The only oscilloscope with isolated channels on the market which fits into one hand

✓ TWO ISOLATED CHANNELS
✓ THREE INSTRUMENTS IN ONE
- 20 or 40 MHz oscilloscope
- Double 8,000-count TRMS multimeter / Power analyser
- Harmonic analyser
✓ 3.5” COLOUR LCD SCREEN LED TECHNOLOGY
✓ INTEGRATED INTERACTIVE MULTILINGUAL HELP FUNCTION
✓ RECORDING
✓ COMMUNICATION VIA ISOLATED USB SCPI PROTOCOL
Developed as on-site measurement tools, **HANDSCOPE oscilloscopes are very simple to use.** The elastomer casing, which is shockproof with IP54 protection, fits comfortably in one hand. The control keys on the front panel are easily accessible even when you are wearing safety gloves. Multilingual interactive help is available to assist users without having to refer to the operating manual.

The colour screen is particularly easy to read and its LED backlighting helps to limit the **HANDSCOPE**’s energy consumption. The **HANDSCOPE** can also be used “hands-free”, an essential feature, with the bag and neck strap delivered with the instrument.

**APPLICATIONS**

So compact that it fits comfortably in one hand, the **HANDSCOPE** is ideal for operations in the field on electrical installations and for general maintenance tasks. Thanks to its isolated channels, users can measure in total safety without any special precautions. The **HANDSCOPE** is a multi-function measurement instrument (Oscilloscope – Multimeter – Harmonic Analyser) allowing you to measure, record and analyse the results on a PC.
**Portable Oscilloscopes with Isolated Channels**

**HIGH-PERFORMANCE OSCILLOSCOPE**

On each of the two isolated channels, it is possible to display automatic measurements selected from the 19 choices proposed (Amplitude, Time or Phase). In addition, MATH functions can be used to calculate the time representation of a signal derived from the channels by means of a mathematical operation (+, -, x, /) with automatic scaling. With the Trigger function, you can use a single menu to program multiple and advanced triggers with possibilities for manual selection of the mode (auto, trig, single), level, filters (HF/LF), edges, etc. Also located on the front panel, the “Acq” key gives you access to the menu for selecting the Peak, Envelope, Averaging and XY display modes, as well as the zooms for optimizing the screen display. With the Peak detection or Glitch function, meanwhile, you can detect short-term disturbance pulses which may occur between 2 sampling points.

**HARMONIC ANALYSER**

Harmonic analysis is performed on 2 channels up to the 31st order, with a fundamental frequency between 40 and 450 Hz. At the same time, the HANDSCOPE measures the total VRMS, the THD and the selected harmonic order (%fundamental, phase, frequency and VRMS). This function helps to improve analysis performance and, in particular, measurement when the level of a harmonic order is greater than the fundamental.

**STORAGE - COMMUNICATION & PC SOFTWARE**

The HANDSCOPE communicates with a PC via an isolated optical USB interface. The optional SX-METRO data processing software can be used to:

- display curves on a PC in real time
- control the oscilloscope via the PC
- import curves stored in the oscilloscope’s memory or as “image” files
- store curves in text format on the PC
- transfer data or curves into Excel.

Users can insert a graph of data from the signal in a report produced using Word (e.g. test report). They can also use Excel’s functions to perform additional calculations on the samples in the curve.

**2 INDEPENDENT 8,000-COUNT TRMS DIGITAL MULTIMETERS**

Just as for the three instrument modes, a single press on the dedicated key gives you access to the multimeter mode, so that you can measure AC, DC and AC+DC current and voltage, resistance, continuity, capacitance, frequency and power (combination of two measurement channels), as well as temperature (K thermocouple or infrared probe) and motor rotation speed (optical tachometer). You can also use it to test diodes and components.

It is possible to display these measurements as a trend curve (2,700 over a period from 5 min to one month). Two essential modes for professional multimeters are also provided: the monitoring mode for measuring the MAX, MIN and AVG values and the relative mode for measuring the relative value, the delta between the relative and real values and the deviation in %.
## TECHNICAL SPECIFICATIONS

### MAN-MACHINE INTERFACE
- **Type of display**: 3.5” colour TFT LCD screen – Resolution 320x240 – LED backlighting
- **Display mode**: 2,500 real acquisition points on screen
- **Display of curves on screen**: 2 curves + 2 references + memory trace or mathematical calculation
- **Commands**: Direct adjustments on front panel & on-screen menus via browser (principal & secondary without “hidden menus”)

