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**MT-PMUT-R7-3P-GMQ-167KVA-YE-BB-A6-BM-CS-Z-M1**

# 167 KVA Submersible Distribution Transformer, Vault Mount, 3PH 13200GrdY/7620 Pri., 480Y/277 Sec., Mineral Oil, Copper, 304 SS, ONAN, Tap Changer

**Product ID: 305673**



**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-PMUT-R7-3P-GMQ-167KVA-YE-BB-A6-BM-CS-Z-M1 Submersible Vault Distribution Transformer**

**Transformer Type: Submersible Vault Distribution Transformer**
**Transformer Configuration:** Underground Vault Installation, Suitable for Temporary Submersion
**Transformer Feed Type:** Loop Feed
**Operation:** Step-Down Operation (Not Approved for Step-Up)
**Phase:** Three Phase
**Capacity:** 167 KVA
**Vector Group: YnYn0**
**Primary Voltage:** 13200GrdY/7620
**Primary Voltage Switch:** N/A
**Primary Voltage Class:** 15 kV Class
**Primary Phasor:** Grounded Wye
**Primary BIL:** 95 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
**Insulation Rating:** Class E Insulation - 120°C, 248°F
**Cooling Class:** ONAN; Self-Cooled
**Forced Air (Fans):** None
**Tap Changer:** 5-position Tap Changer
**Tap Qty:** (2) FCAN Above Taps, (4) FCBN Below Taps
**Tap %:** 2.5%
**Tap Changer Switch Rating:** 600-Amp, 35 kV

**Ratings**

Meets/Exceeds DOE 2016 Efficiency Ratings

Meets/Exceeds CSA Efficiency Ratings

Complies with ANSI / IEEE #C57.12.00
Complies with ANSI / IEEE #C57.12.24
Complies with ANSI / IEEE #C57.12.31
Complies with ANSI / IEEE #C57.12.32
Complies with ANSI / IEEE C57.12.70
Complies with ANSI / IEEE C57.12.80
Complies with ASTM D3487
Non-PCB Insulating Fluid
Lifting Lugs Included

**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): N/A**
**Full Load Loss (in watts): N/A**
**Total Load Loss (in watts): N/A**

**Total Losses at 55°C LL Temp.& 20°C NL Temp.**
**Total Load Loss (in watts) at 50%:** N/A
***Note: Losses offered are typical only, not guaranteed***

**Factory Tests:**

**Tap Changer Switch Location:** High Voltage (HV) [Left Side] Front Compartment
**Impedance (Typical):** 3.10-5.75%
**Primary Connection Type:** Dead Front
**Primary Termination Arrangement:** Inline 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, IEEE 386 Color Brown
**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):** 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:** Inline Terminal Arrangement
**Secondary Connections:** NEMA Spade Terminals, 12-Hole Spade, Externally Clamped, Accepts up to (12) Double Lug connections with (6) 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:** N/A
**Load Break Switch Qty:** N/A
**Load Break Switch Rating:** N/A
**Load Break Switch Location:** N/A
**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 (Oil) Capacity*:** N/A
**Fluid (Oil) Weight*:** N/A
**Liquid Level Indicator: Internal In-Tank Oil Level Line**
**Temperature Indicator:** N/A
**Pressure/Vacuum Indicator:** N/A
**Pressure Relief Device:** N/A
**Fault Indicator:** N/A
**Gas Sampler Valve:** N/A
**Fill Valve:** 1" NPT Port w/ Removable Bolt Plug
**Fill Valve Location:** Top Lid
**Drain Valve:** 1" NPT Port w/ Removable Bolt Plug
**Drain Valve Location:**Top Lid
**Winding Material: Copper**
**Ambient Temperature Rating: 40°C**
**Ambient Operating Temperature Range: -40°C to +40°C (-50°F to +104°F)**
**Sound Level: 55 dBA**
**Elevation (Altitude): 3300ft (1000 meters) Above Sea Level**
**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:** Sealed Tank for Vault Installations
**Enclosure Rating:** N/A
**Seismic Rating:** Yes

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***

**Paint Type:** Weatherproof and UV Resistant Epoxy Coating and Undercoating
**Finish Color: ANSI 70 Light Grey**
**Mounting: Floor Mount**
**Lifting Lugs: Included**
**Dimensions*: 38.00"-W x 63.00"-L x 60.00"-H**
**Dry Weight*:** N/A
**Total Weight (Liquid Filled)*:** N/A

