Larson Electronics LLC
9419 E US HWY 175, Kemp, TX 75143
Phone: 800.369.6671

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.498.3364

MT-PML-TR-R39-3P-DMP-2.5MVA-DNH.YNH-LT-DF-A6-CXP-CZ-2B4-M1

2.5 / 4 MVA Pad Mount Rectifier Transformer - 13800V Delta Primary, 2400V Delta/Wye Secondary, ONAN/Silicon Oil, NEMA 4X, Light Grey

Product ID: 306022



Larson Electronics LLC manufactures a wide variety of products, including custom built to spec designs. The pictures displayed for this unit are a general representation of form factor for the product line and may not accurately represent this exact configuration in every detail due to custom builds and changes between similar products in our standard catalog. The specifics for this configuration are listed in the specification table and supporting documentation (CAD files, Dimensional Drawing, Name Plate Diagram, Wiring Diagram, etc.). This means that specific details (receptacles, plugs, wires, connections, mounting brackets, external finishes, etc.) may not be accurately represented in images vs specifications. Please review specifications and do not order based solely on images.

MT-PML-TR-R39-3P-DMP-2.5MVA-DNH.YNH-LT-DF-A6-CXP-CZ-2B4-M1 Pad Mount Rectifier Transformer
Transformer Type: Pad Mounted, Rectifier Transformer
Transformer Configuration: Liquid Filled Pad Mounted
Transformer Feed Type: Loop Feed
Operation: Step-Down Operation (Not Approved for Step-Up)
Application: Used with 12 or 6 pulse static power converters
Phase: Three Phase
Capacity (@ 55/65°C, 6-Pulse): 2.5 MVA (2500 KVA)
Capacity (@ 55/65°C, 12-Pulse): 4 MVA (4000 KVA)
Vector Group: Dyn1(yn1)
Primary Voltage: 13800V
Primary Voltage Switch: N/A
Primary Voltage Class: 15 kV Class
Primary Phasor: Delta
Primary BIL: 110 kV
Secondary Voltage: 2400V - 2400Y/1386
Secondary Voltage Class: 2.5 kV Class
Secondary Phasor: Delta - Wye-N
Secondary BIL: 45 KV
Secondary Connection Switch: Included
Frequency: 60 Hz
Temperature Rise: 55°C/65°C
Insulation Rating: Class E Insulation - 120°C, 248°F
Cooling Class: ONAN; Self-Cooled
Forced Air (Fans): None
Mounting Provisions For Future Fans: Included, 1.25 PU Rating

Ratings

Meets/Exceeds DOE 2016 Efficiency Ratings
Complies with ANSI / IEEE C57.12.00
Complies with ANSI / IEEE C57 12.28
Complies with ANSI / IEEE C57 12.29
Complies with ASTM D3487
Complies with ANSI / IEEE C57 12.34
Complies with ANSI / IEEE C57 12.35
Complies with ANSI / IEEE C57.12.70
Complies with ANSI / IEEE C62.11
NEMA 3R Wiring Compartment
Penta-head Bolt Entry Assembly
Hot Stick Included, HV Door Mount
Non-PCB Insulating Fluid
Tamper Proof Housing
Hinged Front Compartment Doors, Pad Lockable

Efficiency %: 98.0%
Based on transformer operating at 50% of nameplate base kVA.

