

# HANDHELD BATTERY OPERATED OSCILLOSCOPE/DMM/POWER ANALYZERS

TEKSCOPE® THS 730A • THS 720A • THS 710A • THS 720P



## FEATURES – BENEFITS

### THS 730A/THS 720A/THS 710A/THS 720P

- 200, 100 and 60 MHz Bandwidth
- 1 GS/s, 500 MS/s, 250 MS/s Sampling Rates per Channel
- Two Channels and Dual Digitizers
- External Trigger
- 3-3/4 Digit DMM with Datalogger
- Roll Mode
- Extra Bright Backlit Display
- 8 ns Glitch Capture
- Independently Floating Isolated Scope and DMM Channels for Safety
- Advanced Trigger – Delay, Pulse and Video (Line Count and Field Select), PWM Motor Drive (THS 720P)
- NiCd Battery and AC Adapter
- 21 Automatic Measurements
- RS-232 Programmability/Communications
- Deluxe Soft Carrying Case

### THS 720P ONLY

- Measures Harmonics up to 31st (Fundamental from 30 Hz to 450 Hz)
- Automatic Power Measurement with Statistics
- Full Floating Measurement Capability up to 600 V<sub>RMS</sub>
- 1 kV High-voltage Probes

## APPLICATIONS

- Field or Bench Electronic Troubleshooting
- Floating (Non-grounded) system Measurements
- Industrial Electronic Equipment Troubleshooting (THS 720P)
- Power Quality Surveys (THS 720P)

## THS 700 SERIES

The TekScope THS 700 Series Scope/DMM combines a full-featured real-time oscilloscope with a True RMS digital multimeter in rugged, battery-operated instruments. Scope and meter modes can operate simultaneously and independently on the same or separate signals. The high-resolution, backlit display and pop-up

menus make it easy for users to take full advantage of the instrument's many features. These include cursors, video trigger, voltage and resistance measurements, and storage of waveforms, data and instrument setups. In addition, they offer the most comprehensive triggering capabilities – external trigger and extensive triggering including delay, pulse width and video.

Product(s) available through your local Tektronix Distributor listed in the back of this catalog.

CE

ISO 9001

Tektronix measurement products are manufactured in ISO registered facilities.

# HANDHELD BATTERY OPERATED OSCILLOSCOPE/DMM/POWER ANALYZERS

TEKSCOPE® THS 730A • THS 720A • THS 710A • THS 720P

The THS 700A Series is ideal for electronic applications – at the bench or at the site.

The THS 700A Series shares measurement features with the THS 720P Scope/DMM which includes features to address the needs of electric/power electronics measurements.

## THE ONLY SAFE MEASUREMENT SOLUTION FOR POWER ELECTRONICS

The THS 720P TekScope IsolatedChannel™ Scope/DMM is ideal for electric/power electronics applications.

The THS 720P includes features specifically for electric/power electronics measurements which allow testing and verify-

ing correct operation of motors, checking transformer efficiency, verifying power-supply performance, and measuring the effect of neutral current. These features include harmonic analysis, power measurements and statistics and PWM motor drive triggering. It also contains the powerful features of a modern oscilloscope that enable troubleshooting and verification of complicated electronic control circuits controlling the high-voltage power-electronics circuitry.



THS 720P

## CHARACTERISTICS

### OSCILLOSCOPE FUNCTIONS

	THS 730A	THS 720A	THS 710A	THS 720P
Bandwidth	200 MHz	100 MHz	60 MHz	100 MHz
Sample Rate (Each Channel)	1 GS/s	500 MS/s	250 MS/s	500 MS/s
Time/Division Range	2 ns to 50 s/div	5 ns to 50s/div	10 ns to 50s/div	5 ns to 50s/div
Power Measurements	N	N	N	Y

### OSCILLOSCOPE FUNCTIONS

**Channels** – Two.

**Sensitivity** – 5 mV to 50 V/div (to 500 V/div with 10X probe).

**Position Range** – ±10 div.

**DC Gain Accuracy** – ±2%.

**Vertical Resolution** – 8-Bits.

**Record Length** – 2500 points.

**Horizontal Accuracy** – ±200 ppm.

**Roll Mode** – ≥ 0.5 s/div.

**Autorange** – User-selectable.

**Trigger Modes** – Auto, Normal.

**Trigger Types** – Edge, Pulse, Video, External, Motor (THS 720P).

**Video Trigger Formats and Field Rates** – Odd field, even field and line.

**Motor Trigger (THS 720P only)** – Triggers on 3- and 5-level pulse-width modulated power signal.

**External Trigger Input** – 5 MHz TTL compatible.

**Harmonics (THS 720P only)** – Up to 31st (30 Hz-450 Hz).

**Waveform Processing** – Add, Subtract, Multiply, Calculate Watts = V x I.

**Waveform Storage** – 10 waveforms.

**Acquisition Modes** – Sample, Envelope, Average, Peak Detect.

**Cursor Measurements** – Δ Volts, Δ Time, 1/ΔTime (Hz), Degree (phase).

**Cursor Types** – Horizontal Bars, Vertical Bars, Paired (volts @ time).

**Display System** – Interpolation: Sin(x)/x. Format: YT and XY.

**Mode:** Vector, Dot, Vector Accumulate, Dot Accumulate.

### AUTOMATIC MEASUREMENTS

Period	Frequency
+Width	-Width
Rise Time	Fall Time
+Duty Cycle	-Duty Cycle
+Overshoot	-Overshoot
High	Max
Low	Min
Peak-to-Peak	Amplitude
Mean	RMS
Cycle Mean	Cycle RMS,
Burst Width	

