

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.

HANDHELD OSCILLOSCOPE KIT

MODEL OX5042 OVERVIEW

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

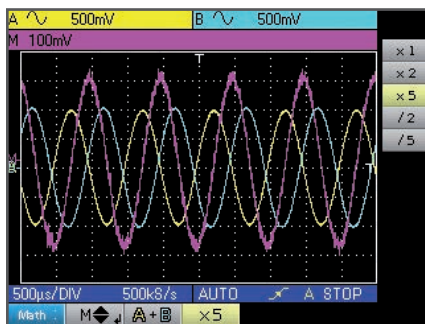
FEATURES

- 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



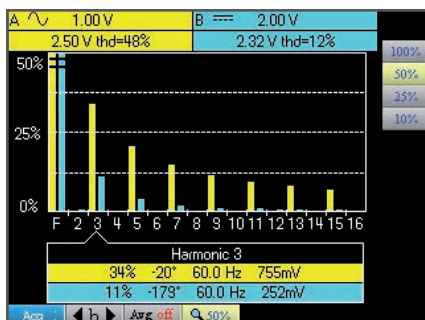
FUNCTIONAL DISPLAYS

HIGH PERFORMANCE



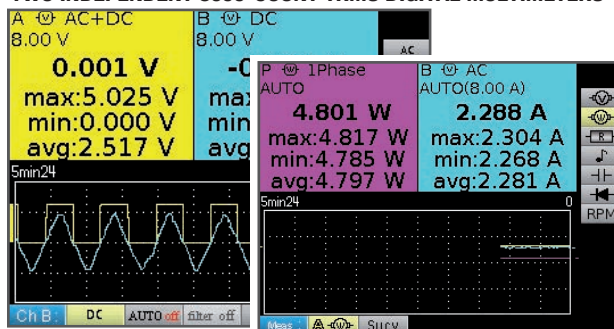
Automatically displays measurements for both isolated channels from your choice of 19 measurement types.

HARMONIC ANALYZER



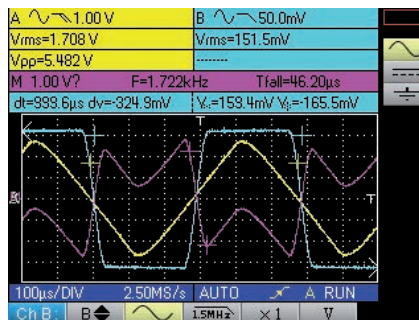
Measures two channels of individual harmonic content up to the 31st harmonic.

TWO INDEPENDENT 8000-COUNT TRMS DIGITAL MULTIMETERS



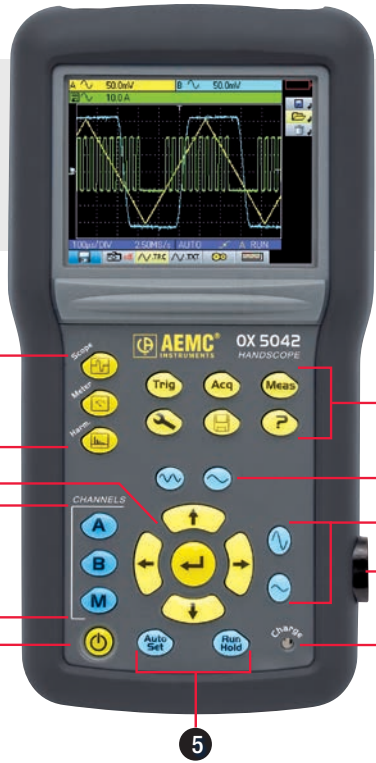
Instantly displays measurements in multimeter mode at the press of a button.

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



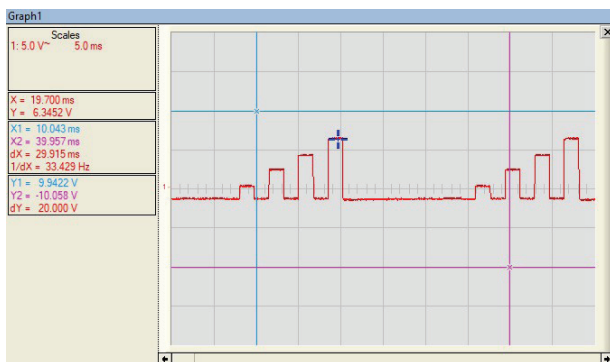
FUNCTIONS



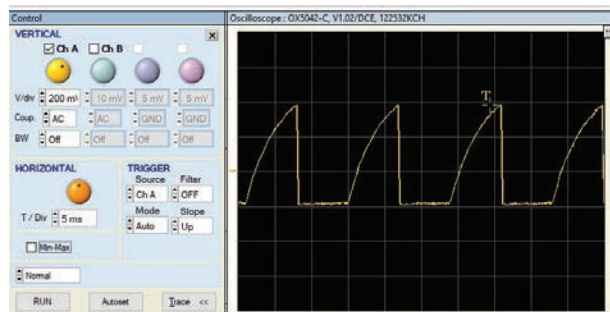
PANEL

| 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 $\pm 1\%$ of Reading $\pm 0.25A$
- 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 | |
| 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 |