Load Losses Based on 85°C Reference Temp.
No Load Loss (in watts)): +/- 7,547W

Cooling Radiators: Included, Bolted galvanized type

Tap Changer: 5-position Tap Changer
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
Tap %: 2.5%
Tap Changer Switch Rating: 900-Amp, 15 kV
Tap Changer Switch Location: High Voltage (HV) [Left Side] Front Compartment
Impedance: 10.75%
Commutating Reactance Between (13.8KV Delta Primary & 2.4KV Delta Secondary): 0.251
Commutating Reactance Between (13.8KV Delta Primary & 2.4KV Wye Secondary): 0.261
Primary Connection Type: Dead Front
Primary Termination Arrangement: V Terminal Arrangement
Primary Termination: Side Mounted in ATC, w/ NEMA 2-Hole Blades
Primary Connection Qty: (6) Primary Connections for use w/ Elbow Connectors
Primary Parking Stand Qty: (6) Welded Brackets for Installing Accessory Pakring Stand Bushings
Primary Bushing Rating: 15 kV Class, 110 kV BIL, 900A, Dead Break
Primary Neutral Connection: Primary HO Neutral Internally Bonded to Tank
Primary Surge Arrestors: (3) High Voltage Elbow Surge Arrestors, Included
Primary Surge Arrestor Voltage Rating: 15 kV Class Elbow Arrestor
Primary Surge Arrestor MCOV Rating: 15 kVrms
Primary Over Current Protection (OCP): Bayonet Expulsion Fuses
Primary Over Current Protection Method: Fused, Oil-Immersed
Primary Over Current Protection Holder: Bayonet Fuse Holder w/ External Drip Shield
Primary Grounding Provisions: (1) NEMA Ground Bar attached to tank via (2) Welded Ground Bungs in HV Cabinet
Secondary Connection Type: Live Front
Secondary Termination Arrangement: Inline Terminal Arrangement
Secondary Connections: Side Mounted in ATC, w/ NEMA 4-Hole Blades, Cast Resin Epoxy Type
Secondary Connection Qty: (3) Secondary Connections for use w/ Elbow Connectors
Secondary Connection Supports: N/A
Secondary Over Current Protection (OCP): N/A
Secondary Neutral Connection: Secondary XO Neutral Internally Bonded to Tank
Secondary Grounding Provisions: (1) NEMA Ground Bar attached to tank via (2) Welded Ground Bungs in LV Cabinet
Metering Current Transformer (CT): N/A
Metering Panel: N/A
Load Break Switch: 4-Position Load Break Switch
Load Break Switch Qty: (1)
Load Break Switch Rating: 900-Amp, 15 kV
Load Break Switch Location: High Voltage (HV) Front Compartment
Efficiency Standard(s): Meets DOE 2016 Standards, Meets ANSI/IEEE Standards
K-Factor Rating (Harmonic Mitigation): K-1 (Standard)
Pulse Drive Rating: N/A
Insulation Fluid: Silicon Oil Insulating Fluid - Non-PCB Fluid
Fluid (Oil) Capacity*: 560 Gallons
Fluid (Oil) Weight*: 4,312 Lbs
Liquid Level Indicator: Analog Dial Gauge, w/ 1 alarm contact
Oil Temperature Indicator: Analog Dial Gauge, w/ 2 alarm contacts
Winding Temperature Indicator: Analog Dial Gauge, w/ 2 alarm contacts
Pressure/Vacuum Indicator: Analog Dial Gauge, w/ air test valve.
Pressure Relief Device: Included, Automatic Action
Gas Sampler Valve: Included, Schrader Valve
Fill Valve: 1" NPT Port w/ Removable Bolt Plug
Fill Valve Location: Front Compartment
Drain Valve: 1" NPT Port w/ 0.38" NPT Sampler Valve
Drain Valve Location: Front Compartment
Winding Material: Copper
Ambient Temperature Rating: 45°C
Sound Level: 62 dBA
Elevation (Altitude): 3300ft (1000 meters) Above Sea Level
Core Material: Grain Oriented Steel
Tank Material: Coated Steel
Cabinet Material: Coated Steel
Base Platform Material: Coated Steel
Portability: Lifting lugs, provisions for jacking under base, w/ base construction suitable for using rollers or skidding
Housing Type: Compartmental Air-Filled Cabinet w/ Locking Doors, HV Compartment

Full Load Loss (in watts) at 100%: +/- 30,484W
Total Load Loss (in watts) at 100%: +/- 38,030W

Total Losses at 55°C LL Temp.& 20°C NL Temp.
Total Load Loss (in watts) at 50%: +/- 15,147W
Note: Losses offered are typical only, not guaranteed

Labeling:
Externally Stencilled (Painted) KVA Rating
Externally Stencilled (Painted) Voltage Rating
External Non-PCB Label
External Warning & Danger Label
External Barcode Label
Internal Busing & Accessory Labeling
Stainless Steel Riveted Nameplate

