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MT-PML-R7-3P-GMP-45KVA-YLZ-LT-DF-A6-BM-CS-2C2-M1

45 KVA Three-Phase Pad Mount Transformer – 13800Y/7970V Primary, 240/120V Secondary – Mineral Oil / ONAN, Copper Windings, 304 Stainless Steel

Product ID: 333153



Image: MT-PML-R7-3P-GMP-45KVA-YLZ-LT-DF-A6-BM-CS-2C2-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-GMP-45KVA-YLZ-LT-DF-A6-BM-CS-2C2-M1 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: 45 KVA	Complies with ANSI / IEEE C57 12.34
Vector Group: YYN0	Complies with ANSI / IEEE C57 12.35
Primary Voltage: 13800GrdY/7970	Complies with ANSI / IEEE C57.12.70
Primary Voltage Switch: N/A	Complies with ANSI / IEEE C57.12.110
Primary Voltage Class: 15 kV Class	Complies with ANSI / IEEE C57.12.131
Primary Phasor: Grounded Wye	Complies with ANSI / IEEE C62.11
Primary BIL: 95 KV	Complies with ANSI / IEEE C62.22
Secondary Voltage: 240/120V	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: ONAN; Self-Cooled	Complies with 10 CFR Part 431
Forced Air (Fans): None	Complies with CSA C2.1-06
Tap Changer: 5-position Tap Changer	Complies with CSA C50
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps	Complies with CSA C88
Tap %: 2.5%	Complies with CSA C88.1
Tap Changer Switch Rating: 200-Amp, 15 kV	Complies with CSA C88-16

Tap Changer Switch Location: High Voltage (HV) [Left Side] Front Compartment
Impedance (Typical): 1.0-4.5% Typical, Target 2.70-4.5%
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: 15 kV Class, 95 kV BIL, 200A, Load Break, IEEE 386 Color Red
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: 10 kV Class Elbow Arrestor
Primary Surge Arrestor MCOV Rating: 8.4 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 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) Externally Clamped One-Piece Epoxy Bushings Copper Threaded Studs
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: 2-Position Load Break Switch
Load Break Switch Qty: (1)
Load Break Switch Rating: 200-Amp, 15 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: Insulating Fluid - Non-PCB Fluid
Fluid (Oil) Capacity*: 70 Gallons
Fluid (Oil) Weight*: 539 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
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: 48 dBA
Elevation (Altitude): 3300ft (1000 meters) Above Sea Level

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

100% Stainless Steel Construction, Corrosion Resistant

Efficiency %: 98.50%

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

Load Losses Based on 85°C Reference Temp.

No Load Loss (in watts): +/- 114W

Full Load Loss (in watts) at 100%: +/- 570W
Total Load Loss (in watts) at 100%: +/- 684W

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

Total Load Loss (in watts) at 50%: +/- 248W
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: *Crated shipping in lieu of palletizing can be done*

upon request for an additional fee

Core Material: Grain Oriented Steel
Tank Material: 304 Stainless Steel
Cabinet Material: 304 Stainless Steel
Base Platform Material: 304 Stainless 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*: 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*: 68"-W x 39"-D x 50"-H
Dry Weight (w/o Oil)*: 663 Lbs
Total Weight (Liquid Filled)*: 1,701 Lbs
*Please note that numbers are approximate and subject to change

Special Orders - Requirements
Contact us for special requirements
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Fax: 1-903-498-3364
E-mail: sales@larsonelectronics.com

The MT-PML-R7-3P-GMP-45KVA-YLZ-LT-DF-A6-BM-CS-2C2-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 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 45 kVA, this industrial unit features a primary voltage of three-phase 13800GRDY/7970V (grounded wye) and a secondary voltage of three-phase 240/120V (4-wire wye). The unit includes a primary loop feed configuration with dead-front primary connections. Radial feed configurations are available upon request.

This transformer features a 5-position tap changer with (2) +2.5% taps above and (2) -2.5% taps below nominal voltage to allow minor field voltage adjustments. The pad mount transformer includes 200A loadbreak well bushings on the primary side and NEMA spade terminals on the secondary side.

Equipped with copper windings and a high-grade silicon steel core, this transformer is designed for durability, efficient energy transfer and long operational life.

Insulation Fluid: The MT-PML-R7-3P-GMP-45KVA-YLZ-LT-DF-A6-BM-CS-2C2-M1 features mineral oil insulating fluid (ONAN), a non-PCB cooling medium widely used in utility-grade distribution transformers. Mineral oil provides reliable dielectric strength, effective heat dissipation and long service life.

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 pressure relief device. The device activates in response to internal pressure buildup to protect the tank and internal components.

