



Protect your upstream personnel and investment while increasing distribution reliability

Using expulsion fuses where ignition of combustible materials, dry grass or worse, gases, are a high potential risk, is now unnecessary because of Eaton's Cooper Power Systems ELF™ current-limiting fuse. Don't take that risk with your upstream personnel; preventing even one accident is well worth the investment.

The ELF dropout fuse is a fully self-contained design that operates silently and eliminates explosive showers associated with expulsion fuse operation. The full-range current-limiting rating ensures reliable operation of over-loads and fault currents. These features make it suitable for areas where a high fire hazard exists. The ELF-LR fuse has been granted permanent exemption by the California Department of Forestry and Fire Protection (CAL FIRE) from power line distribution pole clearance requirements – the trimming or removal of brush or trees from right-of-way to reduce a potential fuel source – when the fuse is installed in the field according to manufacturer's specifications, assuring that no gas, sparks, or debris is emitted.

Because of this assurance, you get all of the following benefits:

- Increased safety to line personnel during circuit energization operations

- Increased safety for persons working in flammable or confined areas of worksites
- Reduced hazards and fire risk

Design

Moreover, the universal fit design of the ELF fuse makes it an easy retrofit into any industry standard interchangeable cutout. Because it has a drop-open design, operation is clearly indicated and fault locating is simplified. In long cable runs of upstream oil and gas applications, this will greatly reduce time and money spent on upkeep of the system. Once the fuse has operated, maintenance personnel can simply use a clampstick to remove the suspended fuse.

Energy-limiting Design

With its full range, current-limiting characteristics tested to ANSI/IEEE requirements C37.40, C37.41, and C37.47, the ELF fuse operates to clear both low- and high-current faults quickly. The element construction, with separable low-current and high-current sections, controls peak arc voltage levels, and limits current and energy (I^2t) let-through levels during the clearing operation.

This energy-limiting design allows for:

- Reduced system damage from high energy faults in heavy loading upstream applications
- Uninterrupted power quality due to sustained system-wide voltage support on trips caused by faults within the system
- Potential reduction in arc flash concerns and required personal protection equipment (PPE)



**Cooper
Power Systems**
by **EAT•N**

Discover innovative solutions with Eaton's Cooper Power Systems ELF self-contained cutout-mounted fuse for upstream power distribution applications.

Perfect for upstream oil field power distribution

- Self-contained design increases safety during circuit energization
- Operates silently while eliminating expulsive showers associated with expulsion fuses
- Universal fit design allows easy retrofit of existing expulsion fuses
- Drop-open design clearly indicates fault location, greatly reducing time and money spent on system upkeep

Typical applications

- Upstream oil & gas exploration power distribution
- Dry, grassy areas, or wherever combustible materials are in close proximity to fuse operation
- Transformer protection
- Capacitor protection
- Personnel safety
- Underground taps

Expulsion Fuse

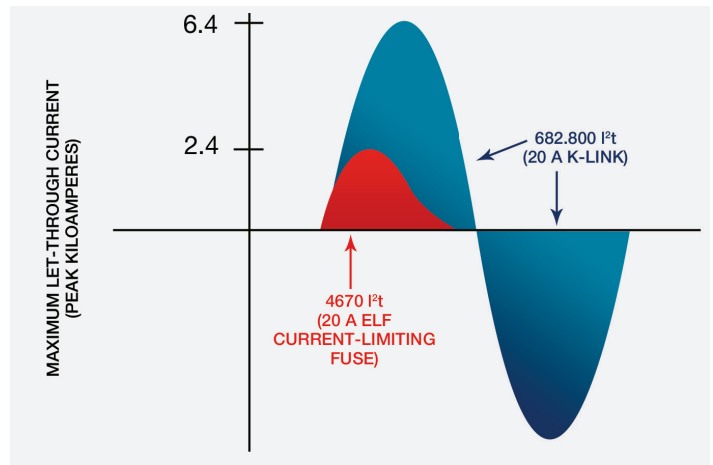


ELF Fuse



Test parameters: 6400 A RMS symmetrical.

Test results: ELF Current-Limiting Fuses Reduce Energy Let-Through by a Factor of 9 over Expulsion Fuses.



Product scope

The ELF fuse voltage ratings range from 8.3–24 kV while our single-, double-, and triple-barrel fuse designs expand amperage ratings from 6–80 A for easy coordination. This expanded offering allows one to easily choose fuses that work for almost any system.

Moreover, the ELF fuse is designed to be mounted in 15 kV and 27 kV, (110 kV, 125 kV or 150 kV BIL) rated interchangeable open distribution cutouts including MacLean/S&C Type XST[™], Hubbell Type C[™] and ABB Type ICX[™] cutouts. Designs for use in 35 kV (170 kV BIL) rated ABB Series V[™] cutouts are also available.

Supplementary products and services for upstream power distribution and overhead line applications

- Type L cutouts
- Single-phase pole-mount transformers
- Reclosers
- Overhead voltage regulators
- Manual disconnect switches
- Distribution arresters
- Fault indicators
- Pole-mounted capacitors



Single-Barrel ELF

Double-Barrel ELF

Triple-Barrel ELF

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton's Cooper Power Systems Business
2300 Badger Drive
Waukesha, WI 53188
cooperpower.com

© 2014 Eaton
All Rights Reserved
Printed in USA
Publication No. PA132007EN
September 2014

EATON
Powering Business Worldwide

For Eaton's Cooper Power Systems product information, call 1-877-277-4636 or visit: www.CooperPower.com

Eaton and Cooper Power Systems are valuable trademarks of Eaton in the U.S. and other countries. You are not permitted to use these trademarks without the prior written consent of Eaton.

All other trademarks are property of their respective owners.