



HD ELECTRIC COMPANY

TEST, MEASUREMENT & SAFETY



PRODUCT CATALOG



HDElectricCompany.com



HD ELECTRIC COMPANY[®]

For over eighty years, HD Electric Company's mission has been to design and manufacture products which help our customers manage and deliver electric power in a safe and efficient manner. We accomplish this mission by designing products and providing solutions with a passion for excellence and innovation. At the core of our success are the relationships we've established with our customers and the reputation we've earned. From safety products for your line crews to products for controlling smart grid applications, HD Electric Company has the solution. HD Electric Company is ISO 9001:2015 certified.



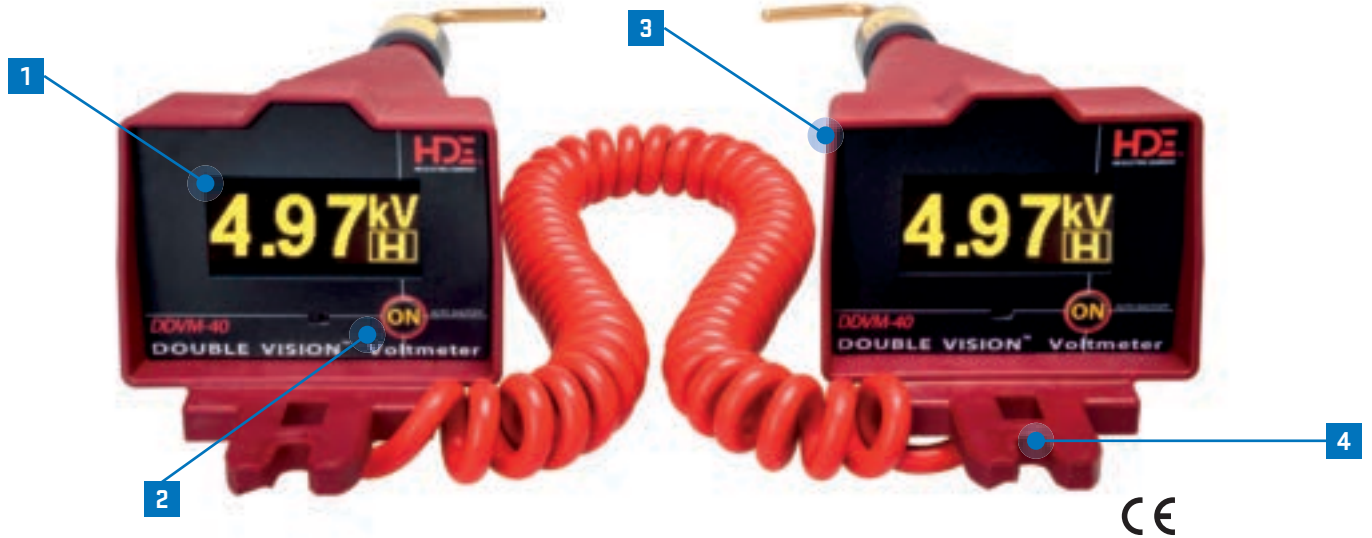


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DOUBLE VISION[®] DUAL DISPLAY DIGITAL VOLTMETER/PHASING SET

DDVM-40



- 1** OVERSIZED, DUAL DIGITAL LED DISPLAY
- 2** ONE BUTTON OPERATION FOR ALL FUNCTIONS
- 3** ULTRA-LIGHT DURABLE HOUSING
- 4** UNIVERSAL SPLINE AND SHOTGUN STICK CONNECTIONS



- Measures voltage and performs phasing operations from 5V to 40kV
- Two large displays are synchronized with the same voltage reading shown
- Versatile for overhead and underground applications
- Capacitive Test Point and Peak Hold modes
- Tests for leakage current in cable fault test mode with available accessory

DOUBLE VISION[®] DUAL DISPLAY DIGITAL VOLTMETER/PHASING SET

DDVM-40

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PROBES AND ACCESSORIES

Overhead Probes	Underground Dead Front Bushing Probes	Insulated Underground Probe	Underground Elbow Probe	Cable Fault Testing Bushing	Proof Tester [®] Voltmeter/Phaser Tester	Extension Hot Sticks
						
025-OLPS-5 (l); 025-OLPS-6 (r)	ASP-15/25 (l); ASP-35U (r)	GCP-1	EA-15/25	CFT-35	PT-5000B	Different Lengths and Telescopic Hot Sticks Available

SPECIFICATIONS

Model Number	DDVM-40
Operating Voltage Range	5V to 40kV line-to-ground or line-to-line
Operating Frequency	AC 25-1000Hz or DC
Accuracy	Within 1% of reading +/- 3 counts
LED Numeral Height	0.7" , indicates 3 digits
Battery	9V lithium or alkaline, one in each display housing
Battery Life	8 hours of continuous use under normal conditions

Operating Temperature Range	-20°F to +120°F (-29°C to +49°C)
Weight (Without Probes)	4.02 lbs. (1.82 kg)
Dimensions (Without Probes)	14" L x 4" H x 4 5/8" W (36 cm x 10 cm x 11 cm)
Coiled Cord Length	Retracted: 3.5' (1.7 cm); Extended: 12' (3.6 cm)
Cord Voltage Rating	Up to 20kV

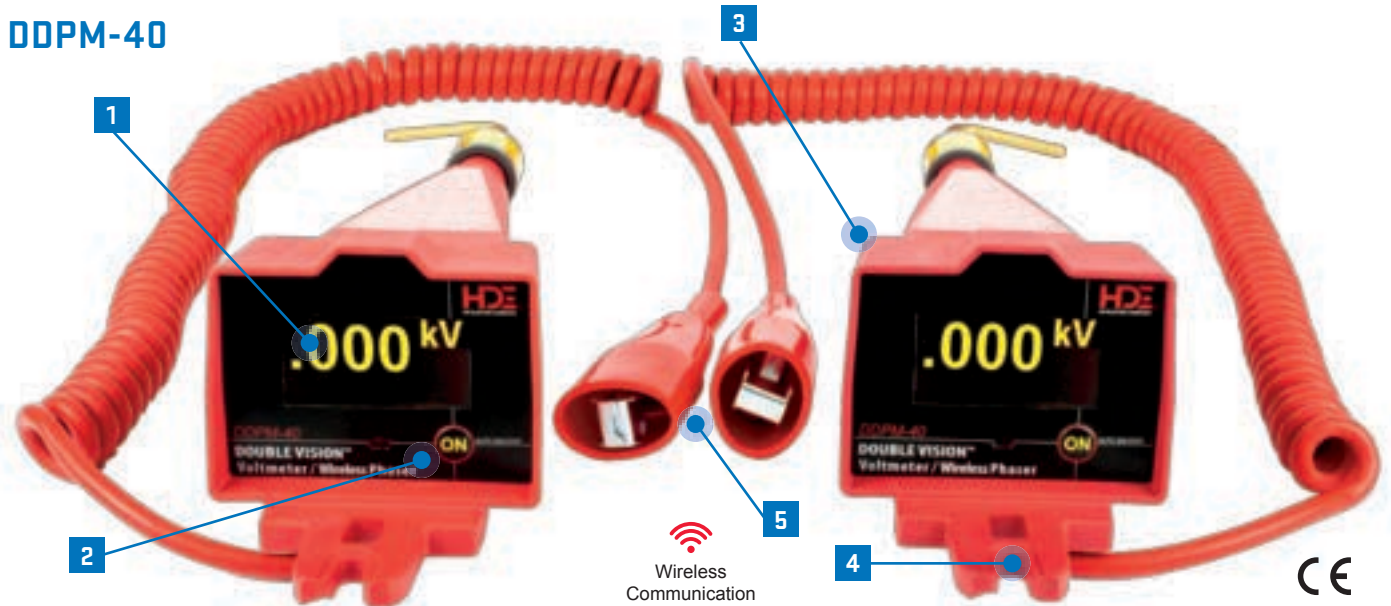
ORDERING INFORMATION

Part No.	Description
DDVM-40	Includes DDVM-40 with (2) 025-OLPS-5 Overhead Hook Probes and CS-DDVM Case
DDVM-40/K01	Kit Includes DDVM-40 with (2) 025-OLPS-5 Overhead Hook Probes, (1) PT-5000B Proof Tester Voltmeter Tester and CS-DDVM Case
DDVM-40/K02	Kit Includes DDVM-40 with (2) 025-OLPS-5 Overhead Hook Probes, (1) PT-5000B Proof Tester Voltmeter Tester, (2) ASP-15/25 UG Bushing Probes and CS-DDVM Case
DDVM-40/K03	Kit Includes DDVM-40 with (2) 025-OLPS-5 Overhead Hook Probes, (1) PT-5000B Proof Tester Voltmeter Tester, (2) ASP-15/25 UG Bushing Probes, (1) CFT-35 Cable Fault Tester and CS-DDVM Case
025-OLPS-5	Overhead Brass Hook Probe
025-OLPS-6	Overhead Brass Pigtail Probe
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold [®] and Cooper [®] (RTE) Bushings
GCP-1	General Contact Underground Distribution Probe
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe
CFT-35	Cable Fault Tester for Use up to 35kV System Voltages (21kV Phase-to-Ground)
PT-5000B	Proof Tester Voltmeter Tester Confirms Proper Operation – 9V Battery Operated – 5000V Output
S-4H	4' Extension Hot Stick with Universal Splines, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Splines, Foam Filled, 1-1/4" Diameter Fiberglass
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CS-DDVM	Plastic Carrying Case
The use of a hot stick is required. Other kits are available, contact HDE.	

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DOUBLE VISION[®] DUAL DISPLAY PHASING VOLTMETER

DDPM-40



- 1** OVERSIZED, DUAL DIGITAL LED DISPLAY
- 2** ONE-BUTTON OPERATION FOR ALL FUNCTIONS
- 3** ULTRA-LIGHT DURABLE HOUSING
- 4** UNIVERSAL SPLINE AND SHOTGUN STICK CONNECTIONS
- 5** HEAVY DUTY GROUND CORDS



FEATURES:

- Measures voltage from 5V to 43kV line-to-line
- Can be used individually as voltmeters or together for phasing operations up to 100 ft. (30m) apart
- Clear indication of phase angle
- Two LED displays are automatically synchronized during phasing operations
- Versatile for overhead and underground applications
- Capacitive Test Point and Peak Hold modes

DOUBLE VISION® DUAL DISPLAY PHASING VOLTMETER

DDPM-40

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PROBES AND ACCESSORIES

Overhead Probes	Underground Dead Front Bushing Probes	Insulated Underground Probe	Underground Elbow Probe	Proof Tester® Voltmeter/Phaser Tester	Extension Hot Sticks
					
025-OLPS-5 (l); 025-OLPS-6 (r)	ASP-15/25 (l); ASP-35U (r)	GCP-1	EA-15/25	PT-5000B	Different Lengths and Telescopic Hot Sticks Available

SPECIFICATIONS

Model Number	DDPM-40
Operating Voltage Range	5V-43kV line-to-line, 5V-25kV line-to-ground, AC 25-1000Hz or DC
Phasing Frequency	50/60Hz
Accuracy	Within 1% of reading +/- 3 counts (line-to-ground & line-to-line measurements)
LED Numeral Height	0.7", indicates 3 digits
Battery	9V lithium or alkaline, one in each display housing

Battery Life	8 hours of continuous use under normal conditions
Operating Temperature Range	-20°F to +120°F (-29°C to +49°C)
Weight (Without Probes)	2.25 lbs. (1.02 kg) each unit
Dimensions (Without Probes)	14" L x 4.1" H x 4.6" W (36 cm x 10 cm x 12 cm)
Coiled Cord Length	Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m)
Cord Voltage Rating	Up to 20kV

ORDERING INFORMATION

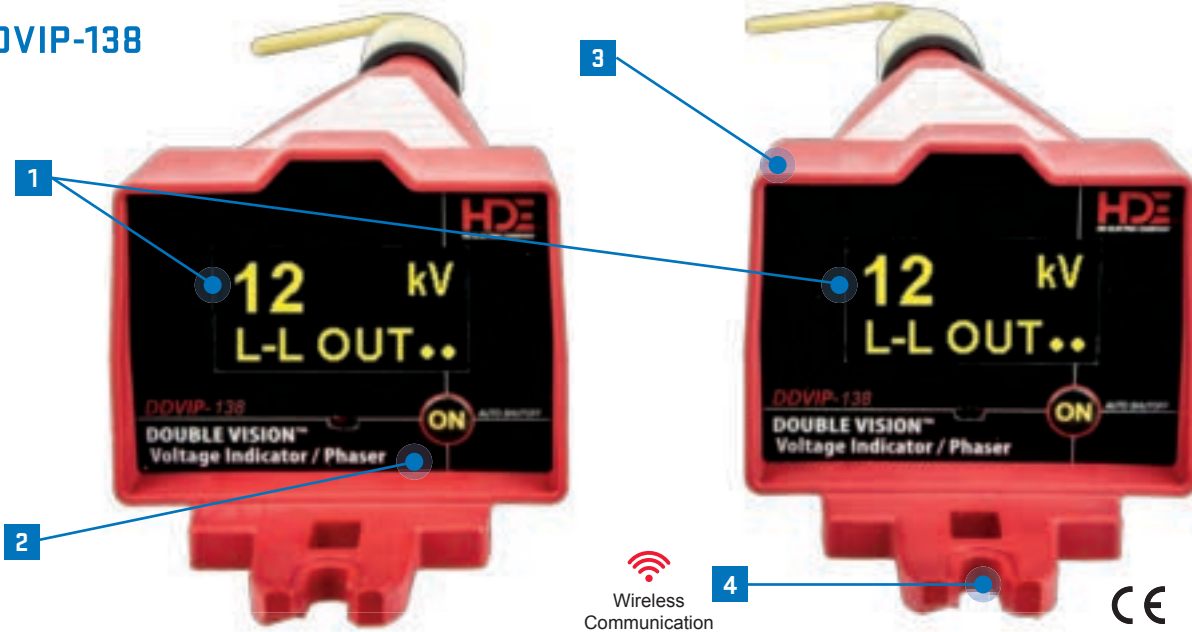
Part #	Description	Included Accessories					
		025-OLPS-5	ASP-15/25	ASP-35U	PT-5000B	CS-SVM	CS-DDVM
DDPM-40S	Dual Display Wireless Phasing Meter 5V-43kV, OH Single Kit, Base	1	0	0	0	1	0
DDPM-40S/K01	Dual Display Wireless Phasing Meter 5V-43kV, OH Single Kit 1	1	0	0	1	1	0
DDPM-40S/K02	Dual Display Wireless Phasing Meter 5V-43kV, OH/UG Single Kit 1	1	1	0	1	1	0
DDPM-40S/K03	Dual Display Wireless Phasing Meter 5V-43kV, OH/UG Single Kit 2	1	1	1	1	0	1
DDPM-40	Dual Display Wireless Phasing Meter 5V-43kV, OH Kit, Base	2	0	0	0	0	1
DDPM-40/K01	Dual Display Wireless Phasing Meter 5V-43kV, OH Kit 1	2	0	0	1	0	1
DDPM-40/K02	Dual Display Wireless Phasing Meter 5V-43kV, OH/UG Kit 1	2	2	0	1	0	1
DDPM-40/K03	Dual Display Wireless Phasing Meter 5V-43kV, OH/UG Kit 2	2	2	2	1	0	1
025-OLPS-5	Overhead Brass Hook Probe						
025-OLPS-6	Overhead Brass Pigtail Probe						
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings						
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold® and Cooper® (RTE) Bushings						
GCP-1	General Contact Underground Distribution Probe						
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe						
PT-5000B	Proof Tester Voltmeter Tester - Confirms Proper Operation						
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass						
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass						
CS-SVM	Plastic Carrying Case for DDPM-40S and Kits						
CS-DDVM	Plastic Carrying Case for DDPM-40 and Kits						

The use of a hot stick is required. Other kits and telescopic hot sticks are available, contact HDE.

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DOUBLE VISION[®] DUAL DISPLAY VOLTAGE INDICATING PHASER

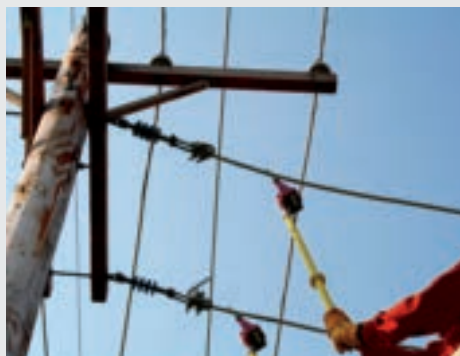
DDVIP-138



- 1** OVERSIZED, DUAL LED DISPLAY
- 2** ONE-BUTTON OPERATION FOR ALL FUNCTIONS
- 3** ULTRA-LIGHT DURABLE HOUSING
- 4** UNIVERSAL SPLINE AND SHOTGUN STICK CONNECTIONS

FEATURES:

- Measures voltage from 100V to 138kV line-to-line
- Can be used individually as voltage indicators or together for phasing operations up to 100 ft. (30m) apart
- Two LED displays are automatically synchronized during phasing operations
- Clear in-phase and out-of-phase indication
- Versatile for overhead and underground applications
- Capacitive Test Point and Peak Hold modes



DOUBLE VISION® DUAL DISPLAY VOLTAGE INDICATING PHASER

DDVIP-138

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PROBES AND ACCESSORIES

Overhead Probes	Underground Dead Front Bushing Probes	Insulated Underground Probe	Underground Elbow Probe	Proof Tester® Voltmeter/Phaser Tester	Extension Hot Sticks
				 CE	
025-OLPS-5 (l); 025-OLPS-6 (r)	ASP-15/25 (l); ASP-35U (r)	GCP-1	EA-15/25	PT-DDVIP	Different Lengths and Telescopic Hot Sticks Available

SPECIFICATIONS

Model Number	DDVIP-138
Operating Voltage Range	100V-138kV line-to-line, 100V-80kV line-to-ground, AC 50/60Hz
Phasing Frequency	50/60Hz
Accuracy	Within 15%, dependent on geometry
LED Numeral Height	0.7" – indicates 3 digits
Battery	9V lithium or alkaline, one in each display housing

Battery Life	8 hours of continuous use under normal conditions
Operating Temperature Range	-20°F to +120°F (-29°C to +49°C)
Weight (Each Unit, Without Probe)	1.6 lbs. (0.7 kg)
Dimensions (Without Probes)	14" L x 4.6" W x 4.1" H (36 cm x 12 cm x 10 cm)

ORDERING INFORMATION

Part #	Description	Included Accessories					
		025-OLPS-5	ASP-15/25	ASP-35U	PT-DDVIP	CS-SVM	CS-DDVM
DDVIP-138S	Dual Display Wireless Voltage Indicating Phaser 100V-138kV, OH Single Kit, Base	1	0	0	0	1	0
DDVIP-138S/K01	Dual Display Wireless Voltage Indicating Phaser 100V-138kV, OH Single Kit 1	1	0	0	1	1	0
DDVIP-138S/K02	Dual Display Wireless Voltage Indicating Phaser 100V-138kV, OH/UG Single Kit 1	1	1	0	1	1	0
DDVIP-138S/K03	Dual Display Wireless Voltage Indicating Phaser 100V-138kV, OH/UG Single Kit 2	1	1	1	1	0	1
DDVIP-138	Dual Display Wireless Voltage Indicating Phaser 100V-138kV, OH Kit, Base	2	0	0	0	0	1
DDVIP-138/K01	Dual Display Wireless Voltage Indicating Phaser 100V-138kV, OH Kit 1	2	0	0	1	0	1
DDVIP-138/K02	Dual Display Wireless Voltage Indicating Phaser 100V-138kV, OH/UG Kit 1	2	2	0	1	0	1
DDVIP-138/K03	Dual Display Wireless Voltage Indicating Phaser 100V-138kV, OH/UG Kit 2	2	2	2	1	0	1
025-OLPS-5	Overhead Brass Hook Probe						
025-OLPS-6	Overhead Brass Pigtail Probe						
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings						
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold® and Cooper® (RTE) Bushings						
GCP-1	General Contact Underground Distribution Probe						
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe						
PT-DDVIP	Proof Tester Voltage Indicating Phaser Tester - Confirms Proper Operation						
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass						
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass						
CS-SVM	Plastic Carrying Case for DDVIP-138S and Kits						
CS-DDVM	Plastic Carrying Case for DDVIP-138 and Kits						

The use of a hot stick is required. Other kits and telescopic hot sticks are available, contact HDE.

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SINGLE STICK DIGITAL VOLTMETER

SVM-25



- 1** OVERSIZED, DIGITAL LED DISPLAY
- 2** ONE-BUTTON OPERATION FOR TEST MODES
- 3** ULTRA-LIGHT DURABLE HOUSING
- 4** UNIVERSAL SPLINE AND SHOTGUN STICK CONNECTIONS
- 5** HEAVY DUTY GROUND CORD

FEATURES:

- Measures voltage from 5V to 25kV line-to-line
- Large, easy to read LED display
- Versatile for overhead and underground applications
- Capacitive Test Point and Peak Hold modes



PROBES AND ACCESSORIES

Overhead Probes	Underground Dead Front Bushing Probe	Insulated Underground Probe	Underground Elbow Probe	Proof Tester® Voltmeter/Phaser Tester	Extension Hot Sticks
					
025-OLPS-5 (l); 025-OLPS-6 (r)	ASP-15/25	GCP-1	EA-15/25	PT-5000B	Different Lengths and Telescopic Hot Sticks Available

SPECIFICATIONS

Model Number	SVM-25
Operating Voltage Range	5V to 25kV line-to-ground
Operating Frequency	25-1000Hz
Accuracy	Within 1% of reading +/- 3 counts
LED Numeral Height	0.7", indicates 3 digits
Battery	9V lithium or alkaline
Battery Life	8 hours continuous use under normal operating conditions

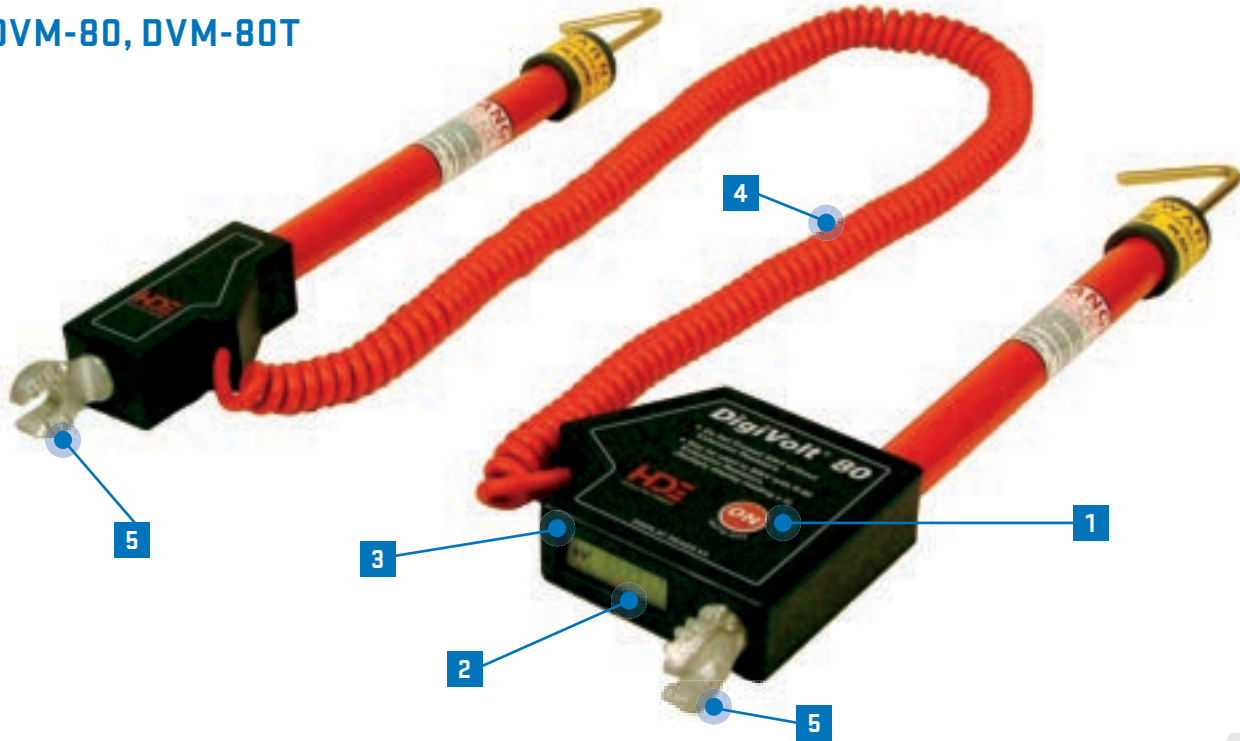
Operating Temperature Range	-20°F to +120°F (-29°C to +49°C)
Weight (Without Probes)	2.25 lbs. (1.02 kg)
Dimensions (Without Probes)	14" L x 4.6" W x 4.1" H (36 cm x 12 cm x 10 cm)
Coiled Cord Length	Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m)
Cord Voltage Rating	Up to 20kV

ORDERING INFORMATION

Part No.	Description
SVM-25	Includes SVM-25, (1) 025-OLPS-5 Overhead Brass Hook Probe and CS-SVM Case
SVM-25/K01	Kit Includes SVM-25, (1) 025-OLPS-5 Overhead Brass Hook Probe, (1) PT-5000B Proof Tester Voltmeter Tester and CS-SVM Case
SVM-25/K02	Kit Includes SVM-25, (1) 025-OLPS-5 Overhead Brass Hook Probe, (1) ASP-15/25 UG Bushing Probe, (1) PT-5000B Proof Tester Voltmeter Tester and CS-SVM Case
025-OLPS-5	Overhead Brass Hook Probe
025-OLPS-6	Overhead Brass Pigtail Probe
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
GCP-1	General Contact Underground Distribution Probe
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe
PT-5000B	Proof Tester Voltmeter Tester Confirms Proper Operation. 9V Battery Operated. 5000V Output
S-4H	4' Extension Hot Stick with Universal Splines, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Splines, Foam Filled, 1-1/4" Diameter Fiberglass
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CS-SVM	Plastic Carrying Case
B-30	Carrying Bag with Fluorescent/Reflective Safety Stripes and Carrying Strap
The use of a hot stick is required. Other kits are available, contact HDE.	

