

TEKTRONIX

TPS2012

The Tektronix TPS2012 is a 100 MHz, 2-channel Digital Storage Oscilloscope in the TPS2000 Series. Designed for engineers and technicians needing to make floating and differential measurements, it features IsolatedChannel technology for up to 600 VRMS CAT II or 300 VRMS CAT III isolation between channels and to ground. Compact and battery-powered, the TPS2012 offers high-performance digital real-time sampling and versatile analysis capabilities from the bench to the field.

SPECIFICATIONS

General

Interfaces	RS-232 (9-pin D-sub male), Centronics parallel printer port, CompactFlash Type I card slot
Display	5.7 inch (145 mm) color active-matrix TFT LCD, 320 × 240 pixels
Recommended Calibration Interval	1 year
Standard Warranty	3 years

Physical

Power Supply	External AC adapter (100 to 240 VAC, 50/60 Hz to 15 VDC output) or up to 2 rechargeable Lithium-Ion batteries
Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	336.0 mm × 161.0 mm × 130.0 mm mm
Weight	2.7 kg (instrument without battery) kg

Vertical System

Analog Bandwidth (-3 dB)	100 MHz
Number of Channels	2 isolated channels
Vertical Resolution	8 bits
Input Impedance	1 MΩ ±2% in parallel with 20 pF ±3 pF
Input Coupling	AC, DC, GND
Input Sensitivity Range	2 mV/div to 5 V/div
DC Gain Accuracy	±3%
Maximum Input Voltage (BNC Signal to Shell)	300 VRMS CAT II
Maximum Float Voltage (BNC Shell to Earth Ground)	600 VRMS CAT II, 300 VRMS CAT III
Hardware Bandwidth Limits	20 MHz
Common Mode Rejection Ratio (CMRR)	100:1 at 60 Hz, 20:1 at 50 MHz (with P2220 probe)
Channel-to-Channel Isolation	≥100:1 at 50 MHz

Horizontal System

Maximum Real-Time Sampling Rate	1.0 GS/s per channel
Maximum Record Length	2500 points per channel
Time Base Range	5 ns/div to 50 s/div
Time Base Accuracy	±50 ppm

Trigger System

Trigger Sources	Channel 1, Channel 2, Ext (Isolated External Trigger Input)
Trigger Modes	Auto, Normal, Single Sequence
Trigger Coupling	AC, DC, Noise Reject, HF Reject, LF Reject
Edge Triggering	Rising, falling
Video Triggering	NTSC, PAL, SECAM
Pulse Width Triggering	Trigger on pulse width <, >, =, or ≠; 33 ns to 10 s
Internal Trigger Sensitivity	0.35 div (DC to 10 MHz), 1.0 div (10 MHz to 100 MHz)
External Trigger Sensitivity	200 mV (DC to 10 MHz), 375 mV (10 MHz to 100 MHz)

Acquisition System

Peak Detect Mode Min Pulse Width	12 ns
Averaging Factor Range	4 to 128

Waveform Measurements and Analysis

Automatic Measurements	11 measurements (Period, Frequency, +Width, -Width, Rise Time, Fall Time, Max, Min, Peak-to-Peak, Mean, Cycle RMS)
Fast Fourier Transform (FFT)	Standard
FFT Window Types	Hanning, Flat Top, Rectangular

Display and User Interface

Graticule Options	Grid, Crosshair, Frame
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Connectivity and Ports

Isolated External Trigger Input	Yes, 1 isolated channel
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Power Specifications

Battery Type	TPSBAT Lithium-Ion battery pack
Number of Batteries Supported	Up to 2 battery packs (hot-swappable)
Battery Operation Time	Up to 4 hours per battery (8 hours total with 2 batteries)

Environmental Specifications

Storage Temperature	-40 °C to +71 °C
Operating Humidity (≤ +30 °C)	Up to 90% RH
Operating Humidity (+31 °C to +50 °C)	Up to 60% RH
Operating Altitude	Up to 3,000 meters (9,843 feet)
Cooling Method	Convection cooled (fanless)

Physical Characteristics

Weight (without batteries)	2.7 kg (6.0 lbs)
Weight (with one battery)	3.2 kg (7.0 lbs)
Weight (with two batteries)	3.7 kg (8.1 lbs)

Performance

Rise Time	3.5 ns
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Storage & Memory

CompactFlash Storage Capacity	Type I, up to 2 GB
Reference Waveform Storage	2 reference waveforms
Setup Storage	10 front-panel setups

Measurements

Cursor Measurements	Amplitude, Time
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Waveform Measurements

Waveform Math Operations	Addition, Subtraction, Multiplication, FFT
FFT Resolution	2048 points

Signal Outputs

Probe Compensator Output Voltage	Approx. 5 V into ≥ 1 M Ω load
Probe Compensator Output Frequency	1 kHz

Display System

Display Formats	YT and XY
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Ease of Use

Autoset Function	Single-button automatic setup of vertical, horizontal, and trigger systems, with undo function
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Compliance

Overvoltage Category	CAT II 300 V (BNC Signal to Common), CAT II 600 V / CAT III 300 V (Common to Earth Ground)
Safety Certification	UL61010-1, CAN/CSA-C22.2 No. 61010-1, EN61010-1
Electromagnetic Compatibility	Meets Directive 89/336/EEC, EN61326 Class A

Software & Options

Optional Power Analysis Software	TPS2PWR1
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TECHNOLOGY

Digital Storage

APPLICATIONS

Floating and differential measurements, industrial power system debugging, motor drive design, and field troubleshooting

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