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-DXA-10MVA-GMF-HT-LT-X6-BMF-CZ-2ZZ-M1

10/12.5 MVA Hermetically Sealed Substation Transformer - 69000V Delta Primary, 24940Y/14400 Grounded Wye Secondary - ONAN/ONAF, Grey

Product ID: 335753



Image: MT-PSTH-R7-3P-DXA-10MVA-GMF-HT-LT-X6-BMF-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-DXA-10MVA-GMF-HT-LT-X6-BMF-CZ-2ZZ-M1 Hermetically Sealed Substation Transformer

Transformer Type: Substation Power Transformer, Hermetically Sealed
Transformer Configuration: Liquid Filled Hermetically Sealed Substation Transformer
Transformer Feed Type: Radial Feed
Operation: Approved for Step-Up and Step-Down Operations
Phase: Three Phase
Capacity: 10,000 kVA w/o Fans, 12,500 kVA w/ Fans (ONAN/ONAF)
Vector Group: Dyn1
Primary Voltage: 69 kV (69000V)
Primary Voltage Switch: N/A
Primary Voltage Class: 72 kV Class
Primary Phasor: Delta
Primary BIL: 350 kV
Secondary Voltage: 24940Y/14400V
Secondary Voltage Class: 25 kV Class
Secondary Phasor: Grounded Wye
Secondary BIL: 125 kV
Frequency: 60 Hz
Temperature Rise: 65°C
Insulation Rating: Class E Insulation - 120°C, 248°F
Cooling Class: ONAN/ONAF; Self-Cooled/Fan Cooled
Forced Air (Fans): Included
HV Tap Changer: 5-Position No-Load Tap Changer (NLTC)
HV Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
HV Tap %: 2.5% Taps

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
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

HV Tap Changer Switch Rating: 72 kV
HV Tap DETC Current Rating: 200A
LV Tap Changer: 33-Position On-Load Tap Changer (OLTC)
LV Tap %: (16) FCAN Above Taps, (16) FCBN Below Taps
LV Tap Changer Switch Rating: 25 kV
Impedance (Typical): 8-10%
Primary Connection Type: Live Front
Primary Termination Arrangement: Top Mounted Terminals
Primary Termination: Porcelain Bushings
Primary Connection Qty: (3) Primary Connections
Primary Bushing Rating: 72 kV Class, 350 kV BIL, 400A Continuous Current Rating
Primary Bushing Type: ABB Style Number 069W0412AN
Primary Bushing CT Qty: (3)
Primary Bushing CT Rating: 600:5 Ratio, MR Type, C400 (RF2.0) Accuracy
Primary Neutral Connection: N/A
Primary Surge Arrestors: Included Porcelain Surge Arrestors, type: Ohio Brass MVN060GA048AA
Primary Surge Arrestor Voltage Rating: 60 KV
Primary Surge Arrestor MCOV Rating: 48 KV
Primary Overcurrent Protection (OCP): N/A
Primary Overcurrent Protection Method: N/A
Primary Overcurrent Protection Holder: N/A
Primary Grounding Provisions: N/A
Secondary Connection Type: Live Front
Secondary Termination Arrangement: Top Mounted Porcelain Bushings
Secondary Connections: Porcelain Bushings
Secondary Connection Qty: (3)
Secondary Bushing Rating: 25 kV Class, 125 kV BIL, 1200A Continuous Current Rating
Secondary Bushing Type: -
Secondary Bushing CT Qty: (5)
Secondary Bushing CT Ratings: [(3) 1200:5 Ratio, MR Type, C400 (RF2.0) Accuracy], [(1) 900:5 Ratio, SR Type, C400 (RF2.0) Accuracy on (X1)] & [(1) 900:5 Ratio, SR Type, C400 (RF2.0) Accuracy on (X2)]
Secondary Overcurrent Protection (OCP): N/A
Secondary Neutral Connection: Included
Secondary Neutral winding BIL: 125 KV
Secondary Neutral Bushing Ratings: 25 KV Class, 125 KV BIL, 1200 A Continuous Current Rating
Secondary Neutral Bushing Type: -
Secondary Surge Arrestors: Included, Polymer Surge Arrestors
Secondary Surge Arrestor Voltage Rating: 24 KV
Secondary Surge Arrestor MCOV Rating: 19.5 KV
Secondary Grounding Provisions: (1) NEMA Ground Bar attached to tank via (2) Welded Ground Bungs
Metering Current Transformer (CT): N/A
Metering Panel: N/A
Auxiliary Control Panel: Included, for Fan Control
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: N/A
Insulation Fluid: Mineral Oil Insulating Fluid, Non-PCB Fluid
Fluid (Oil) Capacity*: TBD
Fluid (Oil) Weight*: TBD
Liquid Level Indicator: Analog Dial Gauge
Temperature Indicator: Analog Dial Gauge
Pressure/Vacuum Indicator: Analog Dial Gauge
Pressure Relief Device: Included, Automatic Action
Fault Indicator: Included, Buchholz Relay

