

MT-PML-R7-3P-DMA-5MVA-DMQ-LT-DF-A6-CM-CZ-2H4-M1

5 MVA Pad Mount Transformer - 34500V Delta Primary, 13200V Delta Secondary - ONAN/Bell Green

Product ID: 327889

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



Image: MT-PML-R7-3P-DMA-5MVA-DMQ-LT-DF-A6-CM-CZ-2H4-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-DMA-5MVA-DMQ-LT-DF-A6-CM-CZ-2H4-M1 3PH Pad Mount Transformer

Transformer Type: Pad Mounted, Compartmental-Type
Transformer Configuration: Liquid Filled Pad Mounted
Transformer Feed Type: Loop Feed
Operation: Step-Down Operation (Not Approved for Step-Up)
Phase: Three Phase
Capacity: 5 MVA (5000 KVA)
Vector Group: Dyn1
Primary Voltage: 34500V
Primary Voltage Switch: N/A
Primary Voltage Class: 35 kV Class
Primary Phasor: Delta
Primary BIL: 150 KV
Secondary Voltage: 13200V
Secondary Voltage Class: 15 kV Class
Secondary Phasor: Delta
Secondary BIL: 95 KV
Frequency: 60 Hz
Temperature Rise: 55/65°C
Insulation Rating: Class E Insulation - 120°C, 248°F

Ratings

Meets/Exceeds DOE 2016 Efficiency Ratings
Meets/Exceeds CSA Efficiency Ratings
Complies with ANSI / IEEE C57.12.00
Complies with ANSI / IEEE C57 12.28
Complies with ANSI / IEEE C57 12.29
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 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

Cooling Class: ONAN; Self-Cooled
Forced Air (Fans): None
Tap Changer: 5-position De-Energized Tap Changer
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
Tap %: 2.5%
Tap Changer Switch Rating: 300-Amp, 35 kV
Tap Changer Switch Location: High Voltage (HV) [Left Side] Front Compartment
Impedance: 5.0-7.5% Typical
Primary Connection Type: Dead Front
Primary Termination Arrangement: V Terminal Arrangement
Primary Termination: Externally Clamped Integral Bushings w/ Removable Studs, 600A Dead Break Elbows
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: 35 kV Class, 200 kV BIL, 600A, Dead Break, IEEE 386 Color Brown
Primary Neutral Connection: N/A
Primary Surge Arrestors: Included, (3) High Voltage Elbow Surge Arrestors
Primary Surge Arrestor Voltage Rating: 36 kV Class Elbow Arrestor
Primary Surge Arrestor MCOV Rating: 29 kVrms
Primary Overcurrent Protection (OCP): Bayonet Expulsion Fuses w/ Backup Current-Limiting Fuses
Primary Overcurrent Protection Method: Fused, Oil-Immersed
Primary Overcurrent 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: Inline Terminal Arrangement
Secondary Connections: NEMA Spade Terminals, 14-Hole Spade, Externally Clamped, Accepts up to (14) Double Lug connections with (7) cables per side of Spade connector
Secondary Connection Qty: (3) Externally Clamped One-Piece Epoxy Bushings Copper Threaded Studs
Secondary Connection Supports: N/A
Secondary Overcurrent Protection (OCP): N/A
Secondary Neutral Connection: N/A
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: 300-Amp, 35 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: Mineral Oil Insulating Fluid, Non-PCB Fluid
Fluid (Oil) Capacity*: 700 Gallons
Fluid (Oil) Weight*: 5,390 Lbs
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

Complies with 10 CFR Part 431
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

Penta-head 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 %: 98.00%

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

Load Losses Based on 85°C Reference Temp.

