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MT-PSTH-R7-3P-DNF-2MVA-YE-HNS-LNS-A6-BMP-AZ-1ZZ-M1

2/2.3 MVA Hermetically Sealed Substation Transformer - 4160V Delta Primary, 480Y/277 Wye-N Secondary - Aluminum - ONAN - NEMA 4X -Light Grey

Product ID: 322262

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



Image: MT-PSTH-R7-3P-DNF-2MVA-YE-HNS-LNS-A6-BMP-AZ-1ZZ-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-DNF-2MVA-YE-HNS-LNS-A6-BMP-AZ-1ZZ-M1 Hermetically Sealed Transformer

Transformer Type: Substation Power Transformer, Hermetically Sealed
Transformer Configuration: Liquid Filled Pad Mounted
Transformer Feed Type: Radial Feed
Operation: Approved for Step-Up and Step-Down Operations
Phase: Three Phase
Capacity (Natural cooled): 2000 KVA
Capacity (Future fan cooled): 2300 KVA
Vector Group: Dyn1
Primary Voltage: 4160V
Primary Voltage Switch: N/A
Primary Voltage Class: 5 kV Class
Primary Phasor: Delta
Primary BIL: 60 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

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 12.35
Complies with CSA C802.1
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

Insulation Rating: Class E Insulation - 120°C, 248°F
Cooling Class: ONAN; Self-Cooled
Forced Air (Fans): N/A
Mounting Provisions For Fans And Radiators: Included
Tap Changer: 5-Position Off-Load Tap Changer
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
Tap %: 2.5% Taps
Tap Changer Switch Rating: 5 kV, 300A, 60kV BIL, Off-Load Rated
Tap Changer Switch Location: High Voltage (HV) [Left Side]
Impedance (@ 85°C): 5.75%
Primary Connection Type: Live Front
Primary Termination Arrangement: Side Mounted Terminals w/ Air Terminal Chamber to Ground
Primary Termination: Porcelain Bushings, w/ 2-hole NEMA Pad Terminals
Primary Connection Qty: (3) Primary Connections
Primary Bushing Rating: 15 kV Class, 110 kV BIL, 600A, 14" Creepage Distance
Primary Neutral Connection: N/A
Primary Surge Arrestors: N/A
Primary Surge Arrestor Voltage Rating: N/A
Primary Surge Arrestor MCOV Rating: N/A
Primary Overcurrent Protection (OCP): N/A
Primary Overcurrent Protection Method: N/A
Primary Overcurrent Protection Holder: N/A
Primary Current Transformer (CT): Included, (1) Per Each Phase, Relaying Accuracy, 400:5 Ratio
Primary Grounding Provisions: N/A
Secondary Connection Type: Live Front
Secondary Termination Arrangement: Side Mounted Terminals w/ Air Terminal Chamber to Ground
Secondary Termination: 8-hole NEMA Pad Terminals
Secondary Connection Qty: (4)
Secondary Connection Supports: N/A
Secondary Over Current Protection (OCP): N/A
Secondary Neutral Connection: Included, Side Mounted Terminals w/ Air Terminal Chamber, Mechanical Lugs Suitable For Terminating XHHW-2 Cables,, #8 AWG Size, 1-Core Cable
Secondary Current Transformer (CT): Included, (1) Per Each Phase, Relaying Accuracy, 3000:5 Ratio
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, 125 Vdc
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 Fluid Oil, Type II, Non-PCB
Fluid (Oil) Capacity*: 443 Gallons
Fluid (Oil) Weight*: 3305 lbs
Oil Level Indicator: Analog Dial Gauge, with alarm contacts
Oil Temperature Indicator: Analog Dial Gauge, with resettable indicator and alarm contacts
Winding Temperature Indicator: Included, with resettable indicator and contacts for control of cooling fans and alarm
Pressure/Vacuum Indicator: Analog Dial Gauge, with alarm contacts
Pressure Relief Device: Included, Automatic Action, mechanical type, self-resealing, with

