

MOLONEY ELECTRIC INC.

MOLONEY ELECTRIC
TRANSFORMERS
FOR EVERY
POSSIBLE
APPLICATION

3-PHASE PADMOUNTED TRANSFORMERS

- ◆ MEETS OR EXCEEDS D.O.E. ENERGY EFFICIENCY
- ◆ REDUCES YOUR OVERALL OPERATING COSTS
- ◆ CUSTOM DESIGNED TO YOUR SPECIFIC NEEDS

Moloney Electric has been manufacturing distribution transformers since 1909 and padmounted transformers since 1970. One of the reasons for our ongoing success is the fact that we offer durable products that provide many years of reliable service, supported by our Quality Assurance program and our R&D team. All designs undergo complete type testing and we do routine testing to support our production quality. Through the years, we have continued to expand our product range to meet the ever changing needs of the market, and one of the many quality products that we developed is our **Three Phase Padmount**, which provide an affordable solution for clients who need to reduce their overall operating costs.



Various 3-phase padmount installations

Our padmounts feature a liquid filled compartment incorporating the fusing and switching requirements as well as the transformer assembly. The design is a shell type, using wound core technology, which provides a five legged core. This design element reduces the circulating current and ferro-resonance within the tank, both of which can contribute to overheating. This innovative feature is especially important where harmonic loading is a concern.

The coils are designed to meet the short circuit requirements and specific voltage requirements of the customer. The coil makes use of epoxy coated paper to increase its mechanical strength and cooling ducts are provided to ensure that adequate cooling is maintained within the coil even during overload periods.



Core and Coil Assembly

The transformer is designed to meet customers' specific climatic conditions and system requirements, including voltage connections and temperature rise. It is important, when making an inquiry, to advise us of the average and the maximum ambient temperature for your transformer application.

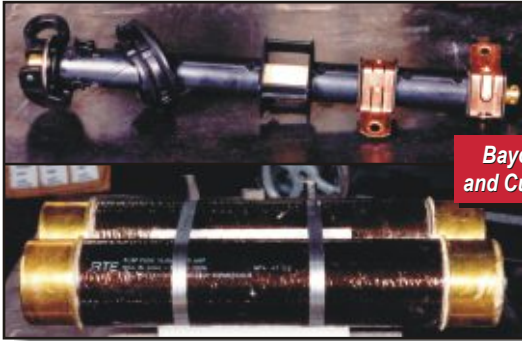
The transformer enclosure section incorporates a sealed tank design using an air space to allow for the expansion and contraction of the oil. A self-actuated pressure relief device is provided that will automatically activate at 10 psi, and which will reseal itself after excess pressure has been released. This device keeps outside air from coming into contact with the transformer oil, thus preventing the atmospheric moisture from being drawn into the oil.



Tamperproof Enclosure and HV Compartment

Panel type radiators are incorporated as the size of the transformer increases, in order to provide sufficient cooling capacity. Where required, an option is available for additional mechanical protection around the radiators without affecting the cooling requirements .

Tamperproof bolts and nuts are used to make the complete enclosure tamperproof, and the oil filled compartment section features a bolted-on cover. The enclosure finish meets ANSI standard C57.12.29, including resistance to continuous salt spray for a minimum of 1500 hours. Type tests have been performed to verify the paint finish and the tamperproofing of the enclosure, both in accordance with the ANSI standard. The paint process includes a powder coat paint finish which provides an extremely durable finish suitable for many environments, such as tropical, desert and contaminated areas. The enclosure can also be provided in 304L stainless steel for excessively corrosive areas. This option should be stated at the time of your inquiry.



Bayonet Fuse in holder and Current Limiting Fuses

The protection system incorporates components that have been field proven to be effective for over 50 years. The primary protection consists of a two fuse system - bayonet fuses in series with backup current limiting fuses. The bayonet fuse holders allow for the easy removal and replacement of the fuses. The fuse is a current sensing fuse used to protect the transformer from system problems. The backup current limiting fuse is mounted internally under oil and it protects the system should a fault occur in the transformer. The fuses are rated based on the specific transformer design. Fuse curves can be provided after the order is placed and the design is completed.