DIGIVOLT[®] DIGITAL VOLTMETERS

DVM-80, DVM-80T



1 ONE-BUTTON OPERATION FOR ALL FUNCTIONS

2 AUTO-RANGING LCD DISPLAY

3 BACK LIT DISPLAY FOR LOW LIGHT CONDITIONS










4 COILED CONNECTING CORD

5 UNIVERSAL SPLINE CONNECTION

FEATURES:

- Measures voltage and performs phasing operations from 50V to 40kV and up to 80kV with add-on resistors
- Provides consistent high accuracy voltage measurements – within 1% of reading
- Auto-ranging – no settings required
- Capacitive Test Point mode available
- Auto-shutoff and low battery indicator features
- Versatile for overhead and underground applications

PROBES AND ACCESSORIES

Overhead Probes	Add-On Resistor	Underground Dead Front Bushing Probes	Insulated Underground Probe	Underground Elbow Probe	Cable Fault Testing Bushing	Proof Tester® Voltmeter/Phaser Tester	Extension Hot Sticks	Hot Stick Adapter
								
025-OLPS-5 (l); 025-OLPS-6 (r)	R-80	ASP-15/25 (l); ASP-35U (r)	GCP-1	EA-15/25	CFT-35	PT-5000B	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	DVM-80 and DVM-80T
Operating Voltage Range	50V - 40kV up to 80kV with add-on resistors (multiply reading by a factor of two)
Operating Frequency	25-1000Hz AC/DC
Accuracy	Within 1% of reading +/- 3 counts (line-to-ground measurements)
Accuracy With Add-On Resistors	Within 2% of reading +/- 3 counts (line-to-ground & line-to-line measurements)
LCD Numeral Height	0.4", indicates 3.5 digits
Battery	9V lithium or alkaline

Battery Life	17 hours continuous use under normal operating conditions
Operating Temperature Range	-13°F to +131°F (-25°C to +55°C)
Weight (Without Probes)	2.25 lbs. (1.02 kg)
Dimensions (Without Probes)	15" (38 cm)
Display Housing Dimensions	5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm)
Diameter Of Fiberglass	1" (2.54 cm)
Coiled Cord Length	Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m)
Cord Voltage Rating	Up to 10kV

ORDERING INFORMATION

Part #	Description	Accessories Included			
		025-OLPS-5	R-80	PT-5000B	CS-DVM
DVM-80	Dual Stick Phasing Voltmeter, 50V-40kV	2	—	—	1
DVM-80/K02	Dual Stick Phasing Voltmeter, 50V-40kV (up to 80kV with Resistors)	2	2	1	1
DVM-80/K03	Dual Stick Phasing Voltmeter, 50V-40kV (up to 80kV with Resistors)	2	2	—	1
DVM-80T	Dual Stick Phasing Voltmeter w/Capacitive Test Point Mode, 50V-40kV	2	—	—	1
DVM-80T/K02	Dual Stick Phasing Voltmeter w/Capacitive Test Point Mode, 50V-40kV (up to 80kV with Resistors)	2	2	1	1
DVM-80T/K03	Dual Stick Phasing Voltmeter w/Capacitive Test Point Mode, 50V-40kV (up to 80kV with Resistors)	2	2	—	1

Part #	Description
025-OLPS-5	Overhead Brass Hook Probe
025-OLPS-6	Overhead Brass Pigtail Probe
R-80	Add-On Resistor Stick for DVM-80 Series (Pair Required)
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold® and Cooper® (RTE) Bushings
GCP-1	General Contact Underground Distribution Probe
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe
CFT-35	Cable Fault Tester for Use up to 35kV System Voltages (21kV Phase-to-Ground)
PT-5000B	Proof Tester Voltmeter Tester Confirms Proper Operation. 9V Battery Operated. 5000V Output
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
HSA-2500	Universal Hot Stick Adapter (Shotgun)
CS-DVM	Plastic Carrying Case

The use of a hot stick is required. Other kits are available, contact HDE.

DIGIVOLT® DIGITAL VOLTMETER

DVM-80UVM / DVM-80UVK



1 ONE-BUTTON OPERATION FOR ALL FUNCTIONS

2 BACKLIT DISPLAY FOR EASY READING

3 COILED CONNECTING CORD










4 UNIVERSAL SPLINE CONNECTIONS



FEATURES:

- Measures voltage and performs phasing operations from 50V to 40kV and up to 80kV with add-on resistors
- Provides consistent high accuracy voltage measurements – within 1% of reading
- Auto-ranging – no settings required
- Capacitive Test Point and Peak Hold modes
- Auto-shutoff and low battery indicator features
- Versatile for overhead and underground applications

PROBES AND ACCESSORIES

Overhead Probes	Add-On Resistor	Underground Dead Front Bushing Probes	Insulated Underground Probe	Underground Elbow Probe	Cable Fault Testing Bushing	Proof Tester [®] Voltmeter/Phaser Tester	Extension Hot Sticks	Hot Stick Adapter
								
025-OLPS-5 (l); 025-OLPS-6 (r)	R-80	ASP-15/25 (l); ASP-35U (r)	GCP-1	EA-15/25	CFT-35	PT-5000B	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	DVM-80UVM
Operating Voltage Range	5V - 40kV up to 80kV with add-on resistors (multiply reading by a factor of two)
Operating Frequency	25-1000Hz AC/DC
Accuracy	Within 1% of reading +/- 3 counts (line-to-ground and line-to-line measurements)
Accuracy With Add-On Resistors	Within 2% of reading +/- 3 counts (line-to-ground & line-to-line measurements)
LCD Numeral Height	0.4", indicates 3.5 digits
Battery	9V lithium or alkaline

Battery Life	17 hours continuous use under normal operating conditions
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Weight (Without Probes)	2.25 lbs. (1.02 kg)
Dimensions (Without Probes)	15" (38 cm)
Display Housing Dimensions	5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm)
Diameter Of Fiberglass	1" (2.54 cm)
Coiled Cord Length	Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m)
Cord Voltage Rating	Up to 10kV

ORDERING INFORMATION

Part No.	Description
DVM-80UVK	Universal Voltmeter Kit Includes DVM-80UVM, (2) 025-OLPS-5 Overhead Brass Hook Probes, (2) R-80 Resistor Sticks, (2) ASP-15/25 UG Bushing Probes, (1) CFT-35 Cable Fault Tester, (2) HSA-2500 Universal Hot Stick Adapters, (1) PT-5000B Proof Tester Voltmeter Tester and B-12 Carrying Bag
DVM-80UVM	Dual Stick Phasing Voltmeter w/Peak Hold and Capacitive Test Point Mode, 5V-40kV (up to 80kV When Used with Optional R-80 Resistors); Includes (2) 025-OLPS-5 Overhead Brass Hook Probes and CS-DVM Case
025-OLPS-5	Overhead Brass Hook Probe (Included in Kit)
025-OLPS-6	Overhead Brass Pigtail Probe
R-80	Add-On Resistor Stick for DVM-80UVM (Pair Required - Included in Kit)
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings (Included in Kit)
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold [®] and Cooper [®] (RTE) Bushings
GCP-1	General Contact Underground Distribution Probe
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe
CFT-35	Cable Fault Tester for Use up to 35kV System Voltages / 21kV Phase-to-Ground (Included in Kit)
PT-5000B	Proof Tester Voltmeter Tester Confirms Proper Operation. 9V Battery Operated. 5000V Output (Included in Kit)
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun - Included in Kit)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
B-12	Soft Sided Carrying Bag with Hanging Hook (Included in Kit)
CS-DVM	Plastic Carrying Case for DVM-80UVM
The use of a hot stick is required.	

DIGIVOLT[®] SINGLE STICK DIGITAL VOLTMETER

DVM-25T




- 1 ONE-BUTTON OPERATION FOR ALL FUNCTIONS**
- 2 BACK LIT DISPLAY FOR LOW LIGHT CONDITIONS**
- 3 HEAVY DUTY GROUND CORD**
- 4 UNIVERSAL SPLINE CONNECTION**

FEATURES:

- Measures voltage from 50V to 25kV
- Auto-ranging - no settings required
- Capacitive Test Point mode
- Auto-shutoff and low battery indicator features
- Versatile for overhead and underground applications

PROBES AND ACCESSORIES

Overhead Probes	Underground Dead Front Bushing Probe	Insulated Underground Probe	Underground Elbow Probe	Proof Tester® Voltmeter/Phaser Tester	Extension Hot Sticks	Hot Stick Adapter
						
025-OLPS-5 (l); 025-OLPS-6 (r)	ASP-15/25	GCP-1	EA-15/25	PT-5000B	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	DVM-25T
Operating Voltage Range	50V - 25kV
Operating Frequency	25-1000Hz AC/DC
Accuracy	Within 1% of reading +/- 3 counts (line-to-ground measurements)
LCD Numeral Height	0.4", indicates 3.5 digits
Battery	9V lithium or alkaline
Battery Life	17 hours continuous use under normal operating conditions

Operating Temperature Range	-13°F to +131°F (-25°C to +55°C)
Weight (Without Probes)	2 lbs. (0.9 kg)
Dimensions (Without Probes)	15" (38 cm)
Display Housing Dimensions	5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm)
Diameter of Fiberglass	1" (2.54 cm)
Coiled Cord Length	Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m)
Cord Voltage Rating	Up to 10kV

ORDERING INFORMATION

Part No.	Description
DVM-25T	Single Stick Voltmeter w/Capacitive Test Point Mode, 50V-25kV; Includes (1) 025-OLPS-5 Overhead Brass Hook Probe and CS-DVM Case
025-OLPS-5	Overhead Brass Hook Probe
025-OLPS-6	Overhead Brass Pigtail Probe
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
GCP-1	General Contact Underground Distribution Probe
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe
PT-5000B	Proof Tester Voltmeter Tester Confirms Proper Operation. 9V Battery Operated. 5000V Output
S-4H	4' Extension Hot Stick with Universal Splines, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Splines, Foam Filled, 1-1/4" Diameter Fiberglass
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
HSA-2500	Universal Hot Stick Adapter (Shotgun)
CS-DVM	Plastic Carrying Case

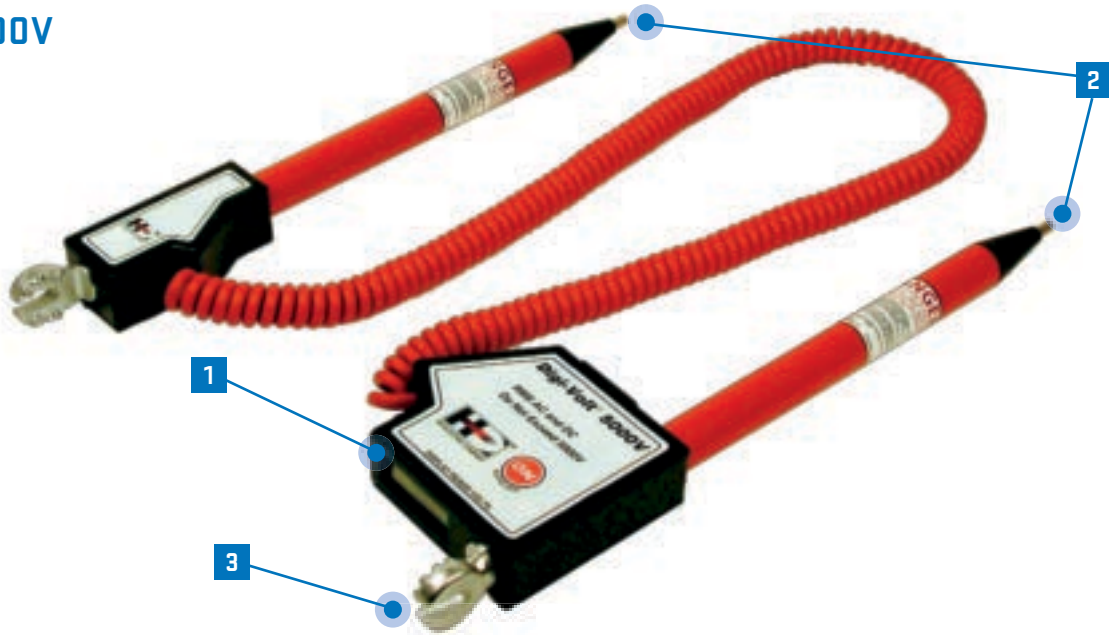
The use of a hot stick is required. Other kits are available, contact HDE.



HD ELECTRIC COMPANY

DIGIVOLT[®] LOW VOLTAGE DIGITAL VOLTMETER/PHASING SET

DVM-5000V






- 1** BACK LIT LCD DISPLAY
- 2** FIXED DIRECT CONTACT PROBES
- 3** UNIVERSAL SPLINE CONNECTION

FEATURES:

- Measures voltage from 10V to 5,000V
- Complies with NFPA-70E OSHA standard for arc flash protection
- Displays 4 digits, showing the true RMS voltage
- Versatile for overhead and underground applications

PROBES AND ACCESSORIES

Proof Tester [®] Voltmeter/Phaser Tester	Extension Hot Sticks	Hot Stick Adapter
		
PT-500	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	DVM-5000V
Operating Voltage Range	10V – 5,000V
Operating Frequency	50-1000Hz AC/DC
Accuracy	Within 1% of reading +/- 5 counts (line-to-ground & line-to-line measurements)
LCD Numeral Height	0.4", indicates 3.5 digits
Battery	9V lithium or alkaline
Battery Life	17 hours continuous use under normal operating conditions

Operating Temperature Range	-13°F to +131°F (-25°C to +55°C)
Weight (Without Probes)	2.25 lbs. (1.02 kg)
Dimensions	15" (38 cm)
Display Housing Dimensions	5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm)
Diameter of Fiberglass	1" (2.54 cm)
Coiled Cord Length	Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m)
Cord Voltage Rating	Up to 10kV

ORDERING INFORMATION

Part No.	Description
DVM-5000V	Low Voltage Phasing Voltmeter with Fixed Contact Probes, 10V-5,000V; Includes CS-DVM5000V Case
DVM-5000V/K01	Low Voltage Phasing Voltmeter with Fixed Contact Probes, 10V-5,000V; Includes (2) UTH-8, (1) PT-500 Proof Tester Voltmeter Tester and CS-DVM Case
PT-500	Voltmeter Proof Tester Confirms Proper Operation. 9V Battery Operated. 500V Output
UTH-8	Universal Tool Handle
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
HSA-2500	Universal Hot Stick Adapter (Shotgun)
CS-DVM5000V	Plastic Carrying Case for DVM-5000V
CS-DVM	Plastic Carrying Case
The use of a hot stick is required. Other kits are available, contact HDE.	

MARK[®] AND EM SERIES ANALOG VOLTMETERS/PHASING SETS

MARK-I THROUGH MARK-VII, EM-1 THROUGH EM-3



- 1** LARGE 3" METER FACE FOR EASY READING
- 2** MULTIPLE SCALES ASSIST IN AVOIDING MISREADS
- 3** COILED CONNECTING CORD (OPTIONAL CORD REEL AVAILABLE)
- 4** STRAIN RELIEFS FOR MAXIMUM CORD LIFE

FEATURES:

- Dual stick MARK series measure voltage and perform phasing operations from 0V to 75kV
- Single stick EM series measure voltage from 0V to 25kV
- No batteries or calibration required
- Determines in-phase or out-of-phase
- Determines underground cable faults
- Discharges underground cables and other equipment that hold capacitive charges
- Versatile for overhead and underground applications

MARK® AND EM SERIES ANALOG VOLTMETERS/PHASING SETS

MARK-I THROUGH MARK-VII, EM-1 THROUGH EM-3

HDElectricCompany.com

PROBES AND ACCESSORIES

Overhead Probes	Add-On Resistors	Underground Dead Front Bushing Probes	Insulated Underground Probe	Underground Elbow Probe	Cable Fault Testing Bushing	Proof Tester® Voltmeter/Phaser Tester	Extension Hot Sticks	Hot Stick Adapter
025-OLPS-5 (l); 025-OLPS-6 (r)	R-45 R-75	ASP-15/25 (l); ASP-35U (r)	GCP-1	EA-15/25	CFT-35	PT-5000B	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Operating Frequency	Measures DC through 1000Hz AC RMS	Model	Length with Probe(s)	Weight with Hook Probe(s)	Model	Length with Probe(s)	Weight with Hook Probe(s)
Accuracy	3% of full scale	MARK-I-S	23" (58 cm)	4.9 lbs. (2.2 kg)	MARK-VIII	26.5" (67 cm)	6.2 lbs. (2.8 kg)
Meter Face Size	3" (7.6 cm)	MARK-II-S	32" (81 cm)	5.7 lbs. (2.6 kg)	MARK-IX	27" (69 cm)	5.2 lbs. (2.4 kg)
Battery	None	MARK-III-S	23" (58 cm)	4.9 lbs. (2.2 kg)	MARK-XI	27" (69 cm)	5.2 lbs. (2.4 kg)
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)	MARK-IV	23" (58 cm)	4.9 lbs. (2.2 kg)	MARK-XII	31" (79 cm)	5.7 lbs. (2.6 kg)
Meter Housing Dimensions	5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm)	MARK-V	23" (58 cm)	4.9 lbs. (2.2 kg)	EM-1	28" (71 cm)	3.7 lbs. (1.7 kg)
Diameter of Fiberglass	1" (2.54 cm)	MARK-VI	23" (58 cm)	4.9 lbs. (2.2 kg)	EM-2	34" (86 cm)	4.0 lbs. (1.8 kg)
Coiled Cord Length	Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m)	MARK-VII	23" (58 cm)	4.9 lbs. (2.2 kg)	EM-3	30" (76 cm)	3.9 lbs. (1.8 kg)
Cord Voltage Rating	Up to 10kV						

ORDERING INFORMATION

Part #	Description	Accessories Included								
		025-OLPS-5	R-45	R-75	ASP-15/25	PT-5000B	S-4H	S-6H	B-6	CM-100/V
MARK-I-S	Dual Stick Voltmeter, Single Range, 0-15kV	2	—	—	—	—	—	—	—	1
MARK-I-S/KIT	Dual Stick Voltmeter, Single Range, 0-15kV	2	—	—	—	—	2	—	1	1
MARK-II-S	Dual Stick Voltmeter, Dual Range, 0-15/0-45kV	2	—	—	—	—	—	—	—	1
MARK-II/KIT	Dual Stick Voltmeter, Dual Range, 0-15/0-45kV	2	—	—	2	1	—	2	1	1
MARK-II-S/KIT	Dual Stick Voltmeter, Dual Range, 0-15/0-45kV	2	—	—	—	—	—	2	1	1
MARK-III-S	Dual Stick Voltmeter, Dual Range, 0-15/0-75kV	2	—	2	—	—	—	—	—	1
MARK-III-S/KIT	Dual Stick Voltmeter, Dual Range, 0-15/0-75kV	2	—	2	—	—	—	2	1	1
MARK-IV	Dual Stick Voltmeter, Single Range, 0-5kV	2	—	—	—	—	—	—	—	1
MARK-V	Dual Stick Voltmeter, Dual Range, 0-5/0-15kV	2	—	—	—	—	—	—	—	1
MARK-V/KIT	Dual Stick Voltmeter, Dual Range, 0-5/0-15kV	2	—	—	2	1	2	—	1	1
MARK-VI	Dual Stick Voltmeter, Triple Range, 0-5/0-15/0-45kV	2	2	—	—	—	—	—	—	1
MARK-VII	Dual Stick Voltmeter, Dual Range, 0-1/0-15kV	2	—	—	—	—	—	—	—	1
MARK-VIII	Single/Dual Stick Voltmeter, Single Range, 0-15kV, Convertible to 1 Stick/2 Stick	2	—	—	—	—	—	—	—	1
MARK-IX	Dual Stick Voltmeter, Single Range, 0-25kV	2	—	—	—	—	—	—	—	1
MARK-XI	Dual Stick Voltmeter, Dual Range, 0-5/0-25kV	2	—	—	—	—	—	—	—	1
MARK-XII	Dual Stick Voltmeter, Single Range, 0-40kV	2	—	—	—	—	—	—	—	1
EM-1	Single Stick Voltmeter, Single Range, 0-16kV	1	—	—	—	—	—	—	—	—
EM-2	Single Stick Voltmeter, Single Range, 0-25kV	1	—	—	—	—	—	—	—	—
EM-3	Single Stick Voltmeter, Dual Range, 0-1/0-15kV	1	—	—	—	—	—	—	—	—

Part #	Description
025-OLPS-5	Overhead Brass Hook Probe
025-OLPS-6	Overhead Brass Pigtail Probe
R-45	Add-on Resistor Stick for MARK-VI (pair required)
R-75	Add-on Resistor Stick for MARK-III-S (pair required)
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold® and Cooper® (RTE) Bushings
GCP-1	General Contact Underground Distribution Probe
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe
CFT-35	Cable Fault Tester for Use up to 35kV System Voltages (21kV Phase-to-Ground)
PT-5000B	Proof Tester Voltmeter Tester Confirms Proper Operation. 9V Battery Operated. 5000V Output

Part #	Description
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CM-100/V	Metal Carrying Case for MARK Series Voltmeters, EM-1 and EM-3
C-2	Aluminum Carrying Case for EM-2
C-5	Aluminum Carrying Case for MARK Series Voltmeters, EM-1 and EM-3

The use of a hot stick is required. Other kits and telescopic hot sticks are available. Optional cord reel available for MARK Series Voltmeters.

