



# Testing Equipment



ENERGY IS OUR BUSINESS

SICAME AUSTRALIA



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## Ampstik® Plus

### ■ High Voltage Ammeter

The AmpstikPlus uses the same current technology that was developed for the original SensorLink Ampstik. The key feature of the AmpstikPlus is the ability to hold up to four True RMS amperage readings, ending the need to raise and lower the hotstick for each reading.

The opening of the current sensor is electronically closed, while external currents are electronically rejected. This sensor design enables the user to measure an individual conductor within close proximity to adjacent current carrying conductors.

The SensorLink patented amp sensor is not position sensitive; just slip the AmpstikPlus over the conductor. The meter will store the current measurement within two seconds. Move to the next conductor and repeat the process.

Return the instrument to eye level when all four of the measurements have been completed. This easy storing and retrieval of data makes the AmpstikPlus a practical and labor saving instrument.

The universal hotstick adaptor and internal structure of the AmpstikPlus are made of long glass fiber reinforced thermoplastic polyurethane called Celstran. This space-age polymer is non-conductive and extra tough to protect the amp sensor. The housing is made of urethane and built to operate safely, even in severe utility environments. The AmpstikPlus is resistant to shock, water repellent, unsusceptible to flame and operates in a wide temperature environment.



Product Number	Product Description	Voltage	Current	Display	Sensor Opening (cm)
8-020XT PLUS	AMPSTIK PLUS	0 to 500 kV	1-5000A	3.5 Digit	6.35
8-024 PLUS	Wide Jaw High Voltage True RMS Ampstik Ammeter	0 to 400 kV	1-2000A	3.5 Digit	9.8

## Ohmstik Plus

### ■ Live-Line Ohmmeter

The OhmstikPlus Live-Line Micro Ohmmeter measures the micro-ohm resistance of conductors, connectors, splices and switching devices positioned directly on an energized, high voltage lines.

The OhmstikPlus calculates resistance by measuring the AC amperage in the line and the voltage drop due to the resistance of the line segment under test. Using the AC current in the line ensures that realistic current distributions through the connection are being measured. The instrument is pressed against the splice or connector in such a manner that the connection under test is between the two electrodes. In a few seconds the instrument is removed from the line and the line amperage and resistance are displayed on the front panel LCD.

The Ohmstik Plus is designed to store up to nine sets of readings. The ability to hold the multiple readings ends the need to raise and lower the hot stick after each measurement.

This measurement is much more direct than infrared thermography, and is not subject to emissivity, weather, current loading, background, and other influences that cause infrared errors.



Product Number	Product Description	Voltage	Current	Micro-Ohms	Display	Sensor Opening (cm)
8-082XT PLUS	OHMSTIK PLUS	0 to 500 kV	1 to 1400A	5 to 2500	Graphics LCD	5.35
8-084 PLUS	Wide Jaw Liveline Micro Ohmmeter Stores 9 Readings	0 to 500 kV	1 to 1400A	5 to 2500	Graphics LCD	9.8
8-090 PLUS	Ultra Wide Ohmmeter	0 to 500 kV	1 to 1400A	5 to 2500	Graphics LCD	15

## Qualstik Plus

### ■ Power Quality Meter

The Qualstik Power Quality Meter has been developed specifically for measurement of four important items of power quality in the electric utility industry. These are Current, True Power Factor, Total Harmonic Distortion and the Direction of Current Flow.

The Qualstik is not position sensitive, just slip it over a conductor and touch the electrode in the bottom of the fork to the line. The meter will store and calculate the three measurements within 10 seconds. The current reading is shown on one line of the display while the power factor and THD readings share the other line. The direction of current flow indication shows below the other readings on the display. The housing of the Qualstiks are made of urethane and built to operate safely even in severe utility environments. They are resistant to shock, water repellent, and unsusceptible to flame. They also operate in a wide temperature environment.

The Qualstik is an excellent survey tool to assist determining placement of power factor correction devices as well as identifying other power quality problems.

