Larson Electronics LLC
9419 E US HWY 175, Kemp, TX 75143
Phone: 800.369.6671

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.498.3364

MT-PSTH-R7-3P-DMV-2.5MVA-GH-HNS-LNS-A5-BM-CZ-1ZZ-M1

2.5 MVA Hermetically Sealed Substation Transformer - 11000V Delta Primary, 420Y/242 Grounded Wye Secondary - ONAN, RAL 7031, NEMA 4X

Product ID: 312727



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-DMV-2.5MVA-GH-HNS-LNS-A5-BM-CZ-1ZZ-M1 Hermetically Sealed Transformer

Transformer Type: Substation Power Transformer, Hermetically Sealed
Transformer Configuration: Liquid Filled Pad Mounted
Transformer Feed Type: Radial Feed
Operation: Step-Down Operation (Not Approved for Step-Up)
Phase: Three Phase
Capacity: 2.5 MVA (2500 KVA)
Vector Group: Dyn11
Primary Voltage: 11000V
Primary Voltage Switch: N/A
Primary Voltage Class: 15 kV Class
Primary Phasor: Delta
Primary BIL: 95 kV
Primary Initial Symmetrical short-circuit current Ik: 20 kArms
Primary Asymmetrical peak short-circuit current Ip: 57 kAp
Primary Short circuit apparent power at primary: 400 MVA
Primary Maximum long term voltage tolerance: +5 %
Primary Maximum short term voltage tolerance: +30 %
Primary Duration of maximum short term voltage: 2 s
Primary Minimum long term voltage tolerance: -5 %
Primary Minimum short term voltage tolerance: -15 %
Primary Duration of minimum short term voltage: 2 s
Primary Maximum supply harmonic distortion (Continuous): 5 %THD
Primary Maximum supply harmonic distortion (Occasional): 8 %THD
Secondary Voltage: 420Y/242
Secondary Voltage Class: 1.2 kV Class
Secondary Phasor: Grounded Wye
Secondary BIL: 30 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 12.28
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 CSA C88-16
Complies with CSA C88.1
Complies with CSA C88
Complies with CSA C50
Complies with CSA C2.1-06
Complies with 10 CFR Part 431
Complies with NEMA 260-1996
Complies with CSA C802.1
Complies with CSA C802-3
Complies with CSA C227.4 & C227.5
Complies with ASTM D6871
Complies with ANSI / IEEE 386
Complies with ANSI / IEEE C2
Complies with ANSI / IEEE C37.47
Complies with ANSI Z535.4

Secondary Symmetrical short-circuit current Ik: 27 kArms

Secondary Asymmetrical peak short-circuit current Ip: 70 kAp

Frequency: 50 HZ
Winding Temperature Rise: 65°C
Oil Temperature Rise: 60°C
Insulation Rating: Class A Insulation - 105°C
Cooling Class: ONAN; Self-Cooled
Forced Air (Fans): None
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: 15 kV, Off-Load Rated
Tap Changer Switch Location: High Voltage (HV) [Left Side]
Short Circuit Impedance: 6.25% ±10 %

X/R ratio: 5

Resistance / phase primary: 7.65 /ph

Resistance / phase secondary: 0.268 x 10^2 /ph

Zero sequence impedance: 5.7%

Primary Connection Type: Live Front
Primary Termination Arrangement: Side Mounted Terminals, Enclosed in Cable Box
Primary Termination: Porcelain Bushings
Primary Connection Qty: (3) Primary Connections
Primary Bushing Rating: 15 kV Class, 95 kV BIL
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 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: Side Mounted Terminals, Enclosed in Cable Box
Secondary Connections: Porcelain Bushings
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) NEMA Ground Bar Attached to Tank via (2) Welded Ground Bungs
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
Fluid (Oil) Capacity*: 334.18 Gallons ± 10%
Fluid (Oil) Weight*: 2,480.2 lbs ± 10%
Oil Level Indicator: Analog Dial Gauge, Equalant
Oil Temperature Indicator: Analog Dial Gauge, Messko/ST160, w/ 4 Contacts, 110 VDC
Winding Temperature Indicator: Analog Dial Gauge, Messko/ST160, w/ 4 Contacts, 110 VDC
Pressure/Vacuum Indicator: Analog Dial Gauge
Pressure Relief Device: Included, Automatic Action, Messko/ST160, w/ 4 Contacts, 110 VDC
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, Equalant DN25
Drain Valve Location: Front Compartment

