

Handscope

Model OX5042

2 channel 40MHz

3-in-1 Instrument

Oscilloscope

Multimeter

Power and
Harmonic Analyzer

- Display voltage and current measurements simultaneously
- Auto scaling
- Records up to 2700 measurements
- Stores up to 100 screen shots recallable to the display
- Rechargeable batteries
- Includes all necessary probes and test leads for electrical measurements

*Ideal Replacement
for the discontinued*

Fluke® Model 43B
Power Quality Analyzer

Our products are backed by over 100 years of experience in test and measurement equipment, and encompass the latest international standards for quality and safety.

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INSTRUMENTS
CHAUVIN ARNOUX GROUP

HANDHELD OSCILLOSCOPE KIT

MODEL OX5042 OVERVIEW

One of the few handheld oscilloscopes on the market with isolated channels

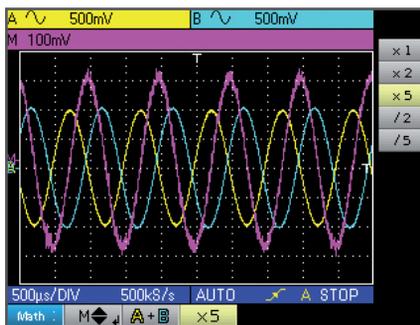
FEATURES

- Two isolated channels
- 40MHz oscilloscope
- 2 Independent 8000-count TRMS Digital Multimeters
- 3.5" color LCD screen with LED backlighting
- Integrated interactive multilingual help function
- 2MB recording data storage
- Communication via isolated USB SCPI protocol



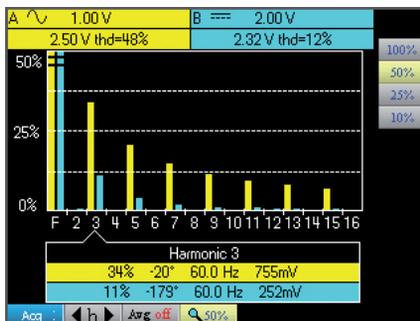
FUNCTIONAL DISPLAYS

HIGH PERFORMANCE



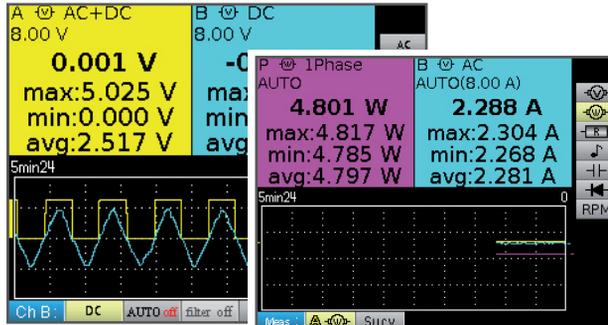
Automatically displays measurements for both isolated channels from your choice of 19 measurement types.

HARMONIC ANALYZER



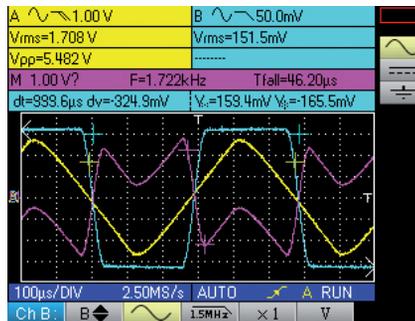
Measures two channels of individual harmonic content up to the 31st harmonic.

TWO INDEPENDENT 8000-COUNT TRMS DIGITAL MULTIMETERS



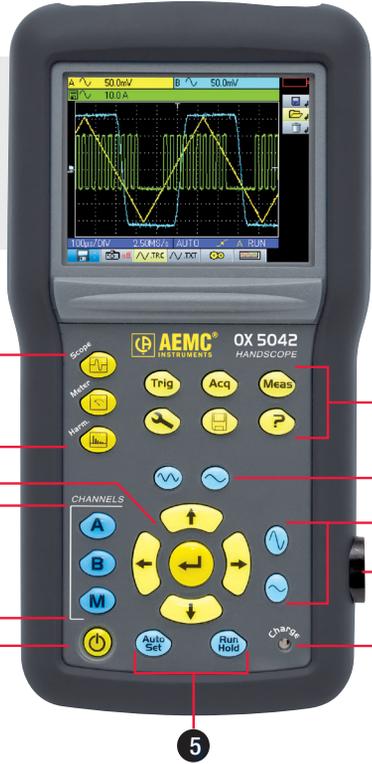
Instantly displays measurements in multimeter mode at the press of a button.

