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MT-PSTH-R7-3P-DRJ-3.75MVA-YMQ-HT-LS-A6-CMF-CZ-2ZZ-M1

3.75 / 4.687 MVA Hermetically Sealed Substation Transformer, 22900V Delta Primary, 13200Y/7620V Wye-N Secondary - ONAN/ONAF, Mineral Oil - Sky Grey

Product ID: 304986

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



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-DRJ-3.75MVA-YMQ-HT-LS-A6-CMF-CZ-2ZZ-M1 Hermetically Sealed Transformer	Ratings
Transformer Type: Hermetically Sealed Transformer	Meets/Exceeds DOE 2016 Efficiency Ratings
Transformer Configuration: Liquid Filled	Meets/Exceeds CSA Efficiency Ratings
Transformer Feed Type: N/A	Complies with ANSI / IEEE C57.12.00
Operation: Step-Down Operation (Not Approved for Step-Up)	Complies with ANSI / IEEE C57 12.28
Phase: Three Phase	Complies with ANSI / IEEE C57 12.29
Capacity (@ 55oC): 3.75 MVA (3,750 KVA) [Natural Cooled] / 4.687 MVA (4,687 KVA) [Fan Cooled]	Complies with ANSI / IEEE C57 12.34
Capacity (@ 65^{o}C): 4.2 MVA (4,200 KVA) [Natural Cooled] / 5.25 MVA (5,250 KVA) [Fan Cooled]	Complies with ANSI / IEEE C37.47
Vector Group: DYN1	Complies with ANSI / IEEE C57 12.35
Primary Voltage: 22900V	Complies with ANSI / IEEE C57.12.70
Primary Voltage Switch: N/A	Complies with ANSI / IEEE C57.12.110
Primary Voltage Class: 25 kV Class	Complies with ANSI / IEEE C57.12.131
Primary Phasor: Delta	Complies with ANSI / IEEE C62.11
Primary BIL: 125 KV	Complies with ANSI / IEEE C62.22
Secondary Voltage: 13200Y/7620V	Complies with ANSI / IEEE 386
Secondary Voltage Class: 15 kV Class	Complies with ANSI / IEEE C2
Secondary Phasor: Wye-N	Complies with ANSI Z535.4
Secondary BIL: 95 KV	Complies with 10 CFR Part 431
Frequency: 60 Hz	Complies with ASTM D3487
Temperature Rise: 55/65°C	Complies with ASTM D6871
Insulation Rating: Class A Insulation	Complies with NEMA 260-1996
Cooling Class: ONAN/ONAF	Complies with CSA C802-3
Forced Air (Fans): Included	Complies with CSA C2.1-06

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Cooling Radiator: Included, Has Upper And Lower Drain Plugs, ANSI #70 Sky Grey
H.V Tap Changer: 5-Position De-energized Tap Changer (DETC)
H.V Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
H.V Tap %: 2.5%
H.V Tap Changer Switch Rating: 25 KV
H.V Tap Changer Switch Location: H.V Side, Top Mounted
Impedance (Typical): 8.36%
Primary Connection Type: Live Front
Primary Termination Arrangement: Inline, Top Mounted
Primary Termination: NEMA 4-Hole Pad connectors
Primary Bushing Qty: (3)
Primary Bushing Rating: 35 KV Class, 110 KV BIL, Porcelain, ANSI #70 Sky Grey
Primary Neutral Connection: N/A
Primary Surge Arrestors: Included, (3) Metal Oxide Polymer Housed Station Class
Primary Surge Arrestor Voltage Rating: 24 KV
Primary Surge Arrestor MCOV Rating: 24 KV
Primary Over Current Protection (OCP): Included
Primary Bushing CT: Included, (1) Per Each Phase,600:5 Ratio MR, C400 Accuracy Class
Primary Over Current Protection Holder: N/A
Primary Grounding Provisions: N/A
Secondary Connection Type: Live Front
Secondary Termination Arrangement: Inline, Side Mounted
Secondary Termination: NEMA 4-Hole Pad connectors
Secondary Bushing Qty: (4)
Secondary Bushing Rating: 25 KV Class, 110 KV BIL, Porcelain, ANSI #70 Sky Grey
Secondary Neutral Connection: Included
Secondary Over Current Protection (OCP): Included
Secondary Bushing CT: Included, (2) Per Each Phase; (1200:5 Ratio MR, C400 Accuracy Class) & (1200:600 Ratio, 0.3-B1.8 Metering Accuracy)
Secondary Surge Arrestors: Included, (3) Metal Oxide Polymer Housed Station Class
Secondary Surge Arrestor Voltage Rating: 14 KV
Secondary Surge Arrestor MCOV Rating: 8 KV
Secondary Grounding Provisions: Included, (2) Grounding Pads Located On Diagonally Opposite Corners Of The Tank Base For Grounding Of The Transformer With Bolt Type Connectors For Connection To 2/0 to 500 KCMIL Stranded Copper conductor
Neutral Bushing CT: Included, (1) 600:5 Ratio MR, C400 Accuracy Class
Metering Current Transformer (CT): Included
Metering Panel: Included
Auxiliary Control Panel : Included, contains terminal block for fan and accessories
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 Fluid - Non-PCB Fluid
Fluid (Oil) Capacity*: TBD
Fluid (Oil) Weight*: TBD
Liquid Level Indicator: Included, Messko, Type: MTO-STF 160 RM/1C
Winding Temperature Indicator: Included Thermometer, Messko, Type: MT-ST/60 VMR/4C/4M
Liquid Temperature Indicator: Included Thermometer, Messko, Type: MT-ST/60 RM/2C/2M
Pressure/Vacuum Indicator: Included, With Scale Range Of Plus Or Minus 10 PSI
Rapid Rise Relay: Included, (63) Qualitrol 910-013-03
Pressure Relief Device: Included, Messko, MPre C Type: 685-10-31-N01-01
Nitrogen Oil Preservation System: Included With A Nitrogen Tank And All Necessary Accessories
Pressure Reducer: Included, Three-Stage
Gas Relay: Included
Fault Indicator: Included, Buchholz Relay
Gas Sampler Valve: N/A
Fill Valve: Included
Fill Valve Location: Top Mounted
Drain Valve: Included W/ Sampling Port
Drain Valve Location:
Winding Material: Copper
Ambient Temperature Rating: 40°C

