OX 2000 - OX 8100 - OX 8050 - OX 8040: 40 to 150 MHz digital and mixed oscilloscopes

TECHNICAL CHARACTERISTICS	OX 2000	OX 8100	OX 8050	OX 8040
• Vertical deflection				
Bandwidth	150 MHz	100 MHz	Analog 40 MHz Digital 60 MHz	40 MHz
Number of channels	4	2	2	2
Input impedance	1 MΩ / 12 pF	1 MΩ / 15 pF	1 MΩ / 25 pF	1 MΩ / 25 pF
Max. input voltage	± 400 V (DC + AC peak)	± 400 V (DC + AC peak)	± 400 V (DC + AC peak)	± 420 V (DC + AC peak)
Sensitivity	2 mV to 10 V/div.	2 mV to 5 V/div.	1 mV to 20 V/div.	5 mV to 20 V/div.
Continuous gain control	Digital vernier	1 to 2.5	1 to 2.5	1 to 2.5
Operating modes	CH1, CH1 and CH2 in 2 different reticles, CH2, XY, A+XY	CH1, CH2, XY, ALT, CHOP, ADD, BWL, -CH2	CH1, CH2, XY, CHOP, ADD, -CH2, MULT	CH1, CH2, XY, CHOP and automatic ALT ADD, -CH2, MULT
• Horizontal deflection				
Time base	2 (A and B)	2 (A and B)	1 + delay	1
Scanning speed	2 ns to 50 s/div.	ana.: 50 ns to 100 ms/div. dig.: 5 ns to 200 s/div.	ana.: 50 ns to 100 ms/div. dig.: 5 ns to 200 s/div.	ana.: 50 ns to 200 ms/div. dig.: 10 ns to 200 s/div.
Time base expansion	Max 0.1 to 100 (B/A)	10 / Max 5 ns/div. (analog)	10 / Max 10 ns/div. (analog)	10 / Max 5 ns/div. (ana.)
Continuous LV control (analog)	Digital vernier	1 to 2.5 (analog)	1 to 2.5 (analog)	-
XY mode (analog)	-	4 MHz	2 MHz	2 MHz
• Triggering				
Triggering sensitivity	0.5 to 1.5 div.	Internal: 0.5 to 1 div. External: 60 to 150 mV	Internal: 0.5 to 2 div. External: 60 to 200 mV	Internal: 0.5 to 2 div. External: 60 to 200 mV
TV triggering	PAL, SECAM, NTSC Line metering	PAL, SECAM, NTSC Line metering	PAL, SECAM, NTSC Line metering	PAL, SECAM, NTSC Line metering
Types of triggering	Front +/-, Window, after metering, after interval, with qualifier, TV	Front +/-, TV	Front +/-, TV	Front +/-, TV
• Digital memory				
Sampling frequency	Single-shot: 200 Ms./s.* 100 Ms./s.** ETS: 50 Gs./s	Single-shot: 100 Ms./s. ETS: 20 Gs./s	Single-shot: 100 Ms./s. ETS: 20 Gs./s	Single-shot: 50 Ms./s. ETS: 10 Gs./s
Acquisition depth	1, 2, 5, or 10 k	1, 8 or 16 k	1, 8 or 16 k	1, 8 or 16 k
Memory capacity	40 Kb internal, 128 Hb to 1 Mb (PCMCIA)	2 x (1, 8 or 16 k)	2 x (1, 8 or 16 k)	2 x (1, 8 or 16 k)
Vertical resolution	8 bits	8 bits	8 bits	8 bits
Glitch mode (transients / anti-aliasing)	10 ns	20 ns	20 ns	20 ns
Envelope mode	yes	yes	yes	yes
Persistence mode	200 ms to 10 s or infinite	-	-	-
Averaging mode	Factors 2 to 64	-	-	-
Triggered / Continuous roll mode	yes / yes	yes / yes	yes / yes	yes / yes
Digital XY mode	150 MHz / Aff. XY and X(t)	100 MHz	60 MHz	40 MHz
Digital processing	ADD, SUB, MULT, INT, DIFF, FFT	FFT and Harmonics	MULT, FFT and Harmonics	MULT
"EADJ" (dot-join) function	Pseudosinusoidal or linear interpolation	EADJ when displaying and printing	EADJ when displaying and printing	EADJ when displaying and printing
• Special features				
AUTOSET	Yes and Undo	With channel detection	With channel detection	With channel detection
Probe ratio compensation	1/1, 1/10, 1/100	1/1, 1/10, 1/100	1/1, 1/10, 1/100	1/1, 1/10, 1/100
Measuring cursors	V1, V2, ΔV, T1, T2, Δt	ΔV, Δt, 1/Δt, phase	ΔV, Δt, 1/Δt, phase	ΔV, Δt, 1/Δt, phase
Automatic measurements	16	17 (ana. and dig.)	17 (ana. and dig.)	17 (ana. and dig.)
Miscellaneous	Menus in 3 languages (Eng., French, German)	Mixed analog and digital appliance	Mixed analog and digital appliance	Mixed analog and digital appliance
Display	High-resolution VGA Colour VGA output for external monitor	High-resolution cathode tube	High-resolution cathode tube	High-resolution cathode tube

