

TEST, MEASUREMENT & SAFETY



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HDElectricCompany.com

PRODUCT CATALOG



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.



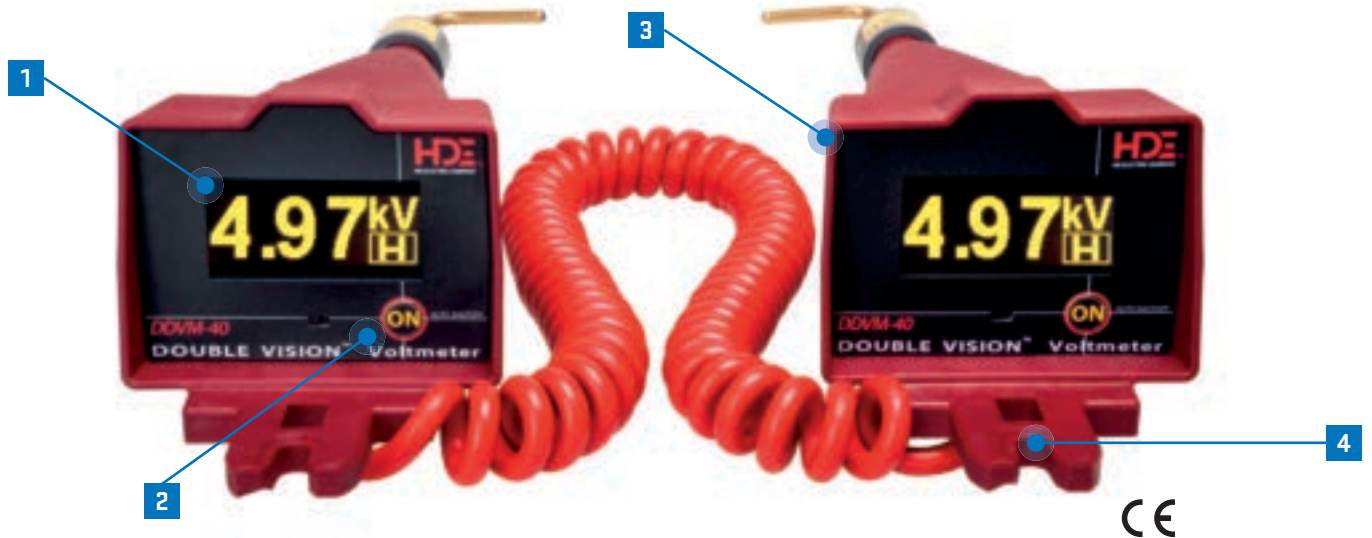


TABLE OF CONTENTS

| | |
|---|---------|
| ABOUT HD ELECTRIC COMPANY | 2 |
| TEST, MEASUREMENT & SAFETY PRODUCTS | 4-95 |
| VOLTMETERS AND PHASING SETS | 4-23 |
| UNDERGROUND CABLE FAULT TESTER..... | 24-25 |
| VOLTAGE INDICATORS AND DETECTORS | 26-43 |
| WORK AREA VOLTAGE DETECTION | 44-47 |
| PERSONAL VOLTAGE DETECTORS..... | 48-51 |
| INSULATOR, ARRESTER AND LEAKAGE TESTERS.... | 52-59 |
| CAPACITOR TESTERS | 60-63 |
| TRANSFORMER AND CAPACITOR TESTERS | 64-69 |
| HIGH VOLTAGE AMMETERS | 70-73 |
| ADDITIONAL TEST INSTRUMENTS | 74-93 |
| HARD HAT SAFETY LIGHTS..... | 94-95 |
| CONTROLS & SYSTEM MONITORING PRODUCTS | 96-101 |
| CAPACITOR CONTROLS..... | 96-101 |
| TERMS AND CONDITIONS | 102-103 |
| PRODUCT INDEX | 104-105 |

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 |

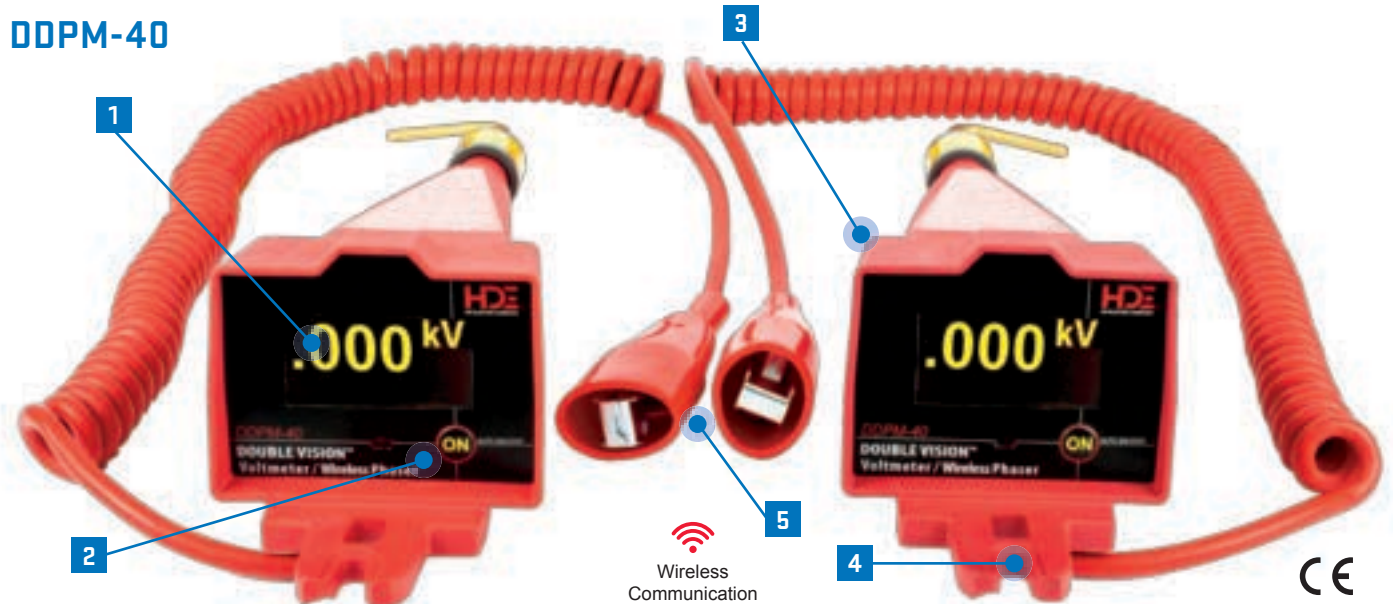
ORDERING INFORMATION

| 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. | |

Elastimold® is a registered trademark of Thomas & Betts International, Inc. Cooper® is a trademark of COOPER US, INC.

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 | Battery Life | 8 hours of continuous use under normal conditions |
| Operating Voltage Range | 5V-43kV line-to-line, 5V-25kV line-to-ground, AC 25-1000Hz or DC | Operating Temperature Range | -20°F to +120°F (-29°C to +49°C) |
| Phasing Frequency | 50/60Hz | Weight (Without Probes) | 2.25 lbs. (1.02 kg) each unit |
| Accuracy | Within 1% of reading +/- 3 counts (line-to-ground & line-to-line measurements) | Dimensions (Without Probes) | 14" L x 4.1" H x 4.6" W (36 cm x 10 cm x 12 cm) |
| LED Numeral Height | 0.7", indicates 3 digits | Coiled Cord Length | Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m) |
| Battery | 9V lithium or alkaline, one in each display housing | Cord Voltage Rating | Up to 20kV |

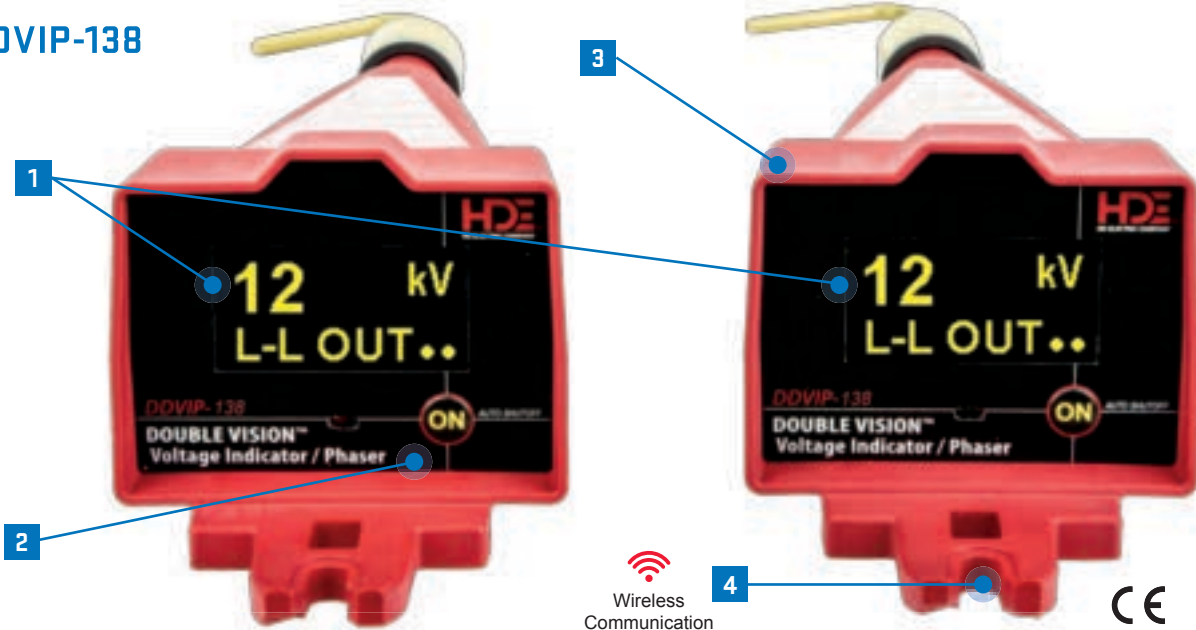
ORDERING INFORMATION

| 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

HDElectricCompany.com

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-DDVIP | Different Lengths and Telescopic Hot Sticks Available |