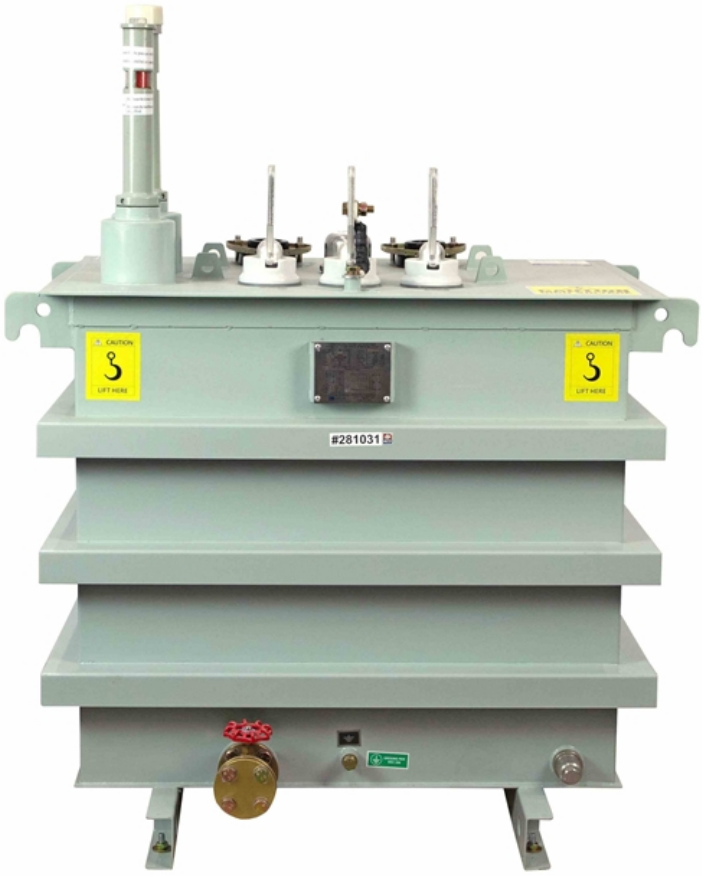
*Please note that numbers are approximate and subject to change

**Special Orders - Special Requirements**
Contact us for special requirements

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**The MT-PMUT-R7-3P-GMQ-167KVA-YE-BB-A6-BM-CS-Z-M1 from Larson Electronics is a Submersible Vault Distribution Transformer that offers powerful, reliable, and efficient power distribution in 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. This submersible vault power distribution system is designed for underground installation in concrete vaults where flooding may happen and the transformer may be temporarily submerged.**
***PLEASE NOTE: ANY FREE SHIPPING OFFERS DO NOT APPLY TO POWER DISTRIBUTION PANELS, TRANSFORMERS, OR SUBSTATIONS****
**Transformer Features:** With a transformer rating of 167 kVA, this submersible industrial transformer features a primary voltage of 13200GrdY/7620 Grounded Wye and a secondary voltage of three-phase 480Y/277. This transformer connects to a three-phase electrical grid system to provide three-phase low voltage power for indoor distribution. This transformer features porcelain high-voltage, dual load break bushings on the primary side and two bushings on the secondary side. Equipped with copper windings and a grain oriented steel core, this overhead distribution transformer consists of one coil and two core loops. Tin plated terminals on the primary and secondary side accepts copper or aluminum connections.
The MT-PMUT-R7-3P-GMQ-167KVA-YE-BB-A6-BM-CS-Z-M1 is air cooled and does not have fans or mounting provision for fans. This unit features a 65°C temperature rise for reduced heat waste, increased reliability and longer life. The submersible design makes this unit suitable for use in concrete vaults where flooding may occur or in other areas where the transformer may be temporarily submerged such as underground.
**Insulation Fluid:** The MT-PMUT-R7-3P-GMQ-167KVA-YE-BB-A6-BM-CS-Z-M1 features biodegradable natural vegetable oil ester insulating fluid. Internal marking is available for proper oil level monitoring. We offer transformers with mineral oil fluid, if needed.
**Gauges:** There are no gauges on this transformer. We can add liquid level, temperature, and pressure/vacuum gauges at an additional cost. Standard liquid level, temperature, and pressure/vacuum gauges are analog, manual reading types.
**Pressure Relief Device:** A relief device is not included with this transformer.
**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 is equipped with high voltage elbow surge arresters.
**Valves:** The MT-PMUT-R7-3P-GMQ-167KVA-YE-BB-A6-BM-CS-Z-M1 is equipped with fill and drain valves. The transformer can be filled via removing the top lid. A drain port w/ bolt plug is equipped.
**Protection Fuses:** This transformer does not contain fuses or circuit breakers. 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 underground

applications such as concrete vaults where flooding may occur. This submersible vault distribution transformer can be floor mounted.
**Benefits:** The MT-PMUT-R7-3P-GMQ-167KVA-YE-BB-A6-BM-CS-Z-M1 heavy-duty 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:** Underground installation applications, such as concrete vaults, where the transformer may be temporarily submerged due to flooding.
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)