

**ERMCO**

## Safety Summary



# ERMCO's

## 3Ø padmount transformer standard cabinet

provides a safer working environment  
verified by arc flash testing



**In 2009**, the National Electric Safety Code established new rules for electric utilities designed to protect employees from incurable injury due to arc flash.

- Utilities must provide Personal Protective Equipment (PPE) to workers based on severity of arc flash energy
  - PPE limits burns to “just curable” 2nd degree

.....  
Typical PPE Category 3:  
≤ 25 cal/cm<sup>2</sup>

# As a rule of thumb, most 300kVA and larger three phase padmount transformers fall into PPE Category 3 or higher.

## 3Ø Pads Arc Flash Summary

7200V Primary - 208GrdY/120V Secondary

1" conductor gap

18" working distance

Assumes infinite buss

kVA	%IZ	Dual Sensing Bayonet Fuse		Dual Element Bayonet Fuse		Current Sensing Bayonet Fuse		Low Voltage Circuit Breaker		HV Switch		Dry Well Canister (CL Fuse)	
		Fuse	PPE Category	Fuse	PPE Category	Fuse	PPE Category	Breaker	PPE Category	Switch	PPE Category	Fuse	PPE Category
75	2.00	358C05	2	108C04	1	353C06	1	6	2	E06	2	6	3
112.5	2.00	358C08	Dangerous	108C06	3	353C06	1	7	4	E10	3	12	3
150	2.00	358C08	4	108C07	Dangerous	353C08	1	8	0	E12	3	18	3
225	2.00	358C10	Dangerous	108C09	Dangerous	353C10	4	N/A	N/A	E18	4	20	4
300	2.00	358C10	Dangerous	108C09	Dangerous	353C10	3	N/A	N/A	E25	Dangerous	25	Dangerous
500	2.00	358C12	Dangerous	108C12	Dangerous	353C12	Dangerous	N/A	N/A	E30	Dangerous	50	Dangerous
750	5.75	358C14	Dangerous	108C14	Dangerous	353C14	Dangerous	N/A	N/A	E50	Dangerous	80	Dangerous
1000	5.75	358C14	Dangerous	N/A	N/A	353C16	Dangerous	N/A	N/A	N/A	N/A	100	Dangerous
1500	5.75	358C18	Dangerous	N/A	N/A	353C17	Dangerous	N/A	N/A	N/A	N/A	N/A	Dangerous
2000	5.75	361C05	Dangerous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2500	5.75	361C05	Dangerous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

### ERMCO safety features confirmed by arc testing:

To the best of our knowledge, only **ERMCO** has conducted arc flash tests on a three phase padmount transformer.

The following chart summarizes the actual arc energy compared to the theoretical energy as calculated per IEEE1584.

Summary of Arc Flash Calculations (IEEE1584) and Testing		
Transformer Configuration	Calculated IEEE1584	Actual Tested
	<u>Energy Cal/cm<sup>2</sup></u>	
Generic Cabinet with Door Open	11.87	12.36
ERMCO Cabinet with Door, Side, Top Open	8.01	5.58
% Reduction in Arc Energy		55%

**NOTE: 55% reduction in arc flash energy with the ERMCO cabinet opened!**

# ERMCO COMMON SENSE safety features:



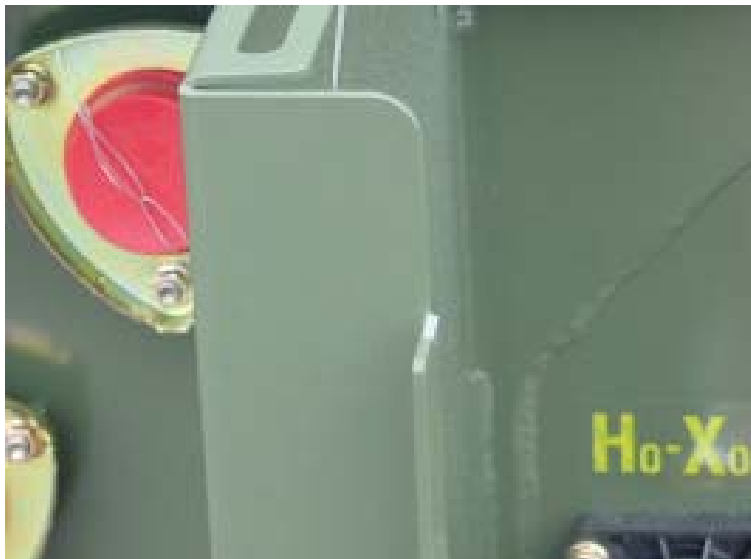
- Increased working space
- Enhanced air flow helps cool workers in heavy clothing

Side and top can be moved away from the bushings —

- No side or top for a lineman to accidentally touch a tool against
- With no side or top to ground against, the surface to initiate an arc is removed

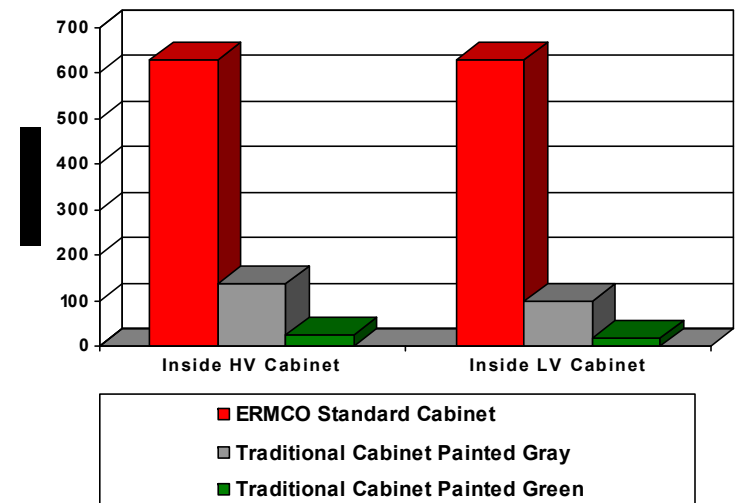


- Conditioned edges to prevent tears in clothing and skin



- Improved visibility
- Tested at 35 times brighter!

3-Phase Pad Transformer Light Density Results



# All Transformers Should be This Safe

- ✓ **Add to your purchasing requirements**
- ✓ **Include in your transformer specification**
  - *Comply with padmounted enclosure integrity IEEE Standard C57.12.28*
  - *Metal edges rounded with a radius edge for personnel safety*
  - *Double door design consisting of independently hinged front and side doors*
  - *Cabinet top capable of opening and locking at 45° and past 90°*

**Warning Note:** An arc flash can cause serious injury and death. Strict adherence to proper regulations, codes and standards such as OSHA and NFPA 70E as well as being a qualified individual according to these standards is mandatory. This includes the use of proper personal protective equipment, clothing and safe work practices.



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