Complies with CSA C88-16
Complies with CSA C227.4
Complies with CSA C802.1
Complies with CSA C802-3
Complies with CSA C227.5

Features
Penta-head Bolt Entry Assembly
Hot Stick Included, HV Door Mount
NEMA 3R Wiring Compartment
Hinged Front Compartment Doors, Padlockable
High-Fire Point Insulating Fluid
Non-PCB Insulating Fluid
Tamper Proof Housing

Efficiency %: ≥ 98.2%
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

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
Nitrogen Blanket: Included, Sealed
Winding Material: Copper
Ambient Temperature Rating: 40°C
Ambient Operating Temperature Range: -40°C to +40°C (-50°F to +104°F)

Sound Level: 66 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: Coated Steel
Portability: Lifting lugs, provisions for jacking under base, w/ base construction suitable for using rollers or skidding
Housing Type: Metal Casing Liquid Filled Transformer
Enclosure Rating: NEMA 3R Weatherproof Wiring Cabinet, Sealed Tank
Seismic Rating: Yes
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: ANSI 61 Grey
Mounting: Pad Mounted
Conduit Opening: N/A
Tank Cover Access Handhole: N/A
Dimensions*: 191.2" x 176.9" x 178.2"
Dry Weight (w/o Oil)*: 20701.41
Total Weight (Liquid Filled)*: 67924.42 lbs
*Please note that numbers are approximate and subject to change

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-DXA-10MVA-GMF-HT-LT-X6-BMF-CZ-2ZZ-M1 Hermetically Sealed Substation 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 make 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 69000V Delta and a secondary voltage of three-phase 24940Y/14400V Grounded Wye. This system carries the following ratings: 10,000 KVA without fans and 12,500 KVA with fans on. 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 a 5-position NLTC tap changer on the HV side with two ±2.5% taps above and two ±2.5% taps below to allow small changes in voltage.

The system features copper windings for high strength and thermal/electrical conductivity. 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-DXA-10MVA-GMF-HT-LT-X6-BMF-CZ-2ZZ-M1 has fans for forced air cooling. This system is completely sealed and features air tight construction. Designed for

long-term performance, the transformer is maintenance free.

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 10,000 KVA without fans or 12,500 KVA with fans on. 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-DXA-10MVA-GMF-HT-LT-X6-BMF-CZ-2ZZ-M1 features mineral oil insulation fluid (ONAN/ONAF). 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. These gauges do not have alarm contacts.

Fault Pressure Devices: There are no fault pressure devices on the unit. 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 surge arresters on the primary and secondary sides. 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 Breaker Switch: The transformer is not equipped with a load breaker switch.

Valves: The MT-PSTH-R7-3P-DXA-10MVA-GMF-HT-LT-X6-BMF-CZ-2ZZ-M1 is equipped with a pressure relief valve, fill valve, and drain valve with a sampler port.

Protection Fuses: This transformer does not have bayonet protection fuses on the primary side. For units without protection fuses, upstream 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 side located or side located for both the high voltage and low voltage sides.

Mount: This hermetically sealed transformer should be installed in a contained, fenced, or protected area.

Benefits: The MT-PSTH-R7-3P-DXA-10MVA-GMF-HT-LT-X6-BMF-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 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)

There are no Faqs