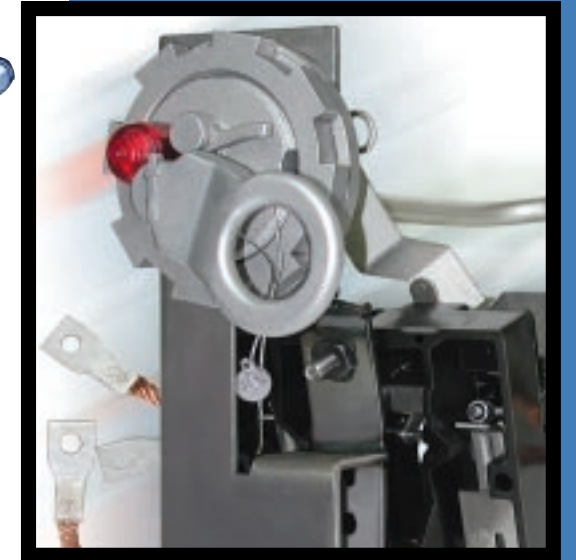
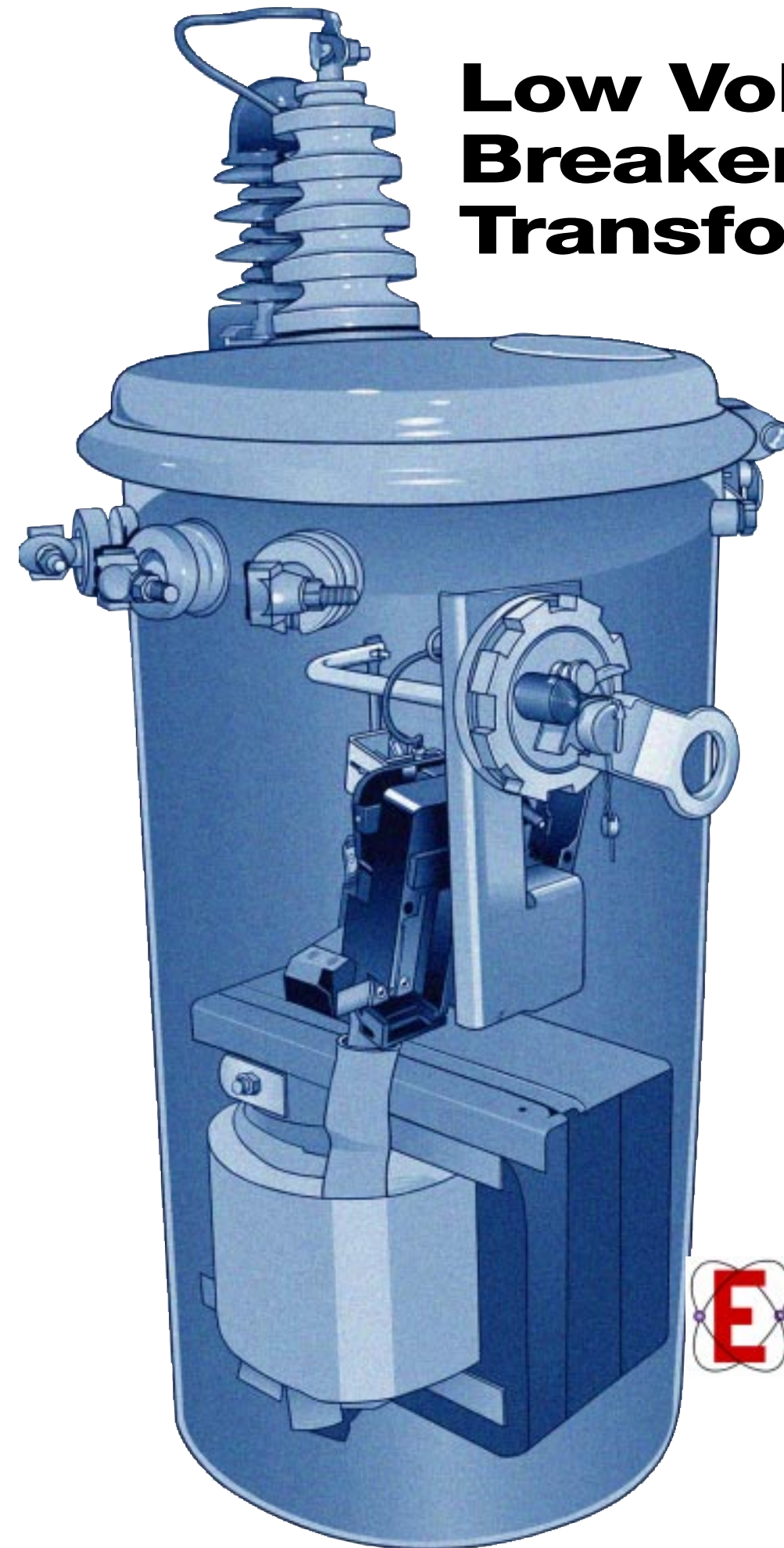