Factory Tests:
Winding Resistance Test
Insulation Resistance Test
Voltage Ratio Error Test
Short-circuit Impedance Test
No-load Loss (Wattage) Test
Load Loss (Wattage) Test
Induced Voltage Withstand Test
Separate Source Voltage Withstand Test
Pressure Integrity Test
oil screening test

Shipping:
Shipped on pallet on open flatbed
Palletized on Wooden Pallet w/ Skid Pockets
Pallet Skid Facing Outward Sides of Truck
Note: Crated shipping in lieu of palletizing can be done upon request for an additional fee

Left, LV Compartment Right, Steel Barrier Separation, HV Door Spring-Loaded Release Pin in LV Compartment
Enclosure Rating: NEMA 4X Weatherproof Wiring Cabinet, Sealed Tank
Seismic Rating: Yes
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: Munsell™ 5BG 7.0/0.4 Light Grey (ANSI #70)
Mounting: Pad Mounted
Conduit Opening: Bottom Feed Underground Entry/Exit
HV Compartment Base Wireway Dimensions*: 21"-W x 7"-D
LV Compartment Base Wireway Dimensions*: 26"-W x 7"-D
MV/LV Compartment Cabinet Depth*: 24"-D
Tank Cover Access Handhole: Included
Dimensions: 89"-W x 44"-D x 85"-H
Dry Weight (w/o Oil)*: 9,921 Lbs
Total Weight (Liquid Filled)*: 16,424 Lbs
*Please note that numbers are approximate and subject to change

Special Orders - Special Requirements
Contact us for special requirements
Toll Free: 1-800-369-6671
Intl: 1-903-270-1187
Fax: 1-903-498-3364
E-mail: sales@larsonelectronics.com

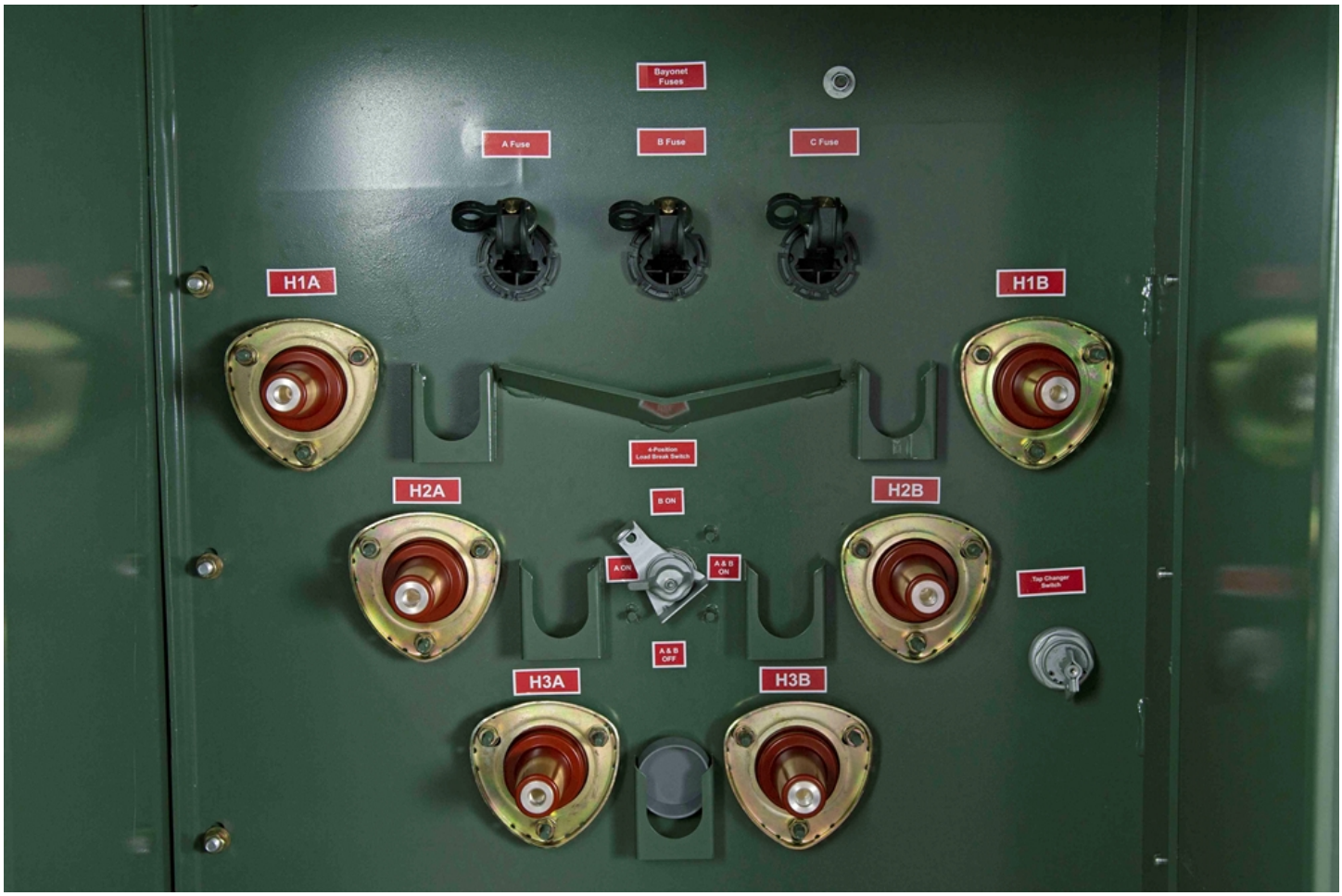
The MT-PML-TR-R39-3P-DMP-2.5MVA-DNH.YNH-LT-DF-A6-CXP-CZ-2B4-M1 from Larson Electronics is an Industrial Pad Mount Rectifier Transformer that offers powerful, reliable, and efficient power distribution in indoor, outdoor, and public locations. The low operating costs, low heat emissions, and low cost of ownership makes this transformer ideal for a wide range of applications and businesses. An enclosed design caters to installations on concrete pads without protective fencing.

