

**MT-PML-R7-1P-DRF-50KVA-SZ-LT-DF-A5-BB-CZ-2B4-M1**

**50 KVA Pad Mount Transformer - 22000V Delta Primary, 240/120V Secondary - Copper, KNAN/Bell Green**

**Product ID: 305416**

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



**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-R7-1P-DRF-50KVA-SZ-LT-DF-A5-BB-CZ-2B4-M1 Pad Mount Transformer**

**Transformer Type: Pad Mounted, Compartmental-Type II**

**Transformer Configuration: Liquid Filled Pad Mounted**

**Transformer Feed Type: Loop Feed**

**Polarity: Additive**

**Phase: Single Phase (Connects to 3-Phase electrical grid)**

**Capacity: 50 KVA**

**Vector Group: II6**

**Primary Voltage: 22000V**

**Primary Voltage Switch: N/A**

**Primary Voltage Class: 25 kV Class**

**Primary Phasor: Delta**

**Primary BIL: 125 KV**

**Secondary Voltage: 240/120 (L-N-L)**

**Secondary Voltage Class: 1.2 kV Class**

**Secondary Phasor: Dual Winding Single Phase**

**Secondary BIL: 30 KV**

**Frequency: 50 Hz**

**Temperature Rise: 65°C**

**Insulation Rating: Class E Insulation - 120°C, 248°F**

**Cooling Class: KNAN; Self-Cooled**

**Forced Air (Fans): None**

**Tap Changer: 5-Position Tap Changer, Hot Stick Operable**

**Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps**

**Tap %: 2.50%**

**Tap Changer Switch Rating: 200-Amp, 15 kV**

**Ratings**

Meets/Exceeds DOE 2016 Efficiency Ratings

Meets/Exceeds CSA Efficiency Ratings

Complies with ANSI / IEEE C57.12.00

Complies with ANSI / IEEE C57.12.21

Complies with ANSI / IEEE C57.12.25

Complies with ANSI / IEEE C57.12.28

Complies with ANSI / IEEE C57.12.29

Complies with ANSI / IEEE C57.12.35

Complies with ANSI / IEEE C57.12.38

Complies with ANSI / IEEE C57.12.70

Complies with ANSI / IEEE C57.12.110

Complies with ANSI / IEEE C57.12.131

Complies with ANSI / IEEE C62.11

Complies with ANSI / IEEE C62.22

Complies with ANSI / IEEE 386

Complies with ANSI / IEEE C2

Complies with ANSI / IEEE C37.47

Complies with ANSI Z535.4

Complies with ASTM D3487

Complies with ASTM D6871

Complies with NEMA 260-1996

Complies with 10 CFR Part 431

Complies with CSA C2.1-06

Complies with CSA C50

Complies with CSA C88

Tap Changer Switch Location: Front Compartment, High Voltage (HV) Left Side  
Impedance: 1.0-4.5% Typical  
Primary Connection Type: Dead Front  
Primary Termination Arrangement: ANSI Type II Arrangement  
Primary Termination: Externally Clamped Well Bushings w/ Removable Studs, 200A Load Break Elbows w/ Inserts  
Primary Connection Qty: (2) Primary Connections for use w/ Elbow Connectors  
Primary Parking Stand Qty: (2) Welded Bracket for Installing Accessory Parking Stand Bushings  
Primary Bushing Rating: 25 kV Class, 125 kV BIL, 200A, Load Break, IEEE 386 Color Red  
Primary Surge Arrestors: (1) High Voltage Elbow Surge Arrestors, Included  
Primary Surge Arrestor Voltage Rating: 30 kV Class  
Primary Surge Arrestor MCOV Rating: 24.4 kVrms  
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 Neutral Connection: Primary H2 Neutral Internally Bonded to Tank  
Primary Grounding Provisions: (1) Welded Ground Bung, 1/2"-13 UNC Tapped Hole, 7/16" Deep Bung, w/ Grounding Terminal Clamp for 2/0-8 AWG Stranded Wire

Secondary Connection Type: Live Font

Secondary Termination Arrangement: ANSI Type II Arrangement  
Secondary Connections: NEMA Spade Terminals, 4-Hole Spade, Accepts up to (4) Single Lug connections with (1) cables per side of Spade connector  
Secondary Over Current Protection (OCP): N/A  
Secondary Connections: NEMA Spade Terminals, 4-Hole Spade, Externally Clamped, Accepts up to (4) Single Lug connections with (1) cables per side of Spade connector

Secondary Connection Qty: (3) Externally Clamped One-Piece Epoxy Bushings w/ 5/8"-11 x 1-1/2" Long Copper Threaded Studs  
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) Welded Ground Bung, 1/2"-13 UNC Tapped Hole, 7/16" Deep Bung, w/ Grounding Terminal Clamp for 2/0-8 AWG Stranded Wire  
Metering Current Transformer (CT): N/A