Low Voltage Breaker Transformers



C,SP
Cheaper, Safer
Protection



ERMCO Components, Inc.
www.ermco-eci.com

ERMCO Components, Inc.
1607 Industrial Road
Greenville, TN 37745
www.ermco-eci.com

ECI Sales Office
1224 Commerce Street, SW
Suite H, Box 3
Conover, NC 28613
828-466-0311

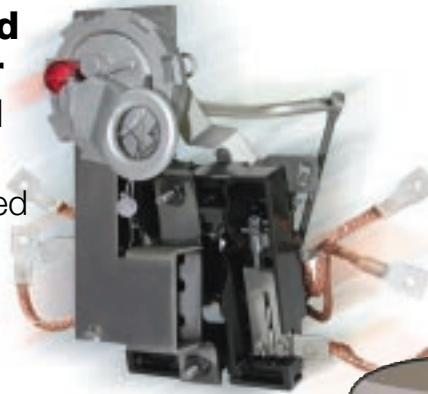
Toll-free
1-877-267-1855
Fran Sweet Ext. 204
Warren Walker Ext. 205



ERMCO Components, Inc.
www.ermco-eci.com

C,SP = Cheaper, Safer Protection

ECI low voltage breakers for single- and three-phase CSP transformers are your best choice for economy, reliability and safety. In high-peak environments, ECI breakers ensure just the right amount of protection is provided to keep power flowing while minimizing potential damage to equipment. And **that saves money!**



Why choose a completely self-protected (CSP) transformer?

Cheaper

Conventional transformers with external cutout fuses and lightning arresters might first appear to be a less expensive choice. But when you add up the substantial extra costs of cutout fuses, longer installation time, increased outage downtime, and time lost repairing and replacing damaged equipment, and so on, conventional transformers just can't compete with CSPs!

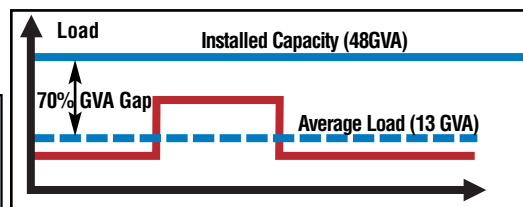
Take a look at this example in US Dollars, based on a typical 25KVA setup (labor rates and loss evaluation formulas may vary):

	CSP	Conventional
Transformer TOC*	\$915.00	\$870.00
Hot Line Clamp	4.00	4.00
Stirrup Clamp	6.00	6.00
Fuse Cut-Out	—	36.00
Fuse for Cut-Out	—	2.00
Cross Arm	—	19.00
10 KV Lightning Arrester**	—	30.00
Installation Labor	—	75.00
TOTAL	\$925.00	\$1,042.00

* TOC Formula = (1.0 x transformer price) + (2.85 x no load losses) + (0.95 x load losses)
 ** Lightning arrester is pre-installed in the CSP and included in price