### OSCILLOSCOPE MODE

<table>
<thead>
<tr>
<th>Feature</th>
<th>OX 5022</th>
<th>OX 5042</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandwidth</td>
<td>20 MHz</td>
<td>40 MHz</td>
</tr>
<tr>
<td>Bandwidth limit</td>
<td>1.5 MHz, 5 kHz</td>
<td>40 MHz</td>
</tr>
<tr>
<td>Number of channels</td>
<td>2 totally-isolated channels</td>
<td>2 totally-isolated channels</td>
</tr>
<tr>
<td>Input impedance</td>
<td>1 MΩ ±0.5%, approx. 17 pF</td>
<td>1 MΩ ±0.5%, approx. 17 pF</td>
</tr>
<tr>
<td>Maximum input voltage</td>
<td>600 V CAT III – Derating -20dB per decade from 100 kHz</td>
<td>1000 V CAT III – Derating -20dB per decade from 100 kHz</td>
</tr>
<tr>
<td>Vertical sensitivity</td>
<td>5 mV to 200 V/div</td>
<td>5 mV to 200 V/div</td>
</tr>
<tr>
<td>Horizontal deflection</td>
<td>25 ns/div to 200 s/div – Roll Mode from 100 ms to 200 s/div</td>
<td>25 ns/div to 200 s/div – Roll Mode from 100 ms to 200 s/div</td>
</tr>
<tr>
<td>Sweep speed</td>
<td>25 ns/div to 200 s/div – Roll Mode from 100 ms to 200 s/div</td>
<td>25 ns/div to 200 s/div – Roll Mode from 100 ms to 200 s/div</td>
</tr>
<tr>
<td>Horizontal zoom</td>
<td>Zoom factor: x1, x2, x5</td>
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</tr>
<tr>
<td>Triggering</td>
<td>Automatic, triggered, one-shot &amp; triggered Roll</td>
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</tr>
<tr>
<td>Type</td>
<td>Edge, pulse width (20 ns – 20 s)</td>
<td>Edge, pulse width (20 ns – 20 s)</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>≤ 1.2 divisions p-p up to 20 MHz</td>
<td>≤ 1.2 divisions p-p up to 40 MHz</td>
</tr>
<tr>
<td>Memory depth</td>
<td>2,500 points per channel</td>
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</tr>
<tr>
<td>User storage</td>
<td>2 MB for storing files: trace (.trc), text (.txt), configuration (.cfg), image files (.bmp)</td>
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</tr>
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<td>Envelope, Averaging (factors 2 to 64) and XY (vector)</td>
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</tr>
<tr>
<td>Other functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH functions</td>
<td>Channel inversion, addition, subtraction, multiplication and division (adjustable scaling)</td>
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</tr>
<tr>
<td>Cursor measurements</td>
<td>2 cursors: V, I, dV, dt simultaneously</td>
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<tr>
<td>Automatic measurements</td>
<td>18 time or level measurements and phase measurement</td>
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</tr>
</tbody>
</table>

### MULTIMETER MODE
- **General specifications**: 2 channels, 8,000-count display + min/max bargraph – Graphic recording of 2,700 measurements (5 min to 1 month)
- **Operating modes**: Absolute or relative display (absolute, deviation, ref, rref) – Monitoring (instantaneous, Min, Max, Avg)
- **AC, DC and AC+DC voltages**: Ranges from 600 mV to 600 VRMS, 800 mV to 800 VDC – accuracy for VDC 1%reading+20D – 50 kHz bandwidth
- **Resistance**: Ranges from 80 Ω to 32 MΩ – accuracy 2%R + 10D
- **Capacitance**: Frequency, rotation speed, 3.3 V diode test, temperature measurement (with K thermocouple or infrared probe)
- **Power**
- **Harmonic analyser mode**: Single-phase and balanced three-phase active power values (with or without neutral), simultaneous display of current
- **General specifications**: 2 channels, 31 orders, fundamental frequency from 40 to 450 Hz
- **Simultaneous measurements**: 2 channels, 31 orders, fundamental frequency from 40 to 450 Hz
- **Total VRMS, THD and selected order (%fundamental, phase, frequency, VRMS)**
- **General specifications**: Up to 100 file in standard “.bmp” format, viewable on the instrument
- **PC communication**: Isolated optical USB interface – “SX-Metro” PC application software available as an option (version CK)
- **Power supply**: 6 LR6 or 6 AA NiMh batteries – Battery life up to 8 hrs 30 min – Universal mains adapter isolated from the channels – Quick charging in 2 hrs 30 min
- **Safety / EMC**: Safety according to IEC61010-1 Ed3 – 600 V CAT III – EMC according to EN61000-3, 2001 & EN61326-1, 2006
- **Maximum sampling rate**: 2 GS/s in ETS mode – 50 MS/s in one-shot mode on each channel
- **Sweep speed**: 20 ns/div to 200 s/div – Roll Mode from 100 ms to 200 s/div
- **Horizontal zoom**: Zoom factor: x1, x2, x5
- **Triggering**: Automatic, triggered, one-shot & triggered Roll
- **Type**: Edge, pulse width (20 ns – 20 s)
- **Sensitivity**: ≤ 1.2 divisions p-p up to 20 MHz
- **Memory depth**: 2,500 points per channel
- **User storage**: 2 MB for storing files: trace (.trc), text (.txt), configuration (.cfg), image files (.bmp)
- **Display modes**: Envelope, Averaging (factors 2 to 64) and XY (vector)
- **Other functions**: Channel inversion, addition, subtraction, multiplication and division (adjustable scaling)
- **Cursor measurements**: 2 cursors: V, I, dV, dt simultaneously –4-digit display resolution
- **Automatic measurements**: 18 time or level measurements and phase measurement

### STATE DELIVERY

**Version C**: 1 oscilloscope delivered with 1 probe (1/10, 1000 V), 1 BNC/Banana adapter, 1 set of banana leads, 1 mains adapter, 1 set of 6 AA NiMh batteries, 1 “hands-free” bag, 1 CD-ROM containing operating manual and 1 programming manual
**Version OK**: same as version C plus 1 optical USB communication cable and 1 CD containing the SX-METRO/P software and USB cable drivers

### References

**OX5022-C**: 1 oscilloscope, 2 x 20 MHz
**OX5022-C**: 1 oscilloscope, 2 x 20 MHz + USB communication
**OX5042-C**: 1 oscilloscope, 2 x 40 MHz
**OX5042-C**: 1 oscilloscope, 2 x 40 MHz + USB communication

**Accessories**

- **Current clamp, 20 AAC/DC**: 100 mA………………..HX0102
- **CA 1871 infrared temperature sensor**: P01651610Z
- **CA 801 single thermocouple adapter**: P01652401Z
- **CA 803 differential thermocouple adapter**: P01652411Z
- **CA 1711 tachometer**: P01102082

For assistance and ordering...