Transformer Features: With a transformer rating of 2.5 MVA [Using 6-Pulse Static Power Converter] / 4 MVA [Using 12-Pulse Static Power Converter], the industrial transformer features a rated primary voltage of three-phase 13800V Delta and a secondary voltage of three-phase 2400V Delta or 2400Y/1386 Wye-N.
The secondary voltage switch allows the transformer to be switched between voltages. The unit has a primary loop feed for single installations and dead-front primary connections. This transformer features a 5-position tap changer with two, +/- 2.5% taps above and two, +/- 2.5% taps below to allow small changes for voltage.
Copper transformer winding material helps improve performance, reduce weight and lower cost. Compared to copper, copper windings have lower eddy losses due to higher resistivity. This transformer consists of rectangular coil and five-legged wound core design with three coils and four core loops (this is for three-phase transformers only; single-phase units have one coil and two core loops).
The MT-PML-TR-R39-3P-DMP-2.5MVA-DNH.YNH-LT-DF-A6-CXP-CZ-2B4-M1 is air cooled and does not have fans but has mounting provisions for future fans.
Enclosure Design: This pad mounted transformer is a compartmental design. The tank and housing are fabricated from steel. The front electrical enclosure carries a NEMA 4X rating. The high voltage and low voltage compartments are located in front of the transformer tank, with the high voltage compartment on the left side and low voltage compartment on the right side. The HV and LV compartments are air filled and separated by a full length steel barrier between the compartments. A removable steel plate at the base of the HV and LV compartments prevents rodents and other intrusions from entering the enclosure once installed. This steel plate allows for underground conduit entry into the enclosure compartments. Two hinged exterior doors allows for access into the compartments. A single pad lockable handle on the low voltage compartment door allows for securing the transformer. A spring loaded pin within the low voltage compartment prevents the high voltage door from being opened without pulling the safety pin. A hot stick is included in the high voltage compartment, mounted to the HV door.
Temperature Rise: This unit features a dual 55/65°C temperature rise for reduced heat waste, increased reliability and longer life. At 55/65°C, the transformer offers 2.5 MVA [Using 6-Pulse Static Power Converter] / 4 MVA [Using 12-Pulse Static Power Converter]. The transformer meets standard efficiency requirements. The combination of low temperature rise and high efficiency makes this unit suitable for use in electrical rooms, air conditioned spaces in buildings, underground vaults and