Units can be provided with either a loop or radial feed system. Both systems incorporate dead front terminations, including bushing wells and inserts. The cable is then terminated in cable elbows which plug into the inserts. This entire termination assembly is based on the customer's voltage and current requirements. The cable elbows can be provided with the unit, but complete cable information is required at the time of the order so that the elbow is matched to the correct cable size for proper termination.



Switching Arrangement

Loop feed units are provided with up to three 2-position loadbreak under oil on/off switches which are operated by hook stick. One switch is provided to sectionalize the transformer, while the other two switches are used to sectionalize either feeder A or B. For radial feed transformers, only one switch is required.

Each feeder switch also has a safety latch which can prevent the operation of the switch, especially in the open position, when operating personnel are near the unit. To increase worker safety, the HV & LV sections are separated by a metal barrier, and a mechanical interlock is provided to prevent withdrawal of the bayonet fuses while the transformer is energized.

The LV section features four spade type bushings. Special requirements in the LV section can be met and they must be detailed at the time of the initial inquiry. In addition, details regarding the outgoing cable are required in order to provide the correct size and number of cable connectors. The LV neutral bushing is connected to a ground spade.

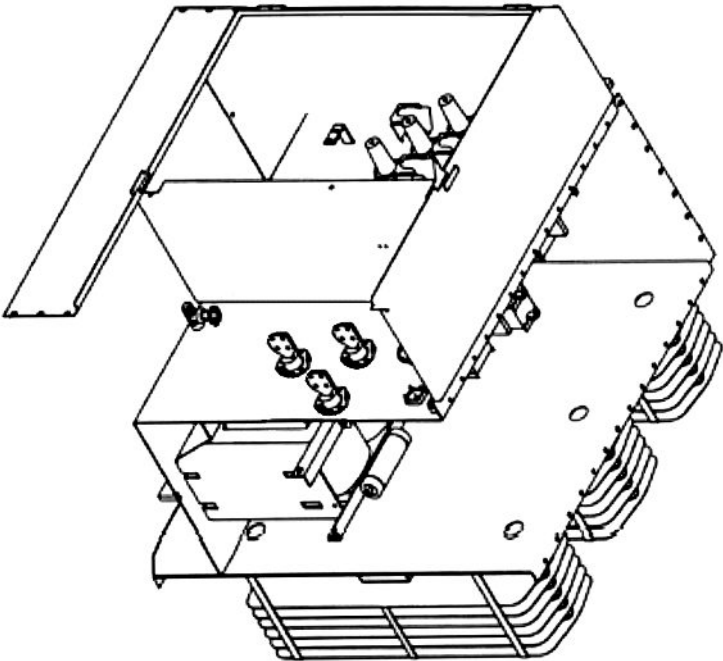
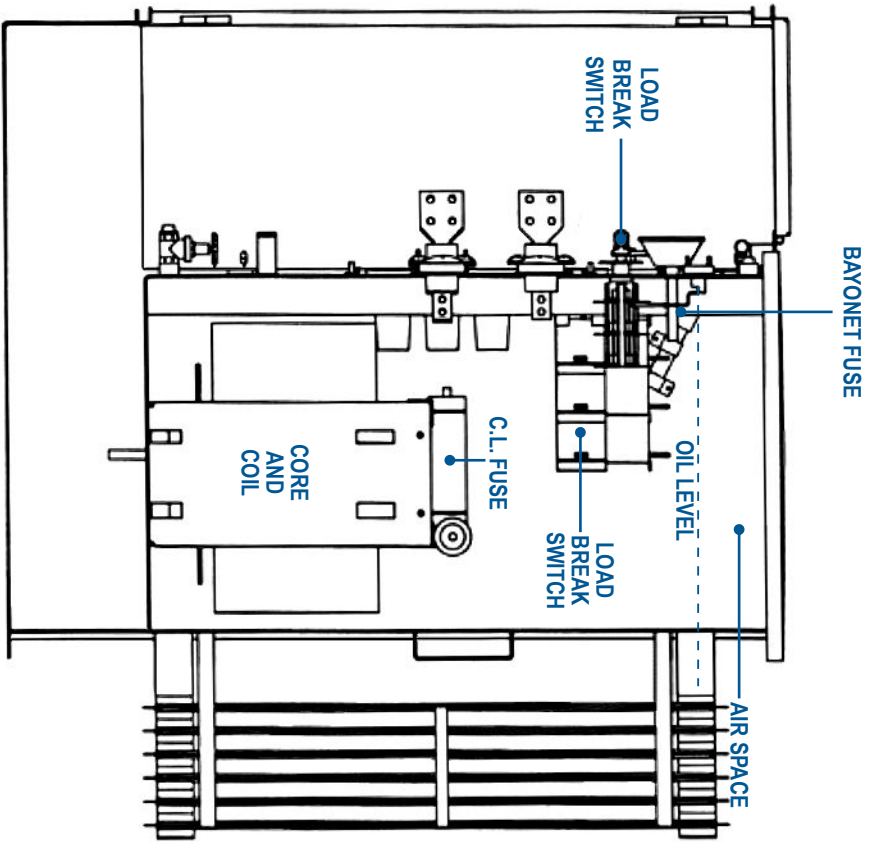
In the LV compartment, transformer accessories are also included, such as an HV tap changer for de-energized operation. Standard taps consisting of $\pm 2-2.5\%$ HV taps are provided unless otherwise specified at the time of inquiry. Other equipment can include a liquid level gauge; a top oil thermometer with a maximum indicating hand; and a drain valve with a sampling device at the bottom of the compartment and a filling plug at the top. Other options are available and need to be specified prior to ordering.