SPECIFICATIONS

| | | | |
|--------------------------------|---|--|--|
| Model Number | DDVIP-138 | Battery Life | 8 hours of continuous use under normal conditions |
| Operating Voltage Range | 100V-138kV line-to-line, 100V-80kV line-to-ground, AC 50/60Hz | Operating Temperature Range | -20°F to +120°F (-29°C to +49°C) |
| Phasing Frequency | 50/60Hz | Weight (Each Unit, Without Probe) | 1.6 lbs. (0.7 kg) |
| Accuracy | Within 15%, dependent on geometry | Dimensions (Without Probes) | 14" L x 4.6" W x 4.1" H (36 cm x 12 cm x 10 cm) |
| LED Numeral Height | 0.7" – indicates 3 digits | | |
| Battery | 9V lithium or alkaline, one in each display housing | | |

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



CE

- 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 |

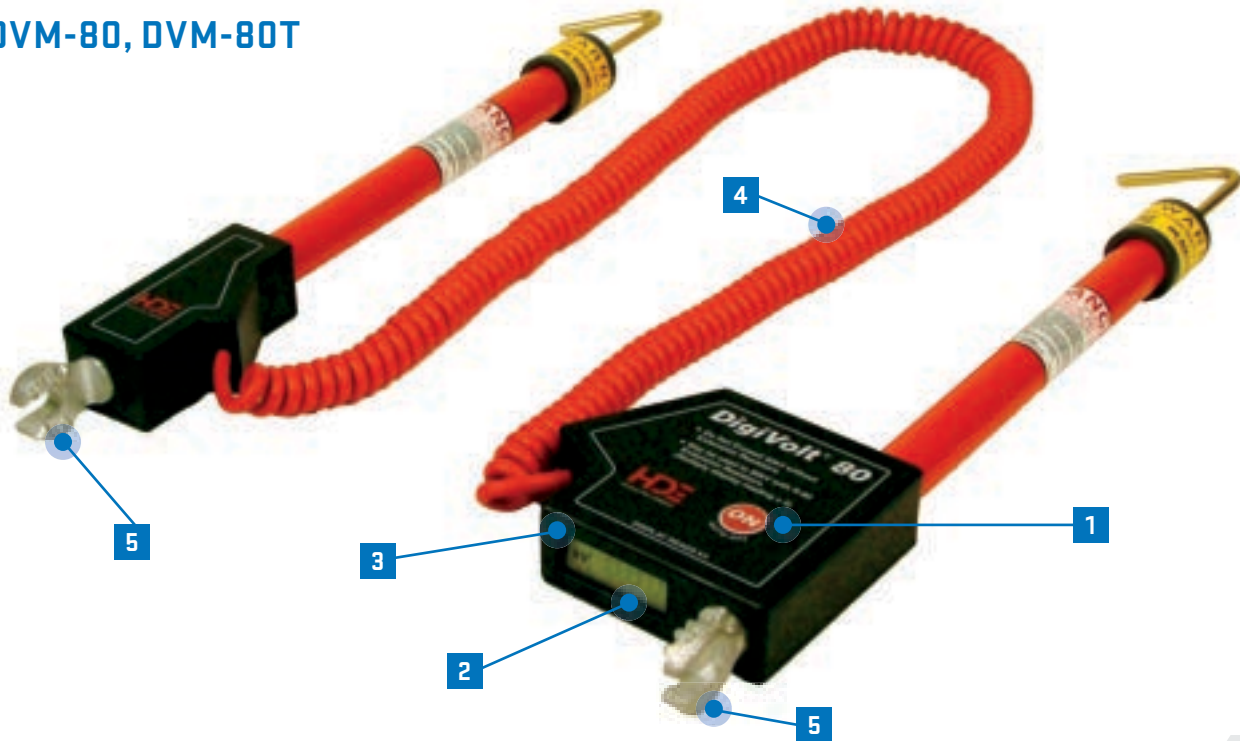
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|------------------------------------|--|
| Operating Temperature Range | -20°F to +120°F (-29°C to +49°C) |
| Weight (Without Probes) | 2.25 lbs. (1.02 kg) |
| Dimensions (Without Probes) | 14" L x 4.6" W x 4.1" H (36 cm x 12 cm x 10 cm) |
| Coiled 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 | Battery Life | 17 hours continuous use under normal operating conditions |
| Operating Voltage Range | 50V - 40kV up to 80kV with add-on resistors (multiply reading by a factor of two) | Operating Temperature Range | -13°F to +131°F (-25°C to +55°C) |
| Operating Frequency | 25-1000Hz AC/DC | Weight (Without Probes) | 2.25 lbs. (1.02 kg) |
| Accuracy | Within 1% of reading +/- 3 counts (line-to-ground measurements) | Dimensions (Without Probes) | 15" (38 cm) |
| Accuracy With Add-On Resistors | Within 2% of reading +/- 3 counts (line-to-ground & line-to-line measurements) | Display Housing Dimensions | 5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm) |
| LCD Numeral Height | 0.4", indicates 3.5 digits | Diameter Of Fiberglass | 1" (2.54 cm) |
| Battery | 9V lithium or alkaline | 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

DIGIVOLT® SINGLE STICK DIGITAL VOLTMETER

DVM-25T

HDElectricCompany.com

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 Temperature Range | -13°F to +131°F (-25°C to +55°C) |
| Operating Voltage Range | 50V - 25kV | Weight (Without Probes) | 2 lbs. (0.9 kg) |
| Operating Frequency | 25-1000Hz AC/DC | Dimensions (Without Probes) | 15" (38 cm) |
| Accuracy | Within 1% of reading +/- 3 counts (line-to-ground measurements) | Display Housing Dimensions | 5" W x 4.25" L x 1.38" H (13 cm x 11 cm x 3.5 cm) |
| LCD Numeral Height | 0.4", indicates 3.5 digits | Diameter of Fiberglass | 1" (2.54 cm) |
| Battery | 9V lithium or alkaline | Coiled Cord Length | Retracted: 3.5' (1.7 m); Extended: 12' (3.6 m) |
| Battery Life | 17 hours continuous use under normal operating conditions | Cord Voltage Rating | Up to 10kV |

ORDERING INFORMATION

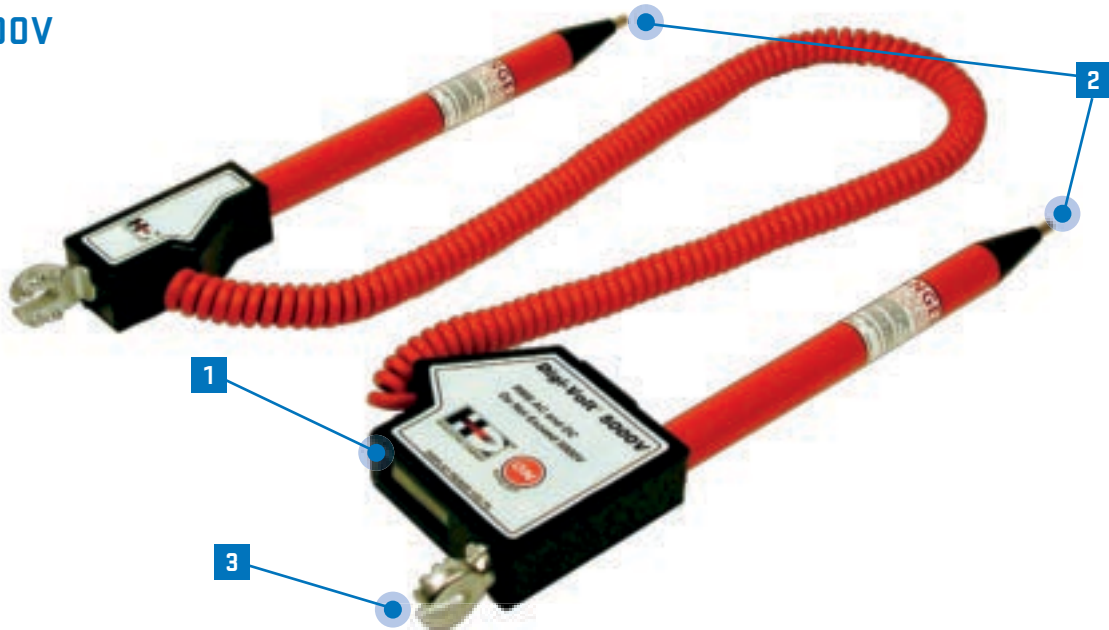
| Part No. | Description |
|--|--|
| DVM-25T | Single Stick Voltmeter w/Capacitive Test Point Mode, 50V-25kV; Includes (1) 025-OLPS-5 Overhead Brass Hook Probe and CS-DVM Case |
| 025-OLPS-5 | Overhead Brass Hook Probe |
| 025-OLPS-6 | Overhead Brass Pigtail Probe |
| ASP-15/25 | 15kV and 25kV Class 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 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. | |



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

DIGIVOLT® LOW VOLTAGE DIGITAL VOLTMETER/PHASING SET

DVM-5000V

HDElectricCompany.com

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 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-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 Splines, 1-1/4" Diameter Fiberglass |
| S-6H | 6' Extension Hot Stick with Universal Splines, 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.

Elastimold[®] is a registered trademark of Thomas & Betts International, Inc. Cooper[®] is a trademark of COOPER US, INC.