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TAG[®] WIRELESS PHASER

TAG-5000



- 1 WIRELESS, NO CONNECTING CORD**
- 2 BEEPS AND FLASHING LIGHTS PROVIDE IN-PHASE/OUT-OF-PHASE INDICATIONS**
- 3 ALL-CHECK[®] SELF-TEST FEATURE FOR VERIFYING PROPER OPERATION PRIOR TO USE**
- 4 UNIVERSAL SPLINE ATTACHMENT**

FEATURES:

- Phase conductors on system voltages up to 230kV phase-to-phase
- Range of operation is over 33 ft. through the air, over 1,000 ft. along overhead conductors
- Perform phasing operations through walls and metal enclosures
- Clear indication of in-phase/out-of-phase conditions with audible and visual indicators
- Rugged and lightweight

PROBES AND ACCESSORIES

Overhead Probes	Underground Probes			Extension Hot Sticks	Hot Stick Adapter
TAG-42029 (l); TAG-AC60 (r)	IEP-UD/C (l); IEP-EA/C (r)	IEP-EA/C-35 (t); IEP-TAG-EXT (b)	IEP-UDP (l); ASP-15/25 (r)	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

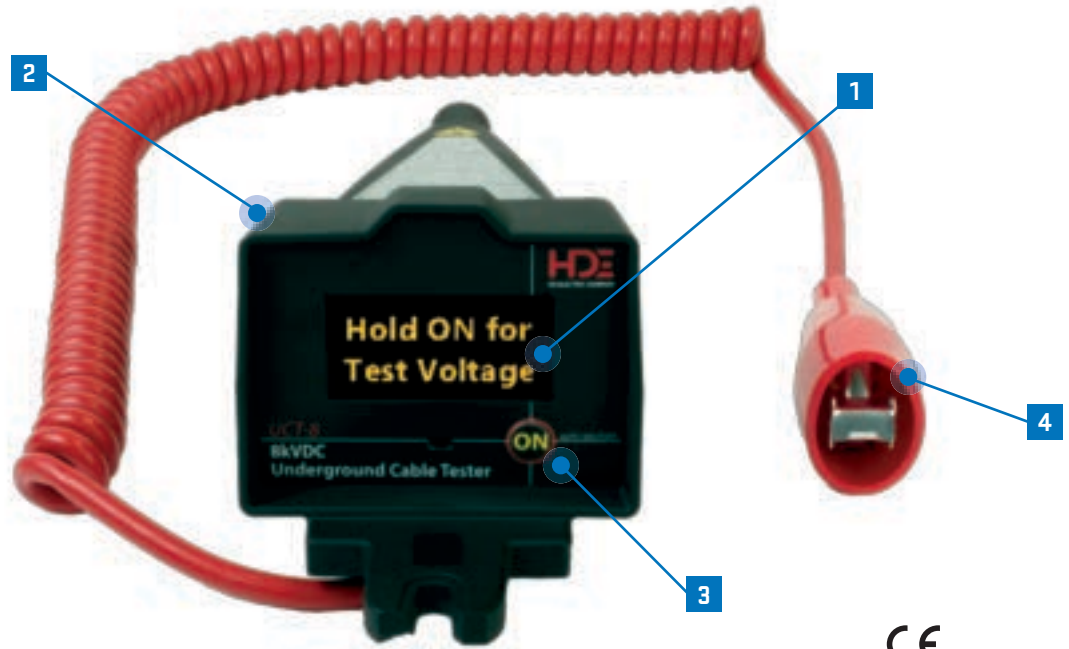
Model Number	TAG-5000
Operating Voltage Range	4kV to 230kV line-to-line
Operating Frequency & Phasing	Can be used on 50Hz and 60Hz systems; In Phase Indication For Phase Angle Shift Is ≤ 10°; No In Phase Indication For Phase Angle ≥ 30°
Transmission	Radio frequency: 433.9MHz; Transmission Power: < 10Mw
Transmission Range	More than 33 feet through the air, over 1,000 feet along overhead conductors and underground cables with polyethylene insulation; range is substantially reduced in underground conductors with rubber insulation
Battery	9V lithium or alkaline battery in both transmitter and receiver units
Battery Life	Approximately 1 year of typical use
Operating Temperature Range	-20°F to +120°F (-29°C to 49°C)
Weight (With Overhead Probe)	1.2 lbs. (0.54 kg) Each Unit
Dimensions (Without Probe)	8.5"L x 3.3"D (22 cm x 8 cm) Each Unit
Available In USA / Canada Only	

ORDERING INFORMATION

Part No.	Description
TAG-5000	Wireless Phaser Set 4-230kV; Includes Transmitter and Receiver, (1) TAG-AC60 OH Hook Probe, (1) TAG-42029 OH Y Probe and CM-5000 Case
TAG-5000/KIT1	Kit Includes Transmitter and Receiver, (1) TAG-AC60 OH Hook Probe, (1) TAG-42029 OH Y Probe, (2) IEP-UD/C UG Bushing Probes and CM-5000 Case
TAG-42029	Overhead "Y" Probe
TAG-AC60	Overhead Suspension Hook Probe
IEP-UD/C	Underground Bushing Probe, 15, 25 and 35kV Class
IEP-EA/C	Underground Elbow Probe, 15, 25 and Elastimold® 35 kV Class
IEP-EA/C-35	Underground Elbow Probe, 35 kV Class
IEP-TAG-EXT	Extension Probe, Allows Direct Contact with Bare Conductor
IEP-UDP	Probe Adapter, Allows ASP-15/25 to be Installed and Used for Testing Bushings
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CM-5000	Metal Carrying Case
The use of a hot stick is required. Other kits and telescopic hot sticks are available. Available in USA / Canada only.	

UNDERGROUND CABLE FAULT TESTER

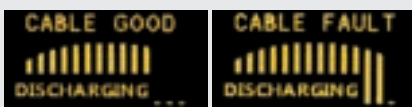
UCT-8



- 1** OVERSIZED DIGITAL LED DISPLAY
- 2** ULTRA-LIGHT DURABLE HOUSING
- 3** ONE BUTTON OPERATION FOR ALL FUNCTIONS
- 4** HEAVY DUTY COILED GROUNDING CORD

FEATURES:

- Compact and lightweight solution for underground cable testing
- DC Hi-Pot test of de-energized, shielded underground primary cable
- Can be used on cable lengths up to 1500 ft (457m)
- Clear and simple test results - analog bar graph and indication of good or faulted cable
- Lightweight, single hot stick operation for testing cable
- No external power required - self-contained 8KVDC voltage source
- Safety feature - measures AC voltage before converting to a DC voltage tester



Clearly displayed test results



PROBES AND ACCESSORIES

Underground Dead Front Bushing Probes	Underground Elbow Probe	Overhead Probe	Extension Hot Sticks
			
ASP-15/25 (l); ASP-35U (r)	EA-15/25	025-OLPS-5	Different Lengths and Telescopic Hot Sticks Available

SPECIFICATIONS

Model Number	UCT-8
Operating Voltage Range	100V-25kVAC line-to-ground
Operating Frequency	50/60Hz
Test Voltage	8kVDC
Accuracy	AC voltage, 5% of reading
Maximum Cable Length Tested	1500 ft. (457m)
Digital Display	Reads AC kilovolts and displays DC leakage/discharge current as an analog bar graph
Battery	9V lithium
Battery Life	Approximately 40 tests on 300' of 250 Kcmil (non-faulted) cable, fewer on faulted cable
Operating Temperature	+20°F to +120°F (-7°C to +49°C)
Weight (Without Probe)	3 lbs. (1.36 kg)
Dimensions (Without Probe)	14"L x 4.6"W x 4.1" H (36 cm x 12 cm x 10 cm)
Ground Cord Length	12' (3.6 m) fully extended, 3.5' (1.7 m) retracted
Cord Voltage Rating	Up to 20kV

ORDERING INFORMATION

Part No.	Description
UCT-8/K01	Underground Cable Fault Tester Kit Includes UCT-8, (1) 025-OLPS-5 Overhead Brass Hook Probe, (1) ASP-15/25 UG Bushing Probe and CS-UCT Case
UCT-8/K02	Kit Includes UCT-8, (1) 025-OLPS-5 Overhead Brass Hook Probe, (1) ASP-15/25 UG Bushing Probe, (1) EA-15/25 UG Elbow Probe and CS-UCT Case
UCT-8	Underground Cable Fault Tester; Includes UCT-8, (1) 025-OLPS-5 Overhead Brass Hook Probe and CS-UCT Case
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold® and Cooper® (RTE) Bushings
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe
025-OLPS-5	Overhead Brass Hook Probe
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CS-UCT	Plastic Carrying Case
B-30	Carrying Bag with Fluorescent/Reflective Safety Stripes and Carrying Strap
The use of a hot stick is required. Other kits are available.	

DIGITAL VOLTAGE INDICATORS

DVI-100 / DVI-500 SERIES



- 1** LARGE, BRIGHT 2 OR 3-DIGIT LED DISPLAY
- 2** DISPLAY IS EASY TO READ FROM A DISTANCE AND IN BRIGHT OR DARK CONDITIONS
- 3** ONE-BUTTON OPERATION FOR TEST MODES
- 4** UNIVERSAL SPLINE ATTACHMENT



FEATURES:

- Two models with ranges up to 500kV line-to-ground
- Voltage readout distinguishes between nominal and induced voltages
- Audible indication when voltage is detected
- Test Point mode available
- Auto-shutoff and low battery indication features
- Versatile for overhead and underground applications

PROBES AND ACCESSORIES

Overhead Probes	Underground Probes		Proof Tester® Digital Voltage Indicator Tester	Extension Hot Sticks	Hot Stick Adapter
HP-DVI-2 (l); HP-DVI-6 (r)	IEP-DVI-5 (t); IEP-DVI-EXT-5 (b)	IEP-200TC-5 (l); ASP-15/25 (r)	PT-DVI	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	DVI-100 / DVI-100T / DVI-500 / DVI-500T	Battery	9V lithium or alkaline
Operating Voltage Ranges	DVI-100: 0 - 99kV (0.1kV - 9.9kV and 10kV - 99kV) DVI-500: 0 - 500kV (0.1kV - 9.9kV and 10kV - 500kV)	Battery Life	About 100 readings with 9V alkaline
Operating Frequency	60Hz (50Hz available)	Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Accuracy	Laboratory calibrated to +/- 3%; Typical Overhead Line In Compact Overhead Three Phase +/- 10%; Other Applications Up To +/- 25%	Weight	1.37 lb. (0.62 kg) with overhead probe
LED Numeral Height	DVI-100: 2.25" (6 cm); DVI-500: 1.45" (3.7 cm)	Dimensions	4.25"H x 7"W x 4.5"D (11 cm x 18 cm x 11 cm)

ORDERING INFORMATION

Part #	Description	Accessories Included					
		HP-DVI-2	HP-DVI-6	IEP-DVI-5	PT-DVI	CS-DVI-5	CS-DVI
DVI-500	Indicates Voltage up to 500kV	1	1	—	—	1	—
DVI-500/K01	Kit; Indicates Voltage up to 500kV	1	1	1	—	1	—
DVI-500/K02	Kit; Indicates Voltage up to 500kV	1	1	1	1	1	—
DVI-500T/K01	Kit; Indicates Voltage up to 500kV with Capacitive Test Point Mode	1	1	1	—	1	—
DVI-500T/K02	Kit; Indicates Voltage up to 500kV with Capacitive Test Point Mode	1	1	1	1	1	—
DVI-100	Indicates Voltage up to 99kV	1	—	—	—	—	1
DVI-100/K01	Kit; Indicates Voltage up to 99kV	1	—	1	—	—	1
DVI-100/K02	Kit; Indicates Voltage up to 99kV	1	—	1	1	—	1
DVI-100T/K01	Kit; Indicates Voltage up to 99kV with Capacitive Test Point Mode	1	—	1	—	—	1
DVI-100T/K02	Kit; Indicates Voltage up to 99kV with Capacitive Test Point Mode	1	—	1	1	—	1
HP-DVI-2	Overhead Hook Probe for DVI 100/500 Series, 2" Diameter Opening						
HP-DVI-6	Overhead Hook Probe for DVI-500 Series, 6" Diameter Opening						
IEP-DVI-5	Underground Bushing Probe, 15, 25 and 35kV Class						
IEP-DVI-EXT-5	Extension Probe, Allows Direct Contact with Bare Conductor						
IEP-200TC-5	Probe Adapter, Allows ASP-15/25 to be Installed						
ASP-15/25	Underground Adapter Bushing Probe, 15 and 25kV Class - Used with IEP-200TC-5 Adapter						
PT-DVI	Proof Tester Digital Voltage Indicator Tester Confirms Proper Operation. 9V Battery Operated. 340VAC Output						
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass						
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass						
HSA-2500	Universal Hot Stick Adapter (Shotgun)						
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks						
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks						
CS-DVI-5	Rugged Plastic Case for DVI-500						
CS-DVI	Rugged Plastic Case for DVI-100						
B-30	Carrying Bag with Fluorescent/Reflective Safety Stripes and Carrying Strap						

The use of a hot stick is required. Other kits and telescopic hot sticks are available.

FIREFLY[®] FUSE TOOL VOLTAGE DETECTOR

FTVD-15






- 1 FUSE PULLER**
- 2 BRIGHT WHITE LED SPOTLIGHTS**
- 3 VOLTAGE DETECTOR SELF-TEST BUTTON**
- 4 RED LED VOLTAGE INDICATOR LIGHTS**
- 5 BEEPER**
- 6 UNIVERSAL SPLINE ATTACHMENT**



FEATURES:

- Three functions in one tool: voltage detector, fuse puller and spotlights
- Single range 4kV to 12kV line-to-line voltage detector
- Provides an audible and visual alarm when voltage is detected
- Bright white LED spotlights provide illumination in dark situations
- Compact and lightweight solution for added safety and flexibility

ACCESSORIES

Proof Tester® Fuse Tool Voltage Detector Tester	Extension Hot Sticks	Hot Stick Adapter
		
PT-FTVD	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	FTVD-15
Operating Voltage Range	4-12kV line-to-line; other voltage ranges available from 4kV to 35kV system voltage
Operating Frequency	50/60Hz
Battery	Four 3V lithium, two for voltage detector and two for white LED spotlights
Battery Life	Voltage detection - up to 40 hours of continuous alert White lights - up to 8 hours of continuous use
Operating Temperature Range	-40°F to +120°F (-40°C to +49°C)
Weight	1 lb. (454 g)
Dimensions	6" L x 1.2" W x 6" H (15 cm x 3 cm x 15 cm)

ORDERING INFORMATION

Part No.	Description
FTVD-15	Fuse Tool Voltage Detector; Includes FTVD-15 and FTVD-BG Bag
FTVD-15/K01	Fuse Tool Voltage Detector Kit; Includes FTVD-15, PT-FTVD Proof Tester FTVD Tester and FTVD-BG Bag
PT-FTVD	Proof Tester Fuse Tool Voltage Detector Tester Confirms Proper Operation. 9V Battery Operated
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
FTVD-BG	Padded, Zippered Carrying Bag with Strap; Holds FTVD-15 and PT-FTVD

The use of a hot stick is required. Telescopic hot sticks are available.

TAG[®] VOLTAGE DETECTORS

TAG-200 / TAG-200/MR / TAG-330



- 1 DIRECT CONTACT PROBE**
- 2 BEEPS AND FLASHING LIGHTS PROVIDE VOLTAGE INDICATION**
- 3 BUILT-IN UNIVERSAL SPLINE FOR HOT STICK ATTACHMENT**

FEATURES:

- Direct contact solution to quickly test for the presence of voltage
- No on/off or range selector switches – always on
- Clear indication of voltage detection with both audible and visual indications
- All-Check[®] Self-Test System verifies proper operation
- TAG-200 Series for system voltages up to 69kV line-to-line
- TAG-330 Series for system voltages from 69kV up to 765kV line-to-line
- Versatile for overhead and underground applications



Distribution Voltage Detectors

The TAG-200 is a single range direct contact voltage detector that determines if a conductor is energized within a specific voltage range. It will emit both audible and visual indications when placed in contact with an energized conductor.

The TAG-200/MR is a dual range direct contact voltage detector is similar to the TAG-200, except that it is a dual range direct contact voltage detector having two distinct ranges. It will indicate the presence of voltage and will show which range setting by the number of LED's activated.

The TAG-200/MR has two red LED's and an audible alarm to indicate the presence of voltage:

- If one LED is activated during contact with a conductor, the voltage present is within the lower voltage range.
- If two LED's are activated, the voltage present is within the higher voltage range.

If the TAG-200 or TAG-200/MR are used in situations where the voltage is more than three times higher than the range listed on the product label, it will act as a proximity detector before direct contact is made.

SPECIFICATIONS

Model Number	TAG-200 and TAG-200/MR
Available Operating Voltage Ranges	TAG-200: 4-12kV or 12-35kV phase-to-phase TAG-200/MR: 4kV & 12kV; 4kV & 35kV; 12kV & 35kV phase-to-phase Custom ranges and labeling are available
Operating Frequency	60Hz
Battery	Field replaceable 9V alkaline battery
Battery Life	Approximately 1 year of typical use
Operating Temperature Range	-15°F to +110°F (-25°C to +40°C)
Weight (Without Probe)	11 oz. (0.31 kg)
Dimensions (Without Probe)	7.5" L x 1.9" Dia. (19.1 cm x 4.9 cm)
Available In USA / Canada Only	



Transmission Voltage Detectors

The TAG-330 is a direct contact type voltage detector for use on transmission voltages. It is a single range unit that determines if a conductor is energized within its specific voltage setting. If the TAG-330 is used in situations where the voltage is more than three times higher than the range listed on the product label, the TAG-330 will act as a proximity detector before direct contact is made.

SPECIFICATIONS

Model Number	TAG-330
Available Operating Voltage Ranges	69-230kV or 138-500kV phase-to-phase Custom ranges and labeling are available
Operating Frequency	60Hz
Battery	Field replaceable 9V alkaline battery
Battery Life	Approximately 1 year of typical use
Operating Temperature Range	-15°F to +110°F (-25°C to +40°C)
Weight (Without Probe)	1 lb. 3 oz. (0.59 kg)
Dimensions (Without Probe)	8.3" L x 3.2" Dia. (21.1 cm x 8.13 cm)
Available In USA / Canada Only	

PROBES AND ACCESSORIES

Overhead Probes		Underground Probes			Proof Tester® Voltage Detector Tester	Extension Hot Sticks	Hot Stick Adapter
TAG-42029 (top); TAG-41811/B (bottom)	TAG-AC60 (top); TAG-AC120 (ctr); TAG-AD100 (bottom)	IEP-UD/C (l); IEP-EA/C (r)	IEP-EA/C-35 (t); IEP-TAG-EXT (b)	IEP-UDP (l); ASP-15/25 (r)	PT-DET	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

TAG-200 SERIES ORDERING INFORMATION

Part #	Description	Accessories Included			
		TAG-42029	TAG-41811/B	IEP-UD/C	C-200
T200-0412	TAG-200, Range 4-12kV	1	1	—	1
T200/KIT-0412	Kit; TAG-200, Range 4-12kV	1	1	1	1
T200-1235	TAG-200, Range 12-35kV	1	1	—	1
T200/KIT-1235	Kit; TAG-200, Range 12-35kV	1	1	1	1
T200MR-0412	TAG-200/MR, Dual Range 4kV and 12kV	1	1	—	1
T200MR/KIT-0412	Kit; TAG-200/MR, Dual Range 4kV and 12kV	1	1	1	1
T200MR-0435	TAG-200/MR, Dual Range 4kV and 35kV	1	1	—	1
T200MR/KIT-0435	Kit; TAG-200/MR, Dual Range 4kV and 35kV	1	1	1	1
T200MR-1235	TAG-200/MR, Dual Range 12kV and 35kV	1	1	—	1
T200MR/KIT-1235	Kit; TAG-200/MR, Dual Range 12kV and 35kV	1	1	1	1
TAG-42029	Overhead "Y" Probe				
TAG-41811/B	Overhead Straight Probe				
TAG-AC60	Overhead Suspension Hook Probe				
IEP-UD/C	Underground Bushing Probe, 15, 25 and 35kV Class				
IEP-EA/C	Underground Elbow Probe, 15, 25 and Elastimold [®] 35kV Class				
IEP-EA/C-35	Underground Elbow Probe, 35kV Class				
IEP-TAG-EXT	Extension Probe, Allows Direct Contact with Bare Conductor				
IEP-UDP	Probe Adapter, Allows ASP-15/25 to be Installed and Used for Testing Bushings				
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings				
PT-DET	Proof Tester Voltage Detector Tester Confirms Proper Operation. 9V Battery Operated				
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass				
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass				
HSA-2500	Universal Hot Stick Adapter (Shotgun)				
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks				
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks				
C-200	Plastic Carrying Case				
B-2	Padded, Zippered Carrying Bag with Strap				

The use of a hot stick is required. Other kits, custom ranges, labeling and telescopic hot sticks are available. Available in USA / Canada only.

Part #	Description	Accessories Included			
		TAG-AC60	TAG-AC120	TAG-AD100	CM-330
T330-069230	TAG-330, Range 69-230kV	1	1	1	1
T330-138500	TAG-330, Range 138-500kV	1	1	1	1
TAG-AC60	Overhead Suspension Small Hook Probe				
TAG-AC120	Overhead Suspension Large Hook Probe				
TAG-AD100	Overhead 4" Straight Probe				
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass				
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass				
HSA-2500	Universal Hot Stick Adapter (Shotgun)				
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks				
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks				
CM-330	Metal Carrying Case				

The use of a hot stick is required. Other kits, custom ranges, labeling and telescopic hot sticks are available. Available in USA / Canada only.

PROXIMITY VOLTAGE DETECTORS

PRX-4 / PRX-69D / PRX-500



- 1 VOLTAGE INDICATING LIGHTS AND BEEPER**
- 2 VOLTAGE SENSING ZONE**
- 3 VOLTAGE RANGE INDICATOR**
- 4 VOLTAGE RANGE SELECTOR**
- 5 UNIVERSAL SPLINE AND SHOTGUN STICK CONNECTIONS**
- 6 RUGGED, ULTRA-LIGHT, WATER RESISTANT HOUSING**
- 7 AC/DC CHARGER PORT**

FEATURES:

- Verify the presence of voltage without contacting the conductor
- Audible and visual alert when voltage is present
- Powered by a rechargeable Li-Ion battery
- PRX-500 for transmission and distribution use with nine standard voltage ranges from 120V to 500kV
- PRX-69D for distribution use with seven standard voltage ranges from 120V to 69kV
- PRX-4 is a HI/LO proximity voltage detector with two voltage ranges; 50V-4kV and above 4kV



PRX-4

The simplest and easiest of the PRX family, The PRX-4 is a HI/LO Proximity Voltage Detector, an ideal testing device for a wide range of applications such as storm assessment or meter reading.

SPECIFICATIONS

Model Number	PRX-4
Operating Voltage Ranges	Two standard voltage ranges: 50VAC - 4kVAC (LO) 4kVAC - 500kVAC (HI)
Voltage Sensing Distance	3 inches at 50V LO range 10 inches at 4kV HI range
Operating Frequency	25Hz-400Hz
Battery	Rechargeable Li-Ion battery with AC/DC charging options
Battery Life	One week of typical daily use after full charge
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Weight	11 oz. (.31 kg)
Dimensions	11"L x 3"W x 2"D (28 cm x 7.6 cm x 5 cm)



PRX-69D

Designed specifically for distribution crews, with seven preset standard distribution ranges from 120VAC to 69kVAC. Capacitive test point mode included in the 120VAC setting.

SPECIFICATIONS

Model Number	PRX-69D
Operating Voltage Ranges	Seven standard voltage ranges from 120VAC - 69kVAC
Voltage Sensing Distance	6 inches at 120V; 10 inches at all other ranges
Operating Frequency	25Hz-400Hz
Battery	Rechargeable Li-Ion battery with AC/DC charging options
Battery Life	One week of typical daily use after full charge
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Weight	11 oz. (.31 kg)
Dimensions	11"L x 3"W x 2"D (28 cm x 7.6 cm x 5 cm)



PRX-500

The ideal solution for line crews that perform voltage testing on both distribution and transmission lines. Preset with nine standard voltage ranges from 120VAC to 500kVAC. Capacitive test point mode included in the 120VAC setting.