The QualstikPlus is designed to store up to eight sets of readings, which the user is then able to delete on the instrument.



Product Number	Product Description	Voltage	Current	Display	Sensor Opening (cm)
8-061XT PLUS	Qualstik Live-Line Power Quality Meter	600 V to 500 kV	1-2000A	Graphics LCD	6.35
8-062 PLUS	Wide Jaw Qualstik Live-Line Power Quality Meter	600 V to 500 kV	1-2000A	Graphics LCD	9.8

## Radio Ampstik®

### ■ Radio Linked Multiple Reading Ammeter

The Radio Ampstik uses the same current sensor technology as the original Ampstik. Its key feature is the ability to display the current reading up to 50 feet away from the sensor. The user has the option to hold the display in their hands, mount it to their hotstick, or hang it on their bucket.

The Radio Ampstik display can hold up to four True RMS amperage readings, and makes it easy to record the measurements for further review. The easy storage and retrieval of data make it a labor saving and useful instrument.

The sensor for the Radio Ampstik was re-engineered to optimize its new wider opening (2.5 inch, 6.35 cm) that is more durable and can accurately measure from 1 to 5000 amps.

The sensor is based on the SensorLink patented amp inductive sensor, which does not use magnetic materials and has no moving parts. The opening of the sensor is electronically closed and external currents are also electronically rejected. The sensor is not position sensitive; just slip the Radio Ampstik sensor over a conductor. The display will show the current measurement and continue to update the reading 3 times per second. A single push button switch operates the display.

By holding down the switch, the user is able to change the mode: to Hold up to four readings, to continuously display readings in the RUN mode, to Erase readings; or Power Off the display. When in the Hold mode, by pressing and quickly releasing the switch, the user can review each of the recorded readings.

The Radio Ampstik puts the display wherever the user finds it the most useful. The easy storing and retrieval of data make it a labor saving and practical instrument.



Product Number	Product Description	Voltage	Current	Display
6-120	RADIO AMPSTIK	0 to 69 kV	1-5000A	5 Digit

## Troubleman's Kit

### ■ Radio Based Ammeter & Voltmeter

The SensorLink Troubleman's Kit consists of the Radio Ampstik and the radio-based Voltstik. These instruments are designed to assist the modern day electric utility troubleshooter in resolving problems in their low and medium distribution circuits.

**Troubleshooting Voltage Problems** The Voltstik allows the user to measure the potential of any two points within a medium voltage distribution system. Voltage drop along a line can be measured or a check of phase to ground voltage on both the primary and secondary voltages. It can determine if the cause belongs to the utility or the customer.

#### Phasing

The most common use for measuring voltage in a distribution system is measuring the phase to phase voltage. In the past, this has been performed with a dedicated instrument called a "Phasing Set", which involves two men and two hot sticks.

#### Non-Conductive

The universal hotstick adaptor and internal structure of both the Ampstik and Voltstik are made of a long, glass, fiber reinforced, thermoplastic polyurethane called Celstran®. This space-age polymer is non-conductive and extremely strong.

#### Remote Display

The display shows the amp or voltage measurement and continues to update the reading three times per second using a non-licensed 900 MHz radio. The Remote display gives the user instant confirmation of the reading.



Product Number	Product Description	Range of Operation			Resolution		Display
		Voltstik	Ampstik	Current Sensor	Voltage	Amps	
6-333	TROUBLEMAN'S KIT	0-37 kV	0-69 kV	1-5000A	1 Volt	0.1A	5 Digit

## Voltstik

### ■ Radio Based Distribution Voltmeters

The Voltstik is a distribution voltage voltmeter designed for use on lines and in substations. This meter is employed onto a line by using a hot stick and universal chuck adapter. It is capable of measuring voltage phase to phase, and phase to ground. This high impedance instrument is an excellent choice for solving multiple problems associated with operating a medium voltage system. Its key applications are defined under three groups, safety confirmation of the voltage present, troubleshooting voltage problems, and phasing.