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

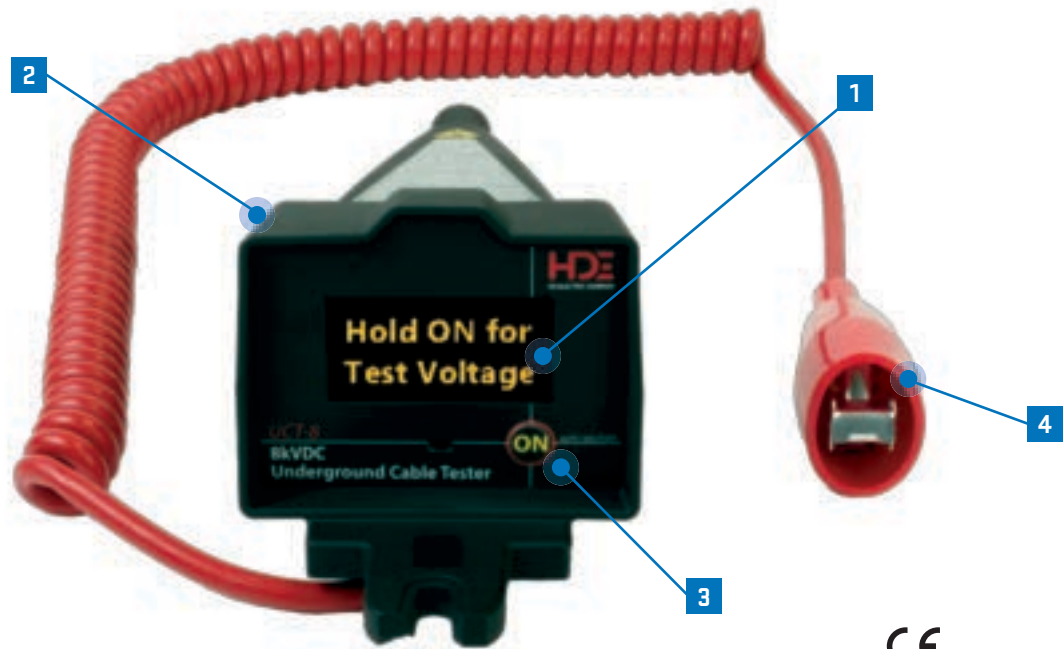
| | |
|--------------------------------|---|
| Model Number | TAG-5000 |
| Operating Voltage Range | 4kV to 230kV line-to-line |
| Operating Frequency & Phasing | Can be used on 50Hz and 60Hz systems; In Phase Indication For Phase Angle Shift Is $\leq 10^\circ$; No In Phase Indication For Phase Angle $\geq 30^\circ$ |
| 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



CE

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



Clearly displayed test results



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

UNDERGROUND CABLE FAULT TESTER

UCT-8

HDElectricCompany.com

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. | |

Elastimold® is a registered trademark of Thomas & Betts International, Inc. Cooper® is a trademark of COOPER US, INC.

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

DIGITAL VOLTAGE INDICATORS

DVI-100 / DVI-500 SERIES

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PROBES AND ACCESSORIES

| Overhead Probes | Underground Probes | Proof Tester® Digital Voltage Indicator Tester | Extension Hot Sticks | Hot Stick Adapter |
|---|---|--|---|---|
|  |   |  CE |  |  |
| 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



CE

- 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

PROXIMITY VOLTAGE DETECTORS

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

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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

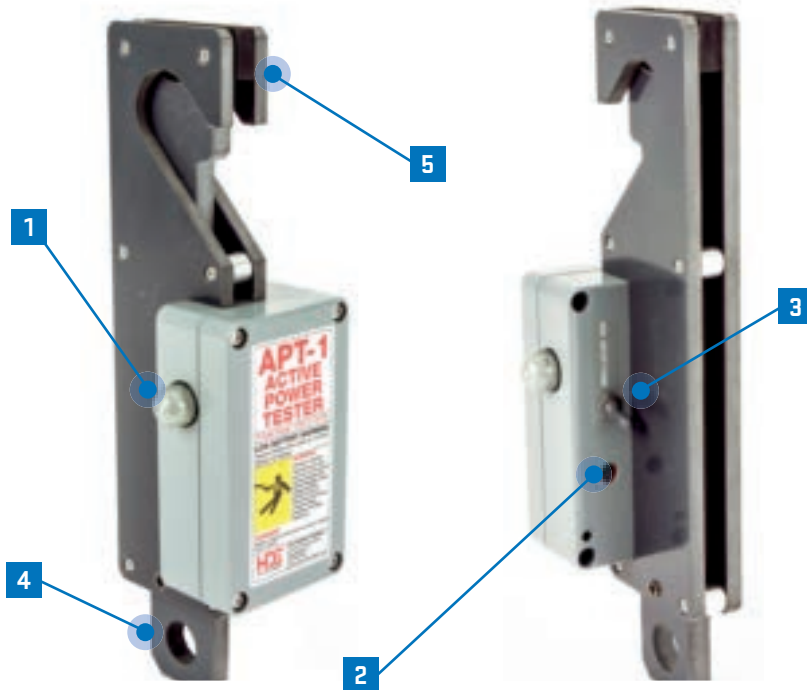
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ORDERING INFORMATION

| 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

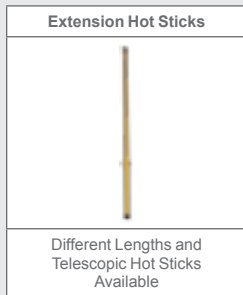
5 OVERHEAD LINE CLAMP

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

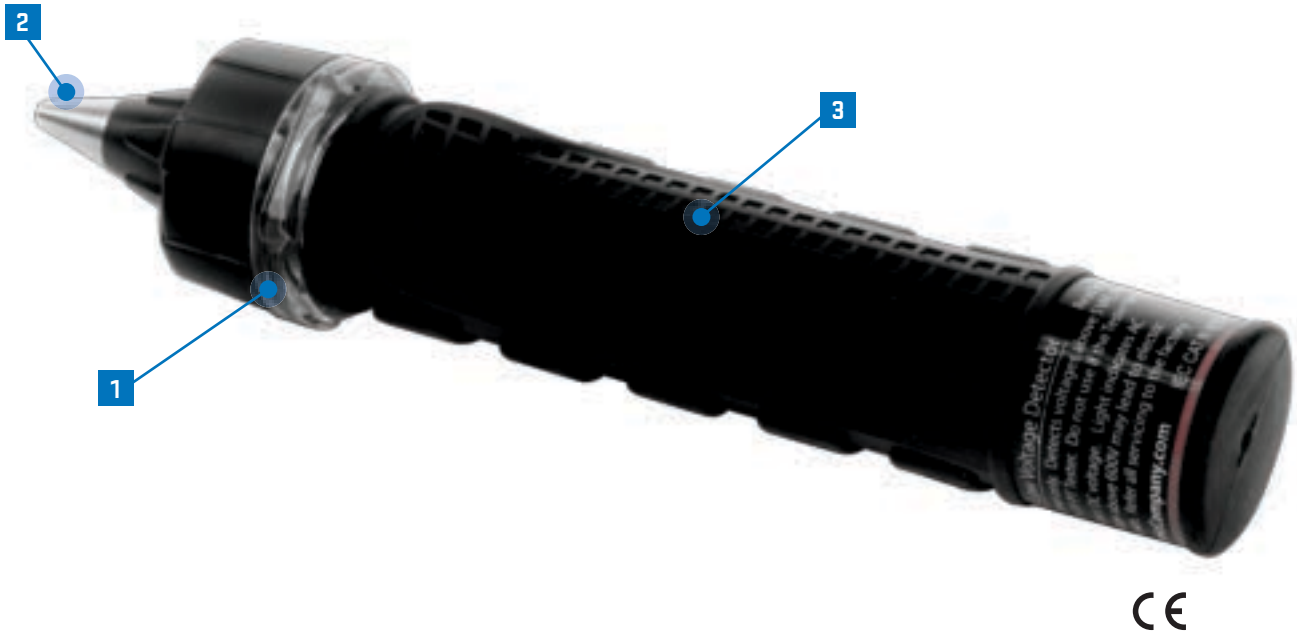
| | |
|--------------------------|---|
| Model Number | VP-1 |
| Operating Voltage Ranges | 50VAC to 600VAC handheld 600VAC to 21KVAC line-to-ground handheld using appropriately rated electrical insulating gloves |
| Operating Frequency | 50/60Hz |
| Battery | 2 AA field replaceable lithium or alkaline 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 |
|---|--|---|---|
|  |  CE |  |  |
| LV-HS | LV-PT | LV-GS | LV-EH |

SPECIFICATIONS

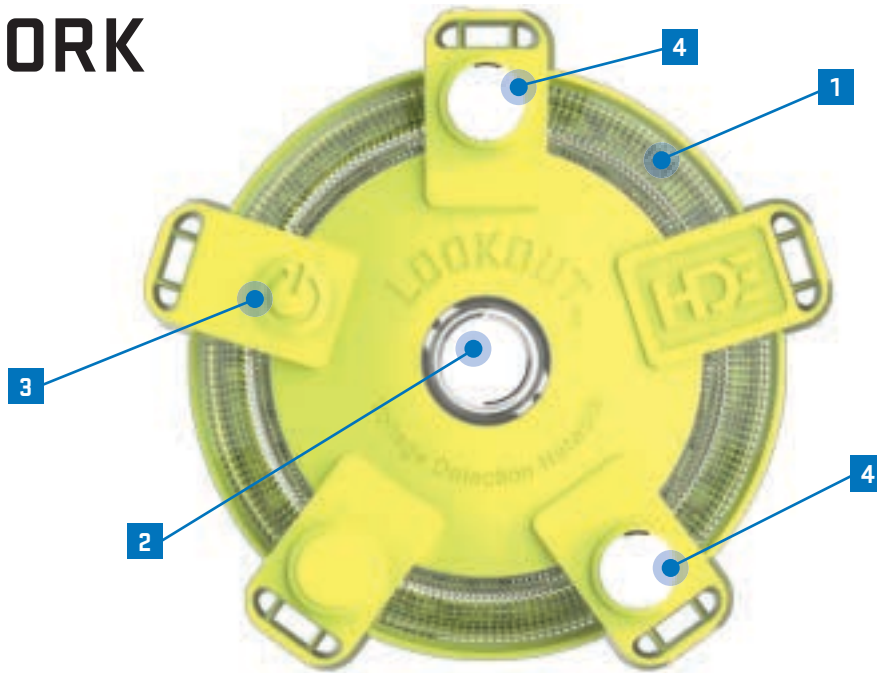
| | |
|-----------------------------|---|
| Model Number | LV-5 |
| Threshold Detection Voltage | 5VAC, 50/60Hz nominal, capacitively coupled |
| Maximum Applied Voltage | 600VAC |
| Operating Frequency | 50/60Hz |
| Battery | 2 AA field replaceable lithium or alkaline batteries |
| Operating Temperature 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