SPECIFICATIONS

Model Number	PRX-500
Operating Voltage Ranges	Nine standard voltage ranges from 120VAC to 500kVAC
Voltage Sensing Distance	6 inches at 120V; 10 inches at all other ranges
Operating Frequency	25Hz-400Hz
Battery	Rechargeable Li-Ion battery with AC/DC charging options
Battery Life	One week of typical daily use after full charge
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Weight	11 oz. (.31 kg)
Dimensions	11"L x 3"W x 2"D (28 cm x 7.6 cm x 5 cm)

ACCESSORIES

Charger Cord & Adapter	Holster	Proof Tester® Proximity Voltage Detector Tester	Extension Hot Sticks
PRX-CORD (top); PRX-XF (bottom)	PRX-HS	PT-PRX	Different Lengths and Telescopic Hot Sticks Available



PROXIMITY VOLTAGE DETECTORS

PRX-4 / PRX-69D / PRX-500

HDElectricCompany.com

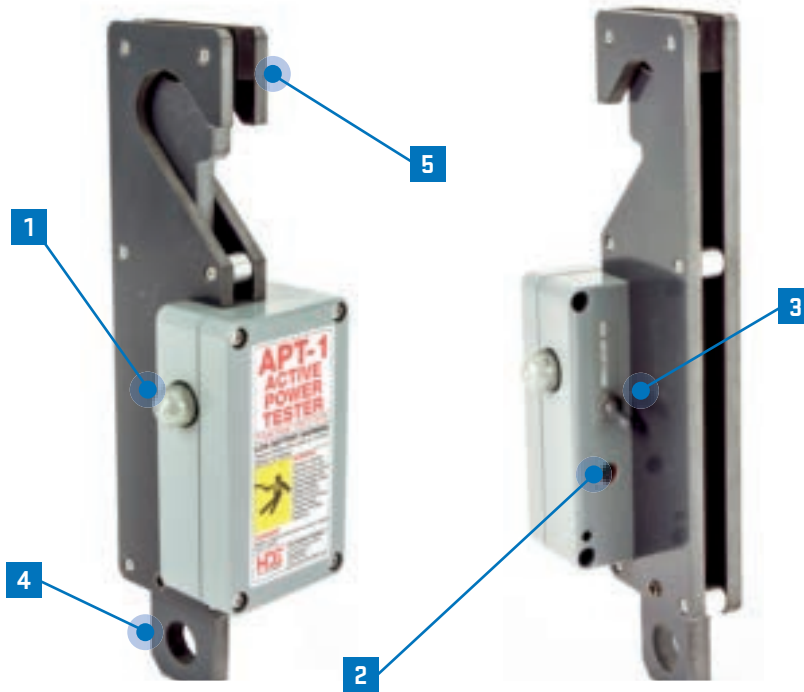
ORDERING INFORMATION

Part #	Description	Accessories Included					
		PRX-CORD	PRX-XF	PRX-HS	PT-PRX	PRX-CS	B-2
PRX-4/K01	Kit; Indicates Voltages from 50V to 4kV	1	—	—	—	—	—
PRX-4/K02	Kit; Indicates Voltages from 50V to 4kV	1	1	—	—	—	—
PRX-4/K03	Kit; Indicates Voltages from 50V to 4kV	1	1	—	—	—	1
PRX-4/K10	Kit; Indicates Voltages from 50V to 4kV	1	1	1	1	1	—
PRX-4H	Kit; Indicates Voltages from 50V to 4kV	1	1	1	—	—	—
PRX-4B	Kit; Indicates Voltages from 50V to 4kV	1	1	1	—	—	1
PRX-4	Indicates Voltages from 50V to 4kV	1	1	1	—	1	—
PRX-69D/K01	Kit; Indicates Distribution Voltages from 120V to 69kV	1	—	—	—	—	—
PRX-69D/K02	Kit; Indicates Distribution Voltages from 120V to 69kV	1	1	—	—	—	—
PRX-69D/K03	Kit; Indicates Distribution Voltages from 120V to 69kV	1	1	—	—	—	1
PRX-69D/K10	Kit; Indicates Distribution Voltages from 120V to 69kV	1	1	1	1	1	—
PRX-69DH	Kit; Indicates Distribution Voltages from 120V to 69kV	1	1	1	—	—	—
PRX-69DB	Kit; Indicates Distribution Voltages from 120V to 69kV	1	1	1	—	—	1
PRX-69D	Indicates Distribution Voltages from 120V to 69kV	1	1	1	—	1	—
PRX-500/K01	Kit; Indicates Trans & Dist Voltages from 120VAC to 500kV	1	—	—	—	—	—
PRX-500/K02	Kit; Indicates Trans & Dist Voltages from 120VAC to 500kV	1	1	—	—	—	—
PRX-500/K03	Kit; Indicates Trans & Dist Voltages from 120VAC to 500kV	1	1	—	—	—	1
PRX-500/K10	Kit; Indicates Trans & Dist Voltages from 120VAC to 500kV	1	1	1	1	1	—
PRX-500H	Kit; Indicates Trans & Dist Voltages from 120VAC to 500kV	1	1	1	—	—	—
PRX-500B	Kit; Indicates Trans & Dist Voltages from 120VAC to 500kV	1	1	1	—	—	1
PRX-500	Indicates Trans & Dist Voltages from 120VAC to 500kV	1	1	1	—	1	—
PRX-CORD	Charger Cord, 12VDC						
PRX-XF	Charger Adapter, 120VAC						
PRX-HS	Carrying Holster with Belt Clip and Restraining Strap						
PT-PRX	Proof Tester PRX Voltage Detector Tester Confirms Proper Operation. 9V Battery Operated. 340VAC Output						
PRX-CS	Carrying Case						
B-2	Padded, Zippered Carrying Bag with Strap						
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass						
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass						
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks						
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks						
050-00310-PRX	220VAC Charging Adapter Kit						
050-00300-PRX	Rechargeable Battery Replacement Kit; Contains Battery, Overlay Label and Instructions						

The use of a hot stick is required. A 220VAC version is available as well as other kits, custom ranges, custom labeling and telescopic hot sticks.

ACTIVE POWER TESTER

APT-1



1 FLASHING LIGHT FOR ABSENCE OF VOLTAGE INDICATION

2 BEEPER

3 ON/OFF SWITCH

4 SHOTGUN STICK ATTACHMENT

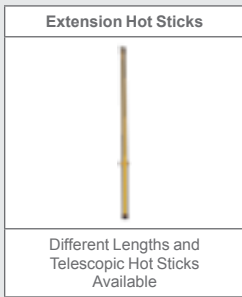
5 OVERHEAD LINE CLAMP

FEATURES:

- For use on uninsulated overhead conductors
- Audible and visual alert when absence of voltage is detected
- Models available with different voltage ranges



ACCESSORIES



SPECIFICATIONS

Model Number	APT-1
Operating Voltage Ranges	7.6kV – 13.2kV line-to-ground
Operating Frequency	50/60Hz
Battery	9V field replaceable lithium or alkaline
Battery Life	30 hours of continuous alarm
Weight	1.2 lbs. (0.5kg)
Dimensions	10.88" L x 3.5" W x 3.5" H (27.6cm x 8.9cm x 8.9cm)

ORDERING INFORMATION

Part No.	Description
APT-1	Indicates Absence of Full Line Voltage on Conductors from 7.6 to 13.2kV Line-to-Ground
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
Telescopic hot sticks are available.	

VOLTAGE PROBE

VP-1



1 FLASHING RED LIGHT AND BEEPER FOR VOLTAGE INDICATION

2 FOAMED GRIP

3 DIRECT CONTACT PROBE

FEATURES:

- Handheld direct contact secondary voltage detector from 50VAC to 600VAC
- Tests exposed metallic surfaces and conductors for the presence of secondary voltage
- Tests unshielded primary voltage cable insulation
- Tests primary voltage joint and termination test points for the presence of voltage
- No on/off switch – always on
- Compact, lightweight and easy-to-use

ACCESSORIES

Proof Tester® Voltage Probe Tester

PT-VP

SPECIFICATIONS

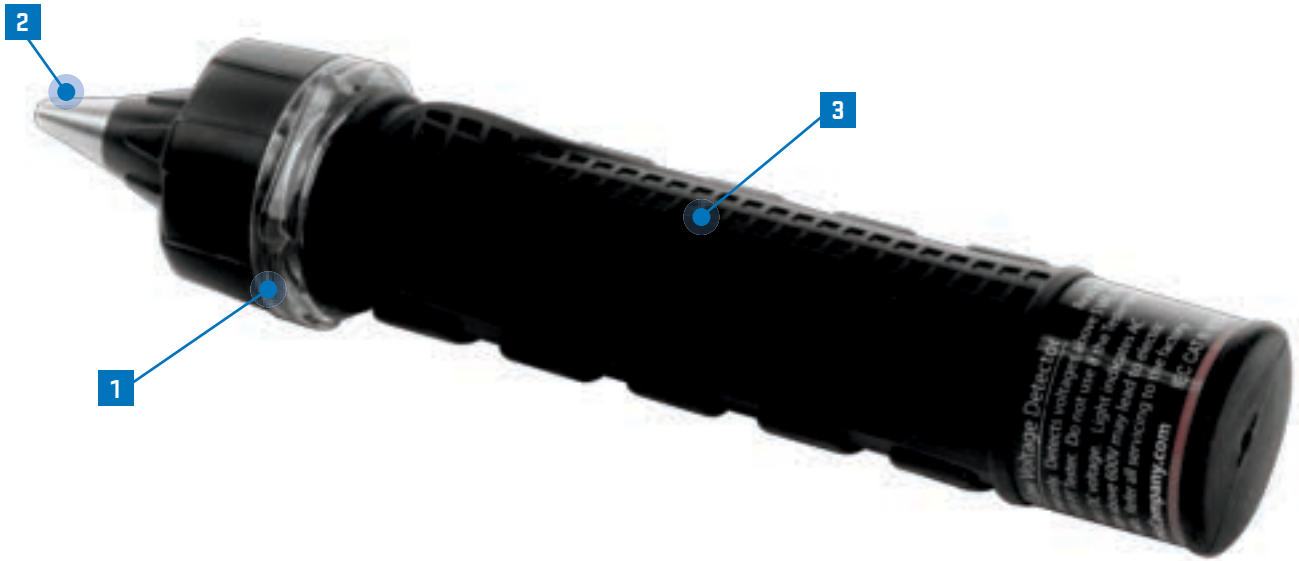
Model Number	VP-1
Operating Voltage Ranges	50VAC to 600VAC handheld 600VAC to 21KVAC line-to-ground handheld using appropriately rated electrical insulating gloves
Operating Frequency	50/60Hz
Battery	2 AA field replaceable lithium or alkaline batteries
Weight	9.6 oz. (0.27 kg)
Dimensions	10" L (25.4 cm)

ORDERING INFORMATION

Part No.	Description
VP-1/K01	Direct Contact Voltage Detector; Kit Includes VP-1, PT-VP Proof Tester VP Tester and B-35 Bag
VP-1	Direct Contact Voltage Detector from 50VAC to 21kV, Proximity Voltage Detector above 21kV; Includes VP-1
PT-VP	Proof Tester Voltage Probe Tester Confirms Proper Operation. 9V Battery Operated.
B-35	Padded, Zippered Carrying Bag with Strap

STRAY VOLTAGE DETECTOR

LV-5



- 1 FLASHING RED LIGHT FOR VOLTAGE INDICATION**
- 2 DIRECT CONTACT PROBE**
- 3 LARGE, ROBUST GRIP AND HAND GUARD**

FEATURES:

- Indicates the presence of stray or contact voltage
- Direct contact detector alerts at 5V and up
- No on/off button, detector is always on
- Use on street light poles, guide guy wires, wood transmission poles, meter cans, manhole covers and other metallic surfaces
- Available holster with integrated tester accessory
- Rugged, water-resistant, utility-grade design



ACCESSORIES

Holster	Proof Tester® Stray Voltage Detector Tester	Ground Shield	Extension Handle
			
LV-HS	LV-PT	LV-GS	LV-EH

SPECIFICATIONS

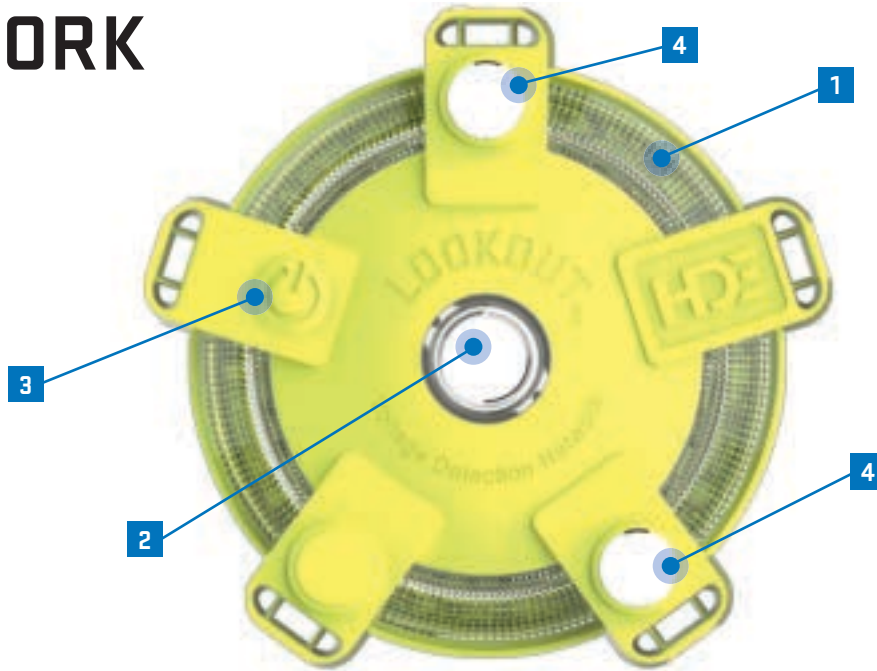
Model Number	LV-5
Threshold Detection Voltage	5VAC, 50/60Hz nominal, capacitively coupled
Maximum Applied Voltage	600VAC
Operating Frequency	50/60Hz
Battery	2 AA field replaceable lithium or alkaline batteries
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Weight	1.25 lbs. (0.57 kg)
Dimensions	10.5" L x 3.8" W x 2.3" H (26.7 cm x 9.7 cm x 5.8 cm)

ORDERING INFORMATION

Part No.	Description
LV-5/K01	Detects Stray Voltage from 5-600VAC; Kit Includes LV-5, LV-PT Proof Tester LV Tester and LV-HS Holster
LV-5	Stray Voltage Detector, Detects Voltage from 5-600VAC; Includes LV-5
LV-HS	Holster for LV-5 and LV-PT Proof Tester LV Tester
LV-PT	Proof Tester Stray Voltage Detector Tester Confirms Proper Operation. 9V Battery Operated. 8VAC Output
LV-GS	Ground Shield with Ground Lead and Alligator Clip; Used in Areas Where High Voltage Lines or Other Energized Conductors are Present
LV-EH	Extension Handle Extends the Reach of the LV-5, Allowing the Detector to Test Equipment on the Ground or Hard to Reach Locations

LOOKOUT[®] VOLTAGE DETECTION NETWORK

LO-01



CE

- 1 BRIGHT LED LIGHTS FOR A VISUAL ALERT TO THE PRESENCE OF AN ELECTRIC FIELD**
- 2 BEEPER FOR A LOUD AUDIBLE ALERT TO THE PRESENCE OF AN ELECTRIC FIELD**
- 3 ON/OFF BUTTON**
- 4 STRONG NEODYMIUM MAGNETS FOR MOUNTING ON MAGNETIC SURFACES**

FEATURES:

- Warns of high voltage electric fields using WAVi[®] technology — Work Area Voltage Indication
- Visual and audible warning indicates the location of energized fields in a red-yellow-green sequence
- Detectors communicate with each other within a mesh network
- Remotely control detectors through the LOOKOUT mobile app
- Battery life of up to 500 hours in Monitor mode and up to 8 hours in Alert mode
- Durable water-resistant housing



LOOKOUT APP FEATURES:

- Remotely turn detectors on/off
- Select system voltage
- Remotely self-test connected detectors
- Monitor battery level
- Rename connected detectors
- Real time notifications when voltage is detected

ACCESSORIES

Operator Unit	Equipment Mount and Claw Tool	Fence Hanger Bracket
		
LO-OP shown with optional equipment mount	LO-EM (l) and LO-CL (r)	LO-HB

SPECIFICATIONS

Voltage Range	System voltage from 4kVAC to 500kVAC – Do not use below 2400VAC line-to-ground
Operating Frequency	50/60Hz
Typical Warning Distance*	Approx. 3 ft (91cm) from a 4kVAC conductor – For more details refer to the instruction manual
Communication Range	Up to 100 ft (30m) between detectors
Weight	1 lb. (0.45kg) single detector
Dimensions	6.75" Ø x 1.55" H (17.14cm x 3.94cm)
Enclosure Rating	IP67

*Based on OSHA standard 1910.269 for minimum approach distances for qualified electrical workers

ORDERING INFORMATION

Part No.	Description
LO-01	LOOKOUT Voltage Detector
LO-OP	LOOKOUT Operator Unit - Relays network alerts to the operator (Does NOT detect voltage)
LOC-01	LOOKOUT Charger, 12V
LO-EM	Equipment Mount
LO-CL	Claw Tool for Detector Installation
LO-CB	Safety Cone Mounting Bracket
LO-HB	Fence Hanger Bracket
LO-XF1	Charger Adapter, 120V
LO-XF2	Charger Adapter, 220V
LO-BGS	Carrying Bag

Part No.	Description	Includes							
		LO-01	LOC-01	LO-OP	LO-EM	LO-CL	LO-CB	LO-HB	LO-BGS
LO-P6E	LOOKOUT 6-Pack Kit, Equipment	5	1	1	4	1	—	—	1
LO-06C	LOOKOUT 6-Pack Kit, Cones	6	1	—	—	—	6	—	1
LO-06H	LOOKOUT 6-Pack Kit, Hangers	6	1	—	—	—	—	6	1
LO-06	LOOKOUT 6-Pack Kit	6	1	—	—	—	—	—	1

Additional kits are available.

WATCHMAN[®] WORK AREA VOLTAGE DETECTOR

WM-01



CE

- 1 BRIGHT LED LIGHTS VISUALLY ALERT TO THE PRESENCE OF AN ELECTRICAL FIELD**
- 2 ON/OFF AND SELF-TEST BUTTON**
- 3 STRONG NEODYMIUM MAGNETS FOR MOUNTING ON MAGNETIC SURFACES**

FEATURES

- Provides an extra level of safety for trained personnel working on or near high voltage systems
- Utilizes WAVi[®] Work Area Voltage Indication technology to detect strong electric fields surrounding high voltage conductors and fleet equipment
- Red spinning LED lights alerts to the presence of an electric field
- Typical warning distance is 7 feet (2.13m) from a 4kVAC conductor

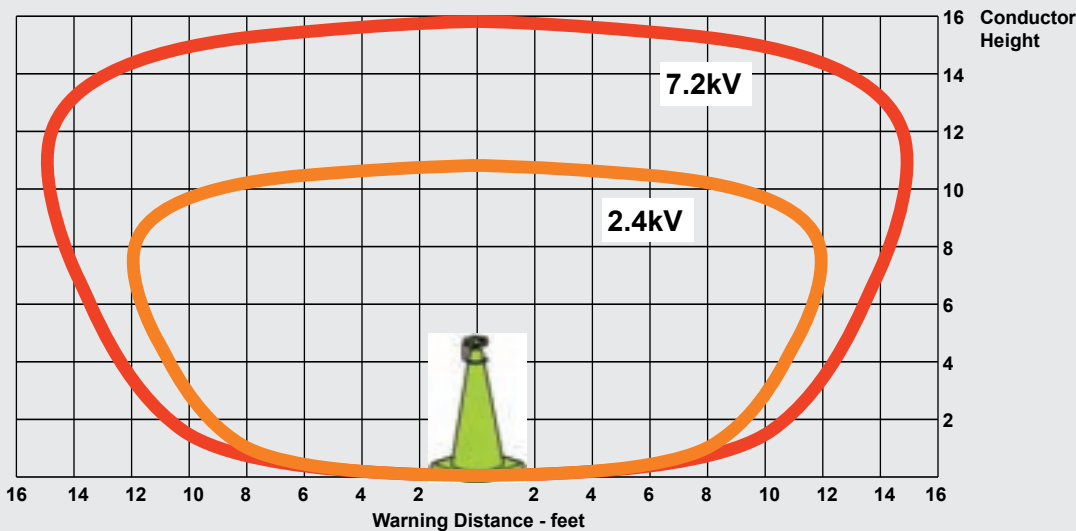


ACCESSORIES

Cone Mount Bracket	Fence Mount Bracket
	
WM-CB1	WM-FB1

Voltage Sensitivity Charts

Watchman Detector on top of safety cone mounting bracket



Each grid square is two feet.
Test conductor is 1 inch diameter bar.
Lines show detection distance at line to ground voltages.

SPECIFICATIONS

Model Number	WM-01
Sensitivity	The detector will only detect AC voltage Do not use below 2400VAC
Typical Warning Distance	7' (2.13m) from a 4kVAC conductor (refer to manual for more details)
Operating Voltage Ranges	2400VAC and above
Operating Frequency	50/60Hz
Battery	3 AAA field replaceable lithium or alkaline batteries
Battery Life	2 years in storage 1,000 hours standby heartbeat mode 10 hours continuous voltage indication
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Weight (With Batteries)	8 oz. (0.23 kg)
Dimensions	3.8" Dia. x 1.4" H (9.7 cm x 3.6 cm)

ORDERING INFORMATION

Part Number	Description	Included				
		WM-01	WM-CB1	WM-FB1	WM-BGS	WM-BGL
WM-01	Watchman Work Area Voltage Detector	1	—	—	—	—
WM-06	Watchman 6-Pack Kit	6	—	—	1	—
WM-06C	Watchman 6-Pack Kit, Cones	6	6	—	1	—
WM-06F	Watchman 6-Pack Kit, Fence	6	—	6	1	—
WM-12	Watchman 12-Pack Kit	12	—	—	—	1
WM-12C	Watchman 12-Pack Kit, Cones	12	12	—	—	1
WM-12F	Watchman 12-Pack Kit, Fence	12	—	12	—	1
WM-CB1	Cone Mount Bracket					
WM-FB1	Fence Mount Bracket					
WM-BGS	Storage Bag - Small; Holds (6) WM-01 and Accessories					
WM-BGL	Storage Bag - Large; Holds (12) WM-01 and Accessories					



HD ELECTRIC COMPANY

NEXT GENERATION V-WATCH® PERSONAL VOLTAGE DETECTOR

VWS-20



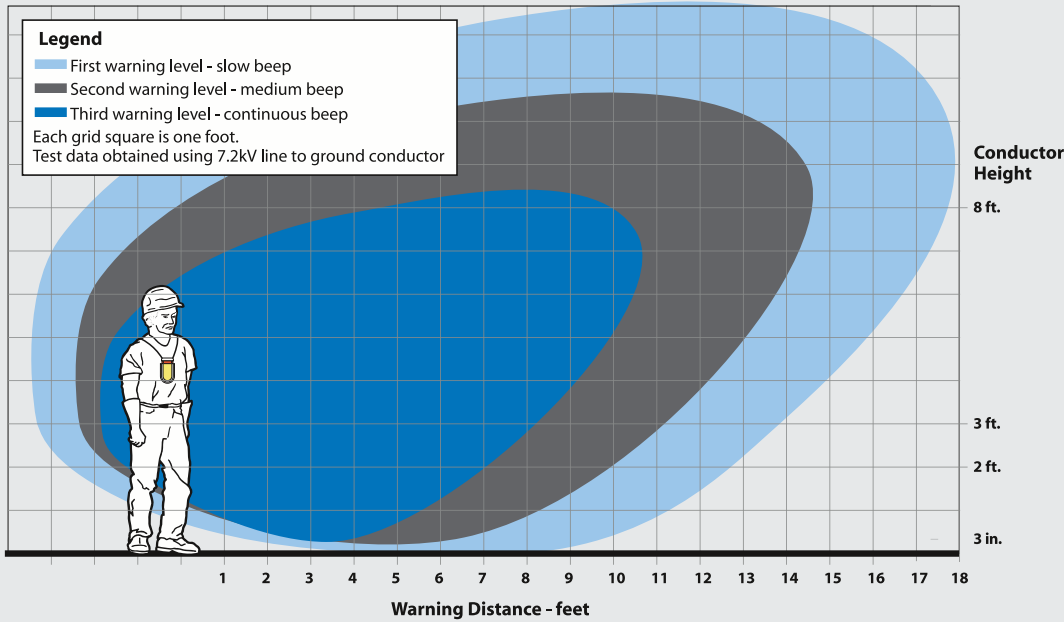
- 1 SLIM AND WEATHER RESISTANT HOUSING WITH BUILT-IN LANYARD**
- 2 BUZZER AND BRIGHT LED LIGHTS**
- 3 SPRING MOUNTED PUSH-PULL MECHANISM TO ACTIVATE AND SELF-TEST**
- 4 RED BAND IS A SAFETY PEER CHECK TO ENSURE UNIT IS TURNED ON**



FEATURES

- Provides another level of safety for line crews, storm restoration workers and first responders
- Alerts user to the proximity of electric fields or energized electrical equipment with a loud alarm and bright lights
- Frequency of alarm increases as the user gets closer to the electrical hazard
- Detects voltage above 4kVAC line-to-line
- Typical initial warning distance is about 7 ft. (2.13 m) from a 4kVAC conductor
- Warning distance increases with higher voltages
- Adjustable clip for use on personal protection gear
- Field replaceable AAA batteries with low battery indicator

Typical V-Watch Warning Distances



SPECIFICATIONS

Model Number	VWS-20
Sensitivity	The detector will only detect AC voltage; do not use below 2400VAC
Typical Warning Distance	About 7' (2.13m) from a 4kVAC conductor (2.4kV line-to-ground) Refer to manual for more details
Operating Voltage Ranges	2400VAC and above The detector will only detect AC voltage; do not use below 2400VAC
Operating Frequency	50/60Hz
Battery	3 AAA field replaceable lithium or alkaline batteries
Battery Life	2 years in storage; 6 months of continuous use
Operating Temperature Range	-20°F to +120°F (-29°C to +49°C)
Weight (With Batteries)	7.97 oz. (0.23 kg)
Dimensions	Closed: 5.53" x 3.54" x 1.42" (14.0 cm x 9.0 cm x 3.6 cm) Open: 6.29" x 3.54" x 1.42" (15.9 cm x 9.0 cm x 3.6 cm)

