

## VOLTSTIK RADIO BASED DISTRIBUTION VOLTMETERS

เครื่องวัดแรงดันไฟฟ้าแบบไร้สาย

Safely and accurately measure the primary voltage

Non-conductive meter case and universal adaptor

Remote display for instant confirmation of the reading

Take Phase to Phase and Phase to Ground measurements

Single stick operation

Holds up to four unique readings



Specification	Model 6-133 Voltstik Kit Consists of 8-133 Voltstik and 8-121 Radio Receiver
Voltage range	0 - 37 kV
Resolution Voltage 0-37 kVAC	1 V
Accuracy	$\pm 1\%$ $\pm 2$ V
<b>Operation</b>	
Frequency	50 Hz (47 to 53 Hz)
Control	One button operation
Storage	4 readings
<b>Mechanical</b>	
Display	5 digit
Housing	Shock & water resistant mold urethane
Hot stick mounting	Universal shuck adapter (Hotstick not include)
Battery	9 V alkaline
Operation Temp.	-30 to 60 C degree
<b>Weight</b>	
8-133 Voltstik	2.62 kg
8-121 Receiver	0.64 kg
<b>Radio</b>	
Frequency	916.48 MHz (region 2 & 3)
Frequency	869 MHz (region 1)
Power	1 mW
Range	50 ft (15.24 m)
<b>Price</b>	<b>250,000.00</b>



## RADIO AMPSTIK RADIO LINKED MULTIPLE READING AMMETER



เครื่องวัดกระแสไฟฟ้าแบบไร้สาย

- Heads Up Display for instant conformation of the reading
- Records up to four readings
- Operates in the 900 MHz non licensed frequency band
- Mount the Display on the hotstick or hold in your hand
- Remote read out up to 50 feet away
- New Non Conductive Universal Chuck

Specification	Model 6-120 Kit
Voltage range	0 - 69 kV
Current range	1 - 5000 A
Sensor Opening	Standard
Opening width	2.5"
<b>Resolution</b>	
Amps 1-99.9 A	0.1 A
Amps 100-5000 A	1 A
<b>Accuracy</b>	$\pm 1\%$ $\pm 2\%$ V
<b>Operation</b>	
Frequency	50 Hz (47 to 53 Hz)
Control	One button operation
Storage reading	4 reading
<b>Mechanical</b>	
Display	5 digit
Housing	Shock & water resistant mold urethane
Hot stick mounting	Universal shuck adapter (Hotstick not include)
Battery	9 V alkaline
Operation Temp.	-30 to 60 C degree
Weight	1.05 kg
<b>Radio</b>	
Frequency	916.48 MHz
Power	1 mW
Range 50 ft	(15.24 m)
<b>Price</b>	<b>250,000.00</b>

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## QUALISTIK PLUS POWER QUALITY METER (POWER FACTOR METER)

### เครื่องวัดคุณภาพไฟฟ้า

Slip over a high voltage conductor and collect four power quality measurements

- Measure Amps
- Measures leading or lagging Power Factor
- Measures Total Harmonic Distortion (THD)
- Indicates Direction of Current Flow
- Store up to eight sets of readings



Specification	Model	
	8-061XT Plus	8-062 Plus
<b>Measurement</b>		
Voltage range	500 kV	
True RMS Amp	1 - 2000 A	5 - 2000 A
Power factor	0.01 - (lag) to 0.01 + (lead)	
THD Amps	1 - 100%	
<b>Resolution</b>		
Amp 1-99 A	0.1 A	
Amp 100-2000 A	1 A	
Power factor	1.0 to 0.01	
THD Amps	1 %	
<b>Accuracy</b>		
Amps	+1% + 2 counts	
Power factor	+0.1 from 0.71 lead to 0.71 lag	
THD Amps	+1% from 0 to 25%	
(Note: Accuracy is diminished if the current is less than 15A)		
<b>Operation</b>		
Frequency	50 Hz (47 to 53 Hz)	
Control	One button operation	
Storage reading	8 reading	
<b>Mechanical</b>		
Sensor opening	Standard	Wide Jaw
Opening width	2.5"	3.86"
Display	Graphic LCD	
Housing	Shock & water resistant mold urethane	
Hot stick mounting	Universal shuck adapter (Hotstick not include)	
Battery	9 V alkaline	
Operation Temp.	-30 to 60 C degree	
Weight	1.05 kg	1.41 kg
<b>Option</b>		
Hand carrying case	model 7 - 044	
<b>Price</b>	<b>275,000.00</b>	<b>310,000.00</b>



