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

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.765.7664

MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1

150 KVA Pad Mount Transformer - 4160V delta Primary, 480Y/277 Wye-n Secondary - Copper, KNAN/Bell Green

Product ID: 327415

Please see last page for supporting documentation for this product (certificates, CAD files & drawings, IES files, wiring diagrams, etc).



Image: MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1

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-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1 3PH Pad Mount Transformer	Ratings
Transformer Type: Pad Mounted, Compartmental-Type	Meets/Exceeds DOE 2016 Efficiency Ratings
Transformer Configuration: Liquid Filled Pad Mounted	Meets/Exceeds CSA Efficiency Ratings
Transformer Feed Type: Loop Feed	Complies with ANSI / IEEE C57.12.00
Operation: Step-Down Operation (Not Approved for Step-Up)	Complies with ANSI / IEEE C57 12.28
Phase: Three Phase	Complies with ANSI / IEEE C57 12.29
Capacity: 150 KVA	Complies with ANSI / IEEE C57 12.34
Vector Group: DYN1	Complies with ANSI / IEEE C57 12.35
Primary Voltage: 4160V	Complies with ANSI / IEEE C57.12.70
Primary Voltage Switch: N/A	Complies with ANSI / IEEE C57.12.110
Primary Voltage Class: 5 kV Class	Complies with ANSI / IEEE C57.12.131
Primary Phasor: Delta	Complies with ANSI / IEEE C62.11
Primary BIL: 60 KV	Complies with ANSI / IEEE C62.22
Secondary Voltage: 480Y/277	Complies with ANSI / IEEE 386
Secondary Voltage Class: 1.2 kV Class	Complies with ANSI / IEEE C2
Secondary Phasor: Wye-N	Complies with ANSI / IEEE C37.47
Secondary BIL: 30 KV	Complies with ANSI Z535.4
Frequency: 60 Hz	Complies with ASTM D3487
Temperature Rise: 65°C	Complies with ASTM D6871
Insulation Rating: Class E Insulation - 120°C, 248°F	Complies with NEMA 260-1996
Cooling Class: KNAN; Self-Cooled	Complies with 10 CFR Part 431

Forced Air (Fans): None
Tap Changer Type: De-Energized Tap Changer (DETC), Manual
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
Tap Range: ±5%, 2.5% each
Tap Changer Switch Rating: Non-loadbreak (No Ampere Rating)
Tap Changer Switch Location: High Voltage (HV) [Left Side] Front Compartment
Impedance: 3.10% – 5.75%
Primary Connection Type: Dead Front
Primary Termination Arrangement: V Terminal Arrangement
Primary Termination: Externally Clamped Well Bushings w/ Removable Studs, 200A Load Break Elbows w/ Inserts
Primary Connection Qty: (6) Primary Connections for use w/ Elbow Connectors
Primary Parking Stand Qty: (6) Welded Brackets for Installing Accessory Parking Stand Bushings
Primary Bushing Rating: 5 kV Class, 60 kV BIL, 200A, Load Break, IEEE 386 Color Red
Primary Neutral Connection: Primary HO Neutral Internally Bonded to Tank
Primary Surge Arrestors: One set of distribution-class, dead-front elbow surge arresters, factory-installed on 200A bushing wells
Primary Surge Arrestor Voltage Rating: 9 kV Rating
Primary Surge Arrestor MCOV Rating: 5.1 kV MCOV
Primary Over Current Protection (OCP): Bayonet Expulsion Fuse in series w/ Partial-Range Current-Limiting Fuse
Primary Over Current Protection Method: Fused, Oil-Immersed
Primary Over Current Protection Holder: Bayonet Fuse Holder w/ Flapper Valve and 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: Staggered Terminal Arrangement
Secondary Connections: NEMA Spade Terminals, 4-Hole Spade, Externally Clamped, Accepts up to (4) Double Lug connections with (2) cables per side of Spade connector
Secondary Connection Qty: (4) LV bushings (X1, X2, X3, X0)
Secondary Connection Supports: N/A
Secondary Over Current Protection (OCP): N/A
Secondary Neutral Connection: Secondary X2 Neutral Grounded to Tank via 1/2"-13 UNC Tapped Hole, 7/16" Deep Bung & Copper Ground Strap
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
Auxiliary Control Panel : N/A
Load Break Switch: 4-Position Load Break Switch
Load Break Switch Qty: (1)
Load Break Switch Rating: 200-Amp, 5 kV
Load Break Switch Location: High Voltage (HV) Front Compartment
Efficiency Standard(s): Meets DOE 2016 Standards, Meets CSA Standards Meets ANSI/IEEE Standards
K-Factor Rating (Harmonic Mitigation): K-1 (Standard)
Pulse Drive Rating: N/A
Insulation Fluid: FR3 / Natural Vegetable Oil Ester (Biodegradable, Less-Flammable)
Fluid (Oil) Capacity*: 108 Gallons
Fluid (Oil) Weight*: 830 lb
Liquid Level Indicator: Analog Dial Gauge
Temperature Indicator: Analog Dial Gauge
Pressure/Vacuum Indicator: Analog Dial Gauge
Pressure Relief Device: Included, Automatic Action
Fault Indicator: N/A
Gas Sampler Valve: Included, Schrader Valve
Fill Valve: 1" NPT Port w/ Removable Bolt Plug