Metering Panel: N/A

Auxiliary Control Panel : N/A

Load Break Switch: 4-Position LBOR, Hot Stick Operable

Load Break Switch Qty: 1

Load Break Switch Rating: 200-Amp, 15 kV

Load Break Switch Location: 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: Biodegradable Natural Vegetable Oil Ester Insulating Fluid - Non-PCB Fluid

Fluid (Oil) Capacity\*: 61.11 Gallons

Fluid (Oil) Weight\*: 551.15 Lbs

Liquid Level Indicator: Analog Gauge

Temperature Indicator: Analog Gauge

Pressure/Vacuum Indicator: Analog Gauge

Pressure Relief Device: Automatic Action, Cracking Pressure @ 10 PSIG, Releasing Pressure @ 8 PSIG, Flow @ 15 PSIG (50 SCFM) @ 14.7 PSIG

Fault Indicator: N/A

Gas Sampler Valve: N/A

Fill Valve: 1/2" NPT w/ Removable Bolt Plug

Fill Valve Location: Front Compartment

Drain Valve: 1/2" NPT w/ Removable Bolt Plug, w/o 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: 48 dBA

Elevation (Altitude): 3300ft (1000 meters) Above Sea Level or Below

Core Material: Grain Oriented Steel

Tank Material: Coated Steel

Cabinet Material: Coated Steel

Complies with CSA C88.1

Complies with CSA C88-16

Complies with CSA C227.3

Complies with CSA C802.1

Complies with CSA C802.2

Complies with CSA C802.3

#### **Features**

Pentahead Bolt Entry Assembly

High-Fire Point Insulating Fluid

Non-PCB Insulating Fluid

Tamper Proof Housing

NEMA 3R Wiring Compartment

Lift-Up Pad lockable Lid

**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)\*: +/- 176W**

**Load Loss (in watts)\*: +/- 650W**

**Total Load Loss (in watts)\*: +/- 826W**

*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 Test

#### **Shipping:**

Shipped on pallet on open flatbed

Palletized on Wooden Pallet w/ Skid Pockets

Pallet Skid Facing Outward Sides of Truck

*Note: For low quantity purchases, enclosed truck can be requested*

*Note: Crated shipping in lieu of palletizing can be done upon request for an additional fee*

Base Platform Material: Coated Steel

Portability: Lifting lugs

Housing Type: Low Profile Air-Filled Cabinet w/ Locking Hinged Door, HV/LV in Same Compartment, Tamper Resistant, w/ Pad-lockable Lift-up Lid

Enclosure Rating: NEMA 3R Weatherproof Wiring Cabinet, Sealed Tank

Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating

Finish Color: Munsell™ 7.0 GY 3.29/1.5 Bell Green

Mounting: Pad Mount

Conduit Opening: Bottom Feed Underground Entry/Exit

Compartment Base Wireway Dimensions\*: 34"-L x 21"-D

Compartment Cabinet Depth: 19"-D

Dimensions\*: 34.25"-W x 37.4"-D x 25.2"-H

Dry Weight (w/o Oil)\*: 507.05 Lbs

Total Weight (Liquid Filled)\*: 1,432.98 Lbs

\*Please note that numbers are approximate and subject to change

#### Special Orders - 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](mailto:sales@larsonelectronics.com)

**The MT-PML-R7-1P-DRF-50KVA-SZ-LT-DF-A5-BB-CZ-2B4-M1 Industrial Pad Mount Transformer from Larson Electronics 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.**

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

**Transformer Features:** With a transformer rating of 50 KVA, the industrial transformer features a primary voltage of single-phase 22000V Delta and a secondary voltage of single-phase 240/120V (L-N-L). The unit has a primary loop feed for single installations and dead-front primary connections. We also offer systems with loop feed and live 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.

The system features copper windings for high strength and thermal/electrical conductivity. 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-R7-1P-DRF-50KVA-SZ-LT-DF-A5-BB-CZ-2B4-M1 is air cooled and does not have fans or mounting provision for 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 3R 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 65°C temperature rise for reduced heat waste, increased reliability and longer life. At 65°C temperature rise, the transformer offers 50 KVA. 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-R7-1P-DRF-50KVA-SZ-LT-DF-A5-BB-CZ-2B4-M1 features biodegradable cooling fluid (KNAN). We offer transformers with FR-3 oil fluid, 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% load 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 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 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-R7-1P-DRF-50KVA-SZ-LT-DF-A5-BB-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-R7-1P-DRF-50KVA-SZ-LT-DF-A5-BB-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](mailto:sales@larsonelectronics.com) to discuss your specific requirements.

---

## Frequently Asked Questions (FAQ)









**Export Control Classification Number (ECCN):** EAR99

Links (Click on the below items to view):

- [HigResPic1](#)
- [HigResPic2](#)
- [HigResPic3](#)
- [HigResPic4](#)
- [HigResPic5](#)
- [HigResPic6](#)
- [HigResPic7](#)
- [HigResPic8](#)
- [HigResPic9](#)
- [HigResPic10](#)
- [Video1](#)
- [Video2](#)
- [Video3](#)
- [ISO 9001 Certification](#)
- [Business Certificate](#)
- [Shipping Time Map](#)