

# APT-1

## ACTIVE POWER TESTER

### Operating & Instruction Manual





# APT-1

## ACTIVE POWER TESTER



### Operating & Instruction Manual

IMPORTANT SAFETY INFORMATION .....	4
GENERAL DESCRIPTION .....	5
TECHNICAL SPECIFICATIONS .....	6
OPERATING INSTRUCTIONS .....	7
BATTERY REPLACEMENT .....	9
CARE AND MAINTENANCE .....	10
REPAIRS .....	10
TERMS AND CONDITIONS OF SALE .....	12

# IMPORTANT SAFETY INFORMATION

**Read and understand these instructions prior to use. These operating instructions are not a substitute for proper training in the use of this equipment.** High voltage systems present serious hazards, including the risk of death or serious injury due to arcing, thermal burns and electrocution. HD Electric's products are intended solely for use by professionals with knowledge, training and experience in the use of the equipment and its accessories in and around high voltage systems.

All applicable federal, state, company and OSHA work practices must be followed. If you are unfamiliar with the work practices required, **DO NOT PROCEED**. Call HD Electric if you have any questions regarding this equipment.

## IMPORTANT LABELS ARE AFFIXED TO THE PRODUCT. READ AND UNDERSTAND BEFORE PROCEEDING.

### SAFETY

Rigorous hot stick work practices should be used at all times. All industry, OSHA and company work practices and safety procedures shall apply when working on or near high voltage systems. When used properly, the APT-1 Detector reliably provides an alarm warning of de-energized conductors.

- Only trained, professional operating personnel should use this equipment. The voltages the Detector operates at are to be considered live and dangerous and are lethal. Severe injury or death can occur if improperly used.
- Make certain all other safety considerations have been identified, implemented and are in place prior to using this equipment. Maintain proper work clearances at all times.
- Make certain the APT-1 Detector is properly rated for use on the system voltages you will test.
- Prior to using, make certain to inspect the Detector for any physical damage, cleanliness and check for proper working order using the On switch. Remove from service and do not use if you suspect a problem with any of the above.
- Test the Detector before and after each use by turning it on and verifying the lights and beeper are operating.
- Never allow another high voltage conductor, or grounded point, to come into contact with the Detector during use.
- Never touch the Detector or On/Off switch during contact with high voltage. The APT-1 Detector should be considered to be at the same voltage as the conductor under test.

The APT-1 requires the use of an accessory hot stick. The minimum hot stick length required for safe use depends upon the particular operation; consult federal, state, company and OSHA specifications for the proper hot stick length for the intended operation.

The users of this Detector should always be equipped with personal protective equipment including high voltage gloves, flame retardant clothing, eye and face protection. Some applications may require additional protective equipment.

Failure to follow these and other warnings and safety precautions may result in severe injury or death.



## OPERATIONAL IMPAIRMENT

If the APT-1 is used in a manner not described in this instruction manual, the protection and effective operation of this equipment may be impaired.

## GENERAL DESCRIPTION

The APT-1 is for use on insulated or uninsulated overhead conductors within the voltage range shown on the front label. The APT-1 is designed to indicate the absence of full line voltage with sound and lights. The APT-1 is not for use on shielded primary cable in either overhead or underground installations.

The APT-1 is intended to flash lights and sound an alarm to warn nearby workers that an energized overhead conductor is de-energized. The lights and alarm will sound for as long as the line voltage is substantially below the APT-1 rated voltage. When line voltage is restored, the APT-1 lights and alarm will stop.

The APT-1 is available in certain voltage ranges. It should be used only within its specified range shown on the front label.

## TECHNICAL SPECIFICATIONS

**MODEL NUMBER:** APT-1 / APT-1-30

**VOLTAGE RANGES, 60HZ AC:**

APT-1: 7.6 to 13.2kV line-to-ground

**VOLTAGE RANGES, 50HZ AC:**

APT-1-30: 10kV to 30kV line-to-ground

## ENVIRONMENTAL CONDITIONS

**CONDITIONS:** Indoor and outdoor use

**ALTITUDE:** Up to 6,566 ft. (2000m)

**OPERATING TEMPERATURE:** -20°F to +120°F (-29°C to +49°C)

**HUMIDITY:** 95% to 49°C (non-condensing)

**POLLUTION DEGREE:** PD4

**MEASUREMENT CATEGORY IV:** Classification Rating (CAT IV) – Product is intended for use with test and measuring circuits connected to the circuits/wiring outside of a building installation, including transmission lines.

**OVERVOLTAGE CATEGORY:** IV

**ENCLOSURE MATERIAL:** Polycarbonate and PVC

**PRINTED CIRCUIT BOARDS:** FR-4 UL94V-0

**IEC PROTECTION RATING:** IP68

## DIMENSIONS

**LENGTH:** 10.88" L x 3.5" W x 3.5" H (27.64cm x 8.89cm x 8.89cm)

**WEIGHT:** 1.2 lbs. (0.54kg)

**BATTERY:** 9V alkaline 1604A, IEC 6LR61 or 9V lithium, ANSI-1604LC

**BATTERY LIFE:** 30 hours standby under normal conditions using alkaline battery

## OPERATING INSTRUCTIONS

Prior to using, make certain to inspect the Detector for any physical damage, cleanliness and check for proper working order using the On switch. Remove from service and do not use if you suspect a problem.

To set the APT-1 to indicate the absence of full line voltage, press the On/Off switch up to the On position. The alarm will sound and the light will flash. The alarm and lights will stop when full line voltage is detected.

To install the APT-1 on an overhead conductor, use a suitable high voltage insulated hot stick. Grasp the eyelet tab on the APT-1 with the hot stick hook and retract it fully into the hot stick head. This will open the APT-1 clamp head. Hook the APT-1 on the conductor and release the hot stick.

