

# OSCILLOSCOPES

## OX 9000 SERIES

### MODELS OX 9062, OX 9102, OX 9104 & OX 9304

*Ergonomic, hand-held oscilloscope with 100MHz bandwidth and 4 models: oscilloscope, multimeter, analyzer and recorder*

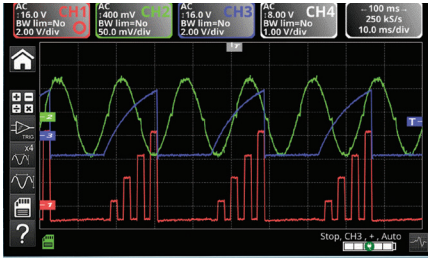


OX 9104

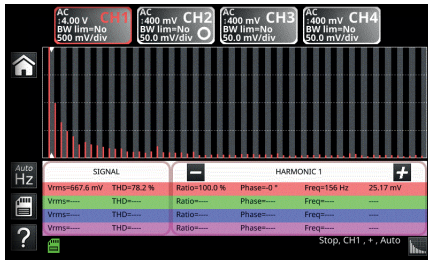


OX 9062

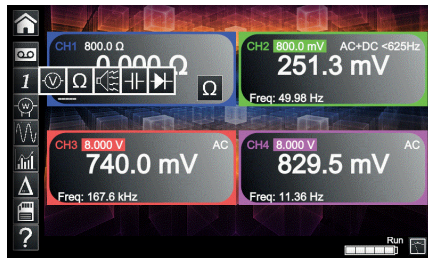
#### OSCILLOSCOPE



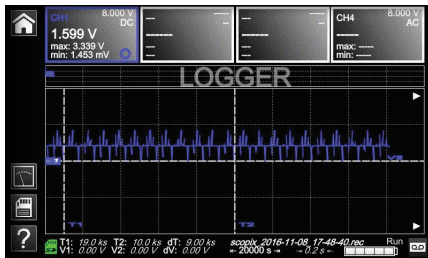
#### HARMONICS



#### MULTIMETER - DISPLAYS UP TO 4 CHANNELS SIMULTANEOUSLY



#### MEASUREMENT BETWEEN H AND V CURSORS: T1, T2, DT, 1/DT, V1, V2, DV, PH



## FEATURES

- Wider bandwidth up to 300 MHz (model dependent)
- Advanced triggering and recording options
- Increased storage capacity, and more!
- 12-bit resolution
- 2.5 GS/sec

## PRODUCT INCLUDES

Scope in carrying case with shoulder strap, set of (2) 5 ft color-coded leads, alligator clips and test probes (4mm diameter), 10 ft USB cable, µSD memory card, 1-PROBIX Banana Plug (4mm) adapter, (1) stylus pen, LI-ION 5.8Ah battery pack, PA40W-2 power adapter with 110V power cord. Additional accessories (model dependent).



## ACCESSORIES/REPLACEMENTS

- 2124.77**  
PROBIX Current Probe, 20mA-20A 1MHz-3dB
- 5000.17**  
Set of 5 stylus pens

CATALOG NO.	DESCRIPTION
2150.31	Hand-held Portable Oscilloscope Model OX 9062 IV 60MHz (2-Channel, 60 MHz) — <b>SPECIAL ORDER ONLY</b>
2150.32	Hand-held Portable Oscilloscope Model OX 9102 IV 100MHz (2-Channel, 100MHz) — <b>SPECIAL ORDER ONLY</b>
2150.33	Hand-held Portable Oscilloscope Model OX 9104 IV 100MHz (4-Channel, 100MHz)
2150.34	Hand-held Portable Oscilloscope Model OX 9304 IV 300MHz (4-Channel, 300MHz)

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### ERGONOMICS

*Designed to simplify use with one button access to most functions*

In a housing tailor-made to be as compact as possible, the mechanical design makes it possible to integrate the hardware components in a small size with the keypad benefits from new technology developed in the automotive industry.

#### ISOLATED CHANNELS

Each channel is isolated from each other and from ground (earth) rated at 600V CAT III.

#### CHANNEL AND PARAMETER IDENTIFICATION

Each channel and related parameters are identified with identical color against a black background for simpler, quicker viewing.