- 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

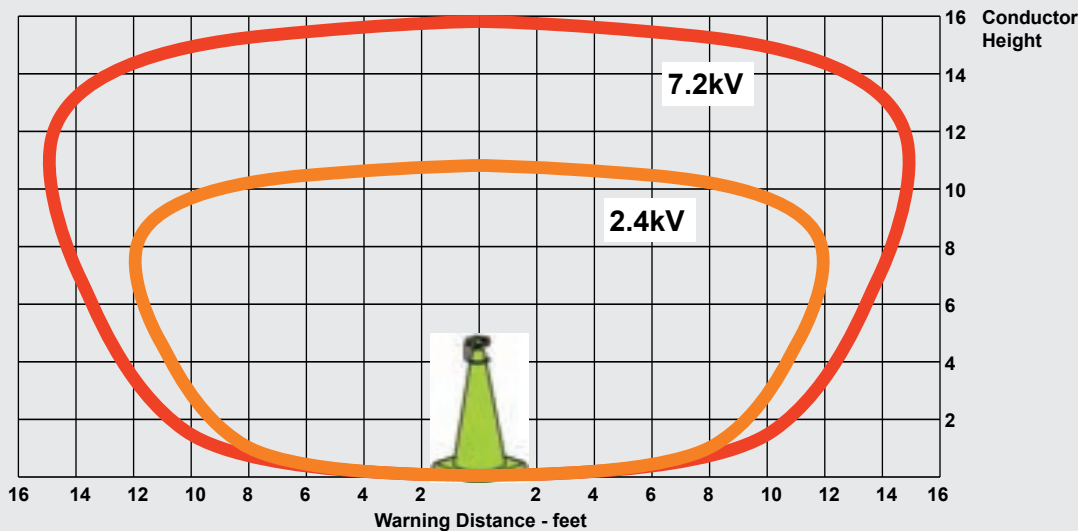
- Provides an extra level of safety for trained personnel working on or near high voltage systems
- Utilizes WAVi[®] Work Area Voltage Indication technology to detect strong electric fields surrounding high voltage conductors and fleet equipment
- Red spinning LED lights alerts to the presence of an 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



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 | | | | | |

NEXT GENERATION V-WATCH® PERSONAL VOLTAGE DETECTOR

VWS-20



CE

- 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

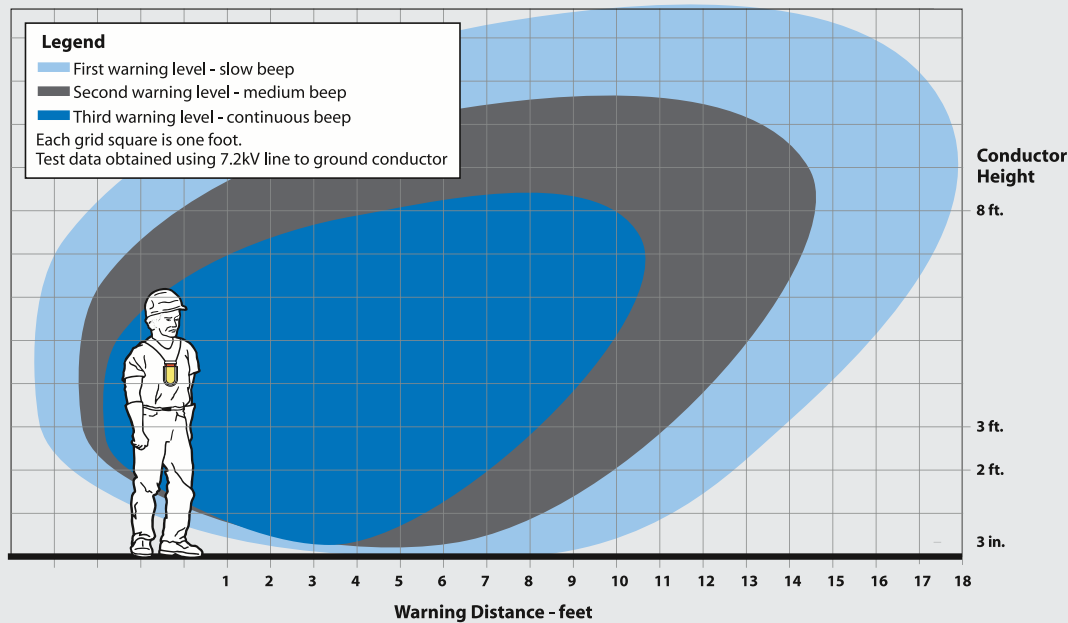
- Provides another level of safety for line crews, storm restoration workers and first responders
- Alerts user to the proximity of electric fields or energized electrical equipment with a loud alarm and bright lights
- Frequency of alarm increases as the user gets closer to the electrical hazard
- Detects 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

NEXT GENERATION V-WATCH® PERSONAL VOLTAGE DETECTOR

VWS-20

HDElectricCompany.com

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

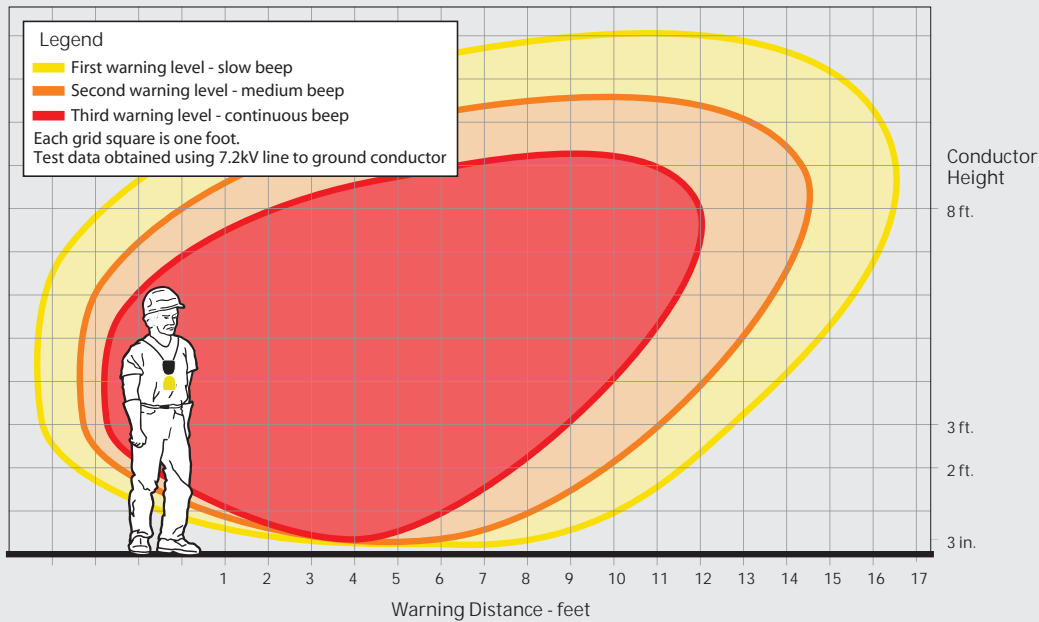


V-WATCH® PERSONAL VOLTAGE DETECTOR

VW-20 SERIES

HDElectricCompany.com

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) |

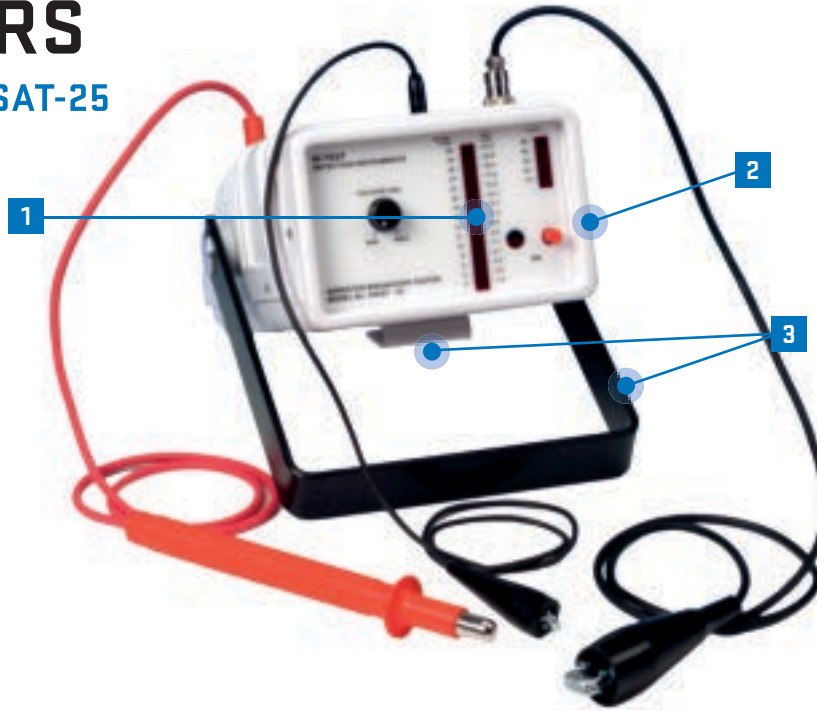
ORDERING INFORMATION

| 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

HI-TEST[®] MOV ARRESTER/LEAKAGE TESTERS

HISAT-15 / HISAT-25

HDElectricCompany.com

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

2 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

CAP CHECK® SUBSTATION CAPACITOR TESTER

CC-II/100

HDElectricCompany.com

ACCESSORIES

| Current Transformers | |
|---|---|
|  |  |
| CT002 | CT004 |

HD Electric Company
Cap Check® Worksheet

1 **Enter Capacitor Nameplate Data**
 KW 7.2 Enter the nameplate KW here
 KVAR 200 Enter the nameplate KVAR here
 Frequency 60 Enter the nameplate frequency here

2 **Enter Test Data**
 V 120 Enter the CapCheck test voltage
 Frequency 60 Enter the CapCheck test frequency

3 **Output Test Amps**
 Min. 0.407 The minimum acceptable test amps
 Max. 0.568 The maximum acceptable test amps

4 **Maximum Capacitor Bank Size**
 Cap Check I KVAR 600 The maximum allowable bank sizes
 Cap Check II KVAR 5000 for the CapCheck model used
 Cap Check III KVAR 600

5 **Capacitance (microfarads)**
 measured 15.23 Actual capacitance

HD ELECTRIC COMPANY
 1475 Lakeside Drive
 Waukegan, IL 60085 USA
 +1-847-473-4980
 HDElectricCompany.com

