

# HALO<sup>®</sup> AMMETER

## Operating & Instruction Manual



Model Numbers:  
8280, 8281, 9390, 9391



**HDE** HD ELECTRIC  
HDElectricCompany.com

# HALO® AMMETER

## Operating & Instruction Manual

GENERAL .....	3
SAFETY .....	3
DESCRIPTION OF EQUIPMENT .....	3
USING THE EQUIPMENT .....	4
BATTERY REPLACEMENT .....	5
HALO FORKHEAD INSTRUCTIONS .....	6
SPECIFICATIONS .....	6
REPAIRS .....	6
TERMS AND CONDITIONS OF SALE .....	8



## **NOTE - PRIOR TO USE, THIS MANUAL SHOULD BE FULLY READ & UNDERSTOOD.**

### **GENERAL**

HALO Ammeters are a high-current, digital ammeter designed to be used on system voltages up to 69,000 volts AC. The HALO ammeter will sense and display current to 1,999 amps and will hold the maximum reading and/or track the reading for the user.

HALO ammeters were designed for the purpose of measuring current flow on overhead lines and/or underground systems. A hot stick must be used at all times and rigorous hot stick work precautions must be followed. When used correctly, the HALO ammeter can enable fast, accurate and safe load surveys and load balance investigations.

The instrument is constructed of durable materials and will require a minimum of maintenance. However, regular examinations are needed to ensure that no deep scratches or physical damage has occurred. If damage does occur, remove from service and arrange for repair.

There are 4 models available, HALO I HOOKHEAD & FORKHEAD has one mode (Hold). HALO II HOOKHEAD and FORKHEAD has two modes of operation (Track and Hold).

The opening in the head is large enough to accept all sizes of wire conductors.

### **SAFETY**

As HALO ammeters are often used on and in the vicinity of high voltage equipment, please practice the following safety precautions.

1. Before use, make certain that:
  - A. Operating instructions are read, understood and questions answered.
  - B. Rigorous hot stick work precautions are followed.
  - C. Industry and/or company standard safety practices are followed.
  - D. All parts of the equipment are dry, clean, properly secured together & in working order.
  - E. The equipment set-up is correct for the voltage system to be monitored.
2. During the use of the unit, make certain that:
  - A. Correct hot sticks are installed for the system voltage being tested.
  - B. It is only held by the insulated hot stick. Do not touch the HALO ammeter while in use.
  - C. Electrically safe, insulated rubber gloves are used at all times on the hot stick.
  - D. The ammeter is not an insulator. Do not bridge from energized line-to-ground or from line-to-line.

### **DESCRIPTION OF EQUIPMENT**

See Page 7 for a brief overview of the features and operating procedures.

The ammeter has a molded sensing coil in the head and a 3.5 digit LCD display. It measures current between 0 and 1,999 amperes. The ammeter is autoranging, providing a reading between 0 to 199.9 on the low range and 200 to 1999 on the high range. When in the HOLD mode, the display will lock in at the highest current monitored on the conductor. If an over-range condition exists (above 1,999 amps), the display will show a 1. Reset display prior to using again.

The HALO I (models 8280/8281) has two pressure switches, one marked “ON/RESET” to switch on the display and to reset the display after testing. The second switch marked “OFF” turns the HALO off after use. The HALO II (models 9390/9391) has two pressure switches, one marked “OFF/ON” to switch the display off and on. The second switch of the HALO II is marked “TRACK/HOLD”. In the TRACK mode the readings will follow the current and in the HOLD mode the reading will display and hold the highest current. When in TRACK mode, a sine wave appears in the lower left corner of the display.



**Figure 1**

Low battery indicator signal shown in upper lefthand corner of display.

An automatic shut off feature turns the ammeter off after approximately 10 minutes.

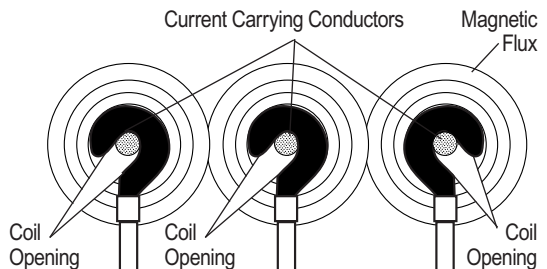
The HALO ammeter is powered by a replaceable, 9 volt lithium or alkaline battery. Under normal conditions, an alkaline battery will provide approximately 50 hours of continuous use. A low battery indicator is displayed on the left hand side of the display when the battery is low, as shown in Figure 1. Incorrect readings may be displayed if operating with a low battery.

## USING THE EQUIPMENT

1. Inspect HALO ammeter and hot stick for any damage, cleanliness and proper working order. If damage is suspected, remove from service and arrange for repair.
2. Attach the hot stick, which can be supplied by HDE as an accessory or by the user, to the universal spline located at the base.  
**NOTE** - The load should not exceed 22 lbs. (10kg) longitudinal or 11 lbs. (5kg) in any other direction.
3. Turn the HALO ammeter on by pressing the “ON/RESET” switch (HALO I) or “ON/OFF” switch (HALO II). While the button is depressed a reading of 1888 will be displayed to indicate that all digits are functional. Note, the 1888 only appears momentarily with the HALO II. The display will come ON and should display 0 to 2 on the HALO I and 00.0 to 00.6 on the HALO II.
4. Place the HALO ammeter, using the hot stick, over the conductor to be monitored. Leave in place for 5 to 10 seconds.

