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-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-M1

12 MVA Hermetically Sealed Substation Transformer - 25000V Delta Primary, 13800Y/7968 Grounded Wye Secondary - ONAN , NEMA 4X, Light Gray

Product ID: 325159

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



Image: MT-PSTH-R7-3P-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-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-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-M1 Hermetically Sealed Substation Transformer

Transformer Type: Hermetically Sealed Substation
Transformer Configuration: Liquid Filled Hermetically Sealed
Transformer Feed Type: Radial Feed
Operation: Step-Down Operation (Not Approved for Step-Up)
Phase: Three Phase
Capacity: 12 MVA (12,000 KVA)
Vector Group: Dyn1
Primary Voltage: 25000V
Primary Voltage Switch: N/A
Primary Voltage Class: 25 kV Class
Primary Phasor: Delta
Primary BIL: 125 KV
Secondary Voltage: 13800Y/7968
Secondary Voltage Class: 15 kV Class
Secondary Phasor: Grounded Wye
Secondary BIL: 95 KV
Frequency: 60 Hz
Temperature Rise: 65°C
Insulation Rating: Class E Insulation - 120°C, 248°F

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
Forced Air (Fans): None
Radiators: Included, Removable, Tube Type
Tap Changer: 5-position De-Energized Tap Changer
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
Tap %: 2.5%
Tap Changer Switch Rating: 900-Amp, 25 kV
Tap Changer Switch Location: High Voltage (HV) [Left Side] Front Compartment
Impedance: 5.0-7.5% Typical
Primary Connection Type: Live Front
Primary Termination Arrangement: Side Mounted Terminal with bolted Air Terminal Chamber (Bottom Entry)
Primary Termination: Porcelain Bushings
Primary Connection Qty: (3) Primary Connections for use w/ NEMA Spade Terminals, 4-Hole Spade, Externally Clamped, Accepts up to (4) Double Lug connections with (2) cables per side of Spade connector
Primary Parking Stand Qty: N/A
Primary Bushing Rating: 25 kV Class, 125 kV BIL, 900A, Dead Break, IEEE 386 Color Green
Primary Neutral Connection: N/A
Primary Surge Arrestors: Included, (3) High Voltage Surge Arrestors
Primary Surge Arrestor Voltage Rating: 24 kV Class Arrestor
Primary Surge Arrestor MCOV Rating: 19.5 kVrms
Primary Overcurrent Protection (OCP): N/A
Primary Overcurrent Protection Method: N/A
Primary Overcurrent Protection Holder: N/A
Primary Grounding Provisions: (1) Stainless Steel NEMA Ground Bar attached to tank via (2) Welded Ground Bungs in HV Cabinet
Secondary Connection Type: Live Front
Secondary Termination Arrangement: Side Mounted Terminals with bolted Air Terminal Chamber (Bottom Entry)
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 Overcurrent Protection (OCP): N/A
Secondary Neutral Connection: Low Resistance Grounding with Resistor Mounted on Top of Transformer
Secondary Grounding Provisions: (1) Stainless Steel NEMA Ground Bar attached to tank via (2) Welded Ground Bungs in LV Cabinet
Metering Current Transformer (CT): N/A
Metering Panel: Included, Ammeter
Auxiliary Control Panel: N/A
Space Heaters: Included, in the Air Terminal Chambers and equipped with ammeter
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 CSA Standards Meets ANSI/IEEE Standards
K-Factor Rating (Harmonic Mitigation): K-1 (Standard)
Pulse Drive Rating: N/A
Insulation Fluid: Mineral Oil Insulating Fluid, Non-PCB Fluid
Fluid (Oil) Capacity*: 290 Gallons
Fluid (Oil) Weight*: 2,256 lbs
Liquid Level Indicator: Analog Dial Gauge, w/ Contacts
Temperature Indicator: Analog Dial Gauge, w/ Contacts
Pressure/Vacuum Indicator: Analog Dial Gauge, w/ Contacts

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

Features

Penta-head 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

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): 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

Pressure Relief Device: Included, Automatic Action
Sudden Pressure Relay: Included, w/ Contacts
Gas Pressure Test Connection: Included, Manual
Nitrogen Purge Nozzle: Included, w/ Shutoff Valve
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: 65 dBA

Elevation (Altitude): 3300ft (1000 meters) Above Sea Level
Core Material: Grain Oriented Steel
Tank Material: Coated Steel
Cabinet Material: Coated 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 4X Weatherproof Wiring Cabinet, Sealed Tank
Seismic Zone: Zone III, Class D
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: Light Gray ANSI 61
Mounting: Pad Mounted
Conduit Opening: Bottom Feed Underground Entry/Exit
HV Compartment Base Wireway Dimensions*: TBD
LV Compartment Base Wireway Dimensions*: TBD
MV/LV Compartment Cabinet Depth*: TBD
Tank Cover Access Handhole: N/A
Dimensions*: TBD
Dry Weight (w/o Oil)*: TBD
Total Weight (Liquid Filled)*: TBD
*Please note that numbers are approximate and subject to change

No-load Loss (Wattage) Test
Load Loss (Wattage) Test
Induced Voltage Withstand Test
Separate Source 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-PSTH-R7-3P-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-M1 Hermetically Sealed Substation 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 12,000 KVA (12 MVA), the industrial transformer features a rated primary voltage of three-phase 25000V Delta and a secondary voltage of three-phase 13800Y/7968 Grounded Wye. The unit has a primary radial feed for single installations 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 in

voltage.

Copper transformer winding material helps improve performance, reduce weight and lower cost. Compared to aluminum, copper windings have lower eddy losses due to higher resistivity. This transformer consists of a rectangular coil and a 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-PSTH-R7-3P-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-M1 is air cooled and does not have fans or mounting provisions for fans.

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 12,000 KVA (12 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-PSTH-R7-3P-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-M1 features mineral oil cooling fluid (ONAN). 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% 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.

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 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.

Surge arresters: This system comes with 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.

Valves: The MT-PSTH-R7-3P-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-M1 is equipped with a pressure relief valve, fill valve, and drain valve with sampler port.

Protection Fuses: This transformer does not contain bayonet protection fuses. We

recommend provisions for protection fuses when possible, as blown fuses may require more frequent oil changes.

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

Benefits: The MT-PSTH-R7-3P-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-M1 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.

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-PSTH-R7-3P-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-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-PSTH-R7-3P-DVD-12MVA-GMP-HNS-LNS-A6-BM-CZ-2ZZ-M1

Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

- **HigResPic1**(https://www.larsonelectronics.com/images/product/HigResPic1/325159.JPG)
- **HigResPic2**(https://www.larsonelectronics.com/images/product/HigResPic2/325159.JPG)
- **HigResPic3**(https://www.larsonelectronics.com/images/product/HigResPic3/325159.JPG)
- **Video1**(https://www.youtube.com/watch?v=KIzsyVtvSWM)
- **Video2**(https://www.youtube.com/watch?v=mN2qPmdLwW4)
- **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)