## SENSORLINK AMPSTIK HIGH VOLTAGE AMMETER

เครื่องวัดกระแสไฟฟ้า

- Slips on and off the conductor with  $\pm 1\%$  accuracy
- Measures Amps averaging true RMS
- Open CT that rejects stray magnetic fields
- Sample and hold measurements
- High voltage rated 500kV



Specification	Model						
	8-020XT	8-022	8-023	8-024	8-020XT Plus	8-022 Plus	8-024 Plus
Voltage range	0 - 500 kV	0 - 69 kV	0 - 69 kV	0 - 400 kV	0 - 500 kV	0 - 69 kV	0 - 400 kV
Current range	0 - 5000 A	0 - 2000 A	0 - 5000 A	0 - 2000 A	0 - 5000 A	0 - 2000 A	0 - 2000 A
Sensor Opening	Standard	Wide Jaw			Standard	Wide Jaw	
Opening width	2.5"	3.86"			2.5"	3.86"	
Resolution							
Amps 0-99 A	0.1 A	-	-	-	0.1 A	-	-
Amps 0-199 A	-	1 A	1 A	1 A	-	1 A	1 A
Amps 200-1999 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A
Amps 2000-5000 A	0.01 kA	-	0.01 kA	-	0.01 kA	-	-
Accuracy	+1% +2 counts						
Operation							
Frequency	50 Hz (47 to 53 Hz)						
Control	One button operation						
Storage reading	-				4 current readings		
Mechanical							
Display	3.5 digit						
Housing	Shock & water resistant mold urethane						
Hot stick mounting	Universal shuck adapter (Hotstick not include)						
Battery	9 V alkaline						
Operation Temp.	-30 to 60 C degree						
Weight	1.14 kg						
Accessorie	Soft carrying case						
Option							
Hard carrying case	model 7-044						
Price	136,000.00	165,000.00	186,000.00	186,000.00	150,000.00	179,000.00	200,000.00



## OHMSTIK PLUS LIVE-LINE OHMMETER



- Measure microhm resistance on a live high voltage conductor
- Superior measurement compared to infrared thermography
- Measure exact resistance or compare to a nearby conductor
- Measures up to Nine sets of readings
- Measures resistance using AC current in the line
- Measures and displays both amps and micro-ohms
- Simple to use one button operation

Specification	Model	
	8-082XT Plus	8-084 Plus
Measurement		
Voltage range	500 kV	
Amps	1 - 1400 A	
Micro-Ohm	5 - 2500 $\mu\Omega$	
Resolution		
Amps 1-99 A	0.1 A	
Amps 100-1400 A	1 A	
Micro-Ohm 1-999	1	
Micro-Ohm 1000-2500	1.0	
Accuracy		
Amps	+1% +1 A	
Micro-Ohm absolute	+2% +2 $\mu\Omega$	
Micro-Ohm repeatability	+1% +2 $\mu\Omega$	
(Note: Accuracy is diminished if the current is less than 15 A while on 0-35 kV and when current is less than 50 A while on 36-500 kV)		
Operation		
Frequency	50 Hz (47 to 53 Hz)	
Control	One button operation	
Storage reading	9 readings	
Mechanical		
Sensor Opening	Standard	Wide Jaw
Opening width	2.5"	3.86"
Display	Graphic LCD	
Housing	Shock & water resistant mold urethane	
Hot stick mounting	Universal shuck adapter (Hotstick not include)	
Battery	9 V alkaline	
Operation Temp.	-30 to 60 C degree	
Weight	1.05 kg	1.41 kg
Option		
Hard carrying case	model 7-044	
Price	<b>412,000.00</b>	<b>430,000.00</b>



## HD ELECTRIC COMPANY



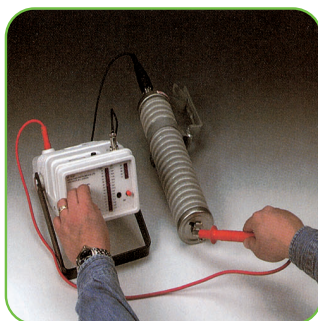
### INSULATOR TESTER

The Hi-Test Insulator Tester tests energized or de-energized suspension insulators for non-visible internal failures at any AC line voltage. These non-visible failures are known as Causes (OCR) operations and blown fuses. They are also a threat to line crew safety when performing energized maintenance.

#### FEATURES

- Universal spline for attachment to a hotstick.
- Built-in gigohmmeter applies a current limited 10k VDC potential across an insulator.
- Buzzer provides audible warning of bad insulator.
- LED meter display the condition of the insulator being tested.
- Powered by an 8 VDC rechargeable battery, lasts for several days of testing.
- Carrying case included.
- Weight – approximately 3 lbs. (1.36 kg).

