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MT-PSTH-R7-3P-GXK-33MVA-DMP-HT-LT-A6-BMF-CS-2ZZ-M1

33/37.5 MVA Hermetically Sealed Substation Transformer - 138000Y/79770 Grounded Wye Primary, 13800V Delta Secondary - ONAN/ONAF, Stainless Steel, Light Grey, NEMA 4X, Marine Rated, w/ Special Tests

Product ID: 341522

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



Image: MT-PSTH-R7-3P-GXK-33MVA-DMP-HT-LT-A6-BMF-CS-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-GXK-33MVA-DMP-HT-LT-A6-BMF-CS-2ZZ-M1 Substation Transformer

Transformer Type: Substation Power Transformer, Hermetically Sealed Type
Transformer Configuration: Liquid Filled Pad Mounted
Phase: Three Phase
Transformer Feed Type: Radial Feed
Capacity (w/o Fans): 33 MVA (33,000 KVA)
Capacity (w/ Fans): 37.5 MVA (37,500 KVA)
Primary Voltage: 138000Y/79770
Primary Voltage Class: 145 kV
Primary BIL: 550 kV
Primary Phasor: Grounded Wye
Secondary Voltage: 13800V
Secondary Voltage Class: 15 kV
Secondary BIL: 110 kV
Secondary Phasor: Delta
Vector Group: YNd11
Frequency: 60 Hz
Temperature Rise: 65°C
Forced Air (Fans): Included
Radiator: Included, Removable Cold Rolled Steel

Ratings

Listed for United States and Canada
30-Year Service Life
3-Year Warranty
Marine Rated

Tap Changer: 5-Position De-Energized Tap Changer
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
Tap %: 2.5% Taps
Short Circuit Impedance: 9.5-9.8%
Short Circuit Resistance: 0.37-0.38%
Symm. Short Circuit (A-B-C-N): 1.9 kA
Symm. Short Circuit (B-D-C): 19.2 kA
Symm. Short Circuit (A-B-C-N) Time: 2 sec.
Symm. Short Circuit (B-D-C) Time: 2 sec.
Primary Connection Type: Live Front
Primary Termination Arrangement: Top Mounted Porcelain Bushings, Suitable for marine atmosphere, Outdoor
Primary Connection: NEMA H-Spade Terminals
Primary Connection Qty: (3)
Primary Bushing Rating: 145 kV Class, 550 kV BIL
Primary Neutral Connection: Included
Primary Surge Arrestors: Included, (3) High Elbow Surge Arrestors
Primary Surge Arrestor Voltage Rating: 132 kV
Primary Surge Arrestor MCOV Rating: 106 kV
Primary Overcurrent Protection (OCP): N/A
Primary Overcurrent Protection Method: N/A
Primary Overcurrent Protection Holder: N/A
Primary Grounding Provisions: Included
Primary Line Current Transformer: Included, (3) units of 10VA 3-winding CT's with CT Ratio of 200/1, 200/1, 200/1 respectively and CI Ratings of 5P20, 5P20, 0.20 respectively
Primary Neutral Current Transformer: Included, (1) unit of 10VA 1-winding CT with CT Ratio of 200/1 and CI Rating of 5P20
Secondary Connection Type: Live Front
Secondary Termination Arrangement: Top Mounted Porcelain Bushings, Suitable for marine atmosphere, Outdoor
Secondary Connections: NEMA H-Spade Terminals
Secondary Connection Qty: (3)
Secondary Connection Supports: N/A
Secondary Overcurrent Protection (OCP): N/A
Secondary Neutral Connection: N/A
Secondary Grounding Provisions: (1) NEMA Ground Bar attached to tank via (2) Welded Ground Bungs
Secondary Current Transformer: Included, (1) unit of 10VA 1-winding CT with CT Ratio of 1600/1.5 and CI Rating of 3
Control Panel: Included, for Cooling System
Insulation Fluid: Mineral Oil Insulating Fluid, Non-PCB Fluid
Fluid Capacity: TBD
Cooling Class: ONAN/ONAF
Liquid Preservation System: Included, Sealed Tank Per IEEE C57.12.10
Liquid Level Gauge: Included, Magnetic Type w/ Contacts
Liquid Temperature Gauge: Included, Analog Type w/ Contacts
Winding Temperature Gauge: Included, Analog Type w/ Contacts
Pressure/Vacuum Gauge: Included, Analog Type
Fault Pressure Device: Included
Pressure Relief Device: Included, w/ Contacts
Oil Breather Assembly: Included, w/ integrated heater and Alarm
Fill Valve: Included
Drain Valve w/ Sampler Port: Included
Buchholz Relay: Included
Sudden Pressure Relay: Included
Load Break Switch: N/A
Winding Material: Copper
No Load Loss: 24.9 KW
No Load Power: 42 kVA

