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-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1

1 MVA Pad Mount Zig Zag Grounding Transformer - 34500Y/19920V Grounded Wye Primary - ONAN - Bell Green - NEMA 4X

Product ID: 336090

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



Image: MT-PML-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-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-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1 Pad Mount Grounding Reactance Transformer	Ratings
Transformer Type: Pad Mounted, Compartmental-Type, Grounding Reactance Transformer	Meets/Exceeds DOE 2016 Efficiency Ratings
Transformer Configuration: Liquid Filled Pad Mounted	Meets/Exceeds CSA Efficiency Ratings
Transformer Feed Type: Radial Feed	Complies with ANSI / IEEE C57.12.00
Operation: Grounding Transformer	Complies with ANSI / IEEE C57 12.28
Phase: Three Phase	Complies with ANSI / IEEE C57 12.29
Capacity: 1 MVA, short time current 1000A/10s	Complies with ANSI / IEEE C57 12.34
Neutral Current: 120 A	Complies with CSA C802-3
Vector Group: Zn	Complies with ANSI / IEEE C57 12.35
Primary Voltage: 34500Y/19920V	Complies with ANSI / IEEE C57.12.70
Primary Voltage Switch: N/A	Complies with ANSI / IEEE C57.12.110
Primary Voltage Class: 38 kV Class	Complies with ANSI / IEEE C57.12.131
Primary Phasor: Grounded Wye	Complies with ANSI / IEEE C62.11
Primary BIL: 200 KV	Complies with ANSI / IEEE C62.22
Secondary Voltage: N/A	Complies with ANSI / IEEE 386
Secondary Voltage Class: N/A	Complies with ANSI / IEEE C2
Secondary Phasor: N/A	Complies with ANSI / IEEE C37.47
Secondary BIL: N/A	Complies with ANSI Z535.4
Frequency: 60 Hz	Complies with ASTM D3487
Temperature Rise: 65°C	Complies with ASTM D6871

Insulation Rating: Class E
Cooling Class: ONAN; Self-Cooled
Isolation Level: 120 Class
X/R: 4
Tap Changer: N/A
Tap Qty: N/A
Tap %: N/A
Tap Changer Switch Rating: N/A
Tap Changer Switch Location: N/A
Zero Sequence Impedance (Ω/Ø): 6.0
Primary Connection Type: Dead Front
Primary Termination Arrangement: In-Line Terminal Arrangement
Primary Termination: Standoff Well Bushings w/ Removable Studs, 900A Dead Break Elbows
Primary Connection Qty: (4) Primary Connections
Primary Parking Stand Qty: (3) Welded Brackets for Installing Accessory Parking Stand Bushings
Primary Bushing Rating: 38 kV Class, 200 kV BIL
Primary Neutral Connection: NEMA Spade Terminals, 4-Hole Spade
Primary Surge Arrestors: Included, 1 per phase
Primary Surge Arrestor Voltage Rating: 36 kV
Primary Surge Arrestor MCOV Rating: 29 kV
Primary Overcurrent Protection (OCP): N/A
Primary Overcurrent Protection Method: N/A
Primary Overcurrent Protection Holder: N/A
Primary Grounding Provisions: (1) NEMA Ground Bar Attached to Tank via (2) Welded Ground Bungs in HV Cabinet
Secondary Connection Type: N/A
Secondary Termination Arrangement: N/A
Secondary Connections: N/A
Secondary Connection Qty: N/A
Secondary Connection Supports: N/A
Secondary Overcurrent Protection (OCP): N/A
Secondary Neutral Connection: N/A
Secondary Grounding Provisions: N/A
Current Transformer (CT): (3) 300:5A, 15 VA, 5P20, one per phase / (1) 300:5A, 15 VA, 5P20, For Neutral
Current Transformer (CT) Manufacturer/Type: Meramec Instrument Transformer (Hubble Power Systems), Bushing-Type
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, 38 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, Non-PCB Fluid
Fluid (Oil) Capacity*: 490 Gallons
Fluid (Oil) Weight*: 3724 Lbs
Liquid Oil Level Indicator (LLI): Analog Dial Gauge, with Hi and Lo Contacts, Qualitrol LLG042 model
Liquid Oil Temperature Gauge (LTG): Analog Dial Gauge, with Hi and Lo Contacts, Qualitrol TR6000 model
Pressure/Vacuum Indicator: Analog Dial Gauge, with Hi and Lo Contacts
Pressure Relief Device (PRD): Included, Automatic Action, with contact, Qualitrol LPRD

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
Complies with CSA C802.1
Complies with CSA C88.1
Complies with CSA C88-16
Complies with CSA C227.4
Complies with CSA C227.5

Features

Penta-head Bolt Entry Assembly
High-Fire Point Insulating Fluid
Non-PCB Insulating Fluid
Tamper Proof Housing
Hinged Front Compartment Doors, Pad Lockable with Key Interlock Provision
NEMA 4X Wiring Compartment
Hot Stick Included, HV Door Mount

Efficiency %: 99.20%
Based on transformer operating at 50% of nameplate base kVA.