**WARNING** - Do not bridge the HALO ammeter from energized line-to-ground or from line-to-line.

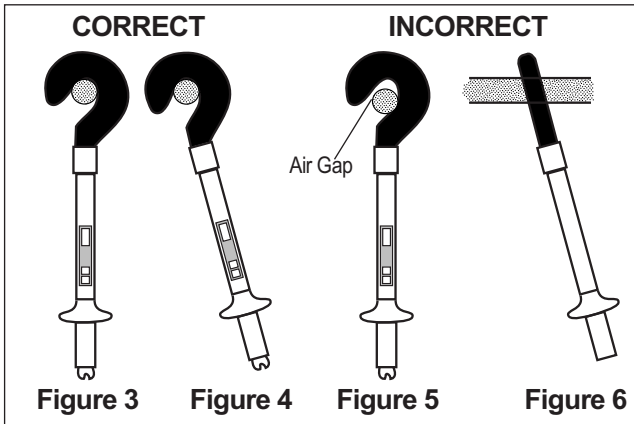
**NOTE** - For best accuracy, the opening of the sensing coil (hook) should face away from any other energized conductors so as not to influence the reading. See Fig. 2.



**Figure 2**

**NOTE** - When conductors are spaced closely, raise the HALO ammeter with the core parallel to the conductors, then slip the coil over the desired conductor by rotating 90°. The sensing coil may pick up external signals from conductors if it passes within 12 inches (0.3 meters) of a conductor while being lifted into position or lowered to the ground. Care should be taken to minimize this situation by avoiding contact or close proximity with conductors other than the conductor being tested.

**NOTE** - To maintain maximum accuracy, the head must be perpendicular as seen in Figures 3 and 4. Failure to do so may result in incorrect readings on the display.



5. HALO I will continue to lock on the maximum current reading during the time it is hanging on the conductor. HALO II can be switched between modes by pressing the “TRACK/HOLD” switch. When the sine wave symbol appears in the display, the ammeter is in the TRACK mode. When the sine wave does not appear, the ammeter is in HOLD mode.

**WARNING** - Before switching modes, always remove HALO from the voltage source.

**NOTE** - If HALO II is reset in either mode it will automatically revert to the other mode.

6. On completion of a monitoring period, the instrument should be removed from the voltage source, carefully lowered, and the reading on the display noted.
7. If another test is required, press the “ON/RESET” switch for HALO I to zero the display and test again and “TRACK/HOLD” switch for HALO II. Prior to retesting, make certain HALO II is in correct mode. Press and hold the “OFF” switch if testing is complete until the display is blank.

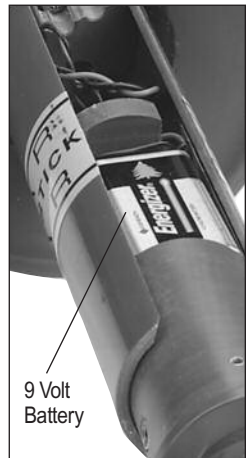
## BATTERY REPLACEMENT

**NOTE** - Figure 7 shows a cross sectional view of the battery holder.

1. Place the HALO ammeter horizontally.
2. The Battery Holder is attached to the body by two brass screws (4 screws on some versions). Remove the screws.
3. When the brass screws have been removed, carefully slide the Battery Holder out beyond the end of the body.

**CAUTION:** The battery clip is attached to the circuit board and to the battery that is located inside the Battery Holder. IF THE BATTERY CLIP IS PULLED TOO FAR, THEN IT CAN BE DISCONNECTED FROM THE CIRCUIT BOARD AND THE HALO WILL NOT OPERATE.

4. Remove the old battery and disconnect from the battery clip.
5. Insert a new 9 volt lithium or alkaline battery in the battery clip and install back in the Battery Holder.
6. Slide the Battery Holder back into the body and replace the brass screws that were removed in Step 2.

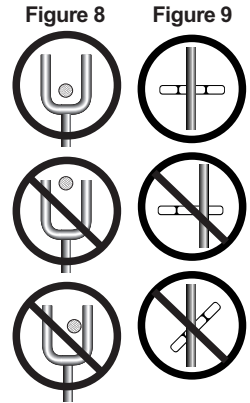


**Figure 7**

## HALO FORKHEAD INSTRUCTIONS (Models 8281 and 9391)

The operational performance of the forkhead is the same as the hookhead, but offers a slightly different approach in obtaining current measurements. All safety concerns that apply to the hookhead apply to the forkhead. The positioning of the instrument with respect to the conductor and the positioning of the conductor within the forkhead is critical in obtaining an accurate reading. To obtain the most accurate reading, the following guidelines should be observed.