ORDERING INFORMATION

Part Number	Description
VWS-20	V-Watch Personal Voltage Detector with VW-S-BAG Bag
VW-S-BAG	Replacement Padded Carrying Bag with Drawstring

V-WATCH[®] PERSONAL VOLTAGE DETECTOR

VW-20 SERIES



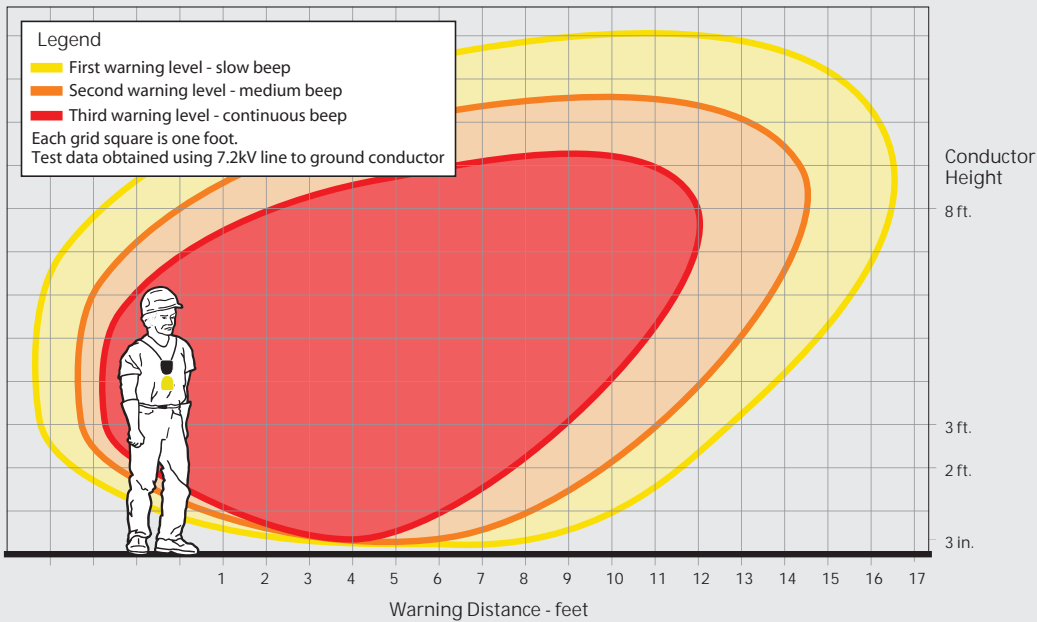
- 1 BUZZER AND BRIGHT LED LIGHTS**
- 2 RUGGED PROTECTIVE HOUSING**
- 3 CARRYING CASE WITH BUILT-IN LANYARD**
- 4 SELF-TEST BUTTON**



FEATURES

- Provides another level of safety for line crews, storm restoration workers and first responders
- Alerts user to the proximity of electric fields or energized electrical equipment with a loud alarm and bright lights
- Frequency of alarm increases as the user gets closer to the electrical hazard
- Detects voltage above 4kVAC line-to-line
- Typical initial warning distance is about 7 ft. (2.13 m) from a 4kVAC conductor
- Warning distance increases with higher voltages
- Field replaceable 9V battery with low battery indicator

Typical V-Watch Warning Distances



SPECIFICATIONS

Model Number	VW-20
Sensitivity	The detector will only detect AC voltage; do not use below 2400 Volts
Typical Warning Distance	About 7' (2.13m) from a 4kVAC conductor (2.4kV line-to-ground) Refer to manual for more details
Operating Voltage Ranges	2400VAC and above The detector will only detect AC voltage; do not use below 2400VAC
Operating Frequency	50/60Hz
Battery	9V field replaceable alkaline battery
Battery Life	2 years in storage; 1 year of typical use
Operating Temperature Range	-20°F to +120°F (-29°C to +49°C)
Weight (With Battery)	5.2 oz. (0.15 kg)
Dimensions	3.5" x 2.8" x 1.2" (8.9 cm x 7.3 cm x 3.2 cm)

ORDERING INFORMATION

Part Number	Description
VW-20HFR	V-Watch Personal Voltage Detector with C-10FR Flame Resistant Carrying Case Lanyard
VW-20HFR-K	Kit Includes VW-20HFR and VW-K-BAG Carrying Bag
VW-20H	V-Watch Personal Voltage Detector with C-10 Black Carrying Case Lanyard
VW-20H-K	Kit Includes VW-20H and VW-K-BAG Carrying Bag
C-10FRVW	Shielded, Flame Resistant Carrying Case with built-in Lanyard in High-Visibility Safety Green Color
C-10VW	Shielded, Carrying Case with built-in Lanyard in Black Color
VW-K-BAG	Zippered Carrying Bag; Holds V-Watch with Carrying Case Lanyard
Other V-Watch models with different sensitivities and kits are available.	

HI-TEST[®] INSULATOR TESTER

IT-4










- 1 UNIVERSAL SPLINE ATTACHMENT**
- 2 LED SCALE DISPLAYS INSULATOR CONDITION**
- 3 BUZZER FOR WARNING OF BAD INSULATOR**
- 4 ADJUSTABLE PROBES**



FEATURES

- Detects non-visible internal defects on energized porcelain suspension or cap and pin insulators
- A troubleshooting tool when tracing the source of ground fault trips and RF/TV interference
- Will not cause flashover when used on energized insulators
- Test de-energized insulators prior to installation
- Powered by rechargeable and replaceable 8VDC battery

ACCESSORIES

Charging Accessories for Lithium-Ion Battery			Standard and Optional Probes		Extension Hot Sticks	Hot Stick Adapter
						
025-02220-120V	050-02050-12V	050-00310-PRX	025-02035-SUB (t); 025-02040-SUB (b)	025-02045-SUB (t); 025-02050-SUB (b)	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	IT-4
Output Voltage and Current	Output Voltage: 10kVDC nominal Output Current: 65µA maximum
Operating Frequency	50/60Hz
Battery	8VDC rechargeable lithium-ion
Battery Life	14 hours continuous use under normal conditions
Operating Temperature Range	-25°F to +125°F (-32°C to +52°C)
Weight (With Battery)	3 lbs. (1.36 kg)
Dimensions	13" L x 5.5"W x 3.4" H (33 cm x 14 cm x 8.6 cm)

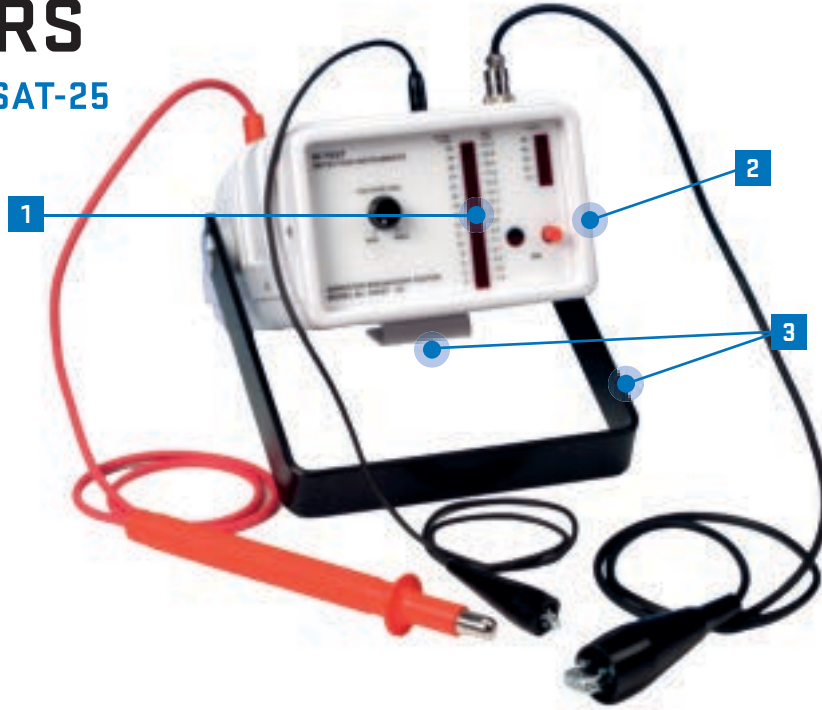
ORDERING INFORMATION

Part No.	Description
IT-4	Insulator Tester; Includes Battery, (1) Standard Side Bent Probe, (1) Standard Straight Probe, 120VAC Charging Adapter and CS-IT4 Case
IT-4/12V	Insulator Tester; Includes Battery, (1) Standard Side Bent Probe, (1) Standard Straight Probe, 120VAC Charging Adapter, 12VDC Charging Cord and CS-IT4 Case
IT-4/220P	Insulator Tester; Includes Battery, (1) Standard Side Bent Probe, (1) Standard Straight Probe, 220VAC Charging Adapter and CS-IT4 Case
075-02020-8VLI	Replacement Lithium-Ion Battery for IT-4 Models Manufactured After Jan 2016 (3-pin charger)
025-02220-120V	120VAC 3-Pin Charging Adapter for IT-4 Models Manufactured After Jan 2016
050-02050-12V	12VDC 3-Pin Charging Cord for IT-4 Models Manufactured After Jan 2016
050-00310-PRX	220VAC 3-Pin Charging Adapter Kit for IT-4 Models Manufactured After Jan 2016
075-IT3-8VX4	Replacement 8VDC Sealed Lead-Acid Rechargeable Battery for IT-4 Models Manufactured Before 2016 (2-pin charger)
025-02070-120V	120VAC 2-Pin Charging Adapter for IT-4 Models Manufactured Before 2016
050-02000-12V	12VDC 2-Pin Charging Cord for IT-4 Models Manufactured Before 2016
050-02025-220V	220VAC 2-Pin Charging Adapter for IT-4 Models Manufactured Before 2016
025-02035-SUB	Standard Side Bent Test Probe
025-02040-SUB	Standard Side Straight Test Probe
025-02045-SUB	Optional Pigtail End Test Probe - Can ONLY Be Used With Optional Straight End Probe
025-02050-SUB	Optional Straight End Test Probe - Can ONLY Be Used With Optional Pigtail End Probe
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CS-IT4	Carrying Case

The use of a hot stick is required if testing energized insulators. Telescopic hot sticks are available.

HI-TEST[®] MOV ARRESTER/LEAKAGE TESTERS

HISAT-15 / HISAT-25







- 1 VOLTAGE AND CURRENT DISPLAYED ON EASY TO READ LEDS**
- 2 POWER BUTTON**
- 3 PIVOTING HANDLE AND BELT CLIP FOR PORTABILITY**



FEATURES

- Non-destructive testing of de-energized surge arresters for non-visible internal breakdown
- Tests up to 25kV class MOV arresters (up to 18kV rated)
- Test MOV arresters for shorts and sparkover voltage
- Fully portable and easy-to-use solution
- Powered by a 12VDC rechargeable battery
- Auto shut-off

ACCESSORIES

Charger Adapter	Test Leads		
			
025-02070-120V	025-02015-SUB	025-02190-SUB	025-02195-SUB

SPECIFICATIONS

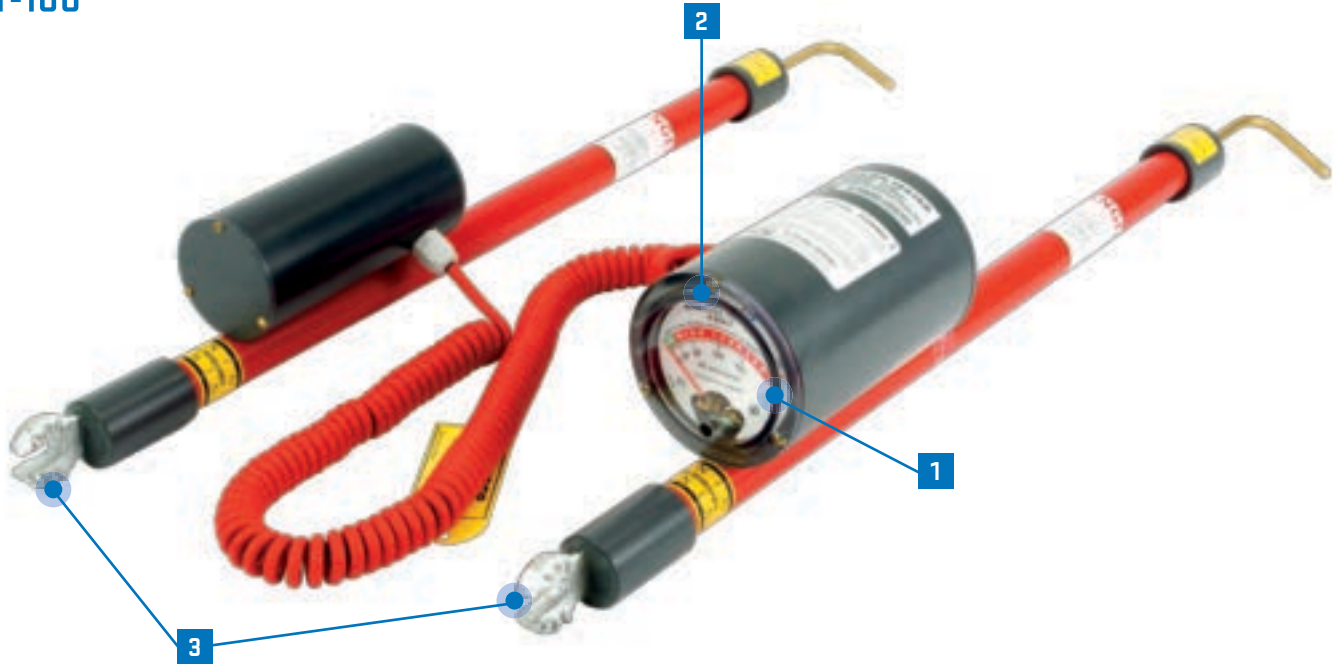
Model Number	HISAT-15 and HISAT-25
DC Output Voltage Range	HISAT-15: 0-21kV HISAT-25: 0-30kV
Voltage Resolution	HISAT-15: 700VDC HISAT-25: 1000VDC
Operating Frequency	50/60Hz
Battery	12VDC rechargeable sealed lead acid
Battery Life	Operates approximately 3-5 days of typical use on a single charge
Operating Temperature Range	-25°F to +125°F (-32°C to +50°C)
Weight (With Battery)	4.6 lbs. (2.1 kg)
Dimensions	12" L x 5" W x 8" H (31 cm x 13 cm x 20 cm)

ORDERING INFORMATION

Part No.	Description
HISAT-15	Surge Arrester/Leakage Tester for up to 15kV Class Arresters; Includes Battery, (1) High Voltage Test Lead, (1) Ground Return Lead, (1) Static Ground Lead and 120VAC Charging Adapter
HISAT-15/220P	Surge Arrester/Leakage Tester for up to 15kV Class Arresters; Includes Battery, (1) High Voltage Test Lead, (1) Ground Return Lead, (1) Static Ground Lead and 220VAC Charging Adapter
HISAT-25	Surge Arrester/Leakage Tester for up to 25kV Class Arresters; Includes Battery, (1) High Voltage Test Lead, (1) Ground Return Lead, (1) Static Ground Lead and 120VAC Charging Adapter
HISAT-25/220P	Surge Arrester/Leakage Tester for up to 25kV Class Arresters; Includes Battery, (1) High Voltage Test Lead, (1) Ground Return Lead, (1) Static Ground Lead and 220VAC Charging Adapter
075-02000-12V	Replacement Battery
025-02070-120V	120VAC Charger Adapter
050-02000-12V	12VDC Charging Cord
050-02025-220V	220VAC Charging Adapter
025-02015-SUB	Red High Voltage Test Lead
025-02190-SUB	Black Ground Return Lead
025-02195-SUB	Black Static Ground Lead
050-02030-SET	Complete Test Lead Set - (1) High Voltage, (1) Ground Return, (1) Static Ground
575-02012-SAT	Wall Mount Rack
B-5	Nylon Zippered Carrying Bag
Note: Because of new arrester technology, will not properly test gap or hybrid MOV/GAP type arresters such as Hubbell [®] Optima or Cooper [®] VariGAP	

ARRESTER TESTER

AT-100



1 EASY TO READ ANALOG METER FACE

3 GREEN/RED SCALE PROVIDES CLEAR INDICATION OF LEAKAGE CURRENT

3 UNIVERSAL SPLINE ATTACHMENTS

FEATURES

- Designed to test lightning arresters for damage or deterioration
- Live line tester tests lightning arresters prior to energizing
- For use on system voltages from 4kV to 25kV line-to-line and up to 69kV with optional add-on resistor sticks
- Versatile for overhead and underground applications



PROBES AND ACCESSORIES

Overhead Probes	Add-On Resistor	Underground Dead Front Bushing Probes	Extension Hot Sticks	Hot Stick Adapter
				
025-OLPS-5 (l); 025-OLPS-6 (r)	R-69	ASP-15/25 (l); ASP-35U (r)	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	AT-100
Voltage Range	4kV to 25kV; up to 69kV with optional add-on resistor sticks
Operating Frequency	50/60Hz
Operating Temperature Range	-25°F to +125°F (-32°C to +50°C)
Meter Face Size	3" (7.6cm)
Battery	None
Meter Housing Dimensions	5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm)
Diameter of Fiberglass	1" (2.54 cm)
Cord Length	Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m)
Cord Voltage Rating	Up to 10kV
Weight (Without Probes)	4.7 lbs. (2.1 kg)
Dimensions	22" L x 3.5" H (56 cm x 9 cm)

ORDERING INFORMATION

Part No.	Description
AT-100	Lightning Arrester/Leakage Tester 4-25kV, up to 69kV with Optional R-69 Resistors; Includes (2) 025-OLPS-5 Overhead Brass Hook Probes and CM-100/V Case
AT-100/K1	Kit Includes AT-100 with (2) 025-OLPS-5 Overhead Brass Hook Probes, (2) R-69 Resistor Sticks and CM-100/V Case
025-OLPS-5	Overhead Brass Hook Probe
025-OLPS-6	Overhead Brass Pigtail Probe
R-69	Add-On Resistor Stick for AT-100 for Voltages Above 25kV Up To 69kV (Pair Required)
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold® and Cooper® (RTE) Bushings
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CM-100/V	Metal Carrying Case
The use of a hot stick is required. Other kits are available, contact HDE.	

DC LEAKAGE TESTER

PT-5000W



1 TEST VOLTAGE SELECTOR

2 BRIGHT LED INDICATORS

3 HEAVY DUTY RUBBER INSULATED COILED TEST LEADS

4 LARGE COPPER ALLIGATOR CLIPS WITH HEAVY DUTY BOOTS

FEATURES

- Portable, general purpose dual voltage leakage tester
- Designed to test primary distribution voltage or secondary voltage equipment for faults or high leakage currents
- Checks for leakage on de-energized and discharged cables, capacitors, transformers, joints, terminations, insulators
- User selectable test voltage 500VDC or 5,000VDC
- Compact, lightweight and easy-to-use
- Versatile for overhead and underground applications

SPECIFICATIONS

Model Number	PT-5000W
Test Voltage	500VDC or 5,000VDC nominal
Test Current	1,000 microamps indicated on 500VDC range 100 microamps indicated on 5,000VDC range 2,000 microamps maximum
Operating Frequency	50/60Hz
Operating Temperature	-25°F to +125°F (-32°C to +50°C)
Battery	9V field replaceable lithium or alkaline battery
Weight	1 lb., 13.5 oz. (0.84 kg)
Dimensions	8" L x 4" W x 2.5" H (20.32 cm x 10.16 cm x 6.35 cm)
Test Leads Length	Retracted: 21" (53.34 cm); Extended: 54" (137.16 cm)

ORDERING INFORMATION

Part No.	Description
PT-5000W	High Voltage DC Leakage Tester, 500VDC or 5,000VDC; Includes Instruction Manual

CAP CHECK[®] SUBSTATION CAPACITOR TESTER

CC-II/100



1 METERS DISPLAY CURRENT THROUGH EACH CAPACITOR AND VOLTAGE APPLIED TO CAPACITOR BANK

2 CURRENT TRANSFORMER AND CORD

3 VOLTAGE TEST LEADS

4 120V POWER SUPPLY AND GROUND CORDS

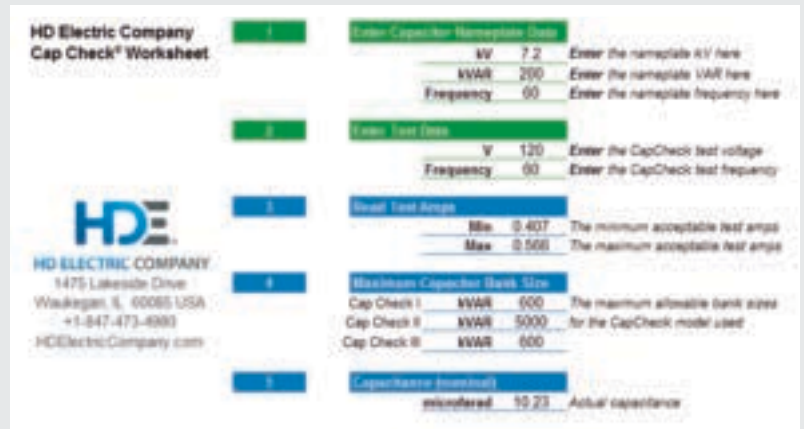
5 HEAVY DUTY CARRYING CASE WITH HANDLES



FEATURES

- Self-contained substation capacitor bank testing solution
- Quickly and easily test capacitor banks for incipient faults, failures and ruptures without disconnecting individual capacitor
- A valuable asset in maintaining substation capacitor banks
- Determines the true internal condition of capacitors by impressing voltage across each capacitor
- Maintenance tool for substation capacitor banks to test for good, bad or failing capacitors

ACCESSORIES



SPECIFICATIONS

Model Number	CC-II/100
Power Required	120V, 50/60Hz, 20 amps
Maximum Current Output	13 amps
Operating Frequency	60Hz (50Hz available)
Operating Temperature Range	-25°F to +125°F (-32°C to +50°C)
Weight	122 lbs. (55 kg)
Dimensions	36" L x 18" W x 15" H (90 cm x 45 cm x 37.5 cm)
Sectional Hot Stick Length	24' L (7.2 m)
Cordage Length	50' L (15 m) each cord

ORDERING INFORMATION

Part No.	Description
CC-II/100	Substation Capacitor Checker - Carrying Case Version, Includes CT002 2" CT, Energizing Cord, Power Supply Cord and Ground Cord
CT002	2" Current Transformer with Plug, Cord and Hot Stick Adapter
CT004	4" Current Transformer with Plug, Cord and Hot Stick Adapter

CAP CHECK[®] PORTABLE CAPACITOR TESTER

CC-III



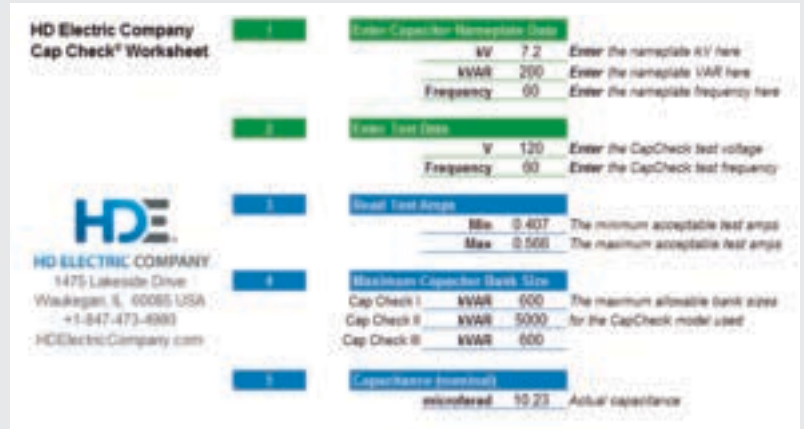
- 1** HEAVY-DUTY SPRING LOADED ALUMINUM HANGING HOOKS
- 2** METERS DISPLAY CURRENT THROUGH EACH CAPACITOR AND VOLTAGE APPLIED TO CAPACITOR BANK
- 3** VOLTAGE TEST LEADS
- 4** CURRENT TRANSFORMER AND CORD
- 5** 120V POWER SUPPLY CORD
- 6** REMOVEABLE TOP AND BOTTOM COVERS

FEATURES

- Portable, self-contained capacitor testing solution
- Quickly test pole-mounted or individual capacitors for incipient faults, failures and ruptures without disconnecting
- Determine the true internal condition of capacitors by impressing voltage across each capacitor
- Portable unit speeds testing

