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-PSTH-R7-3P-GVS-1MVA-DQ-HS-LS-B5-AM-CZ-Z-M1

1 MVA (1000 kVA) Hermetically Sealed Substation Transformer – 10000V Wye (Grounded) Primary, 230V Delta Secondary – ONAN, RAL 7035 Gray

Product ID: 332419

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



Image: MT-PSTH-R7-3P-GVS-1MVA-DQ-HS-LS-B5-AM-CZ-Z-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-PSTH-R7-3P-GVS-1MVA-DQ-HS-LS-B5-AM-CZ-Z-M1 Hermetically Sealed Transformer

Transformer Type: Substation Power Transformer, Hermetically Sealed
Transformer Configuration: Liquid Filled, Outdoor Substation Type
Transformer Feed Type: Radial Feed
Operation: Step-Down Operation (10kV → 0.23kV)
Phase: Three Phase
Capacity: 1 MVA (1000 KVA)
Vector Group: Yh-0 / Δ
Primary Voltage: 10000V
Primary Voltage Switch: N/A
Primary Voltage Class: 12 kV Class
Primary Phasor: Wye (Solidly Grounded)
Primary BIL: 75 kV
Secondary Voltage: 230V Delta
Secondary Voltage Class: 1 kV Class
Secondary Phasor: Delta
Secondary BIL: N/A <1kV Class
Frequency: 50 HZ
Temperature Rise: 65°C
Insulation Rating: Oil-Filled, Class A Insulation System

Ratings

Meets/Exceeds DOE 2016 Efficiency Ratings
Meets/Exceeds CSA Efficiency Ratings
Complies with ANSI / IEEE C57.12.00
Complies with ANSI / IEEE C57 12.28
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 C57.12.110
Complies with ANSI / IEEE C57.12.131
Complies with ANSI / IEEE C62.11
Complies with ANSI / IEEE C62.22
Complies with ANSI / IEEE 386
Complies with ANSI / IEEE C2
Complies with ANSI / IEEE C37.47
Complies with ANSI Z535.4
Complies with ASTM D3487
Complies with ASTM D6871
Complies with NEMA 260-1996

Cooling Class: ONAN; Self-Cooled
Forced Air (Fans): None
Tap Changer: Off-Load Tap Changer
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
Tap %: ±2 x 2.5%
Tap Changer Switch Rating: 12 kV Insulation Class, 10 kV Nominal, Off-Circuit Type, 50 Hz
Tap Changer Switch Location: High Voltage Side
Impedance (Typical): 5.5% ±10%
No-Load Current: 1.8%
Loss Category: ECO-2 (Reference 693 W)
Primary Connection Type: Live Front
Primary Termination Arrangement: Top or Side Mounted Porcelain Bushings
Primary Termination: Porcelain Bushings
Primary Connection Qty: (3)
Primary Bushing Rating: 12 kV Class, 75 kV BIL
Primary Neutral Connection: Solidly Grounded
Primary Surge Arrestors: N/A
Primary Surge Arrestor Voltage Rating: N/A
Primary Surge Arrestor MCOV Rating: N/A
Primary Over Current Protection (OCP): N/A
Primary Over Current Protection Method: N/A
Primary Over Current Protection Holder: N/A
Primary Grounding Provisions: N/A
Secondary Connection Type: Live Front
Secondary Termination Arrangement: Porcelain Bushings
Secondary Connections: (3) Phase Terminals
Secondary Connection Qty: (4)
Secondary Connection Supports: N/A
Secondary Over Current Protection (OCP): N/A
Secondary Neutral Connection: N/A
Secondary Grounding Provisions: (1) Ground Pad on Tank
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 ANSI/IEEE Standards
K-Factor Rating (Harmonic Mitigation): K-1 (Standard)
Pulse Drive Rating: Appropriate For Use With 6-Pulse Drive Equipment On Secondary Side
Insulation Fluid: Mineral Oil (Non-PCB)
Fluid (Oil) Capacity*: TBD
Fluid (Oil) Weight*: TBD
Oil Level Indicator: Analog Dial Gauge
Oil Temperature Indicator: Analog Dial Gauge
Pressure/Vacuum Indicator: Analog Dial Gauge
Pressure Relief Device: Included, Automatic Action
Fault Indicator: N/A
Gas Sampler Valve: N/A
Fill Valve: N/A
Fill Valve Location: N/A
Oil 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)

Complies with 10 CFR Part 431
Complies with CSA C2.1-06
Complies with CSA C50
Complies with CSA C88
Complies with CSA C88.1
Complies with CSA C88-16
Complies with CSA C227.4 & C227.5
Complies with CSA C802.1
Complies with CSA C802-3

Features

Hot Stick Included, HV Door Mount
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

Efficiency %: 98.00%
Based on transformer operating at 50% of nameplate base kVA.