1. Be sure the HALO ammeter body is perpendicular (90°) to the conductor (reference Figures 3, 4, 5 & 6 on page 5).
2. If there are other conductors in close proximity, face the opening of the fork away from the other conductor(s) as much as possible.
3. Position the forkhead so the conductor is close to, or pressed against, the base of the fork and is centered between the legs of the fork (See Figure 8).
4. Keep the opening of the forkhead perpendicular to the conductor (See Figure 9).



**WARNING** - Do not bridge the HALO ammeter from energized line-to-ground or from line-to-line.

**NOTE** - When using the forkhead on underground systems near the elbow, the concentric neutral cannot be inside the forkhead for the unit to perform properly. Position the forkhead around the conductor where the concentric neutral is peeled back. This is usually high on the cable, just below the elbow or on the elbow below the pulling ground.

## SPECIFICATIONS

Display: 3.5 digit LCD 1/2" (13mm) high characters

Measurement Range: 0.1 to 199.9 amps low range - 199.9 to 1,999 amps high range

Accuracy: +/- 3% of reading +/- 3 counts

Operating Temperature: 0°F to +122°F (-18°C to +50°C)

Storage Temperature: 0°F to +122°F (-18°C to +50°C)

System Voltage: Up to 69,000 volts AC

Operating Frequency: 25-1000Hz

Maximum Hook Opening: 2.3" (5.8cm)

Maximum Hook Depth: 3.7" (9.4cm)

Outside Fork Dimension: 5.5"W x 8.5"L x 1.1875" Thick (14cm x 22cm x 3cm)

Inside Fork Dimension: 2.75"W x 5.5" Deep (7cm x 14cm)

Overall Length: 28" (71cm)

Tube Dimensions: 18" x 1-3/4" (45.7cm x 4.5cm) diameter

Weight: 2lbs. 13oz. (1.28 kg)

## 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



1. Inspect. Turn on by pressing "On/Reset" button and check for "Low Battery" indication on display. Replace battery if needed before using.



2. Attach to hot stick using universal spline.



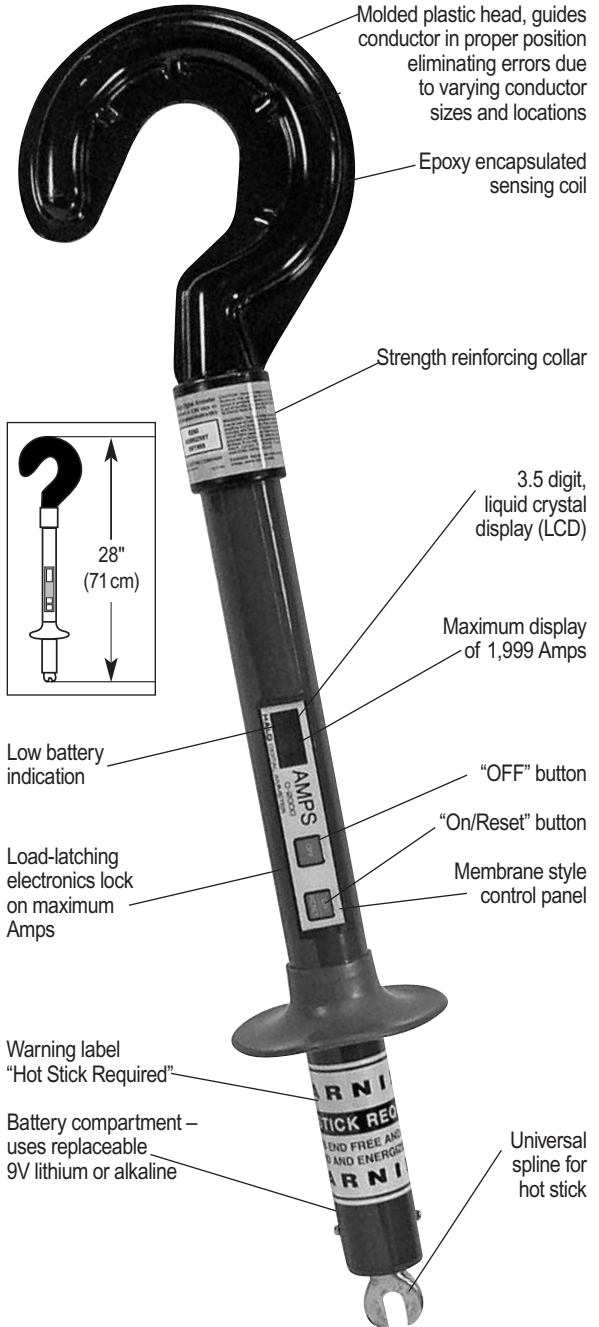
3. Hang on conductor for a minimum of 5-10 seconds.



4. Remove from conductor & read maximum amperes.



5. Reset display by pressing the "On/Reset" button. The ammeter is ready to use again. When finished, turn off by pressing the "Off" button and return to case for storage.



# 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 dates(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 or to provide shipping instructions. If the shipment of Goods is postponed or delayed by HDE 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 or misuse, neglect, fire, flood, theft, or other cause. HDE's limited warranty shall be limited to the repair or replacement of the Goods. HDE's obligation to repair or replace or placement 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, 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; or 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, and 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. HALO IM-200a