Factory Tests:
Winding Resistance Test
Voltage Ratio Error Test
Insulation Resistance Test
Short-circuit Impedance Test
Separate Source Voltage Withstand Test
Induced Voltage Withstand Test
No-load Loss (Wattage) Test
Load Loss (Wattage) Test
Pressure Integrity Test

Special Tests:
Sweep Frequency Response Analysis (SFRA)
Partial Discharge Measurement
Dielectric Power Factor Test of Bushing and Transformer

Power Consumption of the Cooling:1.1 kW
Vacuum Proof: Included
Core Material: Grain Oriented Steel
Tank Material: 304 Stainless Steel
Cabinet Material: 304 Stainless 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: Metal Casing Liquid Filled Transformer
Enclosure Rating: NEMA 4X Weatherproof Wiring Cabinet, Sealed Tank, Marine Rated
Ambient Temperature Rating: 50°C
Relative Humidity: Up to 100%
Corrosion Category:CX Environment
Sound Level: TBD
Cabinet Type: No Doors
Paint Type: UV-resistant finish coating, Marine-grade
Finish Color: ANSI #70 Light Grey
Mounting: Skid Type Base w/ Lifting Lugs
Conduit Opening: N/A
Dimensions: 228" x 162" x 245"
Weight: 178,000 Lbs

Acoustic Noise Test
Oil Quality Analysis
Vibration Assessment

Special Orders - Special Requirements
Contact us for special requirements
Toll Free: 1-800-369-6671
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E-mail: sales@larsonelectronics.com

The MT-PSTH-R7-3P-GXK-33MVA-DMP-HT-LT-A6-BMF-CS-2ZZ-M1 Hermetically Sealed Substation Transformer from Larson Electronics offers powerful, reliable and efficient power distribution in 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 transformer ensures extra space for storing oil and is equipped with breathers to facilitate air flow. The conservator transformer should be installed on supporting structures.

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 138000Y/79770 Grounded Wye and a secondary voltage of three-phase 13800V Delta. This system is rated for 33 MVA (33,000 KVA) [Natural Cooled] / 37.5 MVA (37,500 KVA) [Fan Cooled]. We offer systems with loop or radial feed, as well as dead front or 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 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-GXK-33MVA-DMP-HT-LT-A6-BMF-CS-2ZZ-M1 has fans for forced air cooling. This non-sealed system features breathers for cooling when operating temperatures increase.

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 33 MVA (33,000 KVA) [Natural Cooled] / 37.5 MVA (37,500 KVA) [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-GXK-33MVA-DMP-HT-LT-A6-BMF-CS-2ZZ-M1 features mineral oil 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.

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 side. Surge arresters are 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 load breaker switches.

Valves: The MT-PSTH-R7-3P-GXK-33MVA-DMP-HT-LT-A6-BMF-CS-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.

Mount: This substation transformer should be installed on supporting structures, such as the roof of the transformer main tank.

Benefits: The MT-PSTH-R7-3P-GXK-33MVA-DMP-HT-LT-A6-BMF-CS-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

Warranty: 24 Months.

Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

- **HigResPic1**(https://www.larsonelectronics.com/images/product/HigResPic1/341522.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)