Complies with CSA C802.1
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

Features

Hot Stick Included, HV Door Mount
Pentahead 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

Efficiency %: N/A
Based on transformer operating at 50% of nameplate base kVA.

Load Losses Based on 75°C Reference Temp.
Off-Load Loss (in watts): 21800W, ±10% Tolerance
On-Load Loss (in watts): 120890W, ±10% Tolerance
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 Stenciled (Painted) KVA Rating
Externally Stenciled (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
Pressure Integrity Test
Short-circuit Impedance Test
Separate Source Voltage Withstand Test
No-load Loss (Wattage) Test
Induced Voltage Withstand Test
Load Loss (Wattage) Test

Shipping:

Shipped on pallet on open flatbed
Palletized on Wooden Pallet w/ Skid Pockets
Pallet Skid Facing Outward Sides of Truck

Ambient Operating Temperature Range: -40°C to +45°C

Note: Crated shipping in lieu of palletizing can be done upon request for an additional fee

Sound Level: N/A
Elevation (Altitude): 3300ft (1000 meters) Above Sea Level
Core Material: Silicon Steel, Grain Oriented
Tank Material: Steel
Cabinet Material: Steel
Base Platform Material: Steel
Hardware 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 3R Weatherproof
Seismic Rating: N/A
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: ANSI #70 Sky Grey
Mounting: Supporting Structures
Conduit Opening: Bottom
Tank Cover Access Handhole: Included
Dimensions*: 185”L x 159”W x 161”H
Weight*: 89,560 Lbs
*Please note that numbers are approximate and subject to change

Special Orders - Special Requirements
Contact us for special requirements
Toll Free: 1-800-369-6671
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The MT-PSTH-R7-3P-DRJ-3.75MVA-YMQ-HT-LS-A6-CMF-CZ-2ZZ-M1 Hermetically Sealed 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 makes 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 22900V Delta and a secondary voltage of three-phase 13200Y/7620V Wye-N. This system is rated for 3.75 MVA (3,750 KVA) natural cooled, 4.687 MVA (4,687 KVA) fan cooled. We offer systems with loop or radial feed, as well as dead front or live front primary connections. The transformer features a 5-position off-load tap changer with two, +/- 2.5% taps above and two, +/- 2.5% taps below to allow small changes for voltage. There is a rapid rise relay 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-DRJ-3.75MVA-YMQ-HT-LS-A6-CMF-CZ-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 55/65°C temperature rise for reduced heat waste, increased reliability and longer life. At 55°C temperature rise, the transformer offers 3.75 MVA (3,750 KVA) natural cooled, 4.687 MVA (4,687 KVA) fan cooled. At 65°C temperature rise, the transformer offers 4.2 MVA (4,200 KVA) natural cooled, 5.25 MVA (5,250 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 outdoor areas.

Insulation Fluid: The MT-PSTH-R7-3P-DRJ-3.75MVA-YMQ-HT-LS-A6-CMF-CZ-2ZZ-M1 features mineral oil fluid (ONAN/ONAF). We offer transformers with biodegradable fluid 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% load conditions, which helps preserve the transformer's lifespan and performance.
Gauges: The following gauges are included with the system: liquid level indicator, Fluid temperature indicator, Winding Temperature Indicator, pressure/vacuum indicator. Standard liquid level, temperature and pressure/vacuum gauges are analog dial types.
Fault Pressure Devices: There is a Buchholz relay fault indicator on this unit.
Gas Relay: A gas relay with indicators for light gas and heavy gas is included with the transformer. The relay includes two Dry Type Form C auxiliary contacts (1NO + 1NC) for remote alarm when pressure rises above in-field set pressure located in auxiliary control cabinet.
Surge arresters: This system comes with surge arresters on both the primary and secondary sides.
Load Break Switch: The transformer is not equipped with a load break switch.
Valves: The MT-PSTH-R7-3P-DRJ-3.75MVA-YMQ-HT-LS-A6-CMF-CZ-2ZZ-M1 is equipped with 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.
Mount: This hermetically sealed transformer is equipped with a skid type base with lifting lugs.
Benefits: The MT-PSTH-R7-3P-DRJ-3.75MVA-YMQ-HT-LS-A6-CMF-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)

Warranty: 24 Months.

Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

- **HigResPic1**
- **Video1**
- **ISO 9001 Certification**
- **Business Certificate**
- **Shipping Time Map**