Price : 560,000 ₪



### SURGE ARRESTER TESTER

The Hi-Test line of Surge Arrester Testers perform nondestructive testing of surge arresters for non-visible internal breakdown. These breakdowns are a known cause of blinking lights and RF/TVI. Arresters rated for 3kV to 18kV can be tested with this line of equipment.

#### FEATURES

- Voltage range 0-21 kVDC for use on arrester classes up to 15 kVAC  
0-30 kVDC for use on arrester classes up to 25 kVAC
- Voltage output is easily controlled and clearly displayed in 700 or 1000 volt steps (depending on model) on an LED meter
- Leakage current is displayed on a 50 microamp LED meter scale in microamp steps.
- Powered by a 12 VDC rechargeable gel cell battery.
- Equipped with pivoting handle and belt clip for portability and hand free use; weight approximately 3 lbs. (1.36 kg.)
- Includes mountable wall storage rack

Price : 470,000 ₪



### ROPE TESTER

The Hi-Test Rope Tester is designed to test hot line ropes, slings and straps for dielectric integrity at the time and location they are being used. Ropes with diameters ranging from 3/8" in diameter (9.5mm) to 1 1/2" in diameter (38mm) can be tested along with slings and straps of various size.

#### FEATURES

- Continuously test any length of rope or straps.
- Dielectric condition is displayed by Green (good) or Red (bad) LED.
- Powered by a 8VDC rechargeable battery.
- Audible buzzer sounds if defective rope is found.
- Small, portable and easy-to-use.

Price : 330,000 ₪



## HD ELECTRIC COMPANY



### Digital Voltage Indicators

The DVI Series Digital Voltage Indicators (DVI) are single point instruments designed to read the voltage on a conductor up to 0-500kV line-to-ground. The large LED readout is easy-to-read on the end of a long hotstick and can be used on overhead lines or in underground applications with an underground bushing probe. There are two versions of the DVI series. The DVI series indicates voltage by directly contacting conductors on transmission and distribution systems in both overhead and underground applications. The DVI series with Test Point Mode also indicates voltage on elbow test points.

#### Digital Voltage Indicator Features

Model DVI-100 : For use on system voltages up to 161kV (99kV line-to-ground maximum)

Model DVI-500 : For use on system voltages up to 800kV (500kV line-to-ground maximum)

- \* Large auto-ranging LED display indicates the line-to-ground voltage level
- \* Audible indication of voltage detected
- \* Voltage readout allows user to distinguish between nominal and induced voltage levels
- \* Use on overhead or underground applications (underground probe required)
- \* Built-in universal splice for standard hotstick attachment
- \* Powered by a field replaceable 9-volt alkaline battery
- \* Auto shut-off
- \* Voltage Detector Tester, available as a power source to test the DVI before and after use
  - o PT-DET (optional) for DVI-100
  - o PT-DVI (optional) for DVI-500

Price : Model DVI - 100 : 120,000 บาท (ไม่รวม Hot stick)

Model DVI - 500 : 170,000 บาท (ไม่รวม Hot stick)



## HD ELECTRIC COMPANY

### V-Watch Personal Voltage Detectors

Worn on the outside of your clothing at mid-torso, the V-Watch? provides that extra level of safety by detecting and alerting you to the presence of electrical fields or energized electrical equipment. In emergencies, you and your crews can move in safely to quickly restore power to your customers. The V-Watch is available in both a standard model and a pro model with a mute feature. Each comes in a tough nylon carrying case lanyard that is worn around the neck during use.



### Features and Benefits

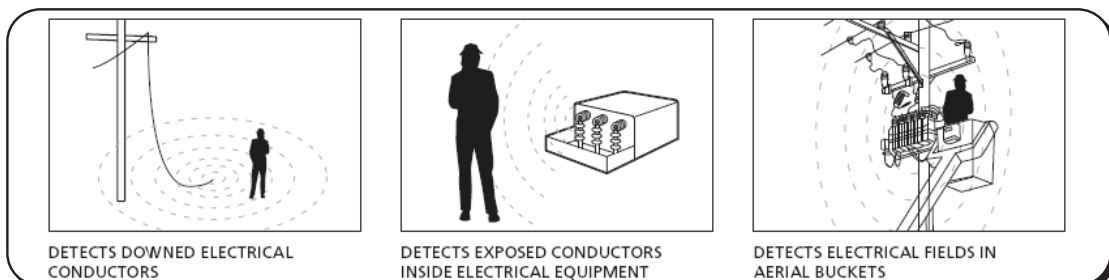
- Alerts user to proximity of high voltage
- Audible and visual alarms increase in frequency the closer the user gets to energized equipment
- Typical V-Watch warning distance is about 7 feet (2.13 m) from a 4kV AC conductor (see instruction manual for more details)• Provides another level of safety for storm restoration workers and first responders
- Low battery indicator• Field replaceable 9V battery
- Rugged protective housing
- Built-in self test
- Lightweight
- Carrying case lanyard
  - Electrically shielded
  - Storage case when the V-Watch is not in use
  - Lanyard allows user to adjust to optimum mid-torso position