STORAGE COMMUNICATION & PC SOFTWARE

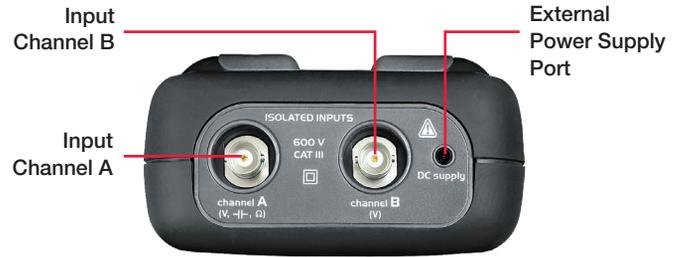


View real-time measurements on your PC, configure the HandScope, export data to spreadsheets using the SX-Metro included software.

HANDHELD OSCILLOSCOPE KIT



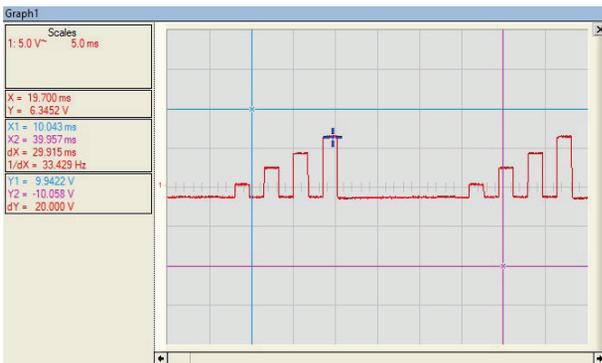
FUNCTIONS



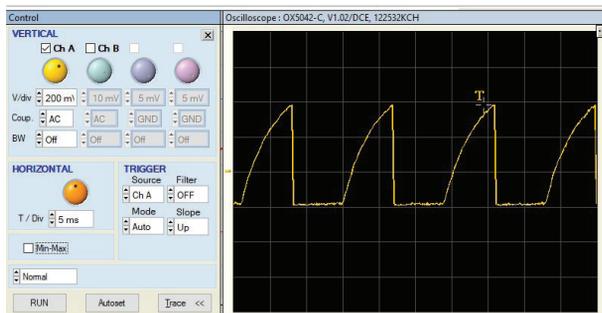
PANEL

KEY	FUNCTION
1	Oscilloscope, multimeter & harmonic analyzer buttons
2	Navigation buttons
3	Channel A/B & math/memory buttons
4	ON/OFF button
5	Function buttons
6	Charge Status - Battery Charge LED
7	Optical Communications Port
8	Sensitivity buttons
9	Time Base buttons
10	Menu buttons

DATA PROCESSING SOFTWARE



Graph showing measurement and values at the cursor positions.



Typical Control Panel allows real-time view of the measurement as well as the ability to configure channel settings.

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

- View traces on a PC in real time
- Control the oscilloscope via the PC
- Import traces stored in the oscilloscope's memory or as image files
- Store traces in text format on the PC
- Transfer data or waveforms into Microsoft® Excel
- Use Excel's functions to perform additional calculations on the data
- Insert a graph of data from the signal in a report produced using your word processor