No Load Loss (in watts): +/- 8,889W

Full Load Loss (in watts) at 100%: +/- 34,996W

Total Load Loss (in watts) at 100%: +/- 43,885W

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

Total Load Loss (in watts) at 50%: +/- 17,640W

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

Fill Valve: 1" NPT Port w/ Removable Bolt Plug
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: 65 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 Weatherproof Wiring Cabinet, 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*: 21"-W x 7"-D

LV Compartment Base Wireway Dimensions*: 26"-W x 9"-D

MV/LV Compartment Cabinet Depth*: 24"-D

Tank Cover Access Handhole: N/A

Dimensions*: 96"-W x 108"-D x 94"-H

Dry Weight (w/o Oil)*: 10,462 Lbs

Total Weight (Liquid Filled)*: 16,518 Lbs

*Please note that numbers are approximate and subject to change

Separate Source Voltage Withstand Test
Pressure Integrity 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-DMA-5MVA-DMQ-LT-DF-A6-CM-CZ-2H4-M1 from Larson Electronics is an Industrial Pad Mount 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 make 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 5000 KVA (5 MVA), the pad-mount transformer features a primary voltage of 34,500V Delta and a secondary voltage of 13,200V Delta for MV-to-MV step-down operation. The unit is equipped with a loop-feed design for utility-style installation and dead-front separable connectors. A 5-position de-energized tap changer provides (2) +2.5% and (2) -2.5% taps to compensate for utility voltage variation.

Copper transformer winding material helps improve performance, reduce weight and lower cost. Compared to aluminum, copper windings have lower eddy losses due to higher resistivity. This transformer consists of a rectangular coil and a 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-R7-3P-DMA-5MVA-DMQ-LT-DF-A6-CM-CZ-2H4-M1 is air cooled and does not have fans or mounting provisions 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 allow 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 55/65°C temperature rise for high-efficiency operation and extended service life. The combination of low temperature rise and high efficiency make this unit suitable for outdoor pad mounting in utility and renewable energy applications.

Insulation Fluid: The MT-PML-R7-3P-DMA-5MVA-DMQ-LT-DF-A6-CM-CZ-2H4-M1 features mineral oil cooling fluid (ONAN) with a capacity of 700 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% 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.

Valves: The MT-PML-R7-3P-DMA-5MVA-DMQ-LT-DF-A6-CM-CZ-2H4-M1 is equipped with a

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

Protection Fuses: This transformer contains bayonet expulsion fuses with backup overcurrent protection inside the oil compartment.

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-DMA-5MVA-DMQ-LT-DF-A6-CM-CZ-2H4-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: Utility interconnection, BESS auxiliary service, commercial power distribution, MV backup power, substations, industrial facilities, renewable energy, electrical infrastructure expansion, and general medium-voltage distribution.

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.



Frequently Asked Questions (FAQ)

There are no Faqs



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Export Control Classification Number (ECCN): EAR99



Links (Click on the below items to view):

- **Operations Manual**(<https://www.larsonelectronics.com/images/product/Manual/327889.PDF>)
- **HigResPic1**(<https://www.larsonelectronics.com/images/product/HigResPic1/327889.JPG>)
- **HigResPic2**(<https://www.larsonelectronics.com/images/product/HigResPic2/327889.JPG>)
- **HigResPic3**(<https://www.larsonelectronics.com/images/product/HigResPic3/327889.JPG>)
- **HigResPic4**(<https://www.larsonelectronics.com/images/product/HigResPic4/327889.JPG>)
- **HigResPic5**(<https://www.larsonelectronics.com/images/product/HigResPic5/327889.JPG>)
- **HigResPic6**(<https://www.larsonelectronics.com/images/product/HigResPic6/327889.JPG>)
- **HigResPic7**(<https://www.larsonelectronics.com/images/product/HigResPic7/327889.JPG>)
- **HigResPic8**(<https://www.larsonelectronics.com/images/product/HigResPic8/327889.JPG>)
- **HigResPic9**(<https://www.larsonelectronics.com/images/product/HigResPic9/327889.JPG>)
- **HigResPic10**(<https://www.larsonelectronics.com/images/product/HigResPic10/327889.JPG>)
- **Video1**(<https://www.youtube.com/watch?v=KlZsyVtvSWM>)
- **Video2**(<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>)