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 primary elbow surge arresters for protection against lightning strikes, switching surges and transient over-voltages. Units without surge arresters can be provided with mounting provisions for customer-supplied arresters.

Load Breaker Switch: The MT-PML-R7-3P-GMP-45KVA-YLZ-LT-DF-A6-BM-CS-2C2-M1 is equipped with a 2-position load break switch located in the high-voltage compartment. The switch allows selection between two incoming primary feeds in loop feed applications.

Valves: The MT-PML-R7-3P-GMP-45KVA-YLZ-LT-DF-A6-BM-CS-2C2-M1 is equipped with a 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, upstream 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-R7-3P-GMP-45KVA-YLZ-LT-DF-A6-BM-CS-2C2-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.

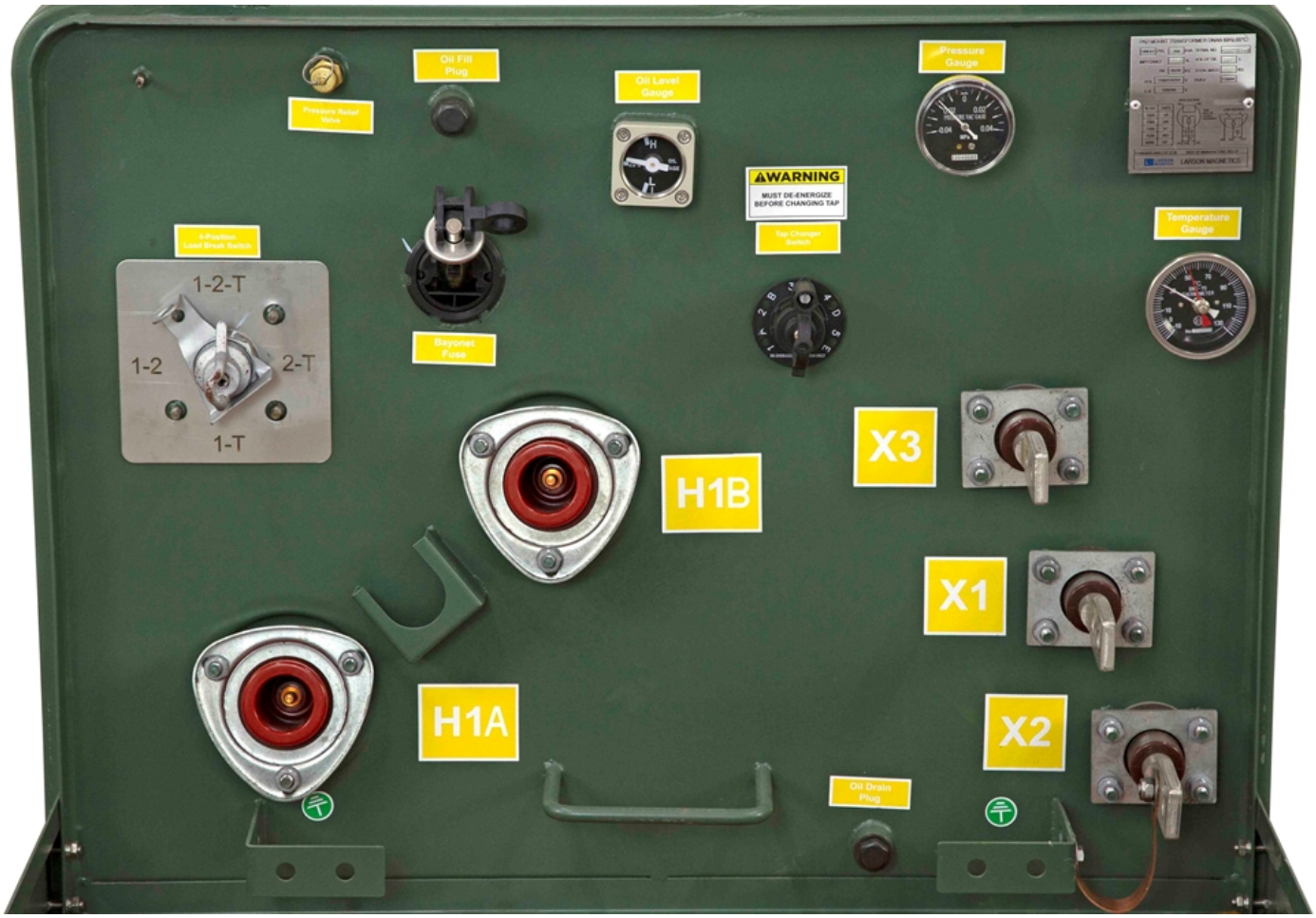
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Frequently Asked Questions (FAQ)

There are no Faqs