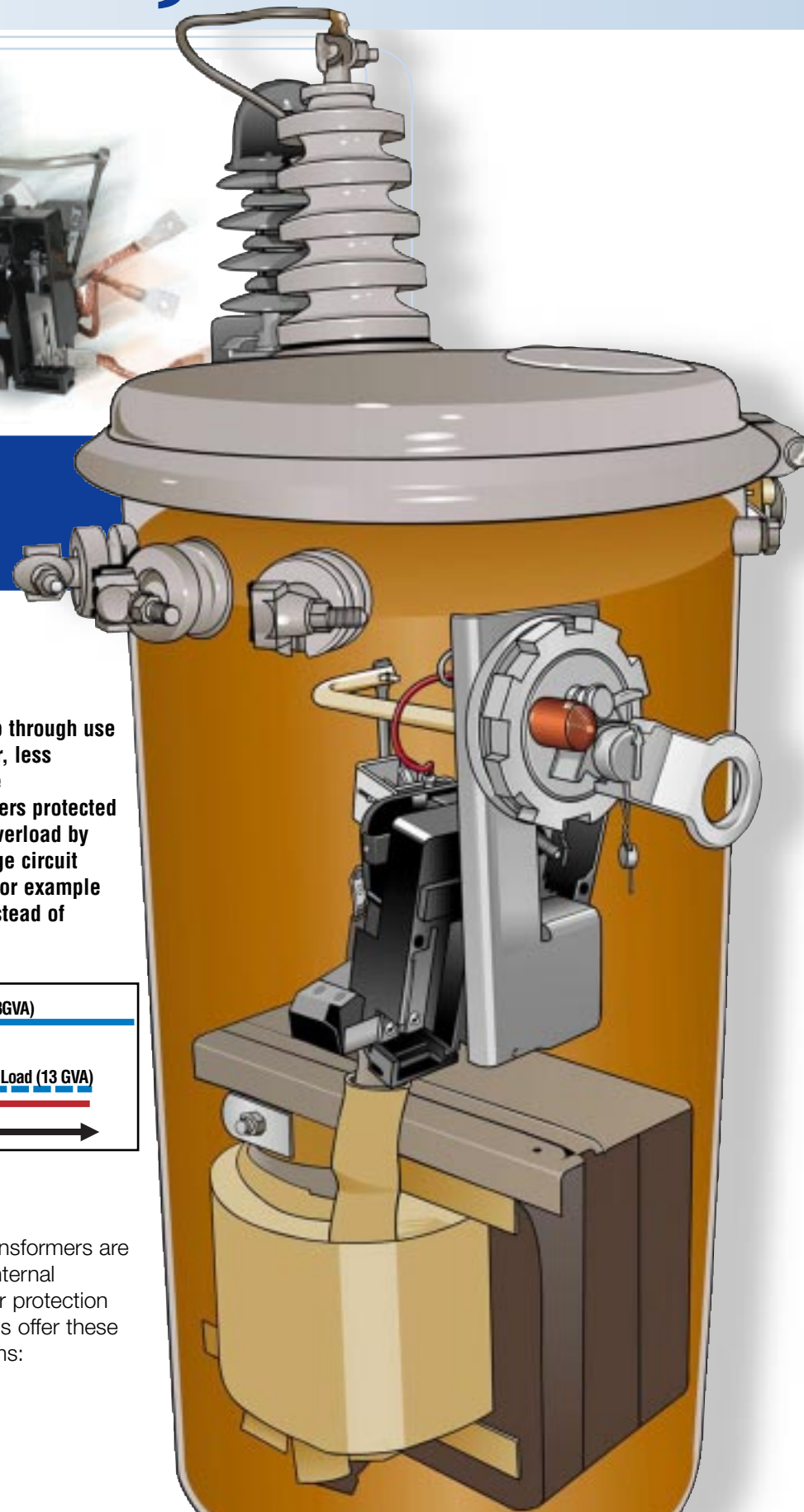
Non CSP
 Large Gap required to avoid accidental transformer burnout

CSP
 Close Gap through use of smaller, less expensive transformers protected against overload by low voltage circuit breaker (for example 25KVA instead of 50KVA)



Safer

Completely self-protected transformers are safer by design. Along with internal installation that offers superior protection against animal intrusion, CSPs offer these solutions to common problems:



1. High-quality components built in the USA
2. Breaker on Bracket (BOB) design is simple and fast to install.
3. Rigid steel mounting bracket with operating handle and linkage (no adjustments required!)
4. Handle through tank wall secures BOB firmly to tank interior.
5. Operating handle allows quick reset.
6. Oil immersion provides superior insulation, temperature tolerance in hot climates.
7. Fuse and breaker correctly sized and completely assembled at the factory. No on-site adjustments needed.
8. Optional signal light makes it easy to spot overloads/high oil temperatures.
9. Optional emergency overload feature allows temporary above-peak operation.
10. Primary line connection. No other protective devices required.

System Problem	CSP	Conventional
Low Voltage (120 volt) Fault	Low voltage (120 volt) fault A low-voltage breaker senses the fault and trips, protecting the transformer. CSP is the only solution to the secondary fault condition!	A cutout fuse may not react fast enough to prevent a transformer failure.
Lightning	Close proximity and line side placement of surge arrester protects against surge and eliminates outage.	A cutout fuse installed a distance from transformer on the line side may delay outage but still allow damage to the transformer.
Overloaded Transformer	A low-voltage breaker trips and protects the transformer. Optional signal light and emergency overload switch allows quick identification of problem and fast, power restoration.	A cutout fuse will probably not respond fast enough, resulting in transformer failure.
Service Restoration	Simply close the breaker. No power indicates a transformer fault. No eventful failure would happen.	Refuse and close-in the cutout. A secondary fault may blow the fuse again. Also an internal transformer fault could lead to a eventful failure (blown cover)
Early Warning	If a reset breaker holds, the transformer can be watched for future problems, or scheduled for change-out. An optional signal light can also provide early warning of an overload.	No early warning. Cutout will most likely not respond fast enough to a failed transformer.

†For additional detailed information refer to paper: CSP vs. Conventional Transformers, by Alan Wilks and Tony Hartfield, presented to the Electric Council of New England (ECNE), June 16, 1999

Protection

CSP design provides maximum protection against transformer failure and disruptive outages. It also protects you from the extra costs of more complicated installation, unnecessary equipment damage and power downtime.

With ECI low voltage breakers for C,SP transformer systems you get **CHEAPER, SAFER PROTECTION!**