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MT-PML-R4-3P-GMA-4.4MVA-GC-LT-DF-A6-BF-AZ-2C4-M2

4.4 MVA Pad Mount Transformer - 34500Y/19919 Grounded Wye Primary, 600Y/346 Grounded Wye Secondary - KNAN/FR-3 - Light Grey - Aluminum Windings

Product ID: 306254

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-R4-3P-GMA-4.4MVA-GC-LT-DF-A6-BF-AZ-2B6-M2 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 (Approved for Step-Up)
Phase: Three Phase
Capacity: 4.4 MVA (4400 KVA)
Vector Group: YNyn0
Primary Voltage: 34500Y/19919
Primary Voltage Switch: N/A
Primary Voltage Class: 35 kV Class
Primary Phasor: Grounded Wye
Primary BIL: 150 KV
Secondary Voltage: 600Y/346
Secondary Voltage Class: 1.2 kV Class
Secondary Phasor: Grounded wye
Secondary BIL: 30 KV
Frequency: 60 Hz
Temperature Rise: 65°C

Winding Insulation: Low Temperature type, UL recognized 220C

Cooling Class: KNAN; Self-Cooled
Forced Air (Fans): None
Tap Changer: 5-Position Tap Changer
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps

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 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
Complies with ASTM D3487
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 %: 99.30%
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

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Tap %: 2.5%
Tap Changer Switch Rating: 600-Amp, 35 kV
Tap Changer Switch Location: High Voltage (HV) [Left Side] Front Compartment
Impedance (Typical): 5.0-7.5% (Target 5.75% ±7.5%)
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, 150 kV BIL, 600A, 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: 27 kV Class Elbow Arrestor
Primary Surge Arrestor MCOV Rating: 22 kVrms
Primary Over Current Protection (OCP): (3) internal Bayonet (PRCLF) under-oil Fuses (Current/Fault sensing) in series with Dual Sensing Expulsion fuses, with (3) spare Bayonet 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: Staggered 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: (4) Externally Clamped One-Piece Epoxy Bushings Copper Threaded Studs
Secondary Winding: Separate galvanically isolated, suitable for operation with inverter
Secondary Connection Supports: N/A
Secondary Over Current Protection (OCP): N/A
Secondary Neutral Connection: Secondary X0 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
Electrostatic Shield: Included, Externally bonded to tank
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: 600-Amp, 35 kV
Load Break Switch Location: High Voltage (HV) Front Compartment
Efficiency Standard(s): Meets DOE 10 CFR Part 421 Standards
K-Factor Rating (Harmonic Mitigation): K-1 (Standard)
Pulse Drive Rating: N/A
Insulation Fluid: FR-3, Non-PCB
Fluid (Oil) Capacity*: 700 Gallons
Fluid (Oil) Weight*: 5,390 lbs
Liquid Level Indicator: Externally Mounted in lockable Box, Magnetic Analog Dial Gauge w/ Dual Contacts (low level)
Liquid Temperature Indicator: Externally Mounted in lockable Box, Magnetic Analog Dial Gauge, w/ Dual Contacts and adjustable setpoints (High Temp and High-High Temp
Pressure/Vacuum Indicator: Magnetic Analog Dial Gauge w/ Dual Contacts (High Press. and High Vac.)
Pressure Relief Device: Externally Mounted, in lockable Box, Automatic Action
Rapid Rise Relay: Included, w/ (2) Dry Type Form C Auxiliary Contacts for Remote Alarm (1NO + 1NC) when Pressure Rises Above In-Field Set Pressure Located in Aux Control Cabinet
Gas Sampler Valve: Included, Schrader Valve
Fill Valve: 1" Globe Valve
Fill Valve Location: Front Compartment
Drain Valve: Externally Mounted in lockable Box, 1" Globe Valve w/ 3/8" NPT Sampler Valve
Drain Valve Location: Front Compartment
Flapper Valve: Included
Shrader Valve: Included

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
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*

Nitrogen Blanket: Included

Jacking Facilities Included

ground Pads: Included, 2-Hole NEMA style in MV and LV compartments

Winding Material: Aluminum
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, Five-Legged
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™ 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 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

Special Orders - Special Requirements
Contact us for special requirements
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The MT-PML-R4-3P-GMA-4.4MVA-GC-LT-DF-A6-BF-AZ-2C4-M2 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 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 4400 KVA (4.4 MVA), the industrial transformer features a dual rated primary voltage of three-phase 34500Y/19919 Grounded wye and a secondary voltage of three-phase 600Y/346 Grounded Wye. 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.

Aluminum transformer winding material helps improve performance, reduce weight and lower cost. Compared to aluminum, aluminum 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-R4-3P-GMA-4.4MVA-GC-LT-DF-A6-BF-AZ-2C4-M2 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 4400 KVA (4.4 MVA). 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.

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.

Insulation Fluid: The MT-PML-R4-3P-GMA-4.4MVA-GC-LT-DF-A6-BF-AZ-2C4-M2 features FR-3 Cooling fluid (KNAN) with a capacity of 700 gallons. We offer transformers with biodegradable 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% 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. Liquid level, temperature, and pressure/vacuum gauges are magnetic analog, manual reading types. The magnetic liquid level gauge is equipped with high and high-high temperature alarm contacts.

Liquid Thermometer: A dial type liquid thermometer with low and high level alarm contacts is included. The thermometer is equipped with two pointers, one to indicate the current temperature and the other to show the maximum temperature reached since the last reset. The thermometer also includes field-adjustable high and high-high alarm temperature switches and additional control contacts for controlling cooling equipment.

Pressure Vacuum Gauge: The pressure vacuum gauge on the MT-PML-R4-3P-GMA-4.4MVA-GC-LT-DF-A6-BF-AZ-2C4-M2 is equipped with alarm contacts and includes a pressure/vacuum bleeder with sampler valve. The sampler valve is installed on the transformer tank and piped to the gas space above the above the liquid.

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: This system is equipped with a rapid rise (sudden pressure) relay. 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. This rapid relay includes dry contact for remote alarm or trip when internal transformer pressure rises at field-set rate.

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-R4-3P-GMA-4.4MVA-GC-LT-DF-A6-BF-AZ-2C4-M2 is equipped with a pressure relief valve, fill valve, and drain valve with sampler port.

Protection Fuses: This transformer contains protection fuses. 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-R4-3P-GMA-4.4MVA-GC-LT-DF-A6-BF-AZ-2C4-M2 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.

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Frequently Asked Questions (FAQ)



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- **HigResPic2**
- **HigResPic3**
- **Video1**
- **Video2**
- **ISO 9001 Certification**
- **Business Certificate**
- **Shipping Time Map**