ACCESSORIES

Current Transformers	
	
CT002/III	CT004/III



SPECIFICATIONS

Model Number	CC-III
Power Required	120V, 50/60Hz, 2 amps
Maximum Current Output	2 amps
Operating Frequency	60Hz (50Hz available)
Operating Temperature Range	-25°F to +125°F (-32°C to +50°C)
Weight	45 lbs. (20 kg)
Dimensions	11" L x 13" W x 19" H (27.5 cm x 32.5 cm x 47.5 cm)
Cordage Length	12' L (3.6 m) each cord

ORDERING INFORMATION

Part No.	Description
CC-III/K01	Distribution/Substation Capacitor Checker – Portable Version, Includes CT002/III 2" CT
CC-III	Distribution/Substation Capacitor Checker - Portable Version, CT Sold Separately
CT002/III	2" Current Transformer with Plug and Cord
CT004/III	4" Current Transformer with Plug and Cord

CLEARTEST[®] TRANSFORMER TESTER

CT-300



1 SINGLE TEST BUTTON

2 VISUAL INDICATION OF OPEN CIRCUITS, SHORT CIRCUITS, SHORTED TURNS OR WINDINGS

3 HEAVY DUTY CARRYING BAG FOR MAXIMUM TOOL PROTECTION

4 STRONG MAGNETS BUILT INTO BAG AND TESTER



FEATURES

- Quickly tests deenergized power distribution transformers
- Briefly energizes the transformer and takes a snapshot of the condition by measuring the voltage, current and power factor of the test signal
- Tests overhead, pad-mount and distribution transformers
- Audible alarm confirms successful test
- Improve SAIDI statistics by quickly testing and getting the transformer back in service
- Auto self-test performed with every test
- Compact, lightweight and easy-to-use

SPECIFICATIONS

Model Number	CT-300
Short	Power factor <0.3 to 0.5, current dependent
Open	Current <10 μ A
Transformer Ok	Power factor \geq 0.3 to 0.5, current dependent
Operating Frequency	50/60Hz
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Battery	(2) 9V field replaceable lithium or alkaline batteries
Weight	1.6 lbs. (0.72 kg)
Dimensions	7.8" L x 4" W x 2.3" H (19.5 cm x 10.1 cm x 5.9 cm)

ORDERING INFORMATION

Part No.	Description
CT-300	ClearTest Transformer Tester; Includes B-9 Carrying Bag
B-9	Red Carrying Bag with Window and Two Magnets
B-2	Optional Padded, Zippered Carrying Bag with Strap

TILT TRANSFORMER TESTERS

TILT-II SERIES



- 1 BUZZER CONFIRMS SUCCESSFUL TEST**
- 2 SINGLE TEST BUTTON**
- 3 VISUAL TEST RESULT INDICATIONS**
- 4 ALLIGATOR CLIPS WITH HEAVY DUTY BOOTS**
- 5 AVAILABLE MAGNET HOLDS THE TESTER IN PLACE WHILE TESTING**

FEATURES

- Quick and easy check for opens or shorts on transformers before energizing
- Provides clear indications of open circuits, short connections and confirmation that the test results are OK
- Tests overhead, pad-mount and other distribution transformers
- Tests the primary and secondary sides of de-energized transformers without disconnecting
- Prevents line workers from installing a fuse on a shorted transformer



SPECIFICATIONS

Model Numbers	TL-MAN-M / TL-MAN-N / TL-AST-M / TL-AST-N
Output Voltage	6VDC maximum pulsed at 50Hz nominal
Short	≤ 10Ω, varies with battery voltage
Open	≥ 10Ω, varies with battery voltage
Transformer OK	Minimum inductance 800μH
Operating Frequency	50/60Hz
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Battery	9V field replaceable lithium or alkaline battery
Weight	TILT II: 1 lb. 1 oz. (0.47 kg) TILT II with magnet: 1 lb. 2 oz. (0.51 kg)
Dimensions	5.7" L x 3.6" W x 1.2" H (14.5 cm x 9.1 cm x 3.0 cm)
Test Lead Length	21" (53.34 cm) retracted, 54" (137.16 cm) fully extended

ORDERING INFORMATION

Part No.	Description
TL-MAN-N	TILT II Transformer Tester with Manual Self-Test; Includes B-8 Bag
TL-MAN-M	TILT II Transformer Tester with Manual Self-Test and Magnet; Includes B-8 Bag
TL-AST-N	TILT II Transformer Tester with Automatic Self-Test; Includes B-8 Bag
TL-AST-M	TILT II Transformer Tester with Automatic Self-Test and Magnet; Includes B-8 Bag
B-8	Replacement Padded Carrying Bag

QUICK-CHECK[®] TRANSFORMER & CAPACITOR TESTERS

QUICK-CHECK SERIES



- 1 BUZZER CONFIRMS SUCCESSFUL TEST**
- 2 SINGLE TEST BUTTON**
- 3 VISUAL TEST RESULT INDICATIONS**
- 4 ALLIGATOR CLIPS WITH HEAVY DUTY BOOTS**
- 5 AVAILABLE MAGNET HOLDS THE TESTER IN PLACE WHILE TESTING**

FEATURES

- Quick and easy check for opens or shorts on transformers or capacitors before energizing
- Provides clear indications of open circuits, short connections and confirmation that the test results are OK
- Tests overhead, pad-mount and other distribution transformers as well as capacitors and capacitor banks
- Tests the primary and secondary sides of de-energized transformers and capacitors without disconnecting
- Prevents line workers from installing a fuse on a shorted transformer or capacitor



SPECIFICATIONS

Model Numbers	QC-MAN-M / QC-MAN-N / QC-AST-M / QC-AST-N
Output Voltage	6VDC maximum pulsed at 50Hz nominal
Short	≤ 10Ω, varies with battery voltage
Open	≥ 10Ω, varies with battery voltage
Transformer OK	Minimum inductance 800μH
Capacitor OK	Minimum capacitance 0.5μf Maximum capacitance 300μf
Operating Frequency	50/60Hz
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Battery	9V field replaceable lithium or alkaline battery
Weight	Quick-Check: 1 lb. 1 oz. (0.47 kg) Quick-Check with magnet: 1 lb. 2 oz. (0.51 kg)
Dimensions	5.7" L x 3.6" W x 1.2" H (14.5 cm x 9.1 cm x 3.0 cm)
Test Lead Length	21" (53.34 cm) retracted, 54" (137.16 cm) fully extended

ORDERING INFORMATION

Part No.	Description
QC-MAN-N	Quick-Check Transformer & Capacitor Tester with Manual Self-Test; Includes B-8 Bag
QC-MAN-M	Quick-Check Transformer & Capacitor Tester with Manual Self-Test and Magnet; Includes B-8 Bag
QC-AST-N	Quick-Check Transformer & Capacitor Tester with Automatic Self-Test; Includes B-8 Bag
QC-AST-M	Quick-Check Transformer & Capacitor Tester with Automatic Self-Test and Magnet; Includes B-8 Bag
B-8	Replacement Padded Carrying Bag

HIGH VOLTAGE AMMETER

HVA-2000



CE

- 1** LARGE, BRIGHT LED DISPLAY
- 2** CONDUCTOR CAPACITY 2.75" (7.0CM)
- 3** UNIVERSAL SPLINE AND SHOTGUN STICK CONNECTION

FEATURES

- Measures AC current from 1 to 2000 Amps on system voltages up to 500kV line-to-ground
- Stores the last 4 readings
- Dual measurement modes – peak hold and real time
- Takes spot-load checks with ease
- Verifies phases are balanced
- Versatile for overhead and underground applications
- Compact, lightweight design



ACCESSORIES



SPECIFICATIONS

Model Number	HVA-2000
Operating Voltage Range	Up to 500kV line-to-ground
Operating Frequency	25-500Hz
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
LED Height	1.5" (3.8 cm)
Accuracy 50-60Hz	1-10A - 1% +/- 2 counts 11-100A - 1% +/- 3 counts 101-500A - 1% +/- 6 counts 501-2000A - 1% +/- 8 counts

Accuracy 25-49Hz and 61-500Hz	1-10A - 2% +/- 3 counts 11-100A - 2% +/- 4 counts 101-500A - 2% +/- 6 counts 501-2000A - 2% +/- 8 counts
Battery	9V field replaceable lithium or alkaline battery
Battery Life	About 100 readings
Weight	1.8 lbs. (0.8 kg)
Dimensions	11.5" L x 6.6" W x 4" H (29 cm x 17 cm x 10 cm)

ORDERING INFORMATION

Part No.	Description
HVA-2000	High Voltage Digital Ammeter, 0-2000 AMPS AC with Large Digital Display, Holds Last 4 Readings; Includes B-5 Bag
HVA-2000H	High Voltage Digital Ammeter, 0-2000 AMPS AC; Includes CS-HVA Case
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CS-HVA	Rugged Plastic Carrying Case
B-5	Zippered Carrying Bag

The use of a hot stick is required. Telescopic hot sticks are available.

HALO[®] HIGH VOLTAGE AMMETERS

8280 / 8281 / 9390 / 9391



- 1 RUGGED MOLDED HEAD**
- 2 AUTO-RANGING LCD DISPLAY WITH 3.5-DIGIT READOUT**
- 3 CONTROL PANEL WITH PUSH BUTTONS**
- 4 UNIVERSAL SPLINE ATTACHMENT**

FEATURES

- Quickly take current reading on system voltages up to 69kV
- Take spot-load checks with ease
- Verify phases are balanced
- Peak Hold mode (HALO I)
- Tracking and Peak Hold modes (HALO II)
- Versatile for overhead and underground applications



ACCESSORIES

Extension Hot Sticks	Hot Stick Adapter
	
Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Numbers	8280 / 8281 / 9390 / 9391
Operating Voltage Range	Up to 69kVAC line-to-line
Measurement Range	Low range: 0.1 to 199.9 Amps; High range: 199.9 to 1,999 Amps
Operating Frequency	25-1000Hz
Operating Temperature Range	0°F to +122°F (-18°C to +50°C)
Display	3.5-digit LCD, 0.5" (13 mm) high characters
Accuracy	+/- 3% of reading +/- 3 counts
Battery	9V field replaceable lithium or alkaline battery
Battery Life	40+ hours of continuous operation

Weight	2 lbs. 13 oz. (1.28 kg)
Dimensions 8280 and 9390 models	Maximum hook opening: 2.3" (5.8 cm) Maximum hook depth: 3.7" (9.4 cm) Tube dimensions: 18" L x 1.75" Dia. (45.7 cm x 4.5 cm) Overall length: 28" (71 cm)
Dimensions 8281 and 9391 models	Outside fork dimension: 8.5" L x 5.5" W x 1.1875" Thick (22 cm x 14 cm x 3 cm) Inside fork dimension: 2.75" W x 5.5" Deep (7 cm x 14 cm) Tube dimensions: 18" L x 1.75" Dia. (45.7 cm x 4.5 cm) Overall length: 28" (71 cm)

ORDERING INFORMATION

Part No.	Description
8280	HALO I Ammeter, 0-2000 AMPS AC with Peak Hold and Hook Head; Includes B-7 Bag
8280/HC-5	HALO I Ammeter, 0-2000 AMPS AC with Peak Hold and Hook Head; Includes HC-5 Case
8281	HALO I Ammeter, 0-2000 AMPS AC with Peak Hold and Fork Head; Includes B-7 Bag
8281/HC-5	HALO I Ammeter, 0-2000 AMPS AC with Peak Hold and Fork Head; Includes HC-5 Case
9390	HALO II Ammeter, 0-2000 AMPS AC with Peak Hold, Tracking and Hook Head; Includes B-7 Bag
9390/HC-5	HALO II Ammeter, 0-2000 AMPS AC with Peak Hold, Tracking and Hook Head; Includes HC-5 Case
9391	HALO II Ammeter, 0-2000 AMPS AC with Peak Hold, Tracking and Fork Head; Includes B-7 Bag
9391/HC-5	HALO II Ammeter, 0-2000 AMPS AC with Peak Hold, Tracking and Fork Head; Includes HC-5 Case
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
HC-5	Aluminum Case with Foam Interior and Steel Corners
B-7	Nylon Zippered Carrying Bag

The use of a hot stick is required. Telescopic hot sticks are available.

FEEDER AMMETER CLEAR TEST

FACT-1

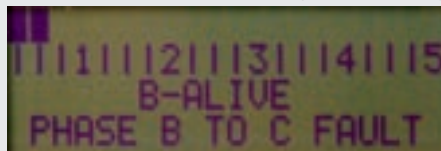


- 1** LCD DISPLAY SHOWS INSTRUCTIONS, MESSAGES AND AMMETER CURRENT
- 2** 3-PHASE TEST LEADS
- 3** SELF-TEST BUTTON
- 4** HEAVY DUTY ROLLING CASE WITH HANDLE

FEATURES

- Portable solution indicates the presence of grounds or short circuits on 3-phase conductors of a primary feeder or transformer secondaries
- Alerts user to grounds left in place before the circuit is energized
- Prevents fault currents, transformer damage and blown fuses

Example of message on LCD display



SPECIFICATIONS

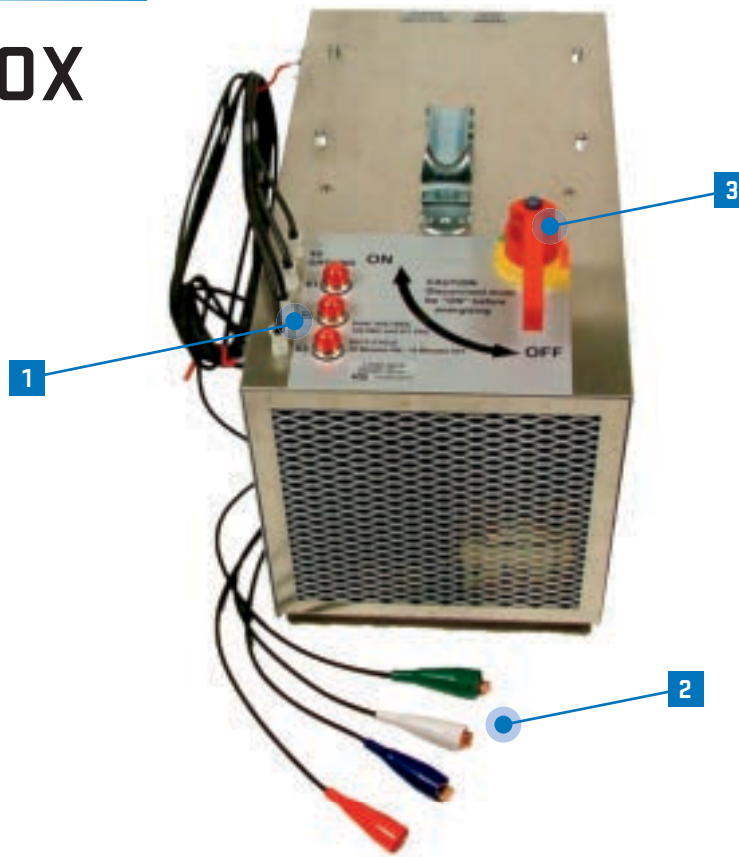
Model Number	FACT-1
Measurement Range	Up to 5A current
Operating Frequency	60Hz
Operating Temperature Range	0°F to +90°F (-18°C to +32°C)
Output	120VAC
Display	LCD display
Power	120VAC
Weight	30 lbs. (13.6 kg)
Dimensions	21" W x 16.5" L x 11.5" H (53 cm x 42 cm x 29 cm)

ORDERING INFORMATION

Part No.	Description
FACT-1	Feeder Ammeter Clear Test - Unintentional Grounds Detector; Includes (4) Test Cables and Power Cord

LOAD BOX

LB-5 / LB-5-1



1 BLOWN FUSE INDICATOR LAMPS

2 SECONDARY CONNECTION LEADS

3 40A FUSED DISCONNECT SWITCH

FEATURES

- Helps prevent damaging effects of ferroresonance found on lightly loaded or unloaded 3-phase power systems during single phase switching
- Ferroresonance typically occurs on medium voltage distribution transformers and power cables during single phase switching
- Overvoltage leads to insulation breakdown resulting in damage to the transformer, lightning arresters and other equipment
- 5,000 watt per phase loading
- Resistive load up to 3 phases



SPECIFICATIONS

Model Number	LB-5 and LB-5-1
Operating Voltage Range	120/208V and 277/480V auto-ranging
Operating Frequency	50/60Hz
Operating Temperature Range	-25°F to +125°F (-32°C to +50°C)
Power	5kW per phase, 15kW total
Weight	55 lbs. (24.9 kg)
Dimensions	28" L x 14.5" W x 18" H (71 cm x 37 cm x 46 cm)

ORDERING INFORMATION

Part No.	Description
LB-5	Dual Voltage Load Box, 120/208V and 277/480V; Includes (4) Test Cables
LB-5-1	Dual Voltage Load Box, 120/208V and 277/480V; Includes a Switch to Unground the Load and (4) Test Cables

CABLE DISTANCE METERS

CDM-50 / CDM-75



1 SIMPLE TWO-BUTTON OPERATION

2 LCD DISPLAY

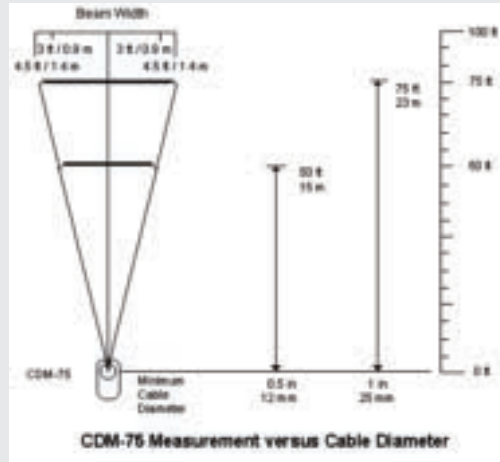
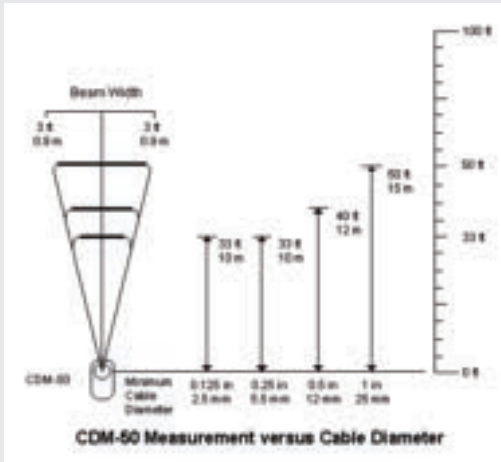
3 BATTERY COMPARTMENT

FEATURES

- Measures cable sag, height and clearance of overhead conductors via an ultrasonic signal
- Alternative to telescopic measuring poles
- No physical connection to cables or wires required
- Simple, three-button operation ensures fast, effective measurements



Closeup of CDM-75 Display



SPECIFICATIONS

Model Numbers	CDM-50	CDM-75
1" (25 MM) Cable Diameter	10' – 50' (3 m – 15 m)	10' – 75' (3 m – 23 m)
0.5" (12 MM) Cable Diameter	10' – 50' (3 m – 15 m)	10' – 50' (3 m – 15 m)
0.25" (5.5 MM) Cable Diameter	10' – 40' (3 m – 12 m)	N/A
0.125" (2.5 MM) Cable Diameter	10' – 33' (3 m – 10 m)	N/A
Number of Wire Measures	6	6
Accuracy	0.5% +/- 2 digits	
Resolution – Range Less Than 33' (10 M)	0.25" (5 mm)	
Resolution – Range More Than 33' (10 M)	0.5" (10 mm)	
Minimum Gap Between Wires	6" (150 mm)	
Operating Temperature Range	+14°F to +104°F (-10°C to +40°C)	
Battery	9V field replaceable lithium or alkaline	
Battery Life	50,000 measurements with long life alkaline type	
Measurement Units	Imperial (feet/inches) or metric (meters)	
Auto Power Off Delay	3 minutes	
Weight	1 lb. (0.5 kg)	
Dimensions	7.5" L x 3" W x 2.5" H (19.0 cm x 7.6 cm x 6.3 cm)	
Specifications based on ambient temperature of 68°F (20°C)		

ORDERING INFORMATION

Part No.	Description
CDM-50	Cable Distance Meter Measures up to 6 Wires, 50' Range with B-20 Bag
CDM-75	Cable Distance Meter Measures up to 6 Wires, 75' Range with B-20 Bag
B-20	Padded, Zippered Carrying Bag
Available in USA / Canada only	

HI-TEST[®] ROPE TESTER

RT-200



1 LED LIGHTS INDICATE GOOD (GREEN) OR BAD (RED) DIELECTRIC CONDITION

2 BUZZER FOR AUDIBLE WARNING WHEN DEFECTIVE ROPE SECTION IS IDENTIFIED

3 MOLDED HANDLE FOR EASY PORTABILITY



FEATURES

- Designed to test dielectric integrity of line ropes and straps in the field
- Continuously test any length of rope or straps
- Use with ropes ranging from 3/8" dia. (9.5 mm) to 1.5" dia. (38 mm)
- Powered by a rechargeable Li-Ion battery

ACCESSORIES

Charger Accessories		
		
025-02220-120V	050-02050-12V	050-00310-PRX

SPECIFICATIONS

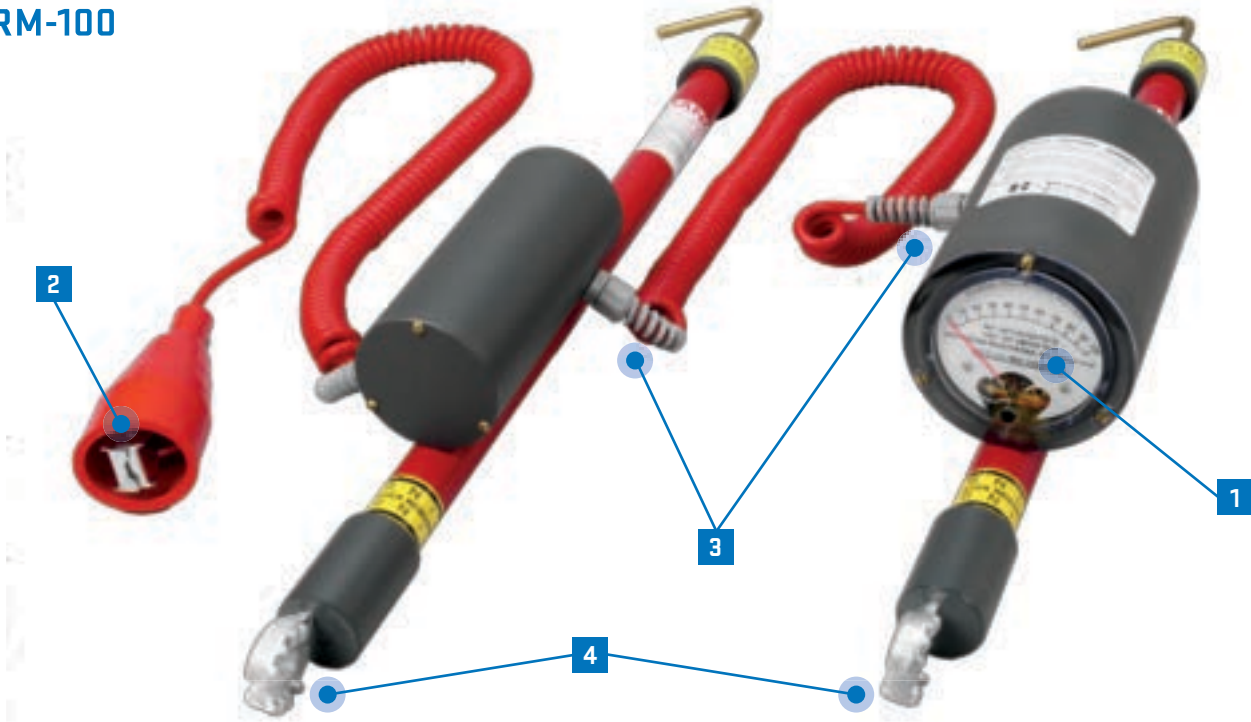
Model Number	RT-200
Output Voltage and Current	7kVDC maximum open circuit voltage 40 μ A maximum short circuit current
Current Threshold For Bad Indication	15 microamps
Battery	Rechargeable lithium-ion
Battery Life	16 hours of continuous use under normal conditions
Operating Temperature Range	-25°F to +125°F (-32°C to +52°C)
Weight (With Battery)	3 lbs. (1.36 kg)
Dimensions	9" L x 7.5"W x 9" H (23 cm x 19 cm x 23 cm)