Load Losses Based on 85°C Reference Temp.
No Load Loss (in watts): +/- 1,300W
Full Load Loss (in watts) at 100%: +/- 8,500W
Total Load Loss (in watts) at 100%: +/- 9,800W

Total Losses at 55°C LL Temp. & 20°C NL Temp.
Total Load Loss (in watts) at 50%: +/- 3,221W

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

model
Rapid Pressure Rise Relay (RPRR): Included, Qualitrol 900-FLA-Q-060-STD model
Temperature Monitoring: Included, (4) Sensors [(1) Sensor on Each Coil and (1) Sensor on the Core]
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: 50°C
Ambient Operating Temperature Range: -40°C to +50°C
Sound Level: 58 dBA
Elevation (Altitude): 3300ft (1000 meters) Above Sea Level
Core Material: Grain Oriented Steel
Tank Material: 316 Stainless Steel
Cabinet Material: 316 Stainless Steel
Base Platform Material: 316 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 w/ interlock keys, HV Compartment Left, LV Compartment Right, Steel Barrier Separation, HV Door Spring-Loaded Release Pin in LV Compartment
Enclosure Rating: NEMA 4X, Weatherproof Wiring Cabinet, Sealed Tank
Seismic Rating: Yes
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: Munsell™ 7GY 3.29/1.5 Bell Green
Mounting: Pad Mounted
Conduit Opening: Bottom Feed Underground Entry/Exit, Sealed With High Temp. Rated NITRILE Gasket Material
HV Compartment Base Wireway Dimensions*: 20"-W x 5"-D
LV Compartment Base Wireway Dimensions*: 20"-W x 5"-D
MV/LV Compartment Cabinet Depth*: 43.3"-D
Tank Cover Access Handhole: N/A
Dimensions*: 81.5"-W x 90.25"-D x 82.75"-H
Dry Weight (w/o Oil)*: 6173 Lbs
Total Weight (Liquid Filled)*: 13450 Lbs
*Please note that numbers are approximate and subject to change

Load Loss (Wattage) Test
Separate Source Voltage Withstand Test
Induced 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-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1 3 Phase Energy Efficient Pad Mount Grounding Transformer from Larson Electronics is powerful, reliable, and designed with the environment in mind. Suitable for both indoor and outdoor applications, the MT-PML-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1 provides increased reliability and protection against critical equipment failures. The lower operating costs, lower heat emissions, and lower cost of ownership make this transformer ideal for a wide range of applications and businesses.

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

Transformer Features: With a transformer rating of 1 MVA, the MT-PML-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1 grounding transformer generates a neutral. On an ungrounded three-phase system, this type of transformer creates a grounded neutral connection which provides a path for ground-fault zero sequence currents. This zig zag transformer is a three

phase unit with a primary voltage of 34500Y/19920V Grounded Wye. Featuring robust construction, this unit's cores are manufactured with non-aging, cold-rolled silicon steel laminations using state of the art technology.

This unit boasts a low cost of ownership and is highly energy efficient. Lower heat emissions mean less cooling is needed as well. The standard NEMA Type 4X enclosure makes the unit suitable for both indoor and outdoor applications and it can be pad mounted. The unit also features mineral oil cooling fluid, class E insulation, a 65°C temperature rise. The MT-PML-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1 is designed so that no excess oil heating occurs from unbalanced loads or phase loss on the primary side.

Enclosure Design: This pad mounted transformer is a compartmental design. The tank and housing are fabricated from stainless steel. The front electrical enclosure carries a NEMA 4X 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.

Insulation Fluid: The MT-PML-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1 grounding transformer features mineral oil cooling fluid (ONAN) with a capacity of 315 gallons. We offer transformers with biodegradable or FR-3 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 have auxiliary contacts.

Fault Pressure Devices: This grounding 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 is a rapid rise relay 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.

Valves: The MT-PML-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1 is equipped with a

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

Load Break Switch: This grounding transformer is equipped with a 2-position load break switch.

Benefits: The MT-PML-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1 pad mount grounding transformer offers many benefits to the consumer. Precision cut copper transformer winding material helps to improve performance. The close tolerances used during manufacturing also eliminate burrs, which hinder performance. Each core is specially coated to prevent the ingress of moisture and is electrically balanced to minimize axial forces during short circuit situations.

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: Grounding transformer purposes.

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-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-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-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-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-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1



Image: MT-PML-GZ-3P-GMA-1MVA-LT-DF-Z6-XM-CZ-2Z6-M1

Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

- **Dimensional Drawing 2D**(https://www.larsonelectronics.com/images/product/DimensionalDrawing/336090.PDF)
- **Operations Manual**(https://www.larsonelectronics.com/images/product/Manual/336090.PDF)
- **HigResPic1**(https://www.larsonelectronics.com/images/product/HigResPic1/336090.JPG)
- **HigResPic2**(https://www.larsonelectronics.com/images/product/HigResPic2/336090.JPG)
- **HigResPic3**(https://www.larsonelectronics.com/images/product/HigResPic3/336090.JPG)
- **HigResPic4**(https://www.larsonelectronics.com/images/product/HigResPic4/336090.JPG)
- **HigResPic5**(https://www.larsonelectronics.com/images/product/HigResPic5/336090.JPG)
- **Video1**(https://www.youtube.com/watch?v=tDwaOvBWdO8)
- **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)