* for CH1; ** for CH2, CH3 and CH4

GENERAL CHARACTERISTICS	OX 2000	OX 8100	OX 8050	OX 8040
Configuration memory	Up to 40 Kb max.	1	1	1
READOUT	yes	yes	yes	yes
Communication interfaces	RS 232, Centronics and IEEE	RS 232 and Centronics IEEE as optional extra	RS 232 and Centronics IEEE as optional extra	RS 232 and standard Centronics optional extra
Interface drivers	PC and printer	PC and printer	PC and printer	PC and printer
Power supply	98 - 264 V 48 - 440 Hz	96 - 264 V 45 - 440 Hz	96 - 264 V 45 - 440 Hz	96 - 264 V 45 - 440 Hz
Weight	9 kg	7 kg	5.5 kg	5.5 kg
Safety: IEC 61010	Cat. II, 400 V	Cat. II, 400 V	Cat. II, 400 V	Cat. II, 300 V
Guarantee	24 months	24 months	24 months	24 months

Accessories and information for placing orders

Accessories included
Each oscilloscope is, in its standard version, delivered with a mains cord as well as an operating and programming instructions booklet. The OX 2000 is delivered with a 256 Kbyte PCMCIA memory card and a RS 232/Centronics converter.

Accessories available as optional extras
AE0189	Bag designed for carrying the oscilloscope around.
HX0003	Probe 1/10 - 150 MHz, Cat. II, 400 V
HX0004	Probe 1/10 - 250 MHz, Cat. II, 1000 V
HX0005	Probe 1/10 - 450 MHz, Cat. II, 1000 V
HX0006	Probe 1/100 - 300 MHz, 5 kV peak
HD1961	1 Mbyte PCMCIA memory card for OX 2000
MX9003	30 MHz differential probe
AM0030N	Current probe - 100 A AC/DC, 100 kHz, 100 mV and 10 mV/A
AM0031N	Current probe - 600 A AC/DC, 10 kHz, 10 mV and 1 mV/A
SX-METRO*	Windows applications software for Metrix oscilloscopes
RK0008	19'' rack for 8000 series oscilloscope
RK0009	19'' rack for OX 2000 oscilloscope

* Software on CD-ROM or diskettes, one PC-to-oscilloscope connecting cord, one 25/9-pin adapter, one gender changer and one installation instructions booklet with licence.

