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**MT-PML-R7-3P-GMK-2.5MVA-YE-LT-DF-A6-BB-CZ-2B6-M1**

# 2.5 MVA Pad Mount Transformer - 20780Y/12000 Grounded Wye Primary, 480Y/277 Wye-N Secondary - Copper, KNAN/Bell Green

**Product ID: 308901**



**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-GMK-2.5MVA-YE-LT-DF-A6-BB-CZ-2B6-M1 3PH Pad Mount Transformer**

**Transformer Type: Pad Mounted, Compartmental-Type**
**Transformer Configuration: Liquid Filled Pad Mounted**
**Transformer Feed Type: Loop Feed**
**Phase: Three Phase**
**Capacity: 2.5 MVA**
**Vector Group: YNyn0**
**Primary Voltage: 20780Y/12000**
**Primary Voltage Selection Switch:** N/A
**Primary Voltage Class: 25 kV Class**
**Primary Phasor: Grounded Wye**
**Primary BIL: 125 KV**
**Secondary Voltage: 480Y/277**
**Secondary Voltage Class: 1.2 kV Class**
**Secondary Phasor: Wye-N**
**Secondary BIL: 30 KV**

**Frequency: 60 Hz**

**Temperature Rise: 65°C**
**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**
**Tap %: 2.5%**
**Tap Changer Switch Location: High Voltage (HV) Front Compartment**
**Impedance (Typical): 5.0-7.5% Typical**
**Primary Connection Type: Dead Front**

**Primary Termination Arrangement:** V Terminal Arrangement

**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 12.34
Complies with ANSI / IEEE C57.12.70
Complies with ASTM D3487
Penta-head Entry Assembly
Hot Stick Included, HV Door Mount
High-Fire Point Natural Ester Insulating Fluid
Non-PCB Insulating Fluid
Tamper Proof Housing
Hinged Front Compartment Doors, Pad Lockable

**Efficiency %: 99.40%**
*Based on transformer operating at 50% of nameplate base kVA.*

**Load Losses Based on 85°C Reference Temp.**
**No Load Loss (in watts)): +/- 2,700W**
**Full Load Loss (in watts) at 100%: +/- 15,500W**
**Total Load Loss (in watts) at 100%: +/- 18,200W**

**Total Losses at 55°C LL Temp.& 20°C NL Temp.**
**Total Load Loss (in watts) at 50%: +/- 6,408W**

**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:** 25 kV Class, 125 kV BIL, 600A, Dead Break
**Primary Neutral Connection:** Primary HO Neutral Internally Bonded to Tank
**Primary Surge Arrestors: Included, (3) High Voltage Elbow Surge Arrestors**
**Primary Surge Arrestor Voltage Rating: 22 kV Class**
**Primary Surge Arrestor MCOV Rating: 13 kVrms**
**Primary Over Current Protection (OCP): (3) Bayonet Fuses with an A05 Isolation Link**
**Primary Over Current Protection Method: Fused**
**Primary Over Current Protection Holder: Bayonet Fuse Holder w/ Drip Shield**
**Primary Grounding Provisions:** (1) ½-13 Thread Female Provision For Tank Grounding
**Secondary Connection Type: Live Font**
**Secondary Termination Arrangement:** Staggered Terminal Arrangement
**Secondary Connections:** NEMA Spade Terminals, 10-Hole Spade, Externally Clamped, Accepts up to (10) Double Lug connections with (5) 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 Neutral Connection:** Secondary X0 Neutral Grounded to Tank via 1/2”-13 UNC Tapped Hole, 7/16” Deep Bung & Copper Ground Strap
**Secondary Over Current Protection (OCP): N/A**
**Secondary Grounding Provisions:** (1) ½-13 Thread Female Provision For Tank Grounding
**Metering Current Transformer (CT): N/A**
**Metering Panel: N/A**
**Auxiliary Control Panel : N/A**
**Load Break Switch: 2-Position Oil-Immersed, Manually Charged, Spring Loaded, And Hook-Stick Operable Load Break Switch**
**Load Break Switch Qty: (3)**
**Load Break Switch Rating:** 600-Amp, 25 kV Class, 125 kV BIL, 12000A Asymmetrical momentary current (30 cycles) make and latch rating
**Load Break Switch Location: High Voltage (HV) Front Compartment**
**Efficiency Standard(s): Meets DOE 2016 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 Capacity: 310 Gallons**
**Liquid Level Indicator: Analog Dial Gauge**
**Temperature Indicator: Analog Dial Gauge**
**Pressure/Vacuum Indicator: Analog Dial Gauge**
**Pressure Relief Device: Included, Automatic Action**
**Fill Valve: 1" NPT upper filter press and filling plug**
**Fill Valve Location: Front Compartment**
**Drain Valve: Included, lower drain plug with built-in sampling device**
**Drain Valve Location: Front Compartment**
**Winding Material: Copper**
**Ambient Temperature Rating: 40°C**
**Sound Level: 62 dBA**
**Elevation Rating: 3300ft (1000 meters) Above Sea Level**
**Core Material: Grain Oriented Steel**
**Tank Material: Coated Steel**
**Cabinet Material: Coated Steel**
**Base Platform Material: Coated Steel**
**Hardware Material:** 304 Stainless Steel
**Enclosure Rating: NEMA 3R Weatherproof**
**Housing Type: Compartmental Air-Filled Cabinet w/ Locking Doors, HV Compartment Left, LV Compartment Right, Steel Barrier Separation**
**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**
**Dimensions: 75"-W x 75"-D x 73"-H**
**Weight: 11,534 lbs**
*Please note that numbers are approximate and subject to change

***Note: Losses offered are typical only, not guaranteed***

**Special Orders - Special Requirements**
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**The MT-PML-R7-3P-GMK-2.5MVA-YE-LT-DF-A6-BB-CZ-2B6-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 2.5 MVA, the industrial transformer features a dual rated primary voltage of three-phase 20780Y/12000 Grounded Wye and a secondary voltage of three-phase 480Y/277 Wye-N. The unit has a primary loop feed for dual 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-R7-3P-GMK-2.5MVA-YE-LT-DF-A6-BB-CZ-2B6-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 2.5 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.

**Insulation Fluid:** The MT-PML-R7-3P-GMK-2.5MVA-YE-LT-DF-A6-BB-CZ-2B6-M1 features biodegradable cooling fluid (KNAN) with a capacity of 310 gallons. 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% 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 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 Break Switch:** This transformer is equipped with three independently operated 2-position load break switches. One is for the transformer, one is for the Primary A lines, and one is for the Primary B lines.
**Valves:** The MT-PML-R7-3P-GMK-2.5MVA-YE-LT-DF-A6-BB-CZ-2B6-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-R7-3P-GMK-2.5MVA-YE-LT-DF-A6-BB-CZ-2B6-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)