The only points on the entire meter that conduct a signal are the two ends. This design is the safest method to make a two-point voltage measurement.

The Remote display gives the user instant confirmation of the reading. The user has the option to hold the display in their hands or mount it to a hot stick.

The display shows the voltage measurement and continues to update the reading three times per second using a non-licensed 900 MHz radio. The display features a five-digit display that shows full scale 1-volt resolution. While in the HOLD mode the display will hold up to four readings. This handy display allows the user to keep both eyes and hands on the task of taking the measurement.



Product Number	Product Description	Voltage	Resolution	Display
6-133	VOLTSTIK	0-37 kV	1 Volt	5 Digit

## Amcorder

### ■ Recording Ammeter

The True RMS inductive sensor does not use magnetic materials and has no moving parts. The opening of the sensor is electronically closed and external currents are electronically rejected. The accuracy, external current reject, and range of currents measured by the patented amp sensor substantially exceed the performance of the best clamp-on sensors. The key feature of the unit is the ability to leave it deployed on the line to record average current readings every 15 minutes for 30+ days. It easily attaches to the line with a standard shotgun style hotstick. Once on the line, it immediately begins to collect and record the current load on the line.

An Amcorder is equipped with an infrared serial port for communicating the recorded data into the user's PC. The data is downloaded through SensorLink's Softlink software, which allows the user to download, view and query the data stored on the Amcorder.

Softlink is a user-friendly software interface that allows the user to download, view, graph and export data from the Amcorder into Microsoft Excel. The data directly transfers from the Amcorder into Excel through an Infrared Port. Microsoft Excel not included.



## Varcorder

### ■ Amp, Power Factor & Var Recorder

The Varcorder measures and records Amps and Power Factor. A voltage constant is then applied in software to calculate VARs. The Varcorder uses the same current sensor technology as the original Ampstik. This patented amp sensor does not use magnetic materials and has no moving parts. The opening of the sensor is electronically closed, and external currents are electronically rejected. The accuracy, external current reject, and range of currents measured by the patented amp sensor substantially exceed the performance of the best clamp-on sensors. The true power factor is calculated by measuring the electric field in comparison with the current reported from the amp sensor. The key feature of the unit is the ability to leave it deployed on the line to record readings every 15 minutes for 90+ days. It easily attaches to the line with a standard shotgun style hotstick. Once on the line, it immediately begins to collect and record the current and power factor on the line.

The Varcorder is equipped with an infrared serial port for communicating the recorded data into the user's PC. The data is downloaded through SensorLink's SoftLink software, which allows the user to download, view and query the data stored on the Varcorder.

SoftLink is a user-friendly software interface that allows the user to download, view, graph and export data from the Varcorder into Microsoft Excel. The data directly transfers from the Varcorder into Excel through an Infrared Port. Microsoft Excel not included.



Product Number	Product Description	Range of Operation		Resolution
		Voltage	Current	
6-920-3	3 x AMCORDERS	69 kV	1-1000A	0.1A

Product Number	Product Description	Range of Operation		Resolution	Power Factor
		Voltage	Current		
6-910-3	3 x VARCORDERES	69 kV	1-2000A	0.1A	-0.71 to 0.71

## Voltage Detectors

### ■ Single Range

#### Operating Check

By pressing the **TEST** button:

- A **RED** LED flashes on
- Powerful rated audible signal >60 dB(A)/2m
- When loosening the button, the timed **GREEN** LED lights up.

While remaining on, it indicates the good working order of the detector.

#### Characteristics

- Precise and stable operating threshold
- High environmental resistance (impacts, vibrations, moisture)
- Temperature conditions: class N (IEC 61243-1 standard)
- Use from 50 to 60 Hz.

#### Composition

- Robust housing
- Weight of the detector: 350gr
- Size of the detector: Ø 59 x 270mm.