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



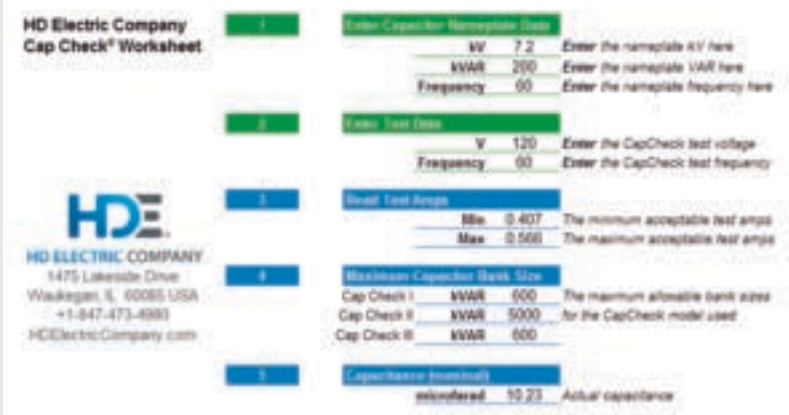
- 1** HEAVY-DUTY SPRING LOADED ALUMINUM HANGING HOOKS
- 2** METERS DISPLAY CURRENT THROUGH EACH CAPACITOR AND VOLTAGE APPLIED TO CAPACITOR BANK
- 3** VOLTAGE TEST LEADS
- 4** CURRENT TRANSFORMER AND CORD
- 5** 120V POWER SUPPLY CORD
- 6** REMOVEABLE TOP AND BOTTOM COVERS

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 |



HD Electric Company Cap Check® Worksheet

1. Enter Capacitor Nameplate Data

| | | |
|-----------|-----|------------------------------------|
| kV | 7.2 | Enter the nameplate kV here |
| kVAR | 200 | Enter the nameplate kVAR here |
| Frequency | 60 | Enter the nameplate frequency here |

2. Enter Test Data

| | | |
|-----------|-----|-----------------------------------|
| V | 120 | Enter the CapCheck test voltage |
| Frequency | 60 | Enter the CapCheck test frequency |

3. Input Test Results

| | | |
|-----|-------|----------------------------------|
| Min | 0.407 | The minimum acceptable test amps |
| Max | 0.568 | The maximum acceptable test amps |

4. Maximum Capacitor Bank Size

| | | | |
|---------------|------|------|--|
| Cap Check I | kVAR | 600 | The maximum allowable bank sizes for the CapCheck model used |
| Cap Check II | kVAR | 5000 | |
| Cap Check III | kVAR | 600 | |

5. Capacitance (optional)

| | | |
|-----------|-------|--------------------|
| monitored | 15.23 | Actual capacitance |
|-----------|-------|--------------------|

HD ELECTRIC COMPANY
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 Waukegan, IL 60085 USA
 +1-847-473-4980
 HDElectricCompany.com

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



CE

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 <10μA |
| Transformer Ok | Power factor ≥ 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 | $\leq 10\Omega$, varies with battery voltage |
| Open | $\geq 10\Omega$, varies with battery voltage |
| Transformer OK | Minimum inductance 800 μ H |
| 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



CE

- 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 | $\leq 10\Omega$, varies with battery voltage |
| Open | $\geq 10\Omega$, varies with battery voltage |
| Transformer OK | Minimum inductance 800 μ H |
| Capacitor OK | Minimum capacitance 0.5 μ f Maximum capacitance 300 μ f |
| 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

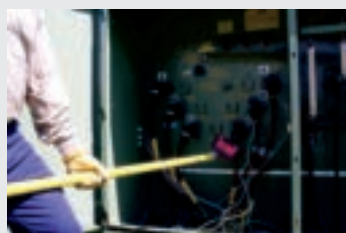
HVA-2000



- 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

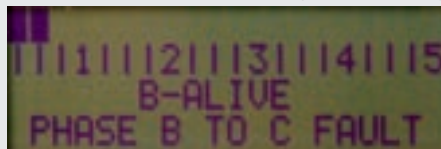


- 1 LCD DISPLAY SHOWS INSTRUCTIONS, MESSAGES AND AMMETER CURRENT**
- 2 3-PHASE TEST LEADS**
- 3 SELF-TEST BUTTON**
- 4 HEAVY DUTY ROLLING CASE WITH HANDLE**

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

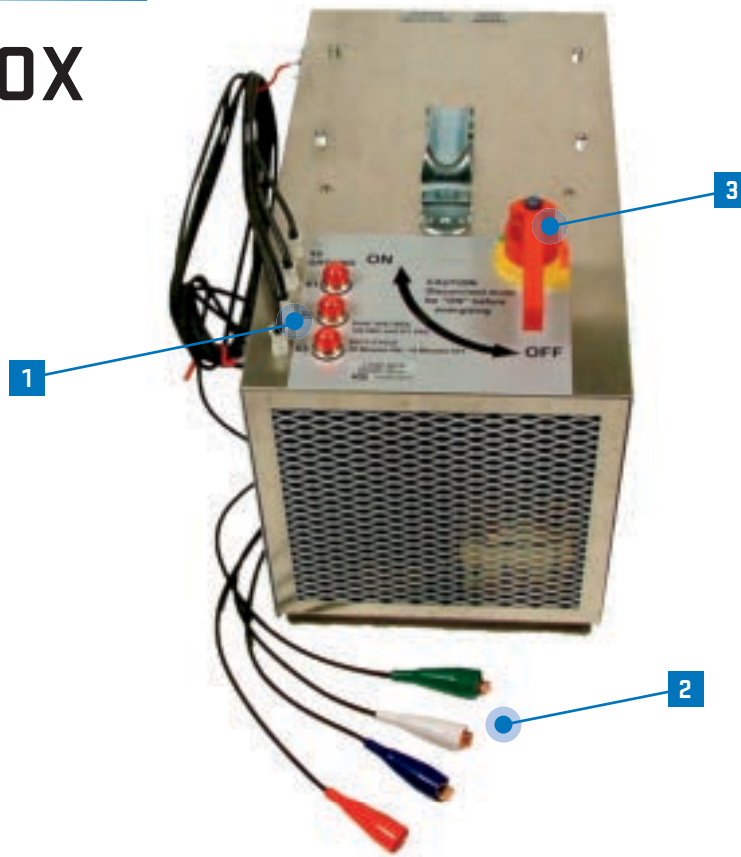
| | |
|-----------------------------|---|
| Model Number | FACT-1 |
| Measurement Range | Up to 5A current |
| Operating Frequency | 60Hz |
| Operating Temperature Range | 0°F to +90°F (-18°C to +32°C) |
| Output | 120VAC |
| Display | LCD display |
| Power | 120VAC |
| Weight | 30 lbs. (13.6 kg) |
| 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

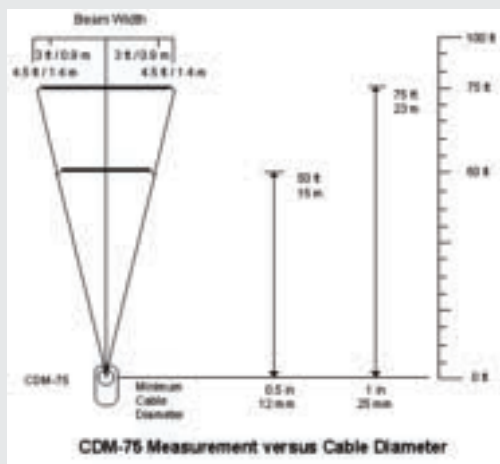
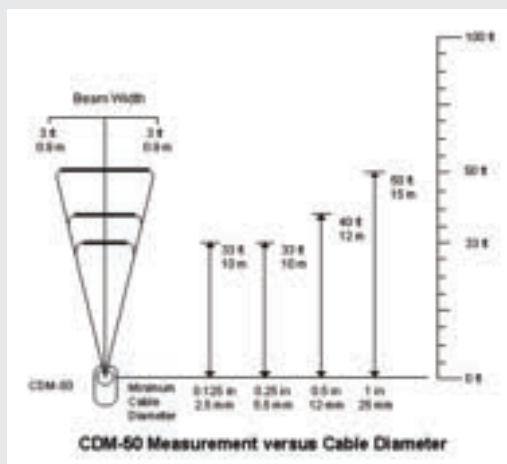
3 BATTERY COMPARTMENT

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



CE

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

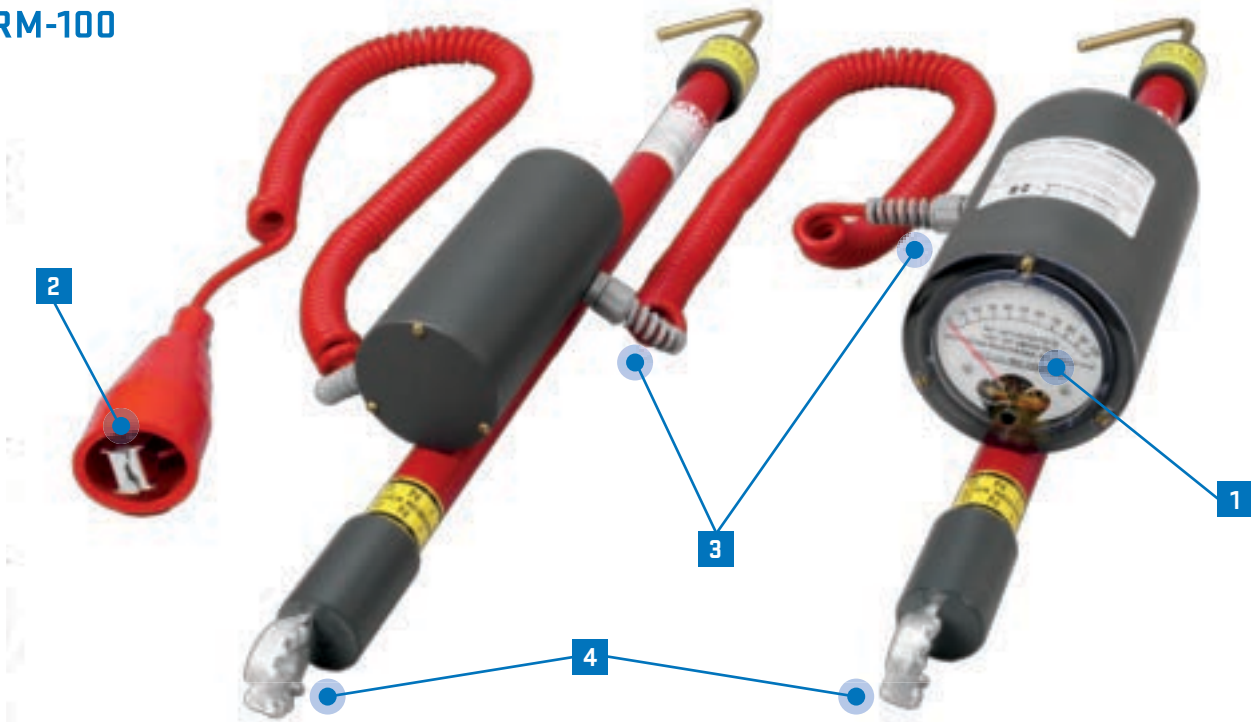
| | |
|--------------------------------------|--|
| Model Number | RT-200 |
| Output Voltage and Current | 7kVDC maximum open circuit voltage 40μA maximum short circuit current |
| Current Threshold For Bad Indication | 15 microamps |
| Battery | Rechargeable lithium-ion |
| Battery Life | 16 hours of 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