The APT-1 is powered by a 9V alkaline or lithium battery. Before installing the APT-1, test the battery by pressing the switch to the On position to verify that the alarm sounds and the lights flash. If there is no alarm or if the alarm is sounding but the lights are not flashing, change the battery by removing the four screws. For more details see the Battery Replacement section on page 9. Battery life is approximately 30 hours of continuous alarm using an alkaline battery. Remove the battery for long term storage.

The APT-1 is sealed to prevent water damage. The battery should be changed only in a clean and dry area.



## OPERATING INSTRUCTIONS *continued*

### **Situations to Avoid**

Within certain situations and because of various system configurations, electrical field interference capable of affecting the operation of the APT-1 Detector may occur. Within these areas it is imperative that you be aware of and identify all such conditions which may exist. Some examples of these situations are discussed here.

**1. 90° CORNER CONFIGURATIONS:** Reposition the APT-1 Detector to at least three feet (1 meter) on both sides of corner configurations and attempt to retest. Any 90° corner configuration may cause field cancellation, causing the APT-1 Detector to not operate correctly. Conductor configurations, busbar and other electrical apparatus all apply.

**2. SAME PHASE INTERFERENCE:** When two conductors of the same phase are in close proximity to one another, the field generated could shield the APT-1 Detector, causing it not to operate. Reposition the APT-1 Detector to areas which will remove it from these situations.

**3. OPPOSITE PHASE INTERFERENCE:** This condition may occur if a grounded and de-energized conductor is in close proximity to a live, ungrounded conductor. When applying the APT-1 Detector, attempt to approach the conductor you want to monitor outside this possible field. If you are within the field of the energized conductor, the APT-1 Detector may indicate that the de-energized line is energized.

**NOTE:** Only operate the APT-1 Detector within the voltage range specified on the product label. Do not use the APT-1 Detector above or below the product label voltage rating.



## BATTERY REPLACEMENT

The APT-1 is sealed to prevent water damage. The battery should be changed only in a clean and dry area.

Use a screwdriver to remove the four screws on the front of the APT-1 Detector.



Open the cover to access the battery compartment. Remove and replace the 9V battery, then replace the cover and screws. Do not overtighten.



Battery life is approximately 30 hours of continuous using an alkaline battery. Remove the battery for long term storage.

## CARE AND MAINTENANCE

**STORAGE** - If a prolonged period of storage is anticipated (six months or more), remove the battery. Remember to replace the battery prior to using the APT-1 Detector again.

**CLEANLINESS** - The polycarbonate housing is very rugged, but it should be kept clean and free of dirt, grease and any other foreign materials. Use a silicone impregnated cloth prior to use in order to maintain the surface. If the housing surface integrity has been compromised in any way, return to factory for repair or replacement. Do not use.

**DAMAGE** - If you suspect any mechanical or electrical damage, do not use the APT-1 Detector and arrange for repair by contacting the factory.

**BATTERY REPLACEMENT** - Battery life is determined by usage, storage and quality. Batteries should be changed on regular schedules not to exceed twelve months and is recommended every six months. See the Battery Replacement section on page 9 for additional information.

**CALIBRATION & TESTING** - Regular calibration of the APT-1 is not required. There is no accessible calibration adjustment.

## REPAIRS

If any damage is found please contact us at 800-435-0786 to arrange for service.

## MANUFACTURING LOCATION

HD Electric • Southaven, MS, 38672 USA



# TERMS AND CONDITIONS OF SALE

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 with 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 the 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 at 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 attorney's fees, relating to the collection of just due amounts. Should Buyer's financial position become unsatisfactory to HDE, cash payments or security satisfactory to HDE may be required by HDE for future deliveries and for the goods thereafter 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 to a Buyer who has not provided shipping instructions. If the shipment of 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 and misuse, neglect, abuse, accident, fire, flood, theft, or other causes. The HDE Limited Warranty shall be limited to HDE's obligation to repair or replace or to pay for the cost of 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 or 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, arc flash and formal burn, 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 have no applicability, 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 restrictions, 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.

**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, 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, and the extent of such written notice as 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 therefor, obtaining from HDE a material authorization number and observing such instructions as HDE may give in authorizing such return. In the event a return is authorized by HDE, a restocking for any Goods requiring repackaging or maintenance a twenty percent (20%) restocking fee shall be assessed to Buyer in the final credit amount.

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

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

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

**14. MISCELLANEOUS:** These terms and conditions supersede all other communications, negotiations and prior oral or written statements regarding the subject matter hereof. No change, modification, rescission, discharge, abandonment, or waiver of these terms and conditions shall be binding upon HDE unless made in writing and signed on its behalf by its duly authorized representative. No conditions, usage or trade, course of dealing or performance, understanding or agreement purporting to modify, vary, explain, or supplement these terms and conditions shall be binding unless hereafter made in writing and signed by Seller. No modification shall be effected by HDE's receipt or acceptance of Buyer's purchase orders, shipping instruction forms, or other documentation containing terms of sale in 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 of Arbitration is not to be 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 shall 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 AAA). 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.

HD Electric Company is committed to ongoing review and improvement of its product lines, and thus reserves the right to modify product design and specifications without notice.

HD Electric Company® products are available through HDE® sales representatives worldwide.

HD Electric products receive final assembly and shipment from HDE's production facility at

Suite 400 - 4320 Executive Drive, Southaven, MS 38672.

HD Electric Company is ISO 9001:2015 certified

Printed in U.S.A. © HD Electric Company 2020 • Bulletin No. APT IM-300a