Product Number	End Fitting	Voltage
CC-765-10/36-C	Hex	10-36kV
CC-765-10/36-K	Universal	10-36kV
CC-765-11/33-C	Hex	11-33kV
CC-765-11/33-K	Universal	11-33kV

**Weight:** 350g  
**Battery:** Type 6 LR-61 9V  
Other voltages available



### ■ Dual Range

#### Operating Check

- One **RED** flashing LED for the smallest range (very bright, visible at more than 20m in direct lighting)
- One **RED** flashing LED + one **RED** permanent LED for higher range
- Powerful rated audible signal >67 dB(A)/1.5m: discontinuous for the lower range and continuous for higher range.

#### Characteristics

- Precise and stable operating threshold
- High environmental resistance (impacts, vibrations, moisture)
- Temperature conditions: class N (IEC 61243-1 standard)
- Use from 50 to 60 Hz.

#### Composition

- Robust housing
- Weight of the detector: 350gr
- Size of the detector: Ø 59 x 270mm.

Product Number	End Fitting	Voltage Range 1	Voltage Range 2
CC-775-3.3-11-22/66-C	Hex	3.3-11kV	22-66kV
CC-775-3.3/11-22/66-K	Universal	3.3-11kV	22-66kV
CC-775-11/22-33/66-C	Hex	11-22kV	33-66kV
CC-775-11/22-33/66-K	Universal	11-22kV	33-66kV

**Weight:** 350g  
**Battery:** Type 6 LR-61 9V  
Other voltages available



## Voltage Detectors

### ■ High Voltage

#### AC Voltage Detector for outdoor use

Precise and stable operating threshold. Insensitivity to induced voltages by limiting the operating voltage range. Remarkably resistant to impacts, vibrations, extreme temperatures, humidity.

Double signaling.

Voltage presence indicated at the same time by:

- 4 bright **RED** flashing electro-luminescent diodes (visible at more than 50 metres even in direct lighting)
- A powerful rated acoustic signal (60 dB/2m)

The **CC-265** detectors is supplied with 3 end fittings for sticks:

**W:** Hexagonal 20mm

**C:** Hexagonal 12mm

**K:** Universal.

Robust housing made from polycarbonate with high mechanical properties and dielectric strength.

Check that the device is working by pressing the **TEST** button. This tests all of the detector's active components once the **TEST** button is released.

Surrounded by a rubber impact-resistant padding.

Two **GREEN** illuminated lights, indicating that the device is on. These lights turn off and four lights illuminate when a voltage is detected.

Product Number	End Fitting	Voltage
CC-265-66/132	C,K,W	66-132kV
CC-265-275/330	C,K,W	275-330kV
CC-265-225/550	C,K,W	225-550kV

#### End fittings

Delivered with 3 end fittings as standard. Removable for replacement if broken.



## Phase Comparators

### Two-Pole Phase Comparators For Indoor Use

The DETEX CL-8-36 detects differences in voltage between any two points of an installation indicated by LED's. It also enables assessment of the order of magnitude of the residual voltage induced by nearby live lines or circuits, and thus differentiates it from the one provided directly from a high voltage source.

#### Wide Range of voltages

- 2 to 36 kV.
- High luminosity.

#### Compact

- 0.62m with probes dismantled.
- High dielectric quality insulating material.
- Two 1.25m elements with removable probes, connected via a high-insulation lead.
- Max. use distance: 2.25m (with probe extenders).
- Operation testing: with a checking device.
- Lead length is 1.5m



Product Number	Product Description	Operating Voltage (kV)	Tester and Case	
			Dimensions (mm)	Weight (kg)
CL-8-36	Tester in plastic case	2-36	150 x 195 x 650	7.5
CL-8-35/1	Tester with two probe extenders	2-36	150 x 195 x 650	7.8

### Piezotest™ Separate Testing Device For Phase Comparator

- Piezo-electric generator activated via a handle mechanism providing a high frequency voltage.
- Metal contact at the tip of the device. This contact may connect to the "banana" plug of the extension lead to facilitate testing on very long detectors.
- Earth socket at the base of the unit receiving a plug for making closed-circuit tests.