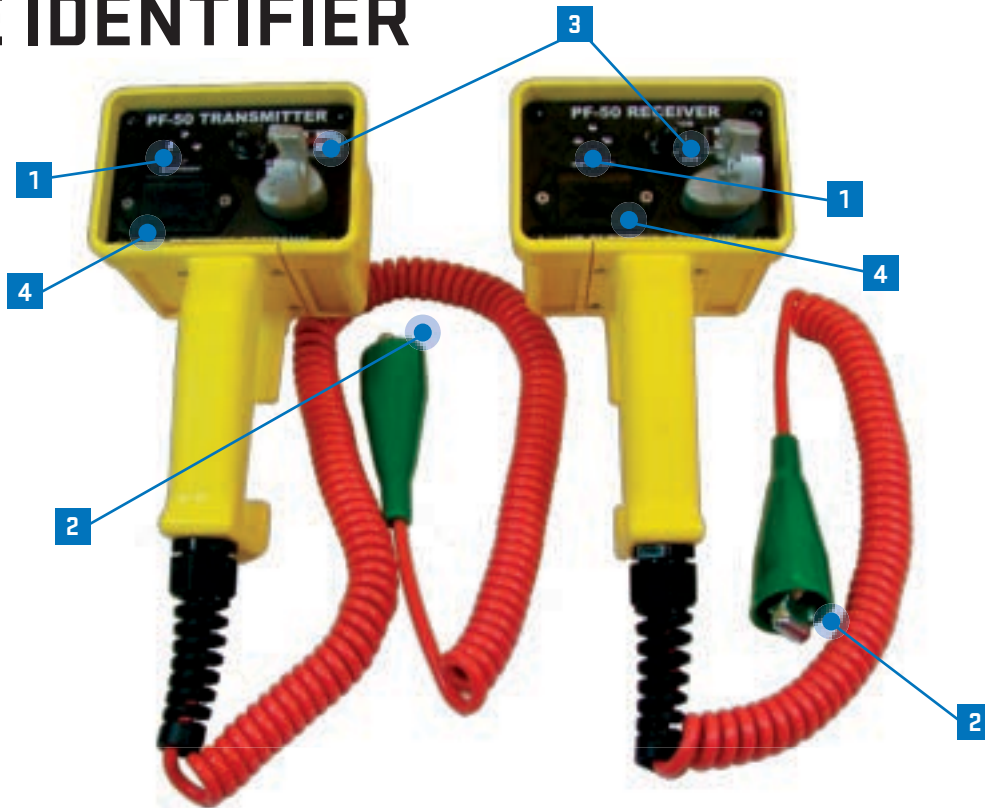
| | |
|-----------------------------|---|
| Model Number | PRM-100 |
| Operating Frequency | 50/60Hz |
| Voltage Range | 0-5kV / 5-15kV / 15-45kV (with optional add-on resistors) |
| Meter Face Size | 3" (7.6 cm) |
| Operating Temperature Range | -20°F to +140°F (-29°C to +60°C) |
| Weight | 5.3 lbs. (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

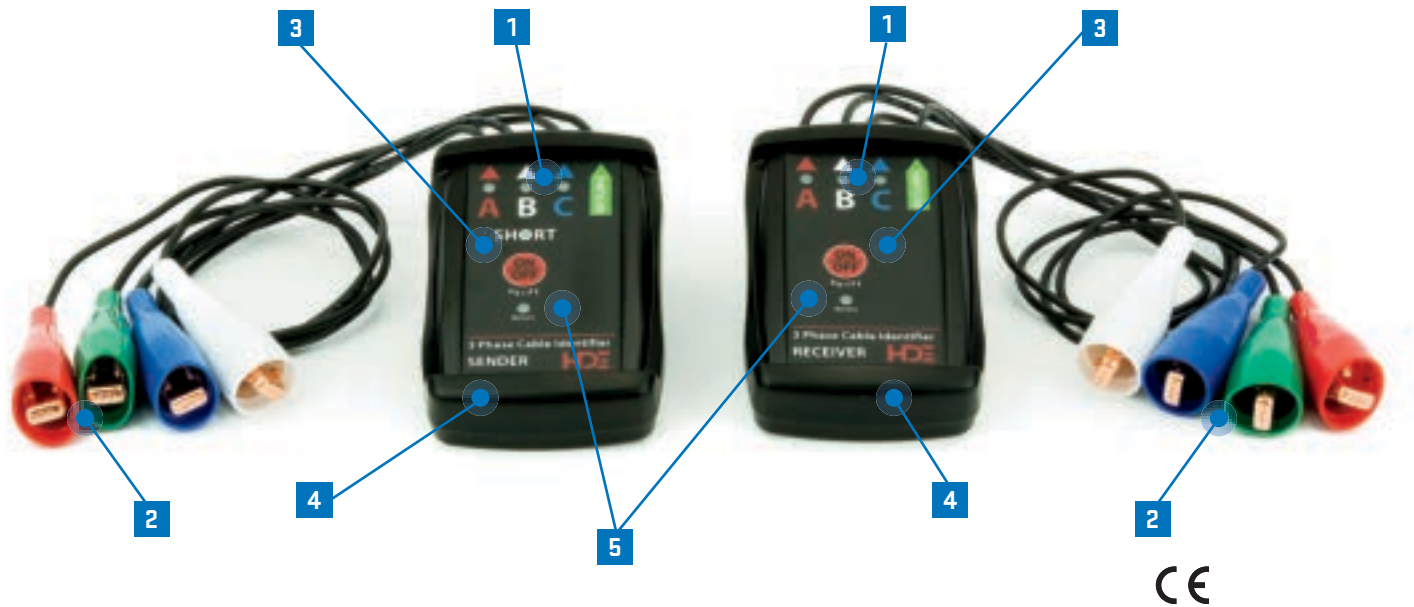
| | |
|---|---|
| Model Number | PF-50 |
| Operating Frequency | 50/60Hz |
| Test Voltage | 50VDC |
| Maximum Underground Cable Length Tested | 5,000' (1,524 m) |
| Operating Temperature Range | -40°F to +120°F (-40°C to +49°C) |
| Battery | 9V field replaceable alkaline or lithium in each unit |
| Weight | 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**



LED lights indicating connected and shorted phases

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

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

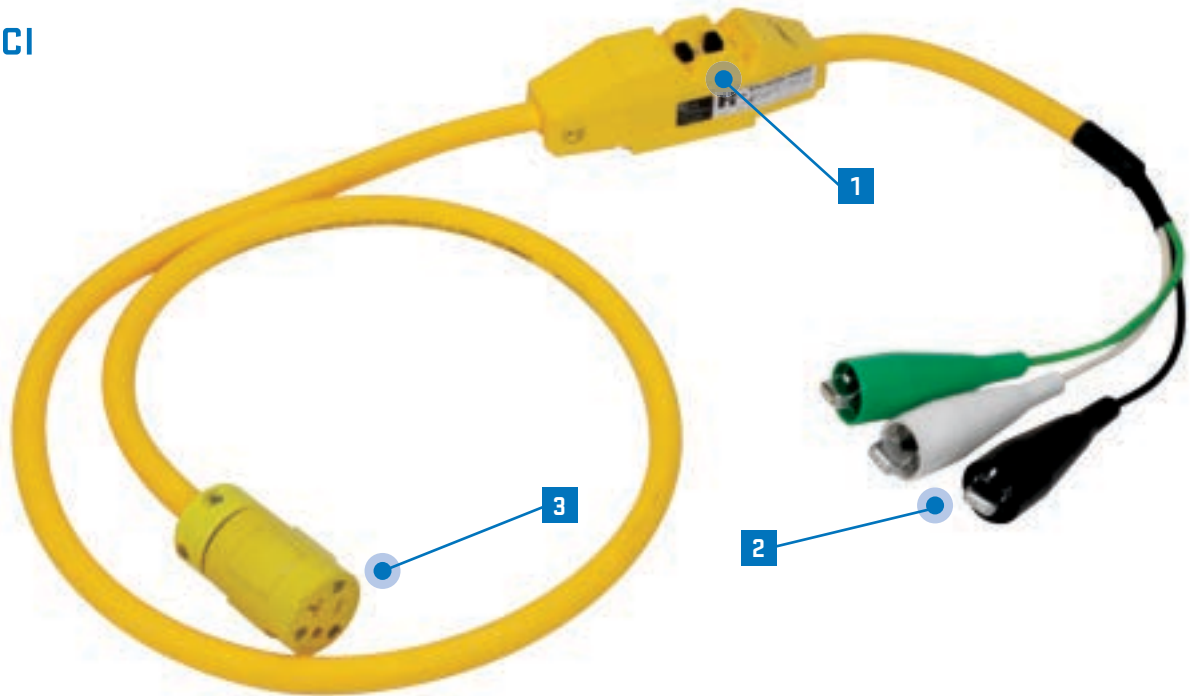
| | |
|--------------|--|
| Model Number | FT-1 |
| Weight | 1.07 lbs. (0.5 kg) |
| Dimensions | 7.75" H x 8" L x 2.4" D (19.7 cm x 20.3 cm x 6.1 cm) |