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

Features

Pentahead Bolt Entry Assembly
Hot Stick Included, HV Door Mount
Non-PCB Insulating Fluid
Tamper Proof Housing
Hinged Front Compartment Doors, Pad Lockable
NEMA 4X 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): 2,500W (±15%)
Full Load Loss (in watts) at 100%: 18,300W (±15%)
Total Load Loss (in watts) at 100%: 20,800W (±15%)

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
Separate Source Voltage Withstand Test
Short-circuit Impedance Test
No-load Loss (Wattage) Test

alarm contacts
Sudden Pressure Relay: Included
Fault Indicator: N/A
Gas Sampler Valve: N/A
Fill Valve: Included
Fill Valve Location: N/A
Oil Drain Valve: 1" NPT Port w/ 5/8" NPT Sampler Valve
Drain Valve Location: Front Compartment
Space Heater: Included, Mounted In ATC
Nitrogen Blanket: Included w/ Purge Valve
Thermostat: Included, Mounted In ATC
Winding Material: Aluminum
Grounding Pads: Included, (2) Stainless steel
Ambient Temperature Rating: 40°C
Ambient Operating Temperature Range: -40°C to +40°C (-50°F to +104°F)

Sound Level: 67 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
Hardware Material: Stainless Steel 316-Type
Nameplate Material: Stainless 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 4X Weatherproof Wiring Cabinet, Sealed Tank
Seismic Rating: Yes
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: ANSI #61 Light Grey
Mounting: Skid Type Base w/ Lifting Lugs
Conduit Opening: Bottom Entry For Primary and Secondary Connections
Tank Cover Access Handhole: N/A
Dimensions*: 88.6"-L x 75"-W x 77.2"-H
Dry Weight (w/o Oil)*: 7,981 lbs
Total Weight (Liquid Filled)*: 9,744 lbs
*Please note that numbers are approximate and subject to change

Pressure Integrity Test
Load Loss (Wattage) Test
Induced Voltage Withstand 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
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The MT-PSTH-R7-3P-DNF-2MVA-YE-HNS-LNS-A6-BMP-AZ-1ZZ-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 4160V Delta and a secondary voltage of three-phase 480Y/277 Wye-N. This system carries the following ratings: 2 MVA [Natural Cooled] / 2.3 MVA [Future Fan Cooled]. The unit has a primary radial feed 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 in voltage.

The system features aluminum 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-DNF-2MVA-YE-HNS-LNS-A6-BMP-AZ-1ZZ-M1 is completely sealed and features air tight construction. Designed for long-term performance, the transformer is maintenance free.

Temperature Rise: This unit features a 65°C temperature rise for reduced heat waste, increased reliability, and longer life. At 65°C temperature rise, the transformer offers 2 MVA [Natural Cooled] / 2.3 MVA [Future Fan Cooled]. 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-DNF-2MVA-YE-HNS-LNS-A6-BMP-AZ-1ZZ-M1 transformer features mineral oil cooling fluid (ONAN) with a capacity of 443 gallons. We offer transformers with FR-3 oil or biodegradable fluids, if needed.

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.

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.

Sudden Pressure Relay: There is a sudden pressure relay on the unit. This safety component is designed for protection when a sudden increase in tank pressure occurs. The relay is suitable for detecting sudden pressure fluctuations above predetermined safe limits.

Surge arresters: This system does not have surge arresters on the primary or secondary side.

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

Valves: The MT-PSTH-R7-3P-DNF-2MVA-YE-HNS-LNS-A6-BMP-AZ-1ZZ-M1 is equipped with an oil drain valve, an oil sampling valve, and a pressure relief valve.

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 side of the transformer. We can configure the location to be top located or top 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-DNF-2MVA-YE-HNS-LNS-A6-BMP-AZ-1ZZ-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

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- **HigResPic1**(https://www.larsonelectronics.com/images/product/HigResPic1/322262.JPG)
- **Video1**(https://www.youtube.com/watch?v=4-JEyYeYcn8)
- **ISO 9001 Certification**(http://larsonelectronics.com/images/pdfdocs/ISO9001.PDF)
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