

# AT-100 LIGHTNING ARRESTER & LEAKAGE TESTER

The Lightning Arrester & Leakage Tester is a two stick, live line tester designed to test lightning arresters prior to energizing them on a power distribution system. The tester is designed to warn linemen that an arrester is damaged or deteriorating and should not be energized.

Lightning arresters are designed to protect a power distribution system by shunting to ground the high voltage surges typically caused by lightning. Arresters subjected to the stresses of very high voltages and currents can be damaged by lightning and can deteriorate over time. Eventually, lightning arresters can fail, and when they do it is usually a violent failure resulting in the eventual destruction of the arrester.

Arresters are often installed on an overhead or underground power distribution system while the system is live. Connecting a weak or damaged arrester to a live line can result in an eventual or immediate catastrophic failure. If the failure is eventual, another outage is caused, peripheral equipment is damaged and a service crew must repair the damage and restore power. If the failure is immediate, the line personnel are endangered by the resulting system fault.

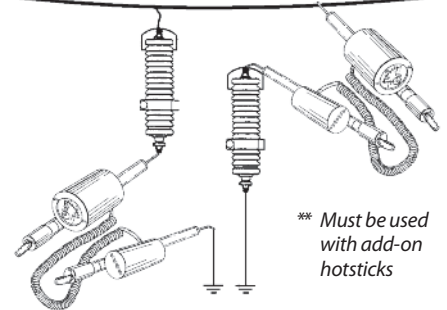
The AT-100 tests lightning arresters with high voltage DC. The high voltage DC is equal to the peak AC voltage; for example, on a 15kV system with a line-to-ground voltage of 7200V, the AT-100 DC test voltage is about 10kV. The tester measures and displays the arrester DC leakage current. It is rated for use on systems from 4kV (2.4kV line-to-ground) up to 25kV (15.2kV line-to-ground). The instrument can be used on systems up to 69kV (40kV line-to-ground) with the addition of the optional R-69 add-on resistor stick pair. The AT-100 can be used on 50Hz and 60Hz systems.

Like a voltmeter, the Lightning Arrester & Leakage Tester has high voltage resistors to limit the current through the tester, and unlike a voltmeter it has a high voltage rectifier to convert AC to DC. An arrester tested with the AT-100 cannot be damaged by the test procedure. In practice, the instrument is connected in series with the lightning arrester between an energized phase and ground.



AT-100  
Shown with standard  
overhead probes

## Overhead Application on Energized Line



For overhead arresters two different test connections are possible. First, with the arrester grounded, the AT-100 is connected between an energized phase and the top electrode of the arrester. Secondly, with the arrester connected directly to an energized phase the AT-100 is connected between the bottom electrode of the arrester and ground. The meter displays DC leakage current, if any. Arresters with leakage currents greater than 20 microamps are classified as high leakage and should not be energized.

Made in the USA

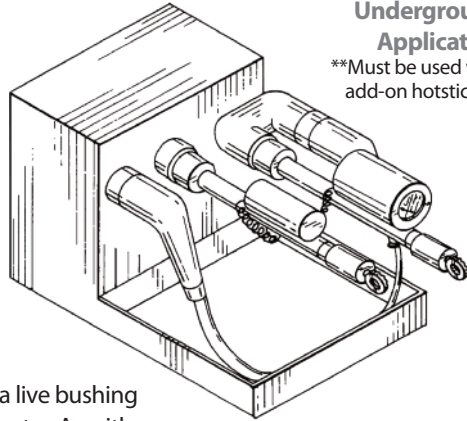


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# AT-100 LIGHTNING ARRESTER & LEAKAGE TESTER

For underground elbow type arresters, the arrester is connected to a 2-way feed-thru with its ground cable grounded. The Lightning Arrester & Leakage Tester is used with two ASP-15/25 load break bushing adapters for 15kV and 25kV systems or two ASP-35U's and R-69 add-on resistor sticks for 35kV systems.



**Underground Application**  
 \*\*Must be used with add-on hotsticks\*\*

The instrument is connected from a live bushing to the feed-thru with the elbow arrester. As with an overhead arrester, leakage current is measured and displayed.

The Lightning Arrester & Leakage Tester improves overall system reliability by testing and removing from the system those arresters that are most likely to fail within a short time. When overhead arresters fail, they generally blow themselves clear of the system and leave the system phase or phases unprotected from lightning. When underground arresters fail, they generally cause a system outage and damage adjacent equipment.

The AT-100 is designed to provide a quick test on arresters using available high voltage. It is not as sensitive as a laboratory test and will not find the most subtle types of arrester damage. It will warn the user of a damaged arrester that could fail immediately upon energizing.



## ADVANCED APPLICATIONS

The AT-100 Lightning Arrester & Leakage Tester can be used as a general purpose DC high potential tester for testing the leakage current of devices other than arresters such as insulators, open switch contacts, crossarms, etc. Testing with DC minimizes the much higher AC capacitive current and allows the user to test for actual DC leakage current. The same green/red scale that applies to arresters is applicable to most other equipment.

## ACCESSORIES

- Each unit includes:
- AT-100
  - Carrying Case
  - Two Overhead Hook Probes

### ORDERING INFORMATION

|                   |   |
|-------------------|---|
| <b>AT-100</b>     | Lightning Arrester/Leakage Tester 4-25kV, up to 69kV with Optional R-69 Resistors |
| <b>AT-100/K1</b>  | Kit Includes AT-100, (2) 025-OLPS-5, (2) R-69 and CM-100/V Case                   |
| <b>R-69</b>       | Add-on Resistor Stick for voltages above 25kV up to 69kV (pair req'd)             |
| <b>ASP-15/25</b>  | Adapter Bushing, 15 and 25 kV Class   |
| <b>ASP-35U</b>    | Adapter Bushing, 34.5kV (Universal) Class   |
| <b>025-OLPS-5</b> | PVC/Brass Overhead Hook Probe   |
| <b>025-OLPS-6</b> | PVC/Brass Overhead Pigtail Probe  |
| <b>HSA-2500</b>   | Universal Hostick Adapter (Shotgun)   |
| <b>S-4H</b>       | 4' Fixed Length Fiberglass Hostick  |
| <b>S-6H</b>       | 6' Fixed Length Fiberglass Hostick  |
| <b>CM-100/V</b>   | Metal Carrying Case   |

*This product is protected by U.S. Patent 6,124,714*

All sales are subject to the terms and conditions of the Limitation of Warranty and Liability set forth in the product Instruction Manual and at [www.HDElectricCompany.com](http://www.HDElectricCompany.com).

Users must read and agree to the Limitation terms, as stated, before using the product.

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.

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Extension Hosticks

R-69