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 |

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

CYCLOPS® BATTERY POWERED HEADLAMPS

CYCLOPS LED

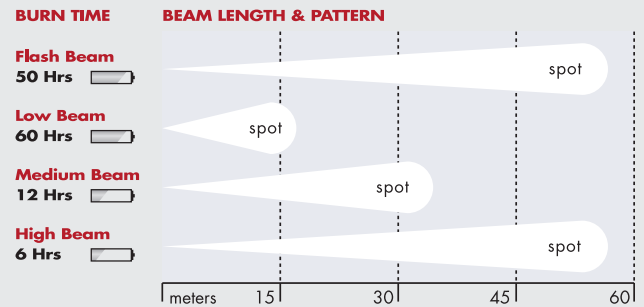
HDElectricCompany.com

SPECIFICATIONS

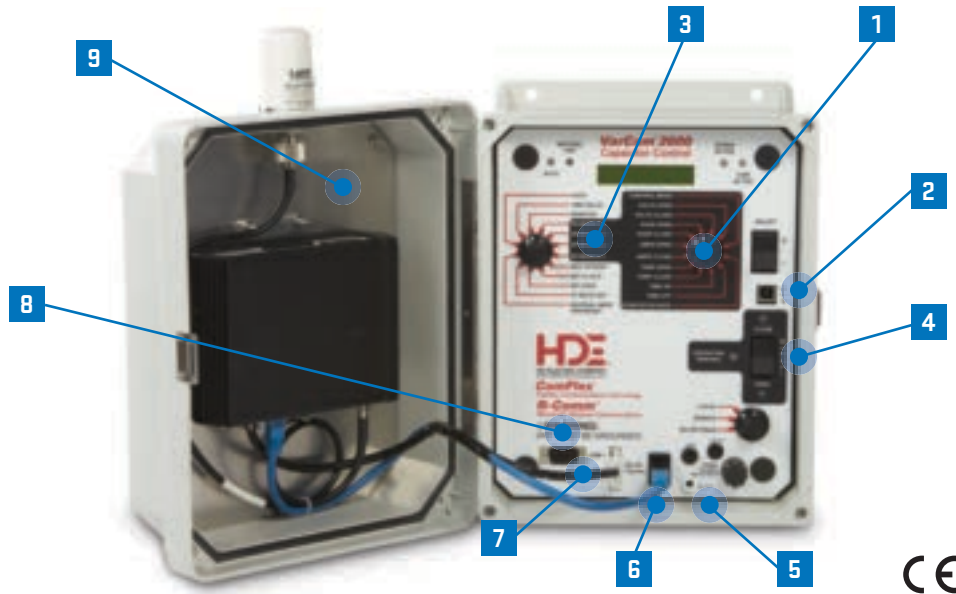
| | |
|---|-------------------------|
| Model Number | Cyclops LED |
| Power | 1 Watt |
| Battery | 3 AAA field replaceable |
| Battery Life With Alkaline Batteries | 50-60 hours |
| Weight With Batteries | 4.5 oz (0.13 kg) |
| Approximate Bulb Burn Life | 10,000 hours |
| Cyclops Headlamps are not explosion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

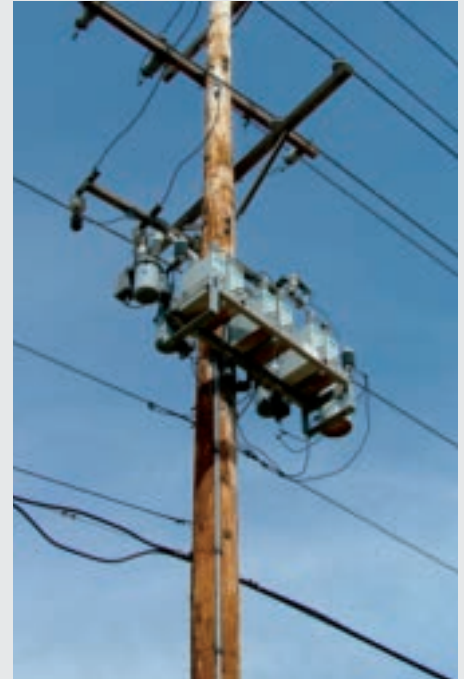
Two-Way Communications from Multiple Platforms:

- 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



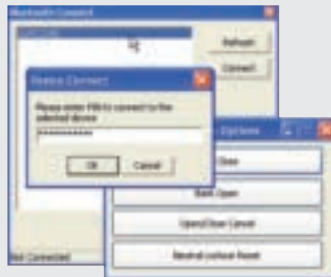
VARWARE SOFTWARE

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.

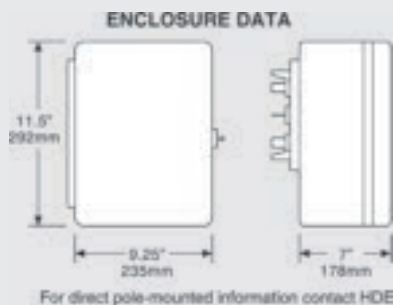
SPECIFICATIONS

MECHANICAL

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

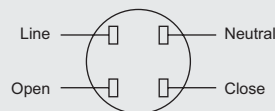
Enclosure: NEMA 3R weatherproof fiberglass; 9.25" W x 11.5" H x 7" D
(235 mm x 292 mm x 178 mm); hinged left, lock hasp on right side

Weight: 8.5 lbs. without communications (3.9 kg)



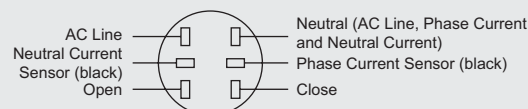
METER SOCKET WIRING (facing meter socket)

4 Jaw: Time, Temperature, Voltage

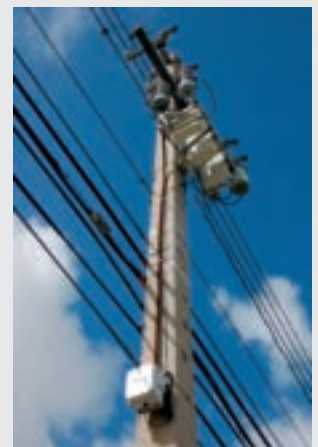


Connectors would be used for neutral current or line current
Other socket wiring configurations are available, contact HDE.

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: $\pm 0.4\%$, 0.1VAC resolution

Current Accuracy: $\pm 1.0\%$, 0.5A resolution

Temperature Accuracy: $\pm 1^\circ\text{F}$, 1°F resolution

Time Accuracy: Temperature compensated oscillator, $\pm 0.001\%$

Clock Back-up: Capacitor – 10 days

Display: Liquid Crystal, -22°F to $+176^\circ\text{F}$ (-30°C to $+80^\circ\text{C}$)

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: $\pm 1^\circ$ lead or lag

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

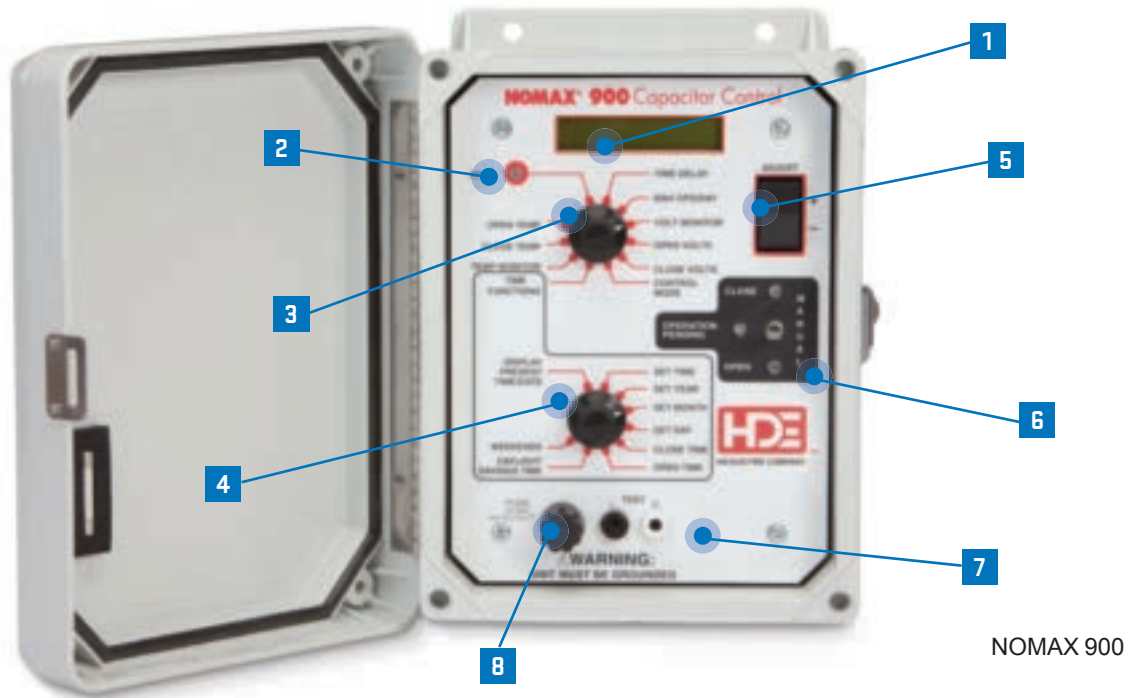
Close: 5A to 600A; minimum setting = open amps + 5A

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 of 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.