### Specifications

- Sensitivity: Factory set at 50/60 Hertz sensing threshold (first beep).  
The V-Watch will only detect AC voltage. Do not use below 2400 Volts.
- Typical Warning Distance: 7 feet (2.13 m.) from a 4kV AC conductor.
- Operating Temperature: -20? to +120?F (-29? to 49?C)
- Battery: 9V alkaline 1604A, IEC 6LR61. Life is 2 years in storage, one year typical usage.
- Beeper Sound Pressure Level: 100 decibels
- Water Withstand: Protected from falling rain per IEC-529, Level 2
- Weight (with battery): 5.2 oz. (147 g.)
- Dimensions: 3.5" x 2.88" x 1.25" (8.89 cm. x 7.32 cm. x 3.18 cm.)

### Ordering Information

Model	DESCRIPTION
VW-20H	V-Watch Personal Voltage Detector with self-test function, yellow color, includes C-10 carrying case lanyard, 9V alkaline battery, and instruction booklet and instruction card.
VW-20H-K	V-Watch Kit includes VW-20H, C-10 carrying case lanyard and VW-K-BAG zippered carrying bag.
VWP-20H	V-Watch Pro Personal Voltage Detector with mute button (turns off audible for 5 minutes), self-test function, orange color, includes C-10 carrying case lanyard, 9V alkaline battery, instruction booklet and instruction card.
VWP-20H-K	V-Watch Pro Kit includes VWP-20H, C-10 carrying case lanyard and VW-K-BAG zippered carrying bag
C-10	Shielded carrying case with built-in lanyard for V-Watch Units
VW-K-BAG	Orange zippered carrying bag holds V-Watch unit, C-10 carrying case lanyard and instruction manual.



## ULTRASONIC DETECTION / INFRARED CAMERA

### Ultraprobe: Ultrasonic Detection

#### Application

Partial Discharge Inspection Equipment is deployed in all kinds of industry as follows :

- Utilities : electricity production and distribution
- Research and Development center : problems analysis
- Contractors : electrical services

ULTRAPROBE Ultrasound Inspection Systems have sensing high frequency emissions and use most any industry, including general manufacturing, processing, power generation and distributio printing and transportation. Typical applications include:

- Leak detection
- Aircraft inspection
- Bearing and mechanical inspection
- Electrical inspection such as arcing, tracking, corona and partial discharge detector



#### Model available

ULTRAPROBE 550 : analog ultrasonic inspection system

ULTRAPROBE 2000 : analog ultrasonic inspection system with frequency selection 20 kHz–100 kHz

ULTRAPROBE 3000 : digital ultrasonic inspection system

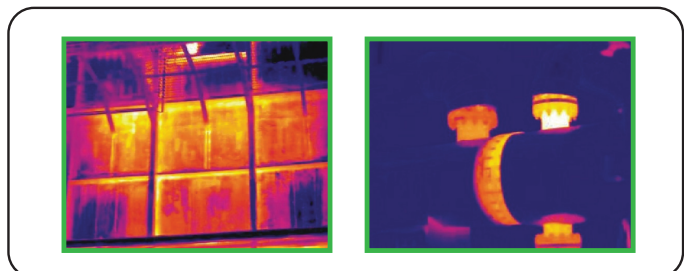
ULTRAPROBE 9000 : digital ultrasonic inspection system with frequency selection 20 kHz–100 kHz

ULTRAPROBE 10000 : advanced ultrasonic inspection system with analysis software

### Infrared Camera

#### SP Thermoview P9 Camera

- Video output: PAL / NTSC composite video
- Spots analysis and isotherm
- Memo recorder up to 60 seconds per file
- Over 3 hours battery life
- External display: 2.47 inch color LCD
- Digital video: 1600 x 1200 ware color
- Measuring range: -20C to +250C (Up to +350C optional)
- Storage: Internal memory and external on 2 GB Mini-SD
- Video recording up to 30 minutes
- Class 2 semiconductor laser
- Safety class: IP54





# ULIRVISION

## CORONA CAMERA

### ULIRVISION's Corona Camera

TD100 is the latest Solar-blind UV camera which enables optical detection of UV signal in full daylight. With the high sensitivity to UV in the solar blind range, it is a powerful tool for detecting weak UV signals from long distance.