similar locations, in addition to outdoor areas.
Insulation Fluid: The MT-PML-TR-R39-3P-DMP-2.5MVA-DNH.YNH-LT-DF-A6-CXP-CZ-2B4-M1 features silicon oil cooling fluid (ONAN) with a capacity of 560 gallons. We offer transformers with biodegradable or FR-3 oil fluids, if needed.
Biodegradable Fluid: Biodegradable cooling fluid (vegetable oil) has a higher heat capacity compared to mineral oil, making the liquid safer to use and more reliable during operations. Vegetable oil has a higher flash point and fire point than mineral oil, hydrocarbon oil, silicone oil and synthetic ester. This cooling fluid is also non-toxic and can tolerate higher breakdown voltages than mineral oil. When operating at high temperatures, biodegradable cooling liquid sustains up to 120% loan conditions, which helps preserve the transformer's lifespan and performance.
Gauges: The following gauges are included with the system: liquid level, temperature and pressure/vacuum gauges. Standard liquid level, temperature and pressure/vacuum gauges are analog, manual reading types.
Fault Pressure Devices: This transformer features an automatic action fault pressure device. Fault pressure devices are used to detect high rates of pressure rise within the tank.
Rapid Rise Relay: There are no rapid rise relays on the unit. This safety component is designed for protection when a rapid increase in tank pressure occurs. The relay is suitable for detecting sudden pressure fluctuations above predetermined safe limits.
Surge arresters: This system comes with high elbow surge arresters on the primary side. Designed for over-voltage and transient voltage protection, the components prevent damage caused by lightning, internal switching or voltage surges. We can offer models without high elbow surge arresters that have mounting provisions for customer-provided surge arresters.
Load Break Switch: The transformer is equipped with a load break switch. This switch has four positions: A side on + transformer on, B side on + transformer on, A and B sides + transformer on, and A and B sides + transformer off.
Valves: The MT-PML-TR-R39-3P-DMP-2.5MVA-DNH.YNH-LT-DF-A6-CXP-CZ-2B4-M1 is equipped with a pressure relief valve, fill valve, and drain valve with sampler port.
Protection Fuses: This transformer contains bayonet protection fuses on the primary side. For units without protection fuses, up stream protection is provided. We recommend provisions for protection fuses when possible, as blown fuses may require more frequent oil changes.
Mount: The heavy-duty enclosure makes the unit suitable for both indoor and outdoor applications. This power distribution system can be pad mounted on concrete pads.
Benefits: The MT-PML-TR-R39-3P-DMP-2.5MVA-DNH.YNH-LT-DF-A6-CXP-CZ-2B4-M1 pad mount transformer offers many benefits to consumers. This transformer provides owners with significant energy savings, as well as offering environmental benefits. Higher efficiency not only extends the life of the transformer, but also turns into cost savings for owners in the form of lower energy bills and decreased cost of ownership.
Applications: Used with 12 or 6 pulse static power converters.
Larson Electronics is a manufacturer and as such can build stationary and portable transformer systems to your specifications. Although we carry several models of power distribution transformer systems, we can deliver custom ordered units almost as quickly as our prebuilt units. If this model does not meet your needs, please contact us at 1-800-369-6671 or sales@larsonelectronics.com to discuss your specific requirements.






Bayonet Fuses
A Fuse
B Fuse
C Fuse
H1A
H1B
4-Position Load Break Switch
H2A
B ON
H2B
A ON
A & B ON
Tap Changer Switch
A & B OFF
H3A
H3B


Oil Fill Valve
Pressure Relief Valve
Pressure Gauge
Oil Level Gauge
Temperature Gauge
X1
X2
X3

Frequently Asked Questions (FAQ)