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MT-PSTH-R7-3P-GTD-15MVA-GMQ-HT-LT-X6-F.AMFF-CZ-2ZZ-M1

15/20/25/28 MVA Hermetically Sealed Substation Transformer - 92000Y/53116 Grounded Wye Primary, 13200Y/7621 Grounded Wye Secondary, 7621V Delta Tertiary Winding, ONAN/ONAF/ONAF, Grey

Product ID: 315137



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-GTD-15MVA-GMQ-HT-LT-X6-F.AMFF-CZ-2ZZ-M1 Hermetically Sealed Transformer	Ratings
Transformer Type: Power Transformer Substation, Hermetically Sealed Type	Meets/Exceeds DOE 2016 Efficiency Ratings
Transformer Configuration: Liquid Filled Pad Mounted	Meets/Exceeds CSA Efficiency Ratings
Transformer Feed Type: Radial Feed	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 (w/o Fans @ 45°C): 15 MVA (15,000 KVA)	Complies with ANSI / IEEE C57 12.34
Capacity