#### EASY ACCESS VIA TOUCH SCREEN

Intuitive icons are provided to facilitate their use, even with gloves on.

#### ADJUSTABLE STRAP

This helps to optimize operation of the oscilloscope in your hand or on your shoulder when working in the field.

A stand is also available to vary the orientation of the oscilloscope when it is placed on a bench. The oscilloscope can be safely left unattended using the Kensington locking system.

#### NEW KEYPAD DESIGN FOR OPTIMUM USER COMFORT

Configuration and measurement displays are simple to access from the front panel in one of these 5 specific areas: Utilities (brightness, full screen, screenshot), Measurements, Vertical, Horizontal, Trigger.

#### LINE POWER AND LI-ION BATTERY CHARGING PORT

Port on left side.



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### APPLICATIONS

*Ideal for electronic and industrial maintenance*

#### IP54

Housing protected against dust and water spray.

#### 7" WVGA WIDE COLOR TFT TOUCH SCREEN

Makes it easy to view and read the measurements clearly. It also provides a screen resolution of 800 x 480 dpi with manual or automatic brightness.

#### TOUCH-SCREEN STYLUS STORAGE

Among the essential tools available, the stylus is equipped with a hook for the addition of a cord to make it captive, as required. One end is slightly flattened to prevent rolling when placed on a table or bench.

#### AUTOSET BUTTON

Quickly and effortlessly adjusts the horizontal and vertical; sensitivity and scales to provide the best resolution.

#### DIRECT SETTING AND SET-UP BUTTONS

#### COMMUNICATION INTERFACES

These are isolated from one another and from the measurement channels. A dedicated compartment on the right side protected by a flexible cover contains all the different communication interface ports:

- USB host for communication with a PC
- Wired RJ45 or WiFi for communication with a PC or printing via a network printer
- $\mu$ SD card for data storage with quick transfer and for upgrading of the instrument's firmware

#### DIRECT ACCESS ZOOM BUTTON

Activates/deactivates the horizontal Zoom function

### ELECTRONIC MAINTENANCE

The OX 9304 model is ideal for electronics with its 300 MHz bandwidth, 4 x 600V CAT III isolated channels, advanced trigger functions, integrated FFT function, complex mathematical calculations on the curves, automatic measurements on 4 channels and the built-in WEB server.



### INDUSTRIAL MAINTENANCE

The OX 9304's large 7-inch screen, 300 MHz bandwidth, 4 x 600V CAT III isolated channels and Harmonic Analyzer and Multimeter modes make it ideal for industrial maintenance applications.