To order
OX2000-CFG	4 x 150 MHz digital oscilloscopes with 4 probes
OX8100-CFG	2 x 100 MHz analog-digital oscilloscopes with 2 probes
OX8050-CFG	2 x 60 MHz analog-digital oscilloscopes with 2 probes
OX8040-CFG	2 x 40 MHz analog-digital oscilloscopes
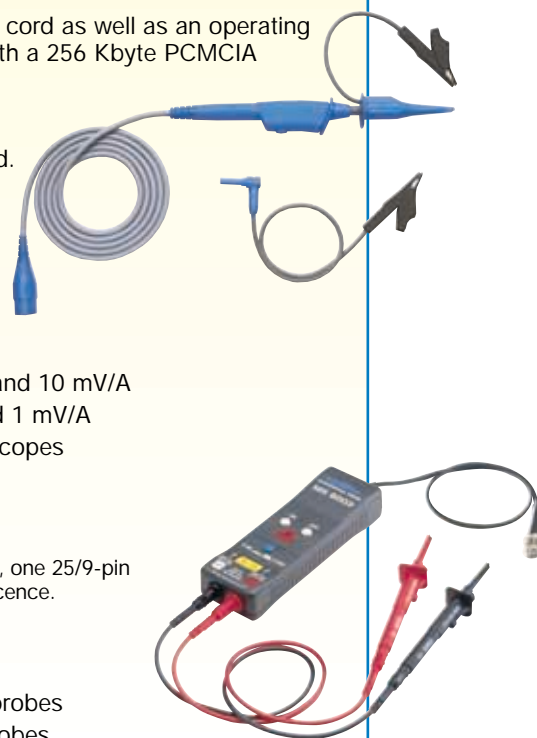
For field applications, think of the OX 5100, the portable and autonomous 100 MHz digital oscilloscope.

Characteristics subject to modifications according to technological developments.

metrix
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For assistance and ordering

40 to 150 MHz
digital and mixed oscilloscopes

Are your signals slow, non repetitive, unstable?
If so, you really do need to add digital technology to your equipment.

- A choice between 100% digital or mixed (digital + analog) technology
- Up to 200 Msamples per second for single-shot signals
- Up to 50 Gsamples per second for repetitive signals
- 2 or 4 input channels and 8 displayed curves (OX 2000)
- FFT functions and harmonics as standard (except for OX 8040)
- Mobile cursors and 17 automatic measurements
- Dynamic input ranges from 1 mV to 20 V per div.
- Everything you need to communicate with a PC or directly with a printer

metrix

The choice of professionals

OX 2000 - OX 8100 - OX 8050 - OX 8040:
40 to 150 MHz digital and mixed oscilloscopes

The advantages of analog
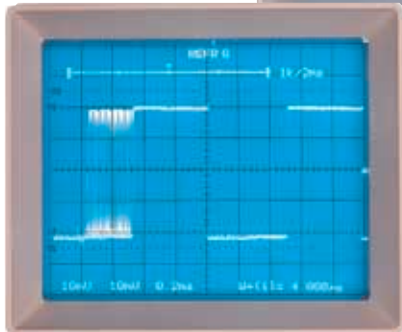## The additional advantages of digital

With 80% of signals being repetitive, analog processing enables the signals to be displayed in real time and in their most natural state. Display offers an excellent quality of trace and contrast.

At the same time, digital processing enables - among other things -events prior to triggering to be displayed and memorised. Moreover, with the ETS (Equivalent Time Sampling) digital mode, a sampling frequency can be obtained which is very high and inaccessible in single-shot digitalisation.

By combining digital and analog, you can study very slow phenomena (variations in temperature, battery load, etc.), unique phenomena, but also repetitive and quick signals by choosing the most suitable mode.
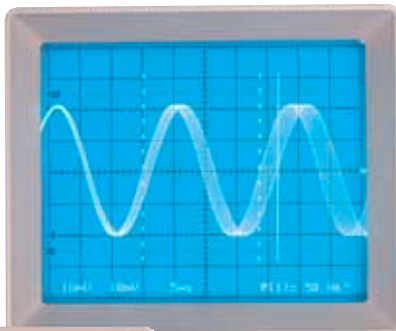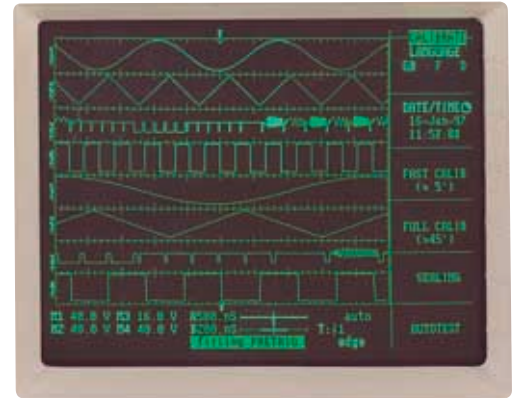

Analog representation: frequency modulation

Digital representation: interference just before triggering

Internal and external memory capacity

With 16,000 samples per channel, the OX 8000 family performs outstandingly in its market segment.