### POWER MEASUREMENTS (THS 720P ONLY) –

W	True power
VA	Apparent power
VAR	Reactive power
V	Volts (RMS, Peak)
A	Amps (RMS, Peak)
THD-F	Total harmonic distortion as a percentage of the fundamental
THD-R	Total harmonic distortion of the RMS of the input signal
PF	Power factor
DPF	Displacement power factor
PHI	Phase difference between the voltage and current

### DMM SPECIFICATIONS

**DC Voltage Ranges** – 400.0 mV to 880 V.

**DC Volts Accuracy** – ±(0.5% of reading + 5 counts).

**True RMS AC Voltage Ranges** – 400.0 mV to 640 V.

**Maximum Float Voltage** – 600 VRMS CAT II, each channel (probe dependent).

**Resolution** – 4000 count, 3-3/4 digits.

**AC Volts Accuracy** – ±(2% of reading + 5 counts).

**Resistance Ranges** – 400.0 Ω to 40.00 MΩ.

**Resistance Accuracy** – ±(0.5% of reading + 2 counts); 40 MΩ: ±(2% of reading + 5 counts).

**Diode Test Range** – 0 to 2 V.

**Continuity Check** – Audible tone when < 50 Ω.

# HANDHELD BATTERY OPERATED OSCILLOSCOPE/DMM/POWER ANALYZERS

TEKSCOPE® THS 730A • THS 720A • THS 710A • THS 720P

**Modes** – Min, Max, delta, Max-Min, Avg, Hold.

**Non-volatile Storage** – 10 DMM screenshots.

**External Trigger Input** – 5 MHz TTL compatible.

**Vertical Zoom Capability** – 2X, 5X, 10X.

**dB Scale** – Selectable, referenced from 1 mV to 10 V.

**dBm Scale** – Selectable, referenced from 50  $\Omega$  to 600  $\Omega$ .

## GENERAL SPECIFICATIONS

**Setups** – 10 front-panel setups.

**Safety** – UL3111-1, CSA1010.1, EN61010-1.

**Power** – NiCd rechargeable battery pack with AC adapter (both included).

**Battery Life** – Approx. 2 hours from full charge.

**Display** – Backlit LCD.

**Display Resolution** – 320 x 240.

## PHYSICAL CHARACTERISTICS

Dimensions	mm	in.
Width	177	6.95
Height	217	8.53
Depth	51	2
<b>Weight</b>	<b>kg</b>	<b>lbs.</b>
Net	1.45	3.2

## ORDERING INFORMATION

For price information: Outside the U.S. contact your local Tektronix representative, inside the U.S. see the price list in the back of this catalog.

### THS 730A, THS 720A, THS 710A

Handheld Battery Operated Oscilloscope/DMM.

**Includes:** Two P6117 10X Passive Probes, User Manual, Quick Reference Manual, Standard Meter Lead Set, NiCd Rechargeable Battery Pack, AC Power Adapter, Soft Carrying Case, Cable and Adapters for RS-232, NIST-traceable Certificate of Calibration.

### THS 720P

Handheld Battery Operated Oscilloscope.

**Includes:** Two P5102 10X High-voltage Passive Probes, User Manual, Quick Reference Manual, Standard Meter Lead Set, NiCd Rechargeable Battery Pack, AC Power Adapter, Soft Carrying Case, Cable and Adapters for RS-232, NIST-traceable Certificate of Calibration.

### LANGUAGE OPTIONS

**Opt. L1** – French User Manual.

**Opt. L2** – Italian User Manual.

**Opt. L3** – German User Manual.

**Opt. L4** – Spanish User Manual.

**Opt. L5** – Japanese User Manual.

**Opt. L6** – Portuguese User Manual.

**Opt. L7** – Simplified Chinese User Manual.

**Opt. L8** – Traditional Chinese User Manual.

**Opt. L9** – Korean User Manual.

### INTERNATIONAL POWER PLUGS

**Opt. A1** – European power plug.

**Opt. A2** – UK power plug.

**Opt. A3** – Australian power plug.

**Opt. A6** – Japanese power plug.

See page 619 for description.

### RECOMMENDED ACCESSORIES

Also see page 495.

**P5102** – 10X 100 MHz Passive Probe for higher voltage application: 1000V<sub>RMS</sub> Tip-to-reference; 600 V<sub>RMS</sub> Reference-to-earth Ground (float).

**A621, A622** – Current Probes for scope operation.

**P6117 (replacement)** – 10X Passive Probe.

**Battery Charger** – Order THS 7CHG.

**Rechargeable Battery (replacement)** – Order THS 7BAT.

**Hard Carrying Case** – Order THS 7HCA.

**Standard Meter Lead Set (replacement)** – Order 012-1482-00.

**Deluxe Meter Lead Set** – Order ATLDX1.

**Programming Manual** – Order 070-9751-00.

**Service Manual** – Order 070-9752-00.

**Soft Carrying Case (replacement)** – Order 016-1399-01.

### SOFTWARE

**WSTR0** – WaveStar™ software for Oscilloscopes, Windows 95/98/NT application for waveform capture, analysis, documentation and control from your PC.

**WSTR0U** – Upgrade from WSTR31 to WSTR0.

**WSTR31** – WaveStar™ software for Windows 3.1.

### WARRANTY

Three years (excluding probes).

Product(s) available through your local Tektronix Distributor listed in the back of this catalog.



Tektronix measurement products are manufactured in ISO registered facilities.