ORDERING INFORMATION

Part No.	Description
RT-200	Rope Tester; Includes Battery and 120VAC Charging Adapter
RT-200/220P	Rope Tester; Includes Battery and 220VAC Charging Adapter
075-02020-8VLI	Replacement Lithium-Ion Battery for RT-200 Models Manufactured After Jan 2016 (3-pin charger)
025-02220-120V	120VAC 3-Pin Charging Adapter for RT-200 Models Manufactured After Jan 2016
050-02050-12V	12VDC 3-Pin Charging Cord for RT-200 Models Manufactured After Jan 2016
050-00310-PRX	220VAC 3-Pin Charging Adapter Kit for RT-200 Models Manufactured After Jan 2016
075-IT3-8VX4	Replacement 8VDC Sealed Lead-Acid Rechargeable Battery for RT-200 Models Manufactured Before 2016 (2-pin charger)
025-02070-120V	120VAC 2-Pin Charging Adapter for RT-200 Models Manufactured Before 2016
050-02000-12V	12VDC 2-Pin Charging Cord for RT-200 Models Manufactured Before 2016
050-02025-220V	220VAC 2-Pin Charging Adapter for RT-200 Models Manufactured Before 2016

PHASE ROTATION METER

PRM-100



- 1** LARGE 3" METER FACE FOR EASY READING AND INCREASED ACCURACY
- 2** HEAVY DUTY GROUND CORD WITH LARGE ALLIGATOR CLIP
- 3** STRAIN RELIEF FOR MAXIMUM CORD LIFE
- 4** UNIVERSAL SPLINE ATTACHMENTS



FEATURES

- Easily determine phase rotation
- Dual range 0-5kV and 0-15kV, optional add-on resistors available for use up to 45kV
- Optional accessories available for overhead and underground applications

PROBES AND ACCESSORIES

Overhead Probes	Add-On Resistor	Underground Dead Front Bushing Probes	Insulated Underground Probe	Underground Elbow Probe	Proof Tester® Voltmeter/Phaser Tester	Extension Hot Sticks	Hot Stick Adapter
							
025-OLPS-5 (l); 025-OLPS-6 (r)	R-45	ASP-15/25 (l); ASP-35U (r)	GCP-1	EA-15/25	PT-5000B	Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

Model Number	PRM-100
Operating Frequency	50/60Hz
Voltage Range	0-5kV / 5-15kV / 15-45kV (with optional add-on resistors)
Meter Face Size	3" (7.6 cm)
Operating Temperature Range	-20°F to +140°F (-29°C to +60°C)
Weight	5.3 lbs. (2.4 kg)
Meter Housing Dimensions	5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm)
Diameter of Fiberglass	1" (2.54 cm)
Coiled Cord Length	Coil cord: Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m) Ground lead: 35" (89 cm)
Cord Voltage Rating	Up to 10kV

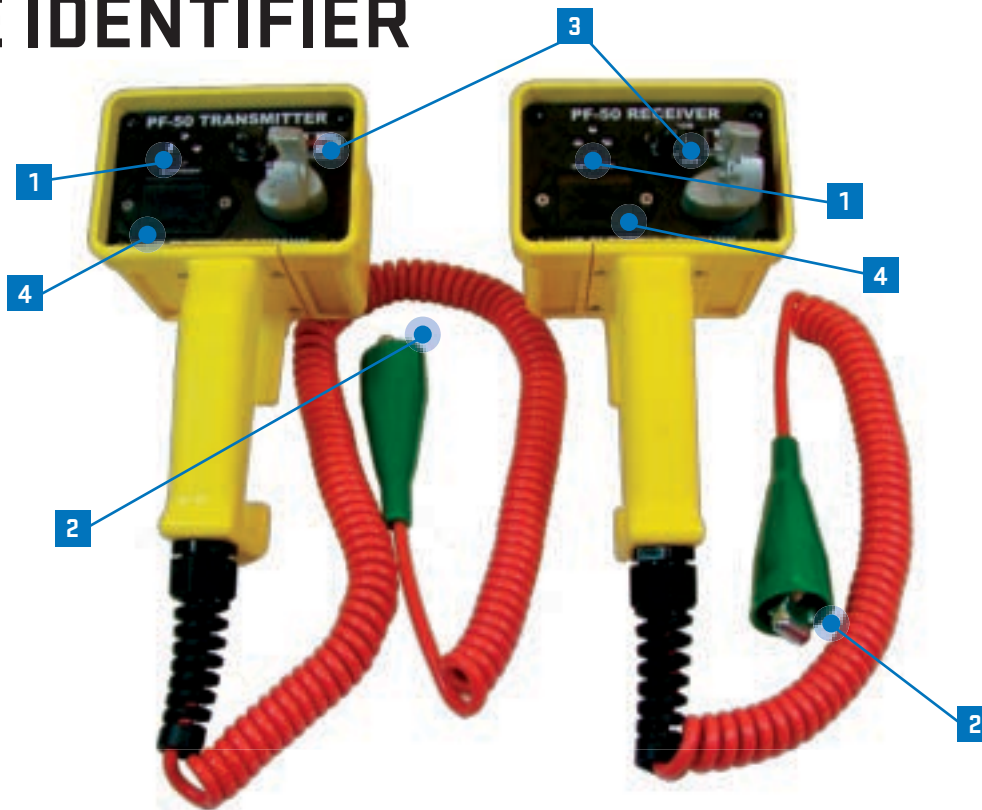
ORDERING INFORMATION

Part No.	Description
PRM-100	Phase Rotation Meter, 0-5/0-15kV, up to 45kV with Optional R-45 Resistor Sticks; Includes (2) 025-OLPS-5 Overhead Brass Hook Probes and CM-100/V Case
025-OLPS-5	Overhead Brass Hook Probe
025-OLPS-6	Overhead Brass Pigtail Probe
R-45	Add-on Resistor Stick (pair required)
ASP-15/25	15kV and 25kV Class Insulated Underground Probe for Loadbreak Bushings
ASP-35U	35kV Insulated Underground Probe for Loadbreak Bushings Designed for Both Elastimold® and Cooper® (RTE) Bushings
GCP-1	General Contact Underground Distribution Probe
EA-15/25	15kV and 25kV Class Underground Loadbreak Elbow Probe
PT-5000B	Proof Tester Voltmeter Tester Confirms Proper Operation. 9V Battery Operated. 5000V Output
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
CM-100/V	Metal Carrying Case

The use of a hot stick is required. Other kits and telescopic hot sticks are available.

CABLE IDENTIFIER

PF-50



1 BRIGHT LED LIGHTS INDICATE MATCHING CONDUCTOR

2 HEAVY DUTY GROUNDING CORDS WITH ALLIGATOR CLIPS

3 UNIVERSAL SPLINE CONNECTIONS


4 BATTERY COMPARTMENT



FEATURES

- Identifies matching phase on long deenergized and discharged conductors
- 50VDC test voltage enables identification of up to 5,000 foot-long conductors
- Compact, lightweight and easy-to-use solution
- Versatile for overhead and underground applications

ACCESSORIES

Extension Hot Sticks	Hot Stick Adapter
	
Different Lengths and Telescopic Hot Sticks Available	HSA-2500

SPECIFICATIONS

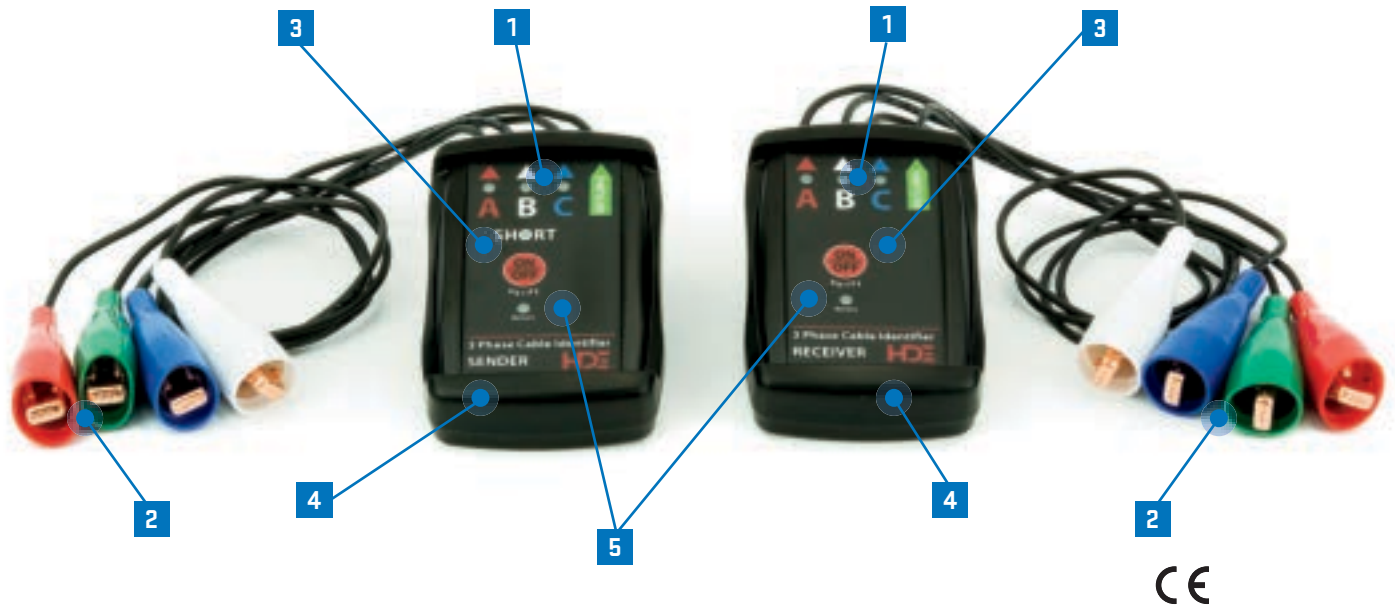
Model Number	PF-50
Operating Frequency	50/60Hz
Test Voltage	50VDC
Maximum Underground Cable Length Tested	5,000' (1,524 m)
Operating Temperature Range	-40°F to +120°F (-40°C to +49°C)
Battery	9V field replaceable alkaline or lithium in each unit
Weight	Transmitter: 1 lb. 9.6 oz. (0.73 kg) Receiver: 1 lb. 7.3 oz. (0.66 kg)
Dimensions	4.5" W x 8" L x 7.5" D (11.4 cm x 20.3 cm x 19.0 cm) each unit
Ground Cord Lead Length	Transmitter: 38" (96.5 cm) Receiver: 21" (53.3 cm)

ORDERING INFORMATION

Part No.	Description
PF-50	Phase Flasher Cable Identifier, Includes Transmitter, Receiver and B-5 Bag
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
B-5	Zippered Carrying Bag
Telescopic hot sticks are available.	

THREE PHASE CABLE IDENTIFIER

31D-100



- 1 BRIGHT LED LIGHTS INDICATE MATCHING AND POTENTIAL SHORTED PHASES**
- 2 ALLIGATOR CLIPS WITH HEAVY DUTY BOOTS**
- 3 SINGLE TEST BUTTON**
- 4 RUGGED RUBBERIZED HOUSINGS**
- 5 LOW BATTERY INDICATOR**

FEATURES

- Identifies matching phases on long deenergized and discharged conductors
- Identifies all three cable phases simultaneously and any shorted phases
- 36VDC test voltage enables identification of up to 7 mile-long conductors
- Compact, lightweight and easy-to-use solution
- Versatile for overhead and underground applications



LED lights indicating connected and shorted phases

SPECIFICATIONS

Model Number	3ID-100
Operating Frequency	50/60Hz
Operating Voltage	38kVDC maximum
Operating Temperature Range	-40°F to +120°F (-40°C to +49°C)
Battery	9V field replaceable alkaline or lithium in each unit
Weight	Each Unit: 1.1 lbs. (.5 kg)
Housing Dimensions	5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm)
Test Leads Length	24" (61 cm)

ORDERING INFORMATION

Part No.	Description
3ID-100	Three Phase Cable Identifier, Includes Sender, Receiver and B-5 Bag
B-5	Zippered Carrying Bag

PHASE SEQUENCE INDICATOR

K-7-1



1 INDICATES PHASE ROTATION BY THE DIRECTION OF THE ROTOR DISC

2 ALLIGATOR CLIP LEADS WITH COLORED BOOTS

FEATURES

- Make three-phase circuit installations or alterations
- Used for making continuity tests of circuits of poly-phase systems
- Use to connect power factor, volt-ampere, watt, watt-hour meters and relays
- No range switching or lamps
- Compact, lightweight and easy-to-use solution

SPECIFICATIONS

Model Number	K-7-1
Operating Frequency	25-60Hz
Operating Voltage	60-600V
Weight	2 lbs. (1 kg)
Housing Dimensions	3.25" dia x 1.75" H (8.3 cm x 4.4 cm)
Test Leads Length	36" (91.4 cm)

ORDERING INFORMATION

Part No.	Description
K-7-1	Phase Sequence Indicator

FUSE TOOL

FT-1



1 CORROSION RESISTANT SWITCH HOOK

2 HEAVY-DUTY FUSE RECEIVER



3 UNIVERSAL SPLINE ATTACHMENT

FEATURES

- Quickly and safely removes and install most cutout-type overhead fuse links
- Provides greater control of the fuse link during installation and removal
- Eliminates the danger of falling fuses



ACCESSORIES

Extension Hot Sticks	Hot Stick Adapter
	
Different Lengths and Telescopic Hot Sticks Available	HSA-2500

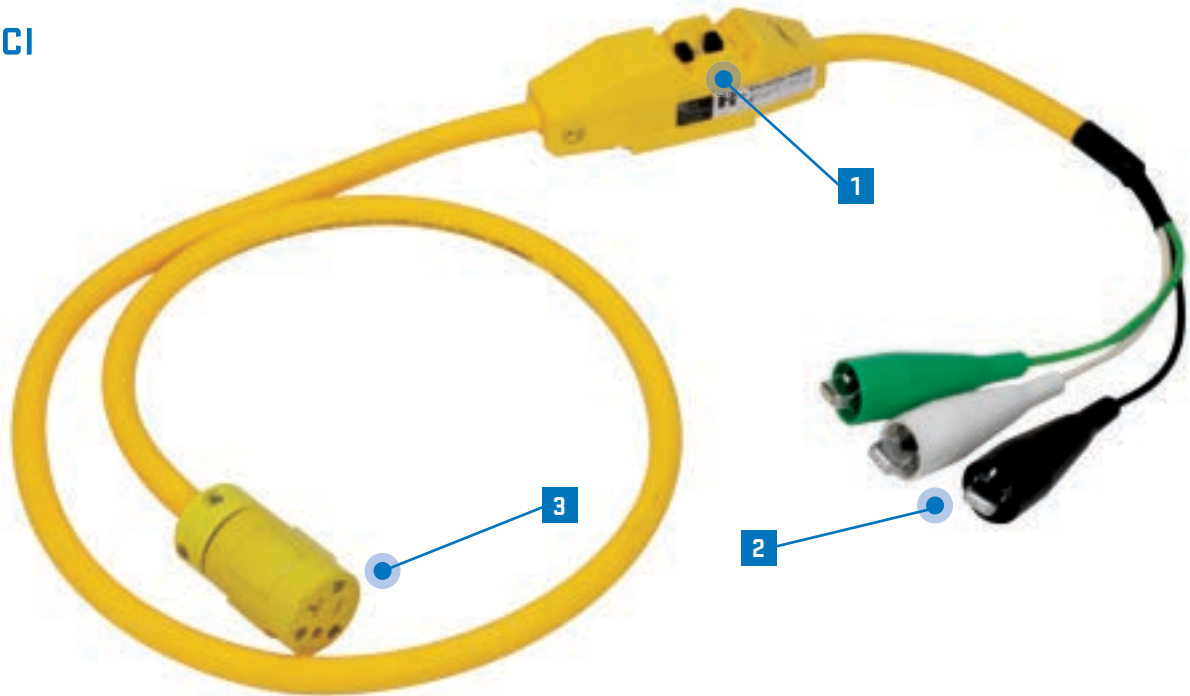
SPECIFICATIONS

Model Number	FT-1
Weight	1.07 lbs. (0.5 kg)
Dimensions	7.75" H x 8" L x 2.4" D (19.7 cm x 20.3 cm x 6.1 cm)

ORDERING INFORMATION

Part No.	Description
FT-1	Fuse Tool
S-4H	4' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
S-6H	6' Extension Hot Stick with Universal Spline, Foam Filled, 1-1/4" Diameter Fiberglass
HSA-2500	Universal Hot Stick Adapter (Shotgun)
B-4	Vinyl Carrying Bag for (2) 4' Extension Hot Sticks
B-6	Vinyl Carrying Bag for (2) 6' Extension Hot Sticks
Telescopic hot sticks are available.	

EXTENSION CLIP CORD

XC-GFCI**1 BUILT-IN GFCI WITH NEON LIGHT****2 ALLIGATOR CLIPS****3 120V POWER RECEPTACLE****FEATURES**

- Powers 120V tools without a need for a power supply
- Attaches to the terminals of a meter socket or transformer using alligator clips
- Grounded 120V plug with built-in GFCI allows testing before each use

SPECIFICATIONS

Model Number	XC-GFCI
Output Voltage	120VAC
Weight	2 lbs. (0.9 kg)
Dimensions	6'-7" L (200.6 cm)

ORDERING INFORMATION

Part No.	Description
XC-GFCI	Clip Cord with GFCI Circuit



HD ELECTRIC COMPANY

CYCLOPS[®] BATTERY POWERED HEADLAMPS

CYCLOPS LED



- 1 RUGGED RUBBER STRAP**
- 2 LED LIGHT**
- 3 HINGED BASE ALLOWS POSITIONING AT ANY ANGLE**

FEATURES

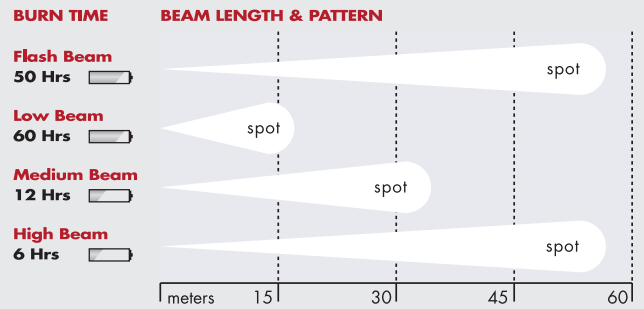
- LED light mounts on hard hat and allows quick and efficient hands-free movement
- Allows for even distribution of weight across the forehead
- Water-resistant
- Field replaceable batteries

SPECIFICATIONS

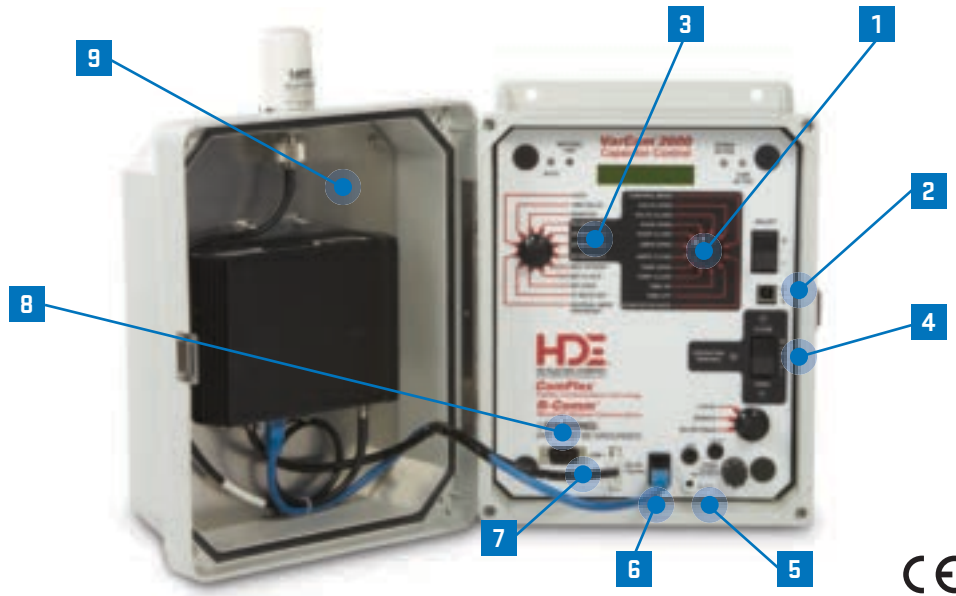
Model Number	Cyclops LED
Power	1 Watt
Battery	3 AAA field replaceable
Battery Life With Alkaline Batteries	50-60 hours
Weight With Batteries	4.5 oz (0.13 kg)
Approximate Bulb Burn Life	10,000 hours
Cyclops Headlamps are not explosion proof	

ORDERING INFORMATION

Part No.	Description
CY3-LED	Cyclops with 4 Setting LED Bulb - High/Med/Low/Flash, (3) AAA Batteries and Rubber Strap
An elastic strap and replacement parts are available.	



VARCOM[®] CAPACITOR CONTROLS



1 SIMPLE FRONT PANEL FUNCTIONALITY

Easy to use and field friendly. Allows the user to easily and intuitively change settings and view critical status parameters.

2 USB INTERFACE

Allows your computer to interface with the control using VARWARE[®] Software.

3 MULTIPLE SCHEDULES

Create independent switching configurations based on variations of time / voltage / temperature / current / kVAR.

4 MANUAL OPERATION

Allows user to manually open or close the cap bank switches.

5 TEST POINTS

Allows for measurement of line voltage and phase current.

6 DUAL PORT ETHERNET

Multi-session capable for DNP3 and remote interrogation, set-point changes and firmware updates.

7 12VDC POWER SUPPLY

For typical communication devices.

Standard: 12VDC – 1A

Optional (for higher power requirements): 12-24VDC – 3A

8 RS-232 COMMUNICATIONS PORT

For serial DNP communications devices with serial only connections.

9 COMMUNICATIONS PANEL

Allows a variety of communications hardware solutions to be installed with ease. Installation and integration of all communication hardware.

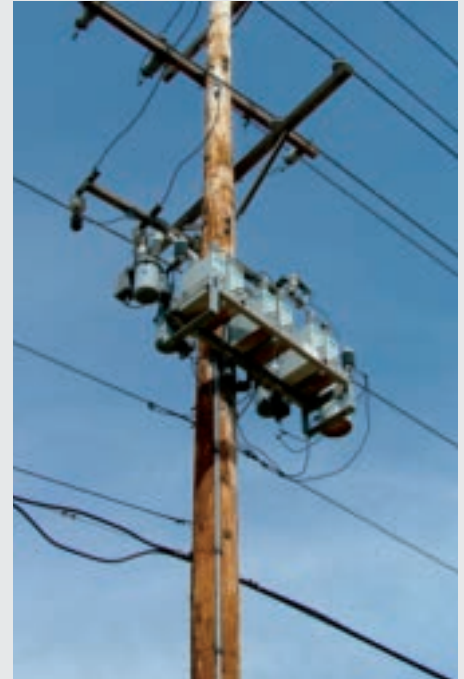
Two-Way Communications from Multiple Platforms:

- Mesh Radio Networks
- Cellular Modem / Router
- AMI Networks
- Wide Area Networks
- Fiber Optics
- WiMAX Networks

AN INDUSTRY LEADER IN CAPACITOR CONTROLS FOR RURAL ELECTRIC | PUBLIC POWER | INVESTOR OWNED

Targeted to the special needs of the utility operator:

- VARCOM Controls are simple to use, yet provide sophisticated system capacitor bank control and auditing
- Plug and play – VARCOM Controls work with a variety of cap bank switch, sensor, SCADA/DMS software and communication devices
- Best customer service and technical support in the market – before, during and after the sale
- Minimal training requirements – Controls can be programmed directly from the front panel or by using the non-licensed VARWARE Software available from our website
- Built to last and backed by a 10-year warranty

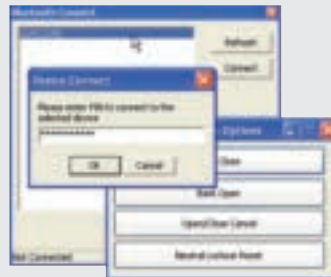


VARWARE SOFTWARE

HDE's VARWARE Control Software manages, programs and interfaces with HDE's VARCOM Capacitor Control product line. VARWARE Software provides the user with a powerful tool for programming controls with customized switching protocols while providing an easy platform for changing settings and extracting data profiles held in the logging function of enabled controls. The DNP interface is controlled by the selection and settings of the DNP points.



Point and click to program a control. Build a library of program files. Retrieve a program from a control to verify operation.



Connect to the control via local Bluetooth[®] encrypted wireless communication and command the VARCOM Control from up to 200 feet away.



All VARCOM Controls can be field upgraded to change operating characteristics or add new functionality by uploading new firmware.