HANDHELD OSCILLOSCOPE KIT

MODEL OX5042 SPECIFICATIONS

INTERFACE	
Display	3.5" color TFT LCD screen; Resolution 320 x 240 – LED backlighting
Display Mode	2500 real acquisition points on screen
Trace Display	2 traces + 2 references + memory trace or mathematical calculation
Interactive Help Function	11 languages: French, English, German, Spanish, Italian, Swedish, Romanian, Russian, Finnish, Polish, Dutch
OSCILLOSCOPE MODE	
Vertical Deflection	
Bandwidth	40MHz
Bandwidth Limiter	1.5MHz, 5kHz
Number of Channels	2 totally isolated channels
Input Impedance	1M Ω \pm 0.5%, approx. 17pF
Maximum Input Voltage	600V CAT III – Derating -20dB per decade from 100kHz
Vertical Sensitivity	5mV to 200V/div
Horizontal Deflection	
Sweep Speed	25ns/div to 200s/div – Roll Mode from 100ms to 200s/div
Horizontal Zoom	Zoom factor: x1, x2, x5
Triggering	
Mode	Automatic, triggered, one-shot & triggered Roll
Type	Edge, pulse width (20ns – 20s)
Coupling	AC or DC (depending on the coupling of the triggering channel) HF, LF or noise rejection
Sensitive	\leq 1.2 divisions p-p up to 40MHz
Digital Memory	
Maximum Sampling Rate	2GS/s in ETS mode – 50MS/s in one-shot mode on each channel
Vertical Resolution	9 bits
Memory Depth	2500 points per channel
User Storage	2MB
Glitch Mode	Duration \geq 20ns – 1250 min/max pairs
Display Modes	Envelope, Averaging (factors 2 to 64) and XY (vector)
Math Functions	Channel inversion, addition, subtraction, multiplication and division (adjustable scaling)
Cursor Measurement	2 cursors: V, T, dV, dt simultaneously – 4-digit display resolution
Automatic Measurement	18 time or level measurements and phase measurement
MULTIMETER MODE	
General Specifications	2 channels, 8000-count display + min/max bargraph – Graphic recording of 2700 measurements (5min to 1 month)
Operating Modes	Absolute or relative display (absolute, deviation, ref, ref%) – Monitoring (instantaneous, min, max, Avg)
AC, DC & AC+DC Voltages	Ranges from 600mV to 600Vrms, 800mV to 800Vdc – accuracy for Vdc \pm 1% reading+20D –50kHz bandwidth
Resistance	Range from 80 Ω to 32M Ω - accuracy \pm 2% reading + 10D –10ms quick continuity test
Capacitance	Ranges from 5nF to 5mF – basic accuracy \pm 2% reading + 10D
Other Measurements	Frequency, rotation speed, 3.3V diode test, temperature measurement (with K-type thermocouple or infrared probe)
POWER	
Measurements	Single-phase and balanced three-phase active power values
HARMONIC ANALYZER MODE	
Multi-Channel Analysis	2 channels, up to 31st harmonic fundamental frequency from 40 to 450Hz
Simultaneous Measurements	Total VRMS, THD and selected order (% fundamental, phase, frequency, Vrms)
GENERAL	
Screenshots	Up to 100 in standard “.bmp” format, viewable on the instrument
PC Communication	Isolated optical USB interface “SX-Metro” PC application software (included)
Power Supply	6 LR6 or 6AA NiMH batteries – Battery life up to 8hrs 30min Universal line adapter isolated from the channels – Quick charging in 2hrs 30min
Safety/EMC	Safety according to IEC61010-1 Ed3 – 600V CAT III, EMC according to EN61000-3, 2001 & EN61326-1, 2006

HANDHELD OSCILLOSCOPE KIT

MODEL OX5042 KITS

Designed for Contractors and Field Service Technicians
Available in 3 different kit options



KIT SHOWN

CATALOG # 2150.22, # 2150.23

PRODUCT INCLUDES

2150.21 - Handscope Portable Oscilloscope Model OX5042

Meter, small classic tool bag, US Wall plug, USB Cable, Set of 2, 10 ft. Color-coded Leads (red/black), Set of 2, Color-coded Alligator Clips (red/black), Set of 2, color-coded Probes (red/black), BNC Adapter, 2 Probe 10:1 600V BNC male, 1.2V NiMH rechargeable batteries, quick start guide, and USB drive with software and user manual.

2150.22 (as shown in kit) - Handscope Model OX5042 w/MN251T & MF 3000-24-1-1

Meter, field case, US Wall plug, USB Cable, Set of 2, 10 ft. Color-coded Leads (red/black), Set of 2, Color-coded Alligator Clips (red/black), Set of 2, Color-coded Probes (red/black), BNC adapter, 1- Probe 10:1 600V BNC male, AC Current Probe Model MN251T, measures down to 1A, MiniFlex[®] Sensor 3000-24-1-1, 1.2V NiMH rechargeable batteries, quick start guide, and USB drive with software and user manual.

2150.23 (as shown in kit) - Handscope Model OX5042 w/MN379T & MF 3000-24-1-1 (for Low AC current measurement)

Meter, field case, US Wall plug, USB Cable, Set of 2, 10 ft. Color-coded Leads (red/black), Set of 2, Color-coded Alligator Clips (red/black), Set of 2, Color-coded Probes (red/black), BNC adapter, 1- Probe 10:1 600V BNC male, AC Current Probe Model MN379T, measures down to 50mA, MiniFlex[®] Sensor 3000-24-1-1, 1.2V NiMH rechargeable batteries, quick start guide, and USB drive with software and user manual.