Complies with ASTM D3487

Features
Hot Stick Included, HV Door Mount
Penta-head Bolt Entry Assembly
High-Fire Point Insulating Fluid
Non-PCB Insulating Fluid
Tamper Proof Housing
Hinged Front Compartment Doors, Pad Lockable
NEMA 4X Wiring Compartment

Efficiency %: 99.14%
Based on transformer operating at 50% of nameplate base kVA.

Load Losses Based on 75°C Reference Temp.

No Load Loss (in watts): 3,000W +15%
Full Load Loss (in watts) at 100%: 31,000W +15%
Total Load Loss (in watts) at 100%: 34,000W +15%

Total Losses at 55°C LL Temp.& 20°C NL Temp.

Total Load Loss (in watts) at 50%: 7,800W +15%

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
Load Loss (Wattage) Test
Induced Voltage Withstand Test
Pressure Integrity Test
Temperature rise Test
Partial discharge Test
Zero sequence impedance Test

Winding Material: Copper
Coil Insulation Material : Enamel/ paper
Ambient Temperature Rating: 45°C
Ambient Operating Temperature Range: -14°C to +40°C
Sound Level: 58 dBA
Relative Humidity: 93%
Elevation (Altitude): 3300ft (1000 meters) Above Sea Level
Service Location: Outdoor
Core Material: Grain Oriented Silicon 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 4X Weatherproof Wiring Cabinet, Sealed Tank
Seismic Rating: Yes, 0.78g / 0.22 g concurrently (DE), 1.04g / 0.29 g concurrently (MCE)
Paint Type: Zinc Rich Primer Ching EMD 156 HS Primary Coat , 80 µm Thickness, Epoxy Ching EMD 30 TR Intermediate Coat, 200 µm Thickness, Polyurethane top coat Ching ADD 43 Final Coat, 80 µm Thickness, 360 µm Total Dry Film Thickness
Finish Color: RAL 7031
Mounting: Skid Mounted
Conduit Opening: Bottom Entry
Tank Cover Access Handhole: N/A
Dimensions*: 117.32"-L, 102.36"-W, 75.59"-H
Dry Weight (w/o Oil)*: TBD
Total Weight (Liquid Filled)*: 13,71.73 lbs
*Please note that numbers are approximate and subject to change

Dissolved gas in oil analysis 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: 1-903-498-3364
E-mail: sales@larsonelectronics.com

The MT-PSTH-R7-3P-DMV-2.5MVA-GH-HNS-LNS-A5-BM-CZ-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 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 11000V Delta and a secondary voltage of three-phase 420Y/242 Grounded Wye. This system carries the following rating: 2.5 MVA (2500 KVA). 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 tap changer with two, +/- 2.5% taps above and two, +/- 2.5% taps below to allow small changes for voltage. There are no load break switches, rapid rise relays, or protection fuses present on the system.

The system features copper windings for high strength and thermal/electrical conductivity. This transformer consists of rectangular coil and 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-DMV-2.5MVA-GH-HNS-LNS-A5-BM-CZ-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 40°C ambient temperature rating and a 65°C temperature rise for reduced heat waste, increased reliability, and longer life. At 65°C temperature rise, the transformer offers 2.5 MVA (2500 KVA). 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-DMV-2.5MVA-GH-HNS-LNS-A5-BM-CZ-1ZZ-M1 features mineral oil (ONAN).
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: 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 doesn't come with surge arresters on the primary or 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-DMV-2.5MVA-GH-HNS-LNS-A5-BM-CZ-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, 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 should be installed on supporting structures.
Benefits: The MT-PSTH-R7-3P-DMV-2.5MVA-GH-HNS-LNS-A5-BM-CZ-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.

Frequently Asked Questions (FAQ)