INDEX

| | | | | | |
|---------------------|---|---------------------|----------------|--------------------|---|
| 3ID-100..... | 86 | B-35..... | 41 | DVI-100/K02..... | 26 |
| 025-02015-SUB..... | 55 | C-2..... | 21 | DVI-100T/K01..... | 26 |
| 025-02035-SUB..... | 53 | C-5..... | 21 | DVI-100T/K02..... | 26 |
| 025-02040-SUB..... | 53 | C-10FRVW..... | 50 | DVI-500..... | 26 |
| 025-02045-SUB..... | 53 | C-10VW..... | 50 | DVI-500/K01..... | 26 |
| 025-02050-SUB..... | 53 | C-200..... | 33 | DVI-500/K02..... | 26 |
| 025-02070-120V..... | 53, 55, 81 | CC-II/100..... | 60 | DVI-500T/K01..... | 26 |
| 025-02190-SUB..... | 55 | CC-III..... | 62 | DVI-500T/K02..... | 26 |
| 025-02195-SUB..... | 55 | CC-III/K01..... | 62 | DVM-25T..... | 16 |
| 025-02220-120V..... | 53, 81 | CDM-50..... | 78 | DVM-80..... | 12 |
| 025-OLPS-5..... | 5, 7, 9, 11, 13, 15, 17, 21, 25, 57, 83 | CDM-75..... | 78 | DVM-80/K02..... | 12 |
| 025-OLPS-6..... | 5, 7, 9, 11, 13, 15, 17, 21, 57, 83 | CFT-35..... | 5, 13, 15, 21 | DVM-80/K03..... | 12 |
| 050-00300-PRX..... | 37 | CM-100/V..... | 21, 57, 83 | DVM-80T..... | 12 |
| 050-00310-PRX..... | 37, 53, 81 | CM-330..... | 33 | DVM-80T/K02..... | 12 |
| 050-02000-12V..... | 53, 55, 81 | CM-5000..... | 23 | DVM-80T/K03..... | 12 |
| 050-02025-220V..... | 53, 55, 81 | CS-DDVM..... | 5, 7, 9 | DVM-80UVK..... | 14 |
| 050-02030-SET..... | 55 | CS-DVI..... | 27 | DVM-80UVM..... | 14 |
| 050-02050-12V..... | 53, 81 | CS-DVI-5..... | 27 | DVM-5000V..... | 18 |
| 075-02000-12V..... | 55 | CS-DVM..... | 13, 15, 17, 19 | DVM-5000V/K01..... | 18 |
| 075-02020-8VLI..... | 53, 81 | CS-DVM5000V..... | 19 | EA-15/25..... | 5, 7, 9, 11, 13, 15, 17, 21, 25, 83 |
| 075-IT3-8VX4..... | 53, 81 | CS-HVA..... | 71 | EM-1..... | 20 |
| 575-02012-SAT..... | 55 | CS-IT4..... | 53 | EM-2..... | 20 |
| 8280..... | 72 | CS-SVM..... | 7, 9, 11 | EM-3..... | 20 |
| 8280/HC-5..... | 72 | CS-UCT..... | 25 | FACT-1..... | 74 |
| 8281..... | 72 | CT002..... | 61 | FT-1..... | 90 |
| 8281/HC-5..... | 72 | CT002/III..... | 63 | FTVD-15..... | 28 |
| 9390..... | 72 | CT004..... | 61 | FTVD-15/K01..... | 28 |
| 9390/HC-5..... | 72 | CT004/III..... | 63 | FTVD-BG..... | 29 |
| 9391..... | 72 | CT-300..... | 64 | GCP-1..... | 5, 7, 9, 11, 13, 15, 17, 21, 83 |
| 9391/HC-5..... | 72 | CY3-LED..... | 94 | HC-5..... | 73 |
| APT-1..... | 38 | DDPM-40..... | 6 | HISAT-15..... | 54 |
| ASP-15/25..... | 5, 7, 9, 11, 13, 15, 17, 21, 23, 25, 27, 33, 57, 83 | DDPM-40/K01..... | 6 | HISAT-15/220P..... | 54 |
| ASP-35U..... | 5, 7, 9, 13, 15, 21, 25, 57, 83 | DDPM-40/K02..... | 6 | HISAT-25..... | 54 |
| AT-100..... | 56 | DDPM-40/K03..... | 6 | HISAT-25/220P..... | 54 |
| AT-100/K1..... | 56 | DDPM-40S..... | 6 | HP-DVI-2..... | 27 |
| B-2..... | 33, 37, 65 | DDPM-40S/K01..... | 6 | HP-DVI-6..... | 27 |
| B-4..... | 5, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 33, 37, 39, 53, 57, 71, 73, 83, 85, 91 | DDPM-40S/K02..... | 6 | HSA-2500..... | 13, 15, 17, 19, 21, 23, 27, 29, 33, 53, 57, 73, 83, 85, 91 |
| B-5..... | 55, 71, 85, 87 | DDPM-40S/K03..... | 6 | HVA-2000..... | 70 |
| B-6..... | 5, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 33, 37, 39, 53, 57, 71, 73, 83, 85, 91 | DDPM-40S/K01..... | 6 | HVA-2000H..... | 70 |
| B-7..... | 73 | DDPM-40S/K02..... | 6 | IEP-200TC-5..... | 27 |
| B-8..... | 67, 69 | DDPM-40S/K03..... | 6 | IEP-DVI-5..... | 27 |
| B-9..... | 65 | DDVIP-138..... | 8 | IEP-DVI-EXT-5..... | 27 |
| B-12..... | 15 | DDVIP-138/K01..... | 8 | IEP-EA/C..... | 23, 33 |
| B-20..... | 79 | DDVIP-138/K02..... | 8 | IEP-EA/C-35..... | 23, 33 |
| B-30..... | 11, 25, 27 | DDVIP-138/K03..... | 8 | IEP-TAG-EXT..... | 23, 33 |
| | | DDVIP-138S..... | 8 | IEP-UD/C..... | 23, 33 |
| | | DDVIP-138S/K01..... | 8 | IEP-UDP..... | 23, 33 |
| | | DDVIP-138S/K02..... | 8 | IT-4..... | 52 |
| | | DDVIP-138S/K03..... | 8 | IT-4/12V..... | 52 |
| | | DDVM-40..... | 4 | | |
| | | DDVM-40/K01..... | 4 | | |
| | | DDVM-40/K02..... | 4 | | |
| | | DDVM-40/K03..... | 4 | | |
| | | DVI-100..... | 26 | | |
| | | DVI-100/K01..... | 26 | | |

continued on next page

continued from previous page

| | | | | | |
|----------------------|----|-----------------------|---|-----------------------|--------|
| IT-4/220P | 52 | PRX-69D/K01 | 34 | T200MR/KIT-0435 | 30 |
| K-7-1 | 88 | PRX-69D/K02 | 34 | T200MR/KIT-1235 | 30 |
| LB-5 | 76 | PRX-69D/K03 | 34 | T330-069230 | 30 |
| LB-5-1 | 76 | PRX-69D/K10 | 34 | T330-138500 | 30 |
| LO-01 | 44 | PRX-500 | 34 | TAG-5000 | 22 |
| LO-06 | 44 | PRX-500B | 34 | TAG-5000/KIT1 | 22 |
| LO-06C | 44 | PRX-500H | 34 | TAG-41811/B | 33 |
| LO-06H | 44 | PRX-500/K01 | 34 | TAG-42029 | 23, 33 |
| LO-BGS | 45 | PRX-500/K02 | 34 | TAG-AC60 | 23, 33 |
| LOC-01 | 45 | PRX-500/K03 | 34 | TAG-AC120 | 33 |
| LO-CB | 45 | PRX-500/K10 | 34 | TAG-AD100 | 33 |
| LO-CL | 45 | PRX-CORD | 37 | TL-AST-M | 66 |
| LO-EM | 45 | PRX-CS | 37 | TL-AST-N | 66 |
| LO-HB | 45 | PRX-HS | 37 | TL-MAN-M | 66 |
| LO-OP | 45 | PRX-XF | 37 | TL-MAN-N | 66 |
| LO-P6E | 44 | PT-500 | 19 | UCT-8 | 24 |
| LO-XF1 | 45 | PT-5000B | 5, 7, 11, 13, 15, 17, 21, 83 | UCT-8/K01 | 24 |
| LO-XF2 | 45 | PT-5000W | 58 | UCT-8/K02 | 24 |
| LV-5 | 42 | PT-DDVIP | 9 | UTH-8 | 19 |
| LV-5/K01 | 42 | PT-DET | 33 | VP-1 | 40 |
| LV-EH | 43 | PT-DVI | 27 | VP-1/K01 | 40 |
| LV-GS | 43 | PT-FTVD | 29 | VW-20H | 50 |
| LV-HS | 43 | PT-PRX | 37 | VW-20HFR | 50 |
| LV-PT | 43 | PT-VP | 41 | VW-20HFR-K | 50 |
| MARK-III-S | 20 | QC-AST-M | 68 | VW-20H-K | 50 |
| MARK-III-S/KIT | 20 | QC-AST-N | 68 | VW-K-BAG | 51 |
| MARK-II/KIT | 20 | QC-MAN-M | 68 | VWS-20 | 48 |
| MARK-II-S | 20 | QC-MAN-N | 68 | VW-S-BAG | 49 |
| MARK-II-S/KIT | 20 | R-45 | 21, 83 | WM-01 | 46 |
| MARK-I-S | 20 | R-69 | 57 | WM-06 | 46 |
| MARK-I-S/KIT | 20 | R-75 | 21 | WM-06C | 46 |
| MARK-IV | 20 | R-80 | 13, 15 | WM-06F | 46 |
| MARK-IX | 20 | RT-200 | 80 | WM-12 | 46 |
| MARK-V | 20 | RT-200/220P | 80 | WM-12C | 46 |
| MARK-VI | 20 | S-4H | 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 33, 37, 39, 53, 57, 71, 73, 83, 85, 91 | WM-12F | 46 |
| MARK-VII | 20 | S-6H | 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 33, 37, 39, 53, 57, 71, 73, 83, 85, 91 | WM-BGL | 47 |
| MARK-VIII | 20 | SVM-25 | 10 | WM-BGS | 47 |
| MARK-V/KIT | 20 | SVM-25/K01 | 10 | WM-CB1 | 47 |
| MARK-XI | 20 | SVM-25/K02 | 10 | WM-FB1 | 47 |
| MARK-XII | 20 | T200-0412 | 30 | XC-GFCI | 92 |
| PF-50 | 84 | T200-1235 | 30 | | |
| PRM-100 | 82 | T200/KIT-0412 | 30 | | |
| PRX-4 | 34 | T200/KIT-1235 | 30 | | |
| PRX-4B | 34 | T200MR-0412 | 30 | | |
| PRX-4H | 34 | T200MR-0435 | 30 | | |
| PRX-4/K01 | 34 | T200MR-1235 | 30 | | |
| PRX-4/K02 | 34 | T200MR/KIT-0412 | 30 | | |
| PRX-4/K03 | 34 | | | | |
| PRX-4/K10 | 34 | | | | |
| PRX-69D | 34 | | | | |
| PRX-69DB | 34 | | | | |
| PRX-69DH | 34 | | | | |

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