OPTIONS

Junction Box and Wiring Harness

The Junction Box and Wiring Harness for capacitor banks have a plug and play design that allows for a simplified, safe and worry-free installation. They are delivered factory assembled and pre-wired, allowing for reduced installation time, eliminating guesswork. Custom configurations are available.



Wireless Bluetooth® Communications

Encrypted short range local Bluetooth wireless communications for VARWARE Software connection from inside the truck and out of the elements (requires optional dongle).



External Neutral Indicator Light

This light, which is visible on the outside of the control, is illuminated when the neutral current exceeds the set threshold.



Neutral Current Sensor

Used with controls equipped with neutral current sensing, a neutral current sensor can indicate blown fuses, bad capacitors and bad capacitor bank switches.

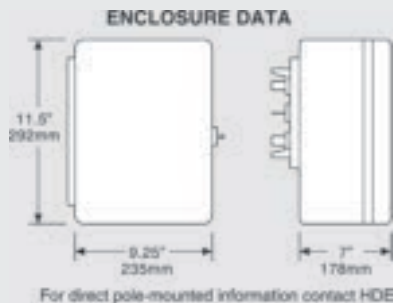
SPECIFICATIONS

MECHANICAL

Mounting: Meter socket, 4 or 6 jaw ringed or pole mount bracket and Amphenol® connector

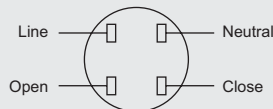
Enclosure: NEMA 3R weatherproof fiberglass; 9.25" W x 11.5" H x 7" D
(235 mm x 292 mm x 178 mm); hinged left, lock hasp on right side

Weight: 8.5 lbs. without communications (3.9 kg)



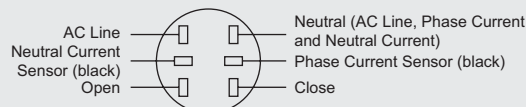
METER SOCKET WIRING (facing meter socket)

4 Jaw: Time, Temperature, Voltage

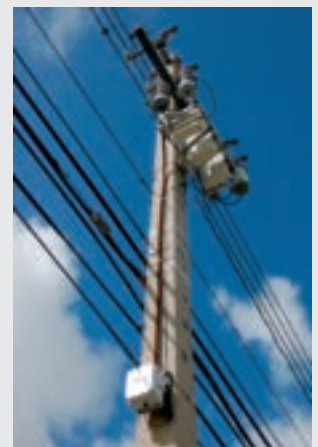


Connectors would be used for neutral current or line current
Other socket wiring configurations are available, contact HDE.

6 Jaw: Phase Current and Neutral Sensor



Other socket wiring configurations are available, contact HDE.



ENVIRONMENTAL

Temperature: -40°F to +185°F (-40°C to +85°C)

Humidity: 5 – 95%, non-condensing

SPECIFICATIONS – *con't*

TECHNICAL

Power Requirement: 100 – 140 or 200 – 260VAC, 10W

Output Contactor: 30A, 120/240VAC; 15 second “on” duration for motor and solenoid operated switches

Fuse: 15A SLO-BLO[®]

Test Points: Insulated banana jack ports for voltage and current

Surge / Lightning Protection: ANSI C37.90.1

Voltage Accuracy: ±0.4%, 0.1VAC resolution

Current Accuracy: ±1.0%, 0.5A resolution

Temperature Accuracy: ±1°F, 1°F resolution

Time Accuracy: Temperature compensated oscillator, ±0.001%

Clock Back-up: Capacitor – 10 days

Display: Liquid Crystal, -22°F to +176°F (-30°C to +80°C)

Computer Interface: USB port using VarWare Software. Bluetooth wireless (200 ft. range), optional

Communications Interface: RS-232 serial interface for DNP3 Ethernet with dual port, multisession capability for DNP3 and configuration with VARWARE control software

Communications Power Supply: 12VDC, 1A (optional 3A)

Communication Protocol: DNP3 / IEEE 1815, level 2

SETTINGS

User Interface: Front panel user interface with visible access to most local control settings via rotary and rocker switches

Voltage: Close: 105 – 127 / 210 – 257VAC 50/60Hz; maximum setting = open volts – 3VAC

Open: 108 – 130 / 213 – 260VAC 50/60Hz; minimum setting = close volts + 3VAC

Time averaged voltage response; setting in 0.1 volt increments

Open/Close Temperature: 0 – 125°F, minimum spacing 5 degrees

Open: 0 – 120°F, no closer than 5°F to Close temperature

Manual Time Delay: 3 – 600 seconds, 1 second increments

Max Operations/Day: Configurable from 2 – 24

Manual Trip: Close and Open operations delayed by user selected Time Delay. 5-minute reclose delay following Open for capacitor discharge

Neutral Amps Trip: 3 – 99A, harmonic filtered, 5-minute time averaged response, manual reset, 5-minute minimum trip time

PT Ratio Set: 1.0 – 500.0 in increments of 0.5

Control Modes: Time / voltage / temperature / kVAR / current with overrides of voltage and temperature as applicable

Compatible Line Post Sensors: Lindsey[®] CVMI, Fisher Pierce[®] 1301, Hubbell and Piedmont

Phase Angle Accuracy: ±1° lead or lag

Current: Open: 5A to 595A; maximum setting = close amps – 5A

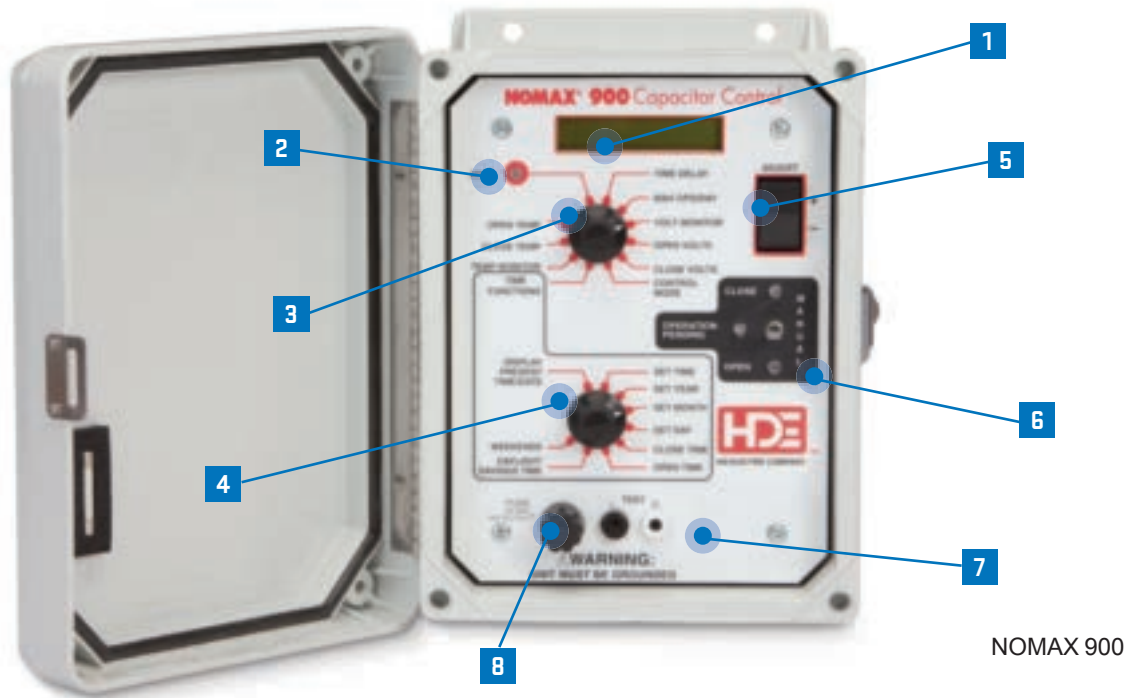
Close: 5A to 600A; minimum setting = open amps + 5A

Time averaged current response; settings in 0.5 Amp increments

kVAR: Open: 280 lagging to 1000 leading (single phase); at least 20kVAR greater than kVAR Close

Close: 2000 lagging to 10 lagging (single phase)

NOMAX[®] CAPACITOR CONTROLS



NOMAX 900

THE INDUSTRY'S SIMPLEST AND MOST DEPENDABLE CONTROLLER FOR NEW AND EXISTING SWITCHED BANKS

- 1** 16-CHARACTER DISPLAY FOR CLEAR VIEW OF SETTINGS
- 2** RED LED PROVIDES CLEAR INDICATION WHEN CONTROL IS IN AUTO MODE
- 3** THE MASTER SETTING ROTARY SWITCH MAKES FOR INTUITIVE AND SIMPLE FIELD SETTING SELECTIONS
- 4** ROTARY SWITCH ALLOWS FOR EASY TIME FUNCTION SETTINGS
- 5** VARIABLE SPEED ROCKER SWITCH FOR EASY ADJUSTMENTS
- 6** TOGGLE SWITCH FOR MANUAL OPEN AND CLOSE OPERATION
- 7** VOLTAGE TEST POINTS
- 8** FUSE PROVIDES 15-AMP PROTECTION

FEATURES

- Designed for total simplicity as a local only control – no communications
- An economical alternative for precise control of capacitor banks using time, temperature, voltage, or any combination
- Adaptive control
- Large easy to read display details system status and control settings
- Intuitive design eliminates the need for a computer or special codes, easing the task of field programming
- Lithium battery for extended, trouble-free clock maintenance
- 10-year warranty



NOMAX 950



NOMAX 900T

SPECIFICATIONS

- **LCD Display**
16 character x 1 line liquid crystal display
- **Test Points**
2 front panel voltage test points
- **Enclosure**
NEMA 4x
Dimensions 6" W x 8" H x 4" D (15cm x 20cm x 10cm)
- **Mounting Options**
4 jaw meter socket
Direct pole mount
- **Environmental**
-22° to +185° F (-30° to +85°C)
5-95% non-condensing humidity
- **Voltage Sensor**
True RMS
Transformer isolated (galvanic isolation)
- **Voltage Input Accuracy**
+/- 1% full scale
-22° to +176° F (-30° to +80°C)
- **Voltage Input Resolution**
.15 VRMS internal
.1 VRMS displayed
- **Voltage Range**
80 to 145 VRMS
- **Temperature Sensor Accuracy**
+/- 0.9° F (0.5°C)
+32° to +158° F (0° to +70°C)
+/- 1.8° F (1°C)
+14° to +185° F (-10° to +85°C)
- **Temperature Sensor Range**
-22° to +185° F (-30° to +85°C)
- **Motor Relays**
Rated 30 amps, fused 15 amp SLO-BLO[®]
15 second ON duration
- **Relay Protection**
MOV and snubbers across contacts
- **Control Protection**
MOV and snubbers line 1 to neutral
Neutral to ground
Line 1 to ground
Fused at 1 amp

SLO-BLO[®] is a registered trademark of LITTLEFUSE, INC.



TERMS AND CONDITIONS

HD Electric Company is herein referred to either as "HDE" or "Seller" and the customer or person or entity purchasing goods or services (hereinafter collectively referred to as "Goods") is referred to as the "Buyer". These Terms and Conditions, any price list or schedule, quotation, acknowledgment or invoice from HDE relevant to the sale of the Goods and all documents incorporated by specific reference therein, constitute the complete and exclusive statement of the terms of the agreement governing the sale of Goods by HDE to Buyer. Buyer's acceptance of the Goods will manifest Buyer's assent to these terms and conditions without variation or addition. Any different or additional terms in Buyer's purchase order or other Buyer documents are hereby objected to. HDE reserves the right in its sole discretion to refuse orders.

1. **PRICES AND TAXES:** Unless a fixed price is quoted, the price at which this order is accepted is subject to adjustment to HDE's price in effect at the time of order. Any current or future tax or governmental charge (or increase in same) affecting Seller's costs or production, sale or delivery or which Seller is otherwise required to pay or collect in connection with the sale, purchase, delivery, storage, processing, use or consumption of Goods (but excluding any tax on Seller's net income or profit) shall be for Buyer's account and shall be added to the price.

2. **TERMS OF PAYMENT:** Terms are stated on HDE's invoice in U.S. currency. HDE shall have the right, among other remedies, either to terminate this agreement or to suspend further performance under this and/or other agreements with the Buyer in the event Buyer fails to make any payment when due, which other agreements Buyer and Seller hereby amend accordingly, or HDE otherwise deems itself insecure. Buyer shall be liable for all expenses, including attorneys' fees, relating to the collection of past due amounts. Should Buyer's financial responsibility become unsatisfactory to HDE, cash payments or security satisfactory to HDE may be required by HDE for future deliveries and for the goods theretofore delivered. If such cash payment or security is not provided, in addition to HDE's other rights and remedies, HDE may discontinue deliveries. HDE may apply a finance charge for payments made by credit card.

3. **SHIPMENT AND DELIVERY:** Unless otherwise expressly provided, shipments are made F.O.B. HDE's shipping point. Risk of loss or damage and responsibility shall pass from HDE to Buyer upon delivery to and receipt by common carrier. Any claims for shortages or damages suffered in transit are the responsibility of Buyer and shall be submitted by the Buyer directly to the carrier. Shortages or damages must be acknowledged and signed for at the time of delivery. While HDE will use all reasonable commercial efforts to maintain the delivery date(s) acknowledged or quoted by HDE, all shipping dates are approximate and not guaranteed. HDE reserves the right to make partial shipments. HDE, at its option, shall not be bound to tender delivery of any Goods for which Buyer has not provided shipping instructions. If the shipment of the Goods is postponed or delayed by Buyer for any reason, Buyer agrees to reimburse HDE for any and all handling and storage costs and other additional expenses resulting therefrom. All claims for shipping errors, lost shipments or any other discrepancies must

be made within ninety (90) days or they will be disallowed and deemed waived.

4. **HDE LIMITED WARRANTY:** HDE covers its products with a manufacturer's warranty against defects in material or workmanship for a period of ten years in the case of Capacitor Controls and in all other circumstances for a period of one year, unless otherwise stated by HDE in writing. To take advantage of this warranty, the complete product must be delivered prepaid to HDE or any HDE Authorized Service Center. This warranty shall not apply to any Goods including but not limited to products which: (a) Have been repaired or altered outside HDE's factory (or Authorized Service Center) or in any manner so as, in HDE's judgment, to affect its serviceability or proper operation; (b) Have been subjected by persons other than HDE (or Authorized Service Center) to improper handling, operation, maintenance, repair or alteration; and, (c) Have been subjected to normal wear and tear, misuse, negligence, improper installation or accident. HDE's obligation under this warranty, and the Buyer's exclusive remedy for the breach thereof, shall be limited to, at HDE's option, repair or replacement of any allegedly defective Goods or issuance of credit. HDE requires the return of any allegedly defective Goods, transportation prepaid, before honoring any claim. All returned Goods are subject to inspection, and if examination does not disclose any defect covered by this warranty, replacement of such Goods or issuance of credit for same will not be approved.

THE FOREGOING CONSTITUTES HDE'S SOLE WARRANTY RESPONSIBILITY AND BUYER'S EXCLUSIVE REMEDY WHETHER SOUNDING IN TORT, CONTRACT, STRICT LIABILITY OR OTHERWISE, EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. No employee, agent, dealer, or other person is authorized to give any warranty on behalf of HDE. This warranty extends only to persons or organizations who purchase the Goods from HDE for resale.

5. **LIMITATION OF REMEDY AND LIABILITY:** THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY WARRANTY HEREUNDER SHALL BE LIMITED TO REPAIR, CORRECTION, REPLACEMENT OR CREDIT UNDER SECTION 4. HDE SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY DELAY IN PERFORMANCE, AND IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE), SHALL HDE'S LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXCEED THE PRICE PAID BY BUYER FOR THE SPECIFIC GOODS GIVING RISE TO THE CLAIM OR CAUSE OF ACTION, AND BUYER SHALL INDEMNIFY HDE FOR ANY DAMAGES IN EXCESS THEREOF. BUYER AGREES THAT IN NO EVENT SHALL HDE'S LIABILITY TO BUYER AND/OR ITS CUSTOMERS INCLUDE SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OF ANY CHARACTER IN CONNECTION WITH THE SALE, RESALE OR USE OF THE GOODS, WHICH ARE WAIVED BY BUYER AND AS TO

WHICH BUYER SHALL INDEMNIFY HDE. The term "consequential damages" shall include, but not be limited to, loss of anticipated profits, business interruption, loss of use of revenue, cost of capital or loss of or damage to property, equipment, or data, or loss of reputation. Further, Buyer shall indemnify and hold HDE harmless from any liability to Buyer, Buyer's employees, workers, contractors or any other persons arising out of Buyer's, and any other persons', use of the Goods. All instructions and warnings supplied by HDE will be passed on to those persons who use the Goods. HDE's Goods are to be used in their recommended applications and all warning labels adhered to the Goods by HDE shall be left intact. It is impossible to eliminate all risks associated with the use of the Goods. Risks of serious injury or death, including risks associated with electrocution, arcing and thermal burns, are inherent in work in and around energized electrical systems. Such risks arise from the wide variety of electrical systems and equipment to which Goods may be applied, the manner of use or application, weather and environmental conditions or other unknown factors, all of which are beyond the control of HDE. HDE does not agree to be an insurer of these risks, and shall have no liability for any claims arising from such risks. WHEN YOU BUY OR USE THESE PRODUCTS, YOU AGREE TO ACCEPT THESE RISKS.

6. **EXCUSE OF PERFORMANCE (FORCE MAJEURE):** HDE shall not be liable for delays in performance or for non-performance due to acts of God; acts of Buyer; war; fire; flood; weather; sabotage; strikes, labor disputes, civil disturbances or riots; governmental requests, restrictions, allocations, laws, regulations, orders or actions; unavailability of or delays in transportation; default of suppliers; or unforeseen circumstances or events beyond HDE's reasonable control. Deliveries or other performance may be suspended for an appropriate period or cancelled by HDE upon notice to Buyer in the event of any of the foregoing, but the balance of this agreement shall otherwise remain unaffected. If HDE determines that its ability to supply the total demand for the Goods, or to obtain material used directly or indirectly in the manufacture of the Goods, is hindered, limited or made impracticable due to causes set forth herein, HDE may allocate its available supply of the Goods or such material (without obligation to acquire other supplies of any such Goods or materials) among itself and its purchasers on such basis as HDE determines to be equitable without liability for any failure of performance which may result therefrom.

7. **CHANGES:** HDE reserves the right to change designs and specifications for standard Goods without prior notice to Buyer, but not with respect to custom Goods being made for Buyer. HDE shall have no obligation to install or make such change in any Goods manufactured prior to the date of such change.

8. **ASSIGNMENT:** Buyer shall not assign its rights or delegate its duties hereunder or any interest herein without the prior written consent of HDE, and any such assignment, without such consent, shall be void.

9. **INSTALLATION:** Buyer shall be responsible for receiving, inspecting, testing, storing, installing, starting up and maintaining all Goods.

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10. **INSPECTION/TESTING:** Buyer, at its expense, agrees that it will promptly inspect the Goods upon receipt thereof, and in no event later than thirty (30) days from the date of receipt of the Goods. Buyer shall deliver to HDE within fifteen (15) days of inspection, but in no event later than forty-five (45) days from the date of receipt of the Goods, written notice of any and all deficiencies, defects, variations from specifications or complaints of any kind with respect to the quantity, quality, condition, shipment, performance, price or appearance of the Goods so received by Buyer. In the event no such written notice is received by HDE, Buyer shall be deemed conclusively to have inspected and accepted all such Goods unconditionally and to have waived any and all rights and claims, including without limitation any right to reject the Goods or to claim damages in respect thereof. Buyer may not return goods without first advising HDE of the reasons therefore, obtaining from HDE a material authorization number and observing such instructions as HDE may give in authorizing such return. In the event a return is authorized by HDE, a restocking for any Goods requiring repackaging or maintenance a twenty percent (20%) restocking fee shall be assessed to Buyer in the final credit amount.

11. **SERVICES:** If this agreement requires HDE to perform or provide any services, HDE (including without limitation its successors, assigns, agents or any person or entity acting at HDE's direction) shall not be responsible for any damages, claims, liabilities or expenses of any nature arising out of such services.

12. **U.S. EXPORT CONTROL LAWS:** All Goods sold to Buyer by HDE hereunder are subject to U.S. Export Control Laws. Buyer hereby agrees not to re-sell or divert any goods contrary to such laws.

13. **COMPLIANCE:** Seller/Contractor shall comply with all applicable federal, state or local laws, rules, regulations, or orders. Seller/Contractor shall comply with Executive Order 11246, as amended by Executive Order 11375, and the applicable provisions of the Office of Federal Contract Compliance Programs (OFCCP), 41 CFR Part 60, which are incorporated herein by this reference. Buyer shall comply with all applicable federal, state, or local laws, rules, regulations or orders including but not limited to the Foreign Corrupt Practices Act of 1977, as amended. HDE reserves the right to delay or refuse delivery if requests for reasonable assurances of Buyer's compliance are not tendered as requested.

14. **MISCELLANEOUS:** These terms and conditions supersede all other communications, negotiations and prior oral or written statements regarding the subject matter hereof. No change, modification, rescission, discharge, abandonment, or waiver of these terms and conditions shall be binding upon HDE unless made in writing and signed on its behalf by its duly authorized representative. No conditions, usage or trade, course of dealing or performance, understanding or agreement purporting to modify, vary, explain, or supplement these terms and conditions shall be binding unless hereafter made in writing and signed by Seller. No modification shall be effected by HDE's receipt or acceptance of Buyer's purchase orders, shipping instruction forms, or other documentation containing terms at variance with or in addition to those set forth herein, all of which are objected to by HDE. Any such modifications or additional terms are specifically rejected by HDE. No waiver by HDE with respect to any breach or default of any right or remedy and no course of dealing, shall be deemed to constitute a continuing waiver of any other breach or default of any other right or remedy, unless such waiver be expressed in writing and signed by HDE. All typographical or clerical errors made by HDE in any quotation, acknowledgment or publication are subject to correction. Validity and performance relating to the interpretation and effect of this agreement shall be governed by the laws of the state of Illinois without regard to its conflict of law principles.

15. **DISPUTE RESOLUTION:** In the event of any dispute INCLUDING, BUT NOT LIMITED TO, BREACH OF CONTRACT, BREACH OF WARRANTY, CLAIMS BASED IN TORT, NEGLIGENCE, PRODUCT LIABILITY, FRAUD, MARKETING, STATE OR FEDERAL REGULATIONS, ANY CLAIMS REGARDING THE ENFORCEABILITY OF THIS LIMITED WARRANTY, AND THE WAIVER OF CLASS ACTION TRIALS between Buyer and Seller, either may choose to resolve the dispute by binding arbitration, as described below, instead of in court. THIS MEANS IF EITHER BUYER OR SELLER CHOOSE BINDING ARBITRATION, NEITHER PARTY SHALL HAVE THE RIGHT TO LITIGATE SUCH CLAIM IN COURT OR HAVE A JURY TRIAL. DISCOVERY AND APPEAL RIGHTS ARE LIMITED IN BINDING ARBITRATION. Buyer and Seller agree that the proper venue if Arbitration is not so chosen by Buyer or Seller of all actions arising in connection herewith shall be only in the state of Illinois and the parties agree to submit to such jurisdiction. No action, regardless of form, arising out of transactions relating to the agreement, may be brought by either party more than two (2) years after the cause of action has accrued. The U.N. Convention on Contracts for the International Sales of Goods shall not apply to this agreement.

16. **CLASS ACTION WAIVER: BINDING ARBITRATION MUST BE ON AN INDIVIDUAL BASIS. THIS MEANS NEITHER BUYER NOR SELLER MAY JOIN OR CONSOLIDATE CLAIMS IN ARBITRATION BY OR AGAINST OTHERS, OR LITIGATE IN COURT OR ARBITRATE ANY CLAIMS AS A REPRESENTATIVE OR MEMBER OF A CLASS OR IN A PRIVATE ATTORNEY GENERAL CAPACITY. ADMINISTRATION OF ARBITRATION:** The binding arbitration must be administered by the American Arbitration Association ("AAA") in accordance with its Commercial Arbitration Rules and/or Supplementary Procedures for Consumer-Related Disputes (including proceedings to mitigate costs of travel). This binding arbitration is governed by the Federal Arbitration Act ("FAA") (9 USC §1, et. seq.) and will govern the interpretation and enforcement. The binding arbitration shall be held at a location determined by AAA or at such other location as mutually agreed. In addition to the terms stated above, the following will apply to the binding arbitration: (1) the arbitrator, and not any federal, state, or local court or agency, will have exclusive authority to resolve any dispute relating to the interpretation, applicability, enforceability or formation of this Agreement including any claim that all or any part of this Agreement is void or voidable; (2) the arbitrator shall apply Illinois law consistent with the FAA.



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