Accessories: liq. level gauge, top oil thermometer, tap changer and full nameplate

The complete substation is designed for easy installation and reliable, low cost operation. Please refer to the data sheets and technical drawings for additional details.

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REV.	REMARKS	BY	APPR	DATE	DRAWN	DATE
					peterj283	04/15/2008
TITLE		APPROVED		DATE		
3-PHASE PADMOUNTED TRANSFORMER						
SCALE		NTS				
DWG NO.		MOLONEY ELECTRIC INC.				
DLIT801 PN 2		REV				
0		SH 1 OF 1				

IMPORTANT NOTICE - Moloney Electric's transformers are custom designed and built to suit your specific applications. It is therefore important that we know your requirements clearly in order for our transformers to best meet your needs and provide you with a long lasting unit that reduces your overall operating costs.

Please complete the data sheet on the next page and forward it to your local **Moloney Electric** representative.

Three Phase Padmounted Transformer Data Sheet

Company Name: _____ Contact Name & Title: _____

Telephone: _____ Fax: _____ Email: _____

Quantity Required: _____ Type: Radial Feed Loop Feed

Temperature Rise (based on 30°C average ambient over 24 hr period, max. of 40°C): 65°C

Other: based on _____ °C average ambient over 24 hour period and maximum of _____ °C

Hertz: 60 50 Primary Voltage Connection: Delta Grounded Wye Series Multiple Connection BIL (other than std)

Taps in HV: Yes No Details _____

Low Voltage Connection: Delta Grounded Wye BIL (other than standard)

Specification: Customer's or other Specification _____

Loss Evaluation: Yes No Loss Calculation: No Load \$ _____/watt @ _____ 100%V _____ 105%V Load Loss \$ _____/watt

Impedance Value: _____% (other than industry std)

OPTIONS (standard package includes pressure relief valve, 1" drain valve with sampling device, top filter press connection and magnetic liquid level indicator)

Cooling Liquid: Std Transformer Oil Other (state special requirements) _____

Fusing: Bayonet and Backup Current Limiting Fuse std. Other Special Requirements _____

Loadbreak Inserts Required: Yes No - Qty. _____

Cable Elbows (complete cable details required at time of order): Yes No HV Lightning Arresters: External Under Oil

Conductor Diameter _____ Type _____ Diameter over Insulation _____

Other HV Requirements: _____

Testing (standard tests are included & test data from typical units can be provided) Customer requires the following additional tests:

Resistance Temp. Rise Impulse (HV) RIV Sound Level Other _____

Nameplate (anodized aluminum is std): Stainless Steel Special Data Required on Plate _____

Markings: Special Marking are Required - Details _____

LV - Special Connectors Required: Details- No. per Phase _____ Conductor Size _____ Conductor Type _____

Moloney Electric Vision Statement

To be recognized as a reliable supplier of transformers, whose committed team of knowledgeable employees consistently meets the expectations of our customers and shareholders



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