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TECHNICAL SPECIFICATIONS	OX 9062	OX 9102	OX 9104	OX 9304
<b>HUMAN-MACHINE INTERFACE</b>				
Type of Display	7" WVGA color TFT LCD touch screen, 800x480 – LED backlighting (adjustable standby mode)			
Different Display Mode	2,500 real acquisition points on screen - vectors with interpolation			
Display of Curves on Screen	4 curves + 4 references – split screen & full screen modes			
Screen Commands	Touch screen – icons and graphical commands – customizable channel colors			
Choice of Language	15 complete languages, menus and online help			
<b>OSCILLOSCOPE MODE</b>				
<b>Vertical Deflection</b>				
Bandwidth	60 MHz	100 MHz	100 MHz	300 MHz
	15 MHz, 1.5 MHz or 5 kHz bandwidth limiter			
Number of Channels	2 isolated channels		4 isolated channels	
Input Impedance	1 M $\Omega$ $\pm$ 0.5%, approx. 12 pF			
Maximum Input Voltage	600 V / CAT III (1,000V per Probix) – from 50 to 400 Hz – Probix safety connectors			
Vertical Sensitivity	16 ranges from 2.5 mV to 200 V/div and up to 156 $\mu$ V/div in vertical zoom mode (12-bit converter) – Accuracy $\pm$ 2%			
Vertical Zoom	"One click Winzoom" mode (12-bit converter and direct graphical zoom on screen) – x 16 max.			
Probe Factor (non-Probix)	1 / 10 / 100 / 1,000 or any scaling – definition of measurement unit			
<b>Horizontal Deflection</b>				
Sweep Speed	35 ranges from 1 ns/div to 200 s/div., accuracy $\pm$ [50 ppm + 500 ps] – Roll mode from 100 ms to 200 s/div			
Horizontal Zoom	"One click Winzoom" system (direct graphical zoom on screen) x 1 to x 5 or x 100 – storage 100 kpts/channel			
<b>Triggering</b>				
Mode	On all the channels: automatic, triggered, one-shot, auto level 50%			
Type	Edge, pulse width (16 ns-20 s), Delay (48 ns to 20 s), Counting (3 to 16,384 events). Continuous adjustment of trigger position.			
Coupling	AC, DC GND, HFR, LFR, noise – Level and Hold-off adjustable from 64 ns to 15 s			
Sensitivity	$\leq$ 1.2 division p-p up to 300 MHz			
<b>Digital Storage</b>				
Maximum Sampling Rate	2.5 GS/s in one-shot mode on each channel (100 GS/s max. in ETS mode)			
Vertical Resolution	12 bits (vertical resolution 0.025 %)			
Memory Depth	100 kpts per channel and file viewer in the manager			
User Storage / File Management	Internal = 1 GB to store the files: trace, text, configuration, math functions, system memory / PDF print files, PNG image files + high-capacity removable $\mu$ SD card: SD 2 GB, SDHC 4-32 GB and SDXC > 32 GB			
GLITCH Mode	Duration $\leq$ 2 ns – 500,000 min/max pairs			
Display Modes	Envelope, vector, accumulation-, averaging (factors 2 to 64) – XY (vector) and Y(f)=FFT			
<b>Other Functions</b>				
AUTOSET	Complete in under 5 s, with recognition of the channels – Frequency > 30 Hz			
FFT Analyzer & MATH Functions	2,500-point FFT (Lin or Log) with measurement cursors – Functions +, -, x / and mathematical function editor			
Cursors	2 or 3 cursors: simultaneous V and T with AUTO measurement: T1, T2, Dt, 1/Dt, dBV, Ph			
Automatic Measurements	Simultaneously with waveform, 20 automatic measurements per channel and on the 4 channels simultaneously with scroll			
<b>MULTIMETER MODE</b>				
General Specifications	2 or 4 channels – 8,000 cts min/max/frequency/relative – TRMS – Time/date-stamped graphical recording in logger mode			
AC, DC and AC + DC Voltages	600 mV to 600 VRMS, 800 mV to 800 VDC – VDC accuracy +/- (0.5 % + 25 D) – 200 kHz bandwidth			
Resistance	80 $\Omega$ to 32 M $\Omega$ – accuracy 0.5%R+ 25D – quick continuity test < 10 ms			
Other Measurements	Temperature (HX0035 = KTC, HX0036 = Pt100) / Capacitance 5nF to 5mF / Frequency 200 kHz / Diode test 3.3 V			
Single and Three-Phase Power	Active, Reactive and Apparent power values plus Power Factor simultaneously with the U & I measurements			
<b>Harmonic Analyzer Mode</b>				
Multi-channel Analysis	2 or 4 (depending on model), 63 orders, fundamental frequency 40 to 450 Hz in auto or manual mode			
Simultaneous Measurements	Total Vrms, THD and selected order (% fundamental, phase, frequency, Vrms)			
<b>Logger Mode</b>				
Acquisition	Duration: 20,000 s – Interval: 0.2 s – Files: 100,000 measurements			
<b>GENERAL</b>				
Configuration Memories	Not limited according to device - variable file sizes			
Printing	Network printing via Ethernet/Wifi in .png format			
PC Communication – Software	Ethernet (100 baseT), WiFi-USB (device, 12 Mbs) – "ScopeNet" application software for PC			
Software	PC: Ethernet and USB, ScopeNet (remote control, data recovery, cursors and automatic measurements) Android tablet – ScopeAdmin Fleet Administration utility			
Mains Power Supply	Li-Ion rechargeable battery (6,900mAh-40 Wh) – Battery life of up to 8 hrs – Adjustable standby mode Adapter / 2-hour fast charger, universal 98-264 V / 50/60 Hz)			
Safety / EMC / IP Protection	Safety as per IEC 61010-2-30, 600V CAT III, 1000V CAT II / EMC as per EN61326-1 / IP54 protection			
Mechanical Specifications	292.5 x 210.6 x 66.2 mm – 2.1 kg with batteries			