Complies with CSA C2.1-06
Complies with CSA C50
Complies with CSA C88
Complies with CSA C88.1
Complies with CSA C88-16
Complies with CSA C227.4
Complies with CSA C227.5
Complies with CSA C802-3
Complies with CSA C802.1

Features

Pentahead Bolt Entry Assembly
High-Fire Point Insulating Fluid
Non-PCB Insulating Fluid
Tamper Proof Housing
Hinged Front Compartment Doors, Pad Lockable
NEMA 3R Wiring Compartment
Hot Stick Included, HV Door Mount

Efficiency %: 98.90%

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

Load Losses Based on 85°C Reference Temp.

No Load Loss (in watts): +/- 320W
Full Load Loss (in watts) at 100%: +/- 1,600W
Total Load Loss (in watts) at 100%: +/- 1,920W

Total Losses at 55°C LL Temp.& 20°C NL Temp.

Total Load Loss (in watts) at 50%: +/- 696W

***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

Fill Valve Location: Front Compartment
Drain Valve: 1" NPT Port w/ 5/8" NPT Sampler Valve
Drain Valve Location: Front Compartment
Winding Material: Copper
Ambient Temperature Rating: 40°C
Ambient Operating Temperature Range: -40°C to +40°C (-50°F to +104°F)

Sound Level: ≤ 60 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 Left, LV Compartment Right, Steel Barrier Separation, HV Door Spring-Loaded Release Pin in LV Compartment
Enclosure Rating: NEMA 3R Pad-Mount Compartmental Enclosure with Sealed Tank
Seismic Rating: Yes
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: Munsell™ 7.0 GY 3.29/1.5 Bell Green
Mounting: Pad Mounted
Conduit Opening: Bottom Feed Underground Entry/Exit
HV Compartment Base Wireway Dimensions*: 20"-W x 5"-D
LV Compartment Base Wireway Dimensions*: 16"-W x 5"-D
MV/LV Compartment Cabinet Depth*: 20"-D
Tank Cover Access Handhole: N/A
Dimensions*: 61"-W x 45"-D x 69"-H
Dry Weight (w/o Oil)*: 1,100 lb
Total Weight (Liquid Filled)*: 2,870 lb
*Please note that numbers are approximate and subject to change

Pressure Integrity Test 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*

Special Orders - Special Requirements
Contact us for special requirements
Toll Free: 1-800-369-6671
Intl: 1-903-270-1187
Fax: 1-903-765-7664
E-mail: sales@larsonelectronics.com

The MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1 Industrial Pad Mount Transformer from Larson Electronics offers powerful, reliable, and efficient medium-voltage power distribution for outdoor industrial and public installations. The sealed tank, FR3 insulation fluid, and low-maintenance design make this transformer ideal for a wide range of commercial, municipal, and utility applications. A compartmental pad-mount enclosure allows deployment on concrete pads in publicly accessible areas without protective fencing.

PLEASE NOTE: ANY FREE SHIPPING OFFERS DO NOT APPLY TO POWER DISTRIBUTION PANELS, TRANSFORMERS, OR SUBSTATIONS*

Transformer Features: With a transformer rating of 150 kVA, the industrial pad-mount transformer features a primary voltage of three-phase 4160V Delta and a secondary voltage of three-phase 480Y/277V Wye-grounded. The unit is configured with a loop-feed, dead-front primary system using (6) 200-amp bushing wells and load-break inserts. This allows the transformer to be connected in a loop distribution circuit with hot-stick–operable elbows.

