trigger Sources - External input, internal rate generator, CH 1, CH 2.

External Trigger Sensitivity - 40 mV_{p-p} from DC to 200 MHz, increasing linearly to 200 mV_{p-p} at 2 GHz.

External Trigger Minimum Pulse Width - 0.25 ns.

Internal Trigger Sensitivity - 80 mV_{p-p} from DC to 200 MHz, increasing linearly to 400 mV_{p-p} at 1 GHz.

Trigger Delay Jitter - 3 ps RMS + 30 ppm of time base delay.

Holdoff Range - 15 μ s to 2 s.

Display

Waveform Style - Dots or vectors. Infinite and variable persistence from 250 ms to 10 s.

Gray Scaling - With variable persistence selected, waveform points gradually decay through 16 levels of intensity, providing "z-axis" information about rapidly changing waveforms.

Graticules - Full, grid, cross hair, frame.

Format - YT and XY.

CRT Type - 7 in. diagonal, magnetic deflection. Horizontal raster-scan. P4 White phosphor.

CRT Resolution - 640 horizontal by 480 vertical displayed pixels.

Measurement System

Automatic waveform measurements -

Period	Frequency
High	Low
+ Width	- Width
Maximum	Minimum
Rise	Fall
Peak to Peak	Amplitude
+ Duty Cycle	- Duty Cycle
+ Overshoot	- Overshoot
Propagation Delay	Burst Width
Mean	Cycle Mean
RMS	Cycle RMS
Phase	Cycle Area
+ Cross	- Cross
Area	

Continuous update of up to four measurements on any combination of waveforms. Snapshot mode shows all measurements on the selected waveforms.

Thresholds - Settable in percentage or voltage.

Cursor Measurements - Absolute, Delta; Volts, Time, Frequency.

Cursor Types - Horizontal bars (volts); Vertical bars (time); Paired (volts and time).

Waveform Processing

Waveform Functions - Interpolate-selectable $\sin(x)/x$ or linear, Average, FFT, integrate, and differentiate.

Arithmetic Operators - Add, Subtract, Multiply, Invert.

Autosetup - Single button, automatic setup on selected input signal for vertical, horizontal and trigger systems.

Computer Interface

GPIB (IEEE -488.2) Programmability - Full talk/listen modes. Control of all modes, settings, and measurements.

Hard Copy

Formats - HP ThinkJet, Epson, Postscript, Interleaf, DeskJet, LaserJet, EPS Monochrome, EPS Color, TIFF, PCX, BMP, HPGL.

Optional Hardcopy Interface - Centronics and RS-232C.

Storage

Waveforms - Up to 15 K points.

Setups - 10 front-panel setups.

Power Requirements

Line Voltage Range - 90 to 250 V RMS.

Line Frequency - 47 to 63 Hz.

Power Consumption - 250 W max.

Environment and Safety

Temperature - Operating: 0 to +50°C. non-operating: -40 to +75°C.

Humidity - Operating and non-operating: Up to 95% relative humidity at or below +40°C; to 75% relative humidity from +41°C to 50°C.

Altitude - Operating: 15,000 ft. non-operating: 40,000 ft.

Electromagnetic Compatibility - Meets MIL-STD-461C, CE-03, Part 4, Curve # 1, RE-02, Part 7; meets VDE 0871, Category B, FCC rules and regulations, Part 15, Subpart B, Class A.

Safety - UL3111-1, CSA1010.1, EN61010-1, IEC61010-1.

Physical Characteristics

Dimensions	mm	in.
Height	193	7.6
with acc. pouch	236	9.3
Width	445	17.5

Depth with front cover	432	17
Weight	kg	lbs.
Net	13.2	29.1
Shipping	23.6	52



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The TDS Series complies with IEEE Standard 488.2-1987, and with Tektronix Standard Codes and Formats.



Tektronix Measurement products are manufactured in ISO registered facilities.



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