For its part, the OX 2000 has an adjustable acquisition depth of between 1,000 and 10,000 samples. In addition to its internal 40 Kbytes, it is equipped with a PCMCIA reader which enables up to 1 Mbyte of memory to be added. This storage also enables acquisitions carried out on site to be saved or, conversely, references to be produced in a laboratory which will make quick on-site diagnosis possible.

On the OX 2000, possibility of extending the memory using a PCM-CIA card (from 128 Kbytes to 1 Mbyte)
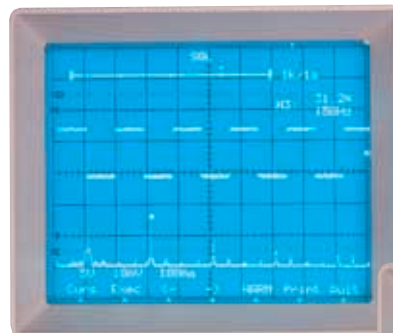

Dual time base

This function, available with the OX 2000 and OX 8100, enables a part of the reference signal to be zoomed while at the same time keeping the whole recording on the screen. You can display up to 8 curves on an OX 2000.

On the OX 2000, screen display of 8 curves

FFT and harmonic analysis
as standard

From the outset, the OX 2000, OX 8100 and OX 8050 have the FFT function - designed for studying the frequential decomposition of a signal - built into them. On top of that, harmonic analysis is added to the OX 8100 and OX 8050. The latter representation is richer than a traditional one. Not limited with regard to the frequency of the fundamental, it functions in particular with MLI-type signals.

Displaying the signal and its FFT

Harmonic analysis

SCPI programming

Metrix's OX 2000, as well as its mixed oscilloscopes, are entirely programmable to the SCPI (Standard Command for Programmable Instruments) standard. They have RS 232 and IEEE 488 interfaces (depending on the models) for remote control. You can also take advantage of all the aids provided for conducting analyses, for documentation and presentation which are accessible in LabView and LabWindows CVI* thanks to the available drivers.

Printer compatibility

All of these appliances have a number of drivers as standard. Therefore it is possible, for no additional cost, to quickly copy a screen directly onto a printer. This operation is all the easier when they are equipped with a digital link which automatically recognises the connected peripheral.

4 top-speed channels

Adding the OX 2000 to the equipment you already have means acquiring a wholly digital oscilloscope with 4 real channels, whose high acquisition speed makes it possible to perform tests on complex signals up to the full bandwidth of 150 MHz.

*OX 2000
and SX-METRO.*

A large number of digital functions

Besides their 5 cursors, Metrix digital oscilloscopes offer up to 17 automatic measurements.
Their "GLITCH" mode for capturing interference, or "ENVELOPE" mode for memorising the minimum and maximum of several successive acquisitions, enable complex signals to be displayed.
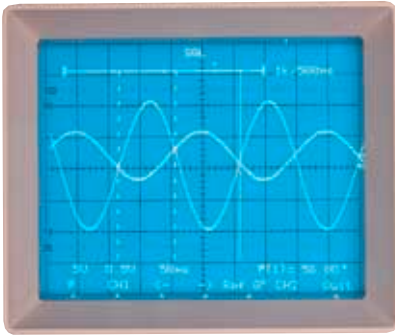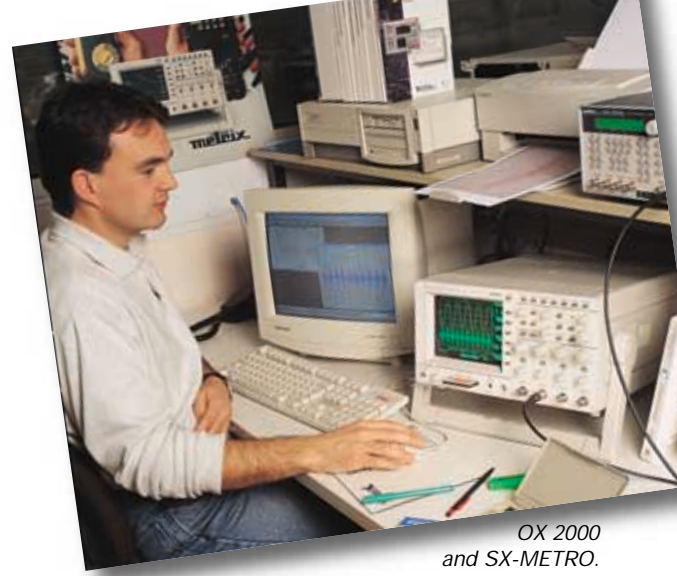