A 5-position De-Energized Tap Changer is provided with two +2.5% and two –2.5% taps for ±5% voltage adjustment. An internal 4-position loadbreak switch is included to isolate the transformer from the loop feed system. The unit features bayonet expulsion fuses in series with partial-range current-limiting fuses, providing primary overcurrent protection inside the sealed tank.

The MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1 is air cooled and does not have fans or mounting provision for fans.

Enclosure Design: This pad-mounted transformer features a NEMA 3R compartmental enclosure with a sealed tank. The high-voltage compartment is located on the left side, and the low-voltage compartment is located on the right side, separated by a full-height steel barrier. A removable base plate provides bottom conduit entry while preventing rodent intrusion. Exterior, hinged access doors include pad-lockable latches and penta-head security hardware. The low-voltage door must be opened first to access the high-voltage compartment, meeting pad-mount safety requirements. A hot-stick is provided inside the HV compartment for elbow operation.

Temperature Rise: This unit features a 75°C temperature rise, as required by the specification. The combination of 75°C rise and FR3 insulation provides extended insulation life, thermal stability, and improved overload performance. The transformer meets applicable ANSI/IEEE efficiency and performance standards.

Insulation Fluid: The MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1 utilizes FR3 natural ester fluid, a biodegradable, less-flammable insulating liquid with high fire point, excellent moisture tolerance, and superior dielectric strength. FR3 enhances thermal performance, extends insulation life, and supports environmentally critical sites.

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. These gauges do not have auxiliary contacts.

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 includes three distribution-class, dead-front elbow-type surge arresters, mounted on the 200A bushing wells for primary over-voltage protection against lightning and switching surges.

Load Breaker 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-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1 is equipped with a

pressure relief valve, fill valve and drain valve with sampler port.

Protection Fuses: Primary overcurrent protection consists of a bayonet expulsion fuse in series with a partial-range current-limiting fuse, installed inside the sealed tank. This provides transformer protection against overloads and high-energy faults.

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-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-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: General purposes, industrial sites, electrical rooms, underground vaults, manufacturing facilities, steel plants, offshore, commercial, military, processing plants, electric power distribution, utilities, public locations and more.

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.

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

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.765.7664

Frequently Asked Questions (FAQ)

There are no Faqs

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

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.765.7664



Image: MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1

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

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.765.7664



Image: MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1

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

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.765.7664



Image: MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1

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

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.765.7664



Image: MT-PML-R7-3P-DNF-150KVA-YE-LT-DF-A6-DF-CZ-2B4-M1

Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

- **Operations Manual**(https://www.larsonelectronics.com/images/product/Manual/327415.PDF)
- **HigResPic1**(https://www.larsonelectronics.com/images/product/HigResPic1/327415.JPG)
- **HigResPic2**(https://www.larsonelectronics.com/images/product/HigResPic2/327415.JPG)
- **HigResPic3**(https://www.larsonelectronics.com/images/product/HigResPic3/327415.JPG)
- **HigResPic4**(https://www.larsonelectronics.com/images/product/HigResPic4/327415.JPG)
- **HigResPic5**(https://www.larsonelectronics.com/images/product/HigResPic5/327415.JPG)
- **HigResPic6**(https://www.larsonelectronics.com/images/product/HigResPic6/327415.JPG)
- **HigResPic7**(https://www.larsonelectronics.com/images/product/HigResPic7/327415.JPG)
- **HigResPic8**(https://www.larsonelectronics.com/images/product/HigResPic8/327415.JPG)
- **HigResPic9**(https://www.larsonelectronics.com/images/product/HigResPic9/327415.JPG)
- **HigResPic10**(https://www.larsonelectronics.com/images/product/HigResPic10/327415.JPG)
- **Video1**(https://www.youtube.com/watch?v=mpt7J5hdJp8)
- **Video2**(https://www.youtube.com/watch?v=KIzsyVtvSWM)
- **Video3**(https://www.youtube.com/watch?v=mN2qPmdLwW4)
- **ISO 9001 Certification**(http://larsonelectronics.com/images/pdfdocs/ISO9001.PDF)
- **Business Certificate**(https://www.larsonelectronics.com/images/pdfdocs/w9.PDF)
- **Shipping Time Map**(https://www.larsonelectronics.com/images/product/ShippingTimeMap/ShippingTimeMap.pdf)