Product Number	Product Description	Operating Voltage (kV)	Weight (kg)
CL-1-06	In case with lead	190 x 32 x 65	0.3

## Phase Comparators

### Standard Electronic Voltage Detector For Indoor and Outdoor Use

- Frequency and voltage phase memory.
- Integrated TEST push-button.
- Orange LED = indication that frequency and voltage are in memory.
- Green LED = phasing indication.
- Red LED = non-phasing indication.
- Powered by a 6V LR 61 9 V battery.
- Delivered in carrying case.

Product Number	Voltage (kV)	Length of Antenna (m)
CL-7-06/18*	6-18	0.55
CL-7-10/30*	10-30	0.85
CL-7-10/30-1*	10-30	1.15
CL-7-12/36*	12-36	1.2

\* Specify type of mounting when ordering: C or K.



### Two-Pole Phase Comparator For Indoor and Outdoor Use

- Precise indications provided by the galvanometer needle;
- Dials are calibrated according to voltage.
- Assessment of the voltage value on testers/measurers.
- Complete function testing built-in, with TEST push-button (battery supplied).
- Consists of two elements connected by a high-insulation lead
- 140 x 250 x 850 mm - 7.5 kg.



Product Number	Voltage (kV)	Dial Scale (kV)	Observations	Device in Metal case	
				Dimensions (mm)	Weight (kg)
Phase tester					
CL-5-36	6 - 36	5-10-15-20-25-30-36 A.C/D.C	Straight Antennae	140 x 250 x 850	7.5
Tester-Measurer					
CL-5-03	0.75 - 3	0.75-1-1.25-1.5-3 A.C/D.C	Straight Antennae	140 x 250 x 850	7.5

## Resistance Tester

### ■ MX-430-M Earth Resistance Tester

The MX-430-M allows for the measurement of earth resistance and earth specific resistivity. It also measures the spurious voltages caused by grounding parasitic voltage presence. This equipment is suitable for fast and easy measurement of the grounding resistance in home, industrial buildings and substations.

- Wide range of measurement from 0.01  $\Omega$  to 20 K $\Omega$
- High visibility 3 1/2 digit display with direct readings, even under sunlight
- Supplied with a rechargeable internal battery. A smart charger is microprocessor-controlled and can be powered from the mains by a power plug provided source or from a 12 V car battery.

#### Technical Features

- **Application:** measurement of grounding resistances (with 3 earth rods) earth resistivity (with 4 earth rods) and spurious voltage presence
- **Range of measurement:** 0 - 20  $\Omega$ ; 0-200  $\Omega$ ; 0-2000  $\Omega$  and 20 K $\Omega$
- **Voltmeter:** voltmeter function in AC range as a conventional voltmeter 0-200 V AC
- **Operation frequency:** 1470 Hz
- **Current in and out put power:** less than 0,5 W and the output current is limited to less than 15 mA (peak to peak)
- **Operation temperature:** -10°C / +50°C
- **Storage temperature:** -25°C / +65°C



- **Humidity:** 95% RH (without condemnation).

#### Accessories Included

- Connection wire to supply the charger with a 12 V battery
- Battery charger 220-240 V

Product Number	Dimension (mm)	Weight (kg)
MX-430-M	221 x 189 x 99	2

## Resistance Tester

### ■ Accessories (Measurement Kit) MX-433-T

- 1 storage bag
- 4 earth rods copper plated steel
- 1 x 5 meters black cable
- 1 x 40 meters red cable
- 2 x 20 meters cable (1 blue and 1 green)
- 1 x 5 meters green cable to connect to the grounding system
- 1 hammer.



Product Number	Dimension (mm)	Weight (kg)
MX-433-T	570 x 220 x 160	7.7



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