Cursors and automatic phase measurements

A single software package for the whole range

SX-Metro makes it possible to import curves stored in the oscilloscope's memory, image files or to download a configuration to the appliance via the RS 232 or IEEE interfaces. You can then analyse these signals by means of mathematical processing, use the results to put them into your Word® or Excel® reports, or simply archive this data.

*SX-METRO
multi-window
display*

Triggering on complex signals

In addition to the traditional triggering modes, the appliances have a meter enabling the TV line chosen to be displayed directly; this is the case for all the different existing standards (except for OX 8040).
The OX 2000 too offers various triggering modes which are sophisticated and suited to the most complex signals: time-delayed triggering, event count triggering, trigger shadowing (Hold off), triggering in a window, etc.
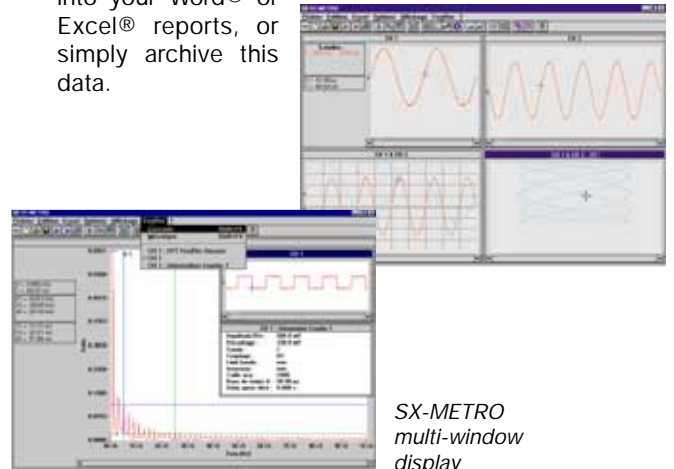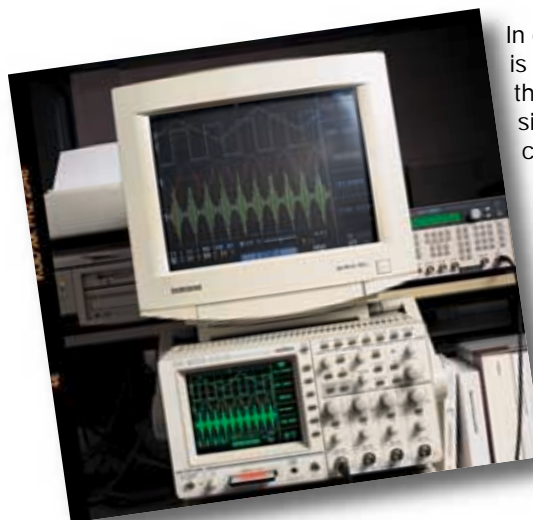

*Everything required
for video analysis*

Maximum legibility

In order to make it easier to use, the OX 2000 is fitted with a VGA output, which enables all the phenomena to be observed on a large-size computer colour screen. In this way, the curves can be identified more quickly.

*Direct connection
of an OX 2000
and a VGA screen*

metrix