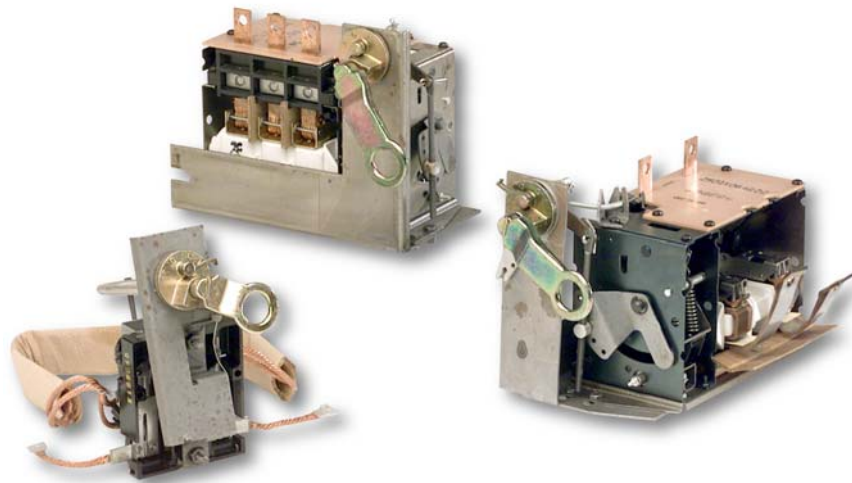




Breaker On Bracket (BOB)



ERMCO Components, Inc. internal oil-immersed secondary circuit breakers are designed for use as part of a protection package for either single or three phase distribution transformers.

The **Breaker On Bracket (BOB)** is a completely assembled breaker operating kit designed to provide the transformer manufacturer with simpler design and assembly as well as providing the utility customer a solution to the most common complaint associated with secondary breakers.

The breaker on bracket consists of a breaker mounted to a rigid steel bracket together with the operating handle and linkage. The package comes completely assembled and adjusted from the factory. One catalog number covers everything; no other components are required. When a signal light is used with any given breaker, it will need to be ordered separately. In addition, the light will require a separate hole in the transformer tank wall.

Installation in the transformer is simple and quick. The breaker and bracket is secured to the tank interior by means of the operating handle that passes through the tank wall. The bracket is designed to rigidly mount the breaker in a fixed position relative to the operating handle. This assembly eliminates the engineering effort to lay out the transformer in-

terior to insure the breaker is properly positioned. It also eliminates the time spent adjusting the breaker linkage on the transformer assembly line because these adjustments are set at the breaker factory.

BOB FEATURES

- Preadjusted
- Ordered as a complete kit
- Rigid mounting bracket
- High interrupting capability
- Rigidly interlocking contacts



Tap Switches



The *ERMCO Components, Inc.* externally operated, single phase, under oil tap changer switch reduces the hazards associated with manual internal tap changing of distribution transformers.

The tap changer switch cap is removed and reversed to make the cap an



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operating wrench. The cap-wrench is equipped with a key, preventing removal until the switching operation is complete, providing both a visual indication and physical check of the switch position.

A Lever Handle Kit with locking plate and screw is available if conversion from the cap-wrench is desirable.

RATINGS

- Continuous Current 100 Amp rms
- Basic Impulse Level 150 kV



Dual Voltage Switch



The *ERMCO Components, Inc.* externally operated dual voltage switch allows rapid changing of the transformer voltage. The switch reconnects parallel transformer windings in series, resulting in a higher winding ratio. The switch eliminates the necessity to take the transformer down and open the tank to reconnect the coil leads.

The dual voltage switch cap is removed and reversed to make the cap an operating wrench. The cap-wrench is equipped with a key, preventing removal until the switching operation is complete, providing both a visual indication and physical check of the switch position.

A Lever Handle Kit with locking plate and screw is available if conversion from the cap-wrench is desirable.

RATINGS

- Continuous Current 100 Amp rms
- Basic Impulse Level 150 kV

ERMCO Components, Inc.

Circuit Breakers
CL Fuse Holders
Fusing
Bushings
Tap Changers
DV Switches
Others



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Current Limiting Fuse Holder



The growth in dead-front pad-mount transformers requires a method of placing dead-front type current-limiting fuses within the transformer. **ERMCO Components, Inc.** dry-well fuse holder design is suited to both single and three phase pad-mount applications.

With the addition of the load break function, the fuse holder provides an economical combination current-limiting fuse and load break switch. The design provides the benefit of easy hot-stick operability to a single fuse.

Non-load break fuse holders – Non-load break fuse holders for pad-mounted transformer applications are available at 8.3, 15.2, and 21.1 kV (125 kV BIL), both standard and submersible construction. The 21.1 kV (150 kV BIL) rating is available in standard construction only.

For those applications where an inter-locked load break switch is not used in conjunction with the non-load break fuse holder, an important feature of the non-load break fuse holder is an integral warning plate to warn against operation while energized with a safety baffle that must be moved to gain access to the fuse. This optional warning baffle assemble is available from ERMCO Components, Inc.

Load break fuse holders – The ERMCO Components load break current-limiting fuse holder functions both as a dry-well holder and as a load break switch. The rod and bore principle, upon which load-break termination operation is based, is the means by which switching is

accomplished within the fuse holder. Fuse removal is accomplished by a hot-stick.