Load Losses Based on 85°C Reference Temp.
No Load Loss (in watts): TBD
Full Load Loss (in watts) at 100%: TBD
Total Load Loss (in watts) at 100%: TBD

Total Losses at 55°C LL Temp.& 20°C NL Temp.
Total Load Loss (in watts) at 50%: TBD
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

Noise Level: <85 dB

Note: *Crated shipping in lieu of palletizing can be done upon request for an additional fee*

Elevation (Altitude): 3300ft (1000 meters) Above Sea Level
Core Material: Grain Oriented Steel
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: Hermetically Sealed Metal Tank
Enclosure Rating: Outdoor Rated (NEMA 3R Equivalent)
Seismic Rating: MSK-64 Scale, Minimum 6 Points
Paint Type: Weather Resistant Coating
Finish Color: RAL 7035 / 7037 / 7038
Mounting: Skid Type Base w/ Lifting Lugs
Conduit Opening: N/A
Tank Cover Access Handhole: N/A
Dimensions*: 96" L x 192" W x 72" H
Dry Weight (w/o Oil)*: -
Total Weight (Liquid Filled)*: 6,500 lbs
*Please note that numbers are approximate and subject to change

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-PSTH-R7-3P-GVS-1MVA-DQ-HS-LS-B5-AM-CZ-Z-M1 Hermetically Sealed Transformer from Larson Electronics offers powerful, reliable, and efficient power distribution in indoor or outdoor 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 air tight transformer does not have doors and must be installed in a contained or protected area away from public access.

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

Transformer Features: The industrial transformer features a primary voltage of three-phase 10000V Wye (solidly grounded) and a secondary voltage of three-phase 230V Delta. This system carries the following rating: 1 MVA (1000 KVA) at 50 Hz. The unit has a primary radial feed and live front primary connections. We also offer systems with loop feed and dead front primary connections.

This transformer features an off-load tap changer with two, ±2.5% taps above and two, ±2.5% taps below nominal voltage to allow small voltage adjustments. There are no load break switches, rapid rise relays, surge arresters, or protection fuses present on the system. Upstream protection is required.

The system features copper windings for high strength and superior thermal/electrical conductivity. This transformer consists of rectangular coils and a grain-oriented silicon steel core construction designed for efficient magnetic performance and reduced losses.

The unit has an impedance of 5.5% ±10%, no-load current of 1.8%, and meets ECO-2 loss category requirements. Sound level is rated at less than 85 dB at 2 meters.

Temperature Rise: This unit features a 65°C temperature rise and is rated for ambient conditions from -40°C to +40°C. At 65°C temperature rise, the transformer offers 1 MVA (1000 KVA). The transformer meets standard efficiency requirements. The combination of moderate temperature rise and high efficiency makes this unit suitable for substations, industrial sites,

utility distribution systems, and outdoor installations.

Insulation Fluid: The MT-PSTH-R7-3P-GVS-1MVA-DQ-HS-LS-B5-AM-CZ-Z-M1 features mineral oil (ONAN – Oil Natural Air Natural cooling). The transformer is hermetically sealed, eliminating the need for a conservator tank and reducing maintenance requirements.

Gauges: The following gauges are included with the system: oil level indicator, oil thermometer, and pressure/vacuum gauge. Standard oil level indicator, oil thermometer, and pressure/vacuum gauges are analog, manual reading types. These gauges do not have alarm contacts.

Fault Pressure Devices: The unit includes a pressure relief valve. Fault pressure devices and rapid rise relays are not included.

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 does not include primary or secondary surge arresters. We can offer models with provisions for customer-provided surge arresters upon request.

Load Breaker Switch: The transformer is not equipped with a load breaker switch.

Valves: The MT-PSTH-R7-3P-GVS-1MVA-DQ-HS-LS-B5-AM-CZ-Z-M1 is equipped with an oil drain valve, oil sampling valve, and pressure relief valve.

Protection Fuses: This transformer does not have 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.

Terminal Connections: The primary and secondary terminal connections are located on the top of the transformer. We can configure the location to be top located or side located for both the high voltage and low voltage sides.

Mount: This hermetically sealed transformer is equipped with a skid type base with lifting lugs.

Benefits: The MT-PSTH-R7-3P-GVS-1MVA-DQ-HS-LS-B5-AM-CZ-Z-M1 transformer offers many benefits to consumers. This transformer provides owners with significant energy savings while offering environmental benefits through reduced losses and sealed construction. Higher efficiency extends transformer life and reduces total 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, 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.

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

Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

- **HigResPic1**(https://www.larsonelectronics.com/images/product/HigResPic1/332419.JPG)
- **Video1**(https://www.youtube.com/watch?v=4-JEyYeYcn8)
- **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)