HANDHELD OSCILLOSCOPE KIT

MODELS MN251T & MN379T

AC Current Probes



Range 0.5 to 240A
MODEL # MN251T
INCLUDED IN KIT # 2150.22



Range 0.005 to 120A
MODEL # MN379T
INCLUDED IN KIT # 2150.23



FEATURES

- Small, compact size
- True RMS measurements
- Large jaw opening accommodates conductor sizes up to 250MCM
- 10 foot leads allow measurements in hard to reach areas
- 40Hz to 10kHz response

	MN251T	MN379T
ELECTRICAL		
Nominal Range	200A	5A / 100A
Measurement Range	0.5 to 240A	0.005 to 6A; 0.1 to 120A
Accuracy	3% of Reading @ 5A; 1% of Reading @ 200A	1% of Reading @ 5A; 1% of Reading @ 100A
Phase Shift	≤2.5° @ 20A / ≤2.5° @ 100A	≤4° @ 5A / ≤2.2 @ 100A
Overload	240A for 10 min ON, 30 min OFF	
Frequency Range	40 to 10kHz	
Limit Operating Conditions	200A permanently to 1kHz; Derating above 3kHz: 200A x (1/0.333F), F in kHz	
Working/Common Mode Voltage	600Vrms	
Output Termination	10ft (~3m) BNC Lead	
Output Signal	1mV/AAC (200mV @ 200A)	200mV/A AC (1V @ 5A) & 10mV/A AC (1V @ 100A)
MECHANICAL		
Operating Temperature	14° to 131°F (-10° to 55°C)	
Storage Temperature	-40° to 158°F (-40° to 70°C)	
Operating Relative Humidity	10 to 35°C (50 to 95°F) 85% RH (without roll-off above 35°C (95°F))	
Jaw Opening	0.83" (21mm)	
Maximum Conductor Size	0.78" (20mm)	
Dimensions	5.47 x 2.00 x 1.18" (139 x 51 x 30mm)	
Weight	6.5 oz (180g)	
Polycarbonate Material	Polycarbonate with fiberglass charge, UL94 V0	
SAFETY		
Electrical	EN 61010-2-32	
Double Insulation	Yes	
CE Mark	Yes	

HANDHELD OSCILLOSCOPE KIT

MiniFlex® 3000-14-1-1 & 3000-24-1-1

AC Flexible Current Sensors



14" SENSOR
Range 5 to 3000A
MODEL # 3000-14-1-1
 optional



24" SENSOR
Range 5 to 3000A
MODEL # 3000-24-1-1
 included in all kits

FEATURES

- True RMS Measurements
- 14" (~35cm) sensor optional
- 24" (~60cm) sensor included
- 10 foot (~3m) leads allow measurements in hard to reach areas
- Measurement range of 0.5 to 3000Arms
- Accuracy ±1% of Reading ±0.25A
- No core saturation or damage if measured circuit is overloaded
- 20kHz frequency response
- Low phase shift for power measurements
- Insensitive to DC: measures only the AC component on DC + AC signals
- Excellent linearity
- 9V Alkaline battery typically provides 150 hrs of continuous operation

	3000-14-1-1	3000-24-1-1
ELECTRICAL		
Range	3000A	
Signal Output	1mV/A	
Frequency Range	10Hz to 20kHz with current derating	
Influence Of Conductor Positioning	1.5% typical, 3% max	
Influence Of Conductor Positioning In Sensor Against Handle	4% typical, 6% max	
External Conductor Influence	35dB to 40dB on contact	
Power Source	9V Alkaline battery (included)	
MECHANICAL		
Sensor Diameter	Ø 0.2 (5mm)	
Sensor Length	14" (~355mm)	24" (~609mm)
Max Conductor Size (DIA)	4.94" (~100mm)	8" (~190mm)
Connection Cable Length	10ft (~3.04M)	
Drop Test	Per IEC 68-2-32	
Vibration	Per IEC 68-2-6	
Mechanical Shock	Per IEC 68-2-27	
Weatherproofing	IP 50	
ENVIRONMENTAL		
Operating Temperature Range	14° to 131°F (-10° to +55°C)	
Storage Temperature Range	-40° to 158°F (-40° to +70°C)	
Altitude	Operating: 0 to 6560ft (2000m), working voltage derating above; Non-operating: 0 to 39370ft (12,000m)	
SAFETY		
Safety Rating	EN 61010, 1000V CAT III; 600V CAT IV	

CATALOG NO.	DESCRIPTION
2150.21	Handscope Portable Oscilloscope Model OX5042
2150.22	Handscope Model OX5042 w/MN251T & MF 3000-24-1-1 {BNC Output}
2150.23	Handscope Model OX5042 w/MN379T & MF 3000-24-1-1 (BNC output; Low AC Current Measurement)
Accessories/Replacements - available on website store from www.AEMC.com/store	
5000.50	Probe 10:1 600V BNC Male for use with Model OX5042
2124.86	Set of 2, Color-coded Grip Probes (Red/Black) 1000V CAT II <6A
2133.72	Small Classic Tool Bag
2132.59	AC Current Probe Model MN251T
2132.60	MiniFlex® 3000-14-1-1
2132.63	MiniFlex® 3000-24-1-1
2153.02	AC Current Probe Model MN379T

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