#### Technical Specifications

##### UV - Optical properties

UV sensitivity	2.2x10 <sup>-18</sup> watt/cm <sup>2</sup>
Minimum discharge detection	1 pC @ 10m
Minimum RIV sensitivity	3.6 dBμV @ 1MHz
Spectral range	240-280nm
FOV	7.2° x 5.4°
Focus	Auto/Manual
Resolution	640 x 480
Zoom	2x, 4x(optional)
Focus range	1.5m~∞

##### Visible - Optical properties

Minimum visible light sensitivity	0.1 Lux
Zoom	12x(Digital)、10x(Optical)

##### Image Performance

Image display	Sun proof color LCD 5", 800x480
Display brightness	Over 450cd/m <sup>2</sup>
Image modes	Visible/UV/Combine
UV/Visible overlay accuracy	< 1 milliradian

##### Image Storage

Image format	JPG
Video format	AVI
Media download	Via Card Reader, USB, WIFI SD Card
Audio	Stored with image
Playback	Video/Pictures/Audio
SD card	Removable SD card 32GB
Software upgrade	Via files downloaded from website to SD Card
Storage capacity	1000+ images or >1 hr video/1GB

##### Output Interface

Video output	CVBS/HDMI(optional), PAL
Micro USB	Data transfer, communication
USB	USB WIFI

##### Power System

External power	DC: 9V~12V
Battery type	Rechargeable Li-Ion
Operating runtime	4hours

##### Physical Characteristics

Size	290mmx136mmx86mm
Weight	1.5kg



## ELECTRICAL MEASUREMENT INSTRUMENTS

### MEGABRAS INSTRUMENT



#### MD-5075x - 5kV INSULATION TESTER

- Insulation resistances up to 5 TΩ
- Digital & bar-graph reading
- Automated tests:
  - Absorption index
  - Polarization index
  - Capacitance
  - Leakage current
  - AC/DC voltmeter
- Chronometer up to 90 minutes
- Built-in printer
- Isolated RS-232 data port
- Software for data management
- Rechargeable battery

Price : 180,000 ₪



#### MI-15Kve - HIGH VOLTAGE MEGOHMMETER

- Insulation test up to 3.000.000MΩ
- 4 test voltages:
  - kV - 5 kV - 10 kV - 15 kV
- Guard terminal
- Rechargeable battery
- Multiple scales for precision improvement
- Portable, accurate & rugged
- IP-54 protection
- CE mark

Price : 360,000 ₪



#### MPK-2000e - 10A DIGITAL MICRO-OHMMETER

- Microprocessor controlled
- 0,1μΩ resolution
- 4 \_ digits reading
- Alphanumerical display
- Rechargeable battery
- 0,10% basic accuracy
- Kelvin-type (4-wires) measurement
- Offset free reading
- RS-232 data output
- IP-54 protection
- Resistance reading up to 200Ω

Price : 187,000 ₪



#### MPK-204e - 200A PORTABLE DIGITAL MICRO-OHMMETER

- Microprocessor controlled
- Alphanumerical display
- Resolution down to: 0,1 μΩ
- Resistance reading up to: 200 Ω
- Up to 200 A test current
- Kelvin-type (4 - wires) measurement
- Powered by internal battery or main supply
- Direct reading (up to 4<sup>1</sup>/<sub>2</sub> digits)
- Overheating protection
- Serial data output (RS-232)
- Lightweight (16 kg)

Price : 638,000 ₪



#### EM-4055 - EARTH RESISTANCE TESTER

- Earth resistance measurement
- Ground resistivity
- 0.01 Ω resolution
- Up to 20 kΩ resistance range
- Auto-range
- Alphanumerical display
- Rechargeable battery
- Built-in printer (optional)
- Direct reading of ground resistivity
- Up to 50 m selectable distance
- 4000 readings memory
- RS-232 data output
- IP-54 protection
- CE mark

Price : 169,000 ₪



#### MTD-20KWe - EARTH RESISTANCE TESTER

- Digital and automatic
- 3<sup>1</sup>/<sub>2</sub> digits display
- Earth resistance measurement
- 4 pole ground resistivity (Wenner's method)
- Spurious voltage measurement
- High Spurious voltage rejection
- Audible signal indicated anomalies in the current circuit
- Resolution: 0,01Ω
- Up to 20 kΩ resistance range
- Rechargeable battery
- Battery check

Price : 132,000 ₪