Expulsion Fuses



The **ERMCO Components, Inc.** fuse link is an oil immersed, expulsion type fuse assembly for use in the high voltage circuit of a distribution transformer. Used in coordination with the secondary circuit breaker, the expulsion fuse link's functions are to disconnect a defective transformer from the feeder circuit, and to limit the severity of the damage to the transformer in case of an internal fault. These fuse links are available in a wide variety of fuse sizes, mounting configurations and kV classes for proper coordination with a secondary circuit breaker.

When designing a self protected transformer scheme, the secondary circuit breaker is selected first. After the breaker is selected, the fuse link is chosen so that proper coordination between the primary side fuse link and the secondary side circuit breaker is achieved. The fuse links should be mounted in a vertical or near vertical orientation. Standard mounting configurations include inside the high voltage bushings or on a terminal board attached to a suitable point inside the transformer. All energized parts of the

fuse link must be under oil with adequate clearance to other energized or grounded 200 parts.

WARNING: The misapplication of a fuse link constitutes a potential hazard to life and property.



Bay-O-Net Fuse Links



The **ERMCO Components, Inc.** Bay-O-Net fuse links are used to protect distribution transformers from damaging currents and to protect distribution systems from failed transformers. They are used on single-phase conventional and self protected distribution transformers rated through 500kVA, and on three-phase transformers through 1500kVA.

Bay-O-Net fuse links are ideal in a two-fuse protection scheme with a current-limiting back up fuse. In this latter case, secondary faults and overload currents are cleared by the Bay-O-Net fuse, and high level faults are cleared by the current-limiting fuse. The two fuses are connected in series, and coordinated so that the current-limiting fuse operates only upon internal equipment failure. If the Bay-O-Net fuse will not be used in series with a current-limiting fuse, an isolation link is required. These fuse links have the advantage of being field-replaceable, unlike the expensive cartridge type fuses. They can also be easily coordinated with upstream devices. Two types of fuse elements are available; a FAULT SENSING fuse and a LOAD SENSING fuse. The fault sensing fuse is sensitive to current only and offers protection to the primary circuit

from transformer faults. The load sensing fuse is sensitive to both current and oil temperature, thus providing both secondary protection and transformer protection.

WARNING: The misapplication of a fuse link constitutes a potential hazard to life and property.



Isolation Links



The isolation links are essential in providing extra protection during refusing and switching operations when used in series with a Bay-O-Net type fuse. The isolation links are not fuses and do not have interrupting rating. They are coordinated to operate at high current levels that are typical of a transformer failure. When a transformer failure occurs, the isolation link will melt so that the opened primary circuit of a faulted transformer cannot be re-energized by the line crew. The isolation link is a safety feature and proper coordination with the fuse element is required.

WARNING: The misapplication of a fuse link constitutes a potential hazard to life and property.



Bushing Wells



The **ERMCO Components, Inc.** SURE MAKE high voltage bushing well utilizing a polyester thermoset compound meets or exceeds all industry and ECI requirements. The bushing well is designed for the termination of primary leads in oil filled devices such as padmount transformers. The bushing well mating interface conforms to the ANSI/IEEE

Std. 386 for Separable Insulated Connectors and will accept switch modules (bushing well inserts) complying with the Standard.

The "SURE MAKE" bushing well is designed for external clamping and supplied with or without a loose gasket. Simply add "G" to the end of the model number to receive a loose gasket with the bushing well. The removable stud version is tin plated for corrosion resistance and ease of removal. Use a 5/32 allen wrench to replace stud, insert non-threaded lead-end first and torque to 65 inch lbs.

RATINGS

- Line to Ground 21.1kV rms
- Continuous Current 200 Amp rms
- Basic Impulse Level 150 kV Crest



Integrated Bushing



The **ERMCO Components, Inc.** "SURE MAKE" separable connector 200 amp, 35 kV Class Three Phase Rated Load break Integrated Bushing meets all requirements of ANSI/IEEE Std. 386 Separable Insulated Connector Systems, and combines the advantages of reliable on-piece design with the operating features required for underground distribution switching. The bushing is designed for pad mounted transformers, switchgear and other apparatus filled with transformer oil in accordance with the published "SURE MAKE" instructions.

RATINGS

- Continuous Voltage 35 kV RMS
- Line to Ground Voltage 21.1 kV RMS
- Line to Line Voltage 36.6 kV RMS
- Continuous Current 200 AMP RMS
- Basic Impulse Level 150kV Crest

DESIGN FEATURES

- Molded of a polyester thermoset
- Ground shield is oil resistant.
- Gasket location and compression are controlled.
- ANSI/IEEE 386 STD.
- Mounting hole of 2.562 inches diameter



LV Pad Bushing



The **ERMCO Components, Inc.** secondary bushings are designed for external mounting on oil filled distribution transformers.

Each bushing is molded from a thermoplastic material for superior electrical and mechanical characteristics. The bushing design has molded "stops" to provide controlled compression and containment of the gasket. The conductor is fabricated with an internal one hole spade for convenience and an external threaded stud per ANSI Standard C57.12.25. The bushing has a molded flange, eliminating the need for a clamping ring. Mounting requires a 1.375" tank opening with weld studs on a 3.375" bolt circle. An I.D. centered, Buna-N rubber gasket is provided.

FEATURES

- Molded Flange Design
- Controlled Gasket Compression
- I.D. Centered Gasket
- Interchangeability



CT Terminal Block



The **ERMCO Components, Inc.** CT Junction Block and Outlet Box has been designed for use in liquid filled transformers as a terminating block for current transformer leads. The Outlet Box is suitable for indoor or outdoor applications. It consists of a thermoset epoxy body with integrally cast-in brass threaded studs, a metal enclosure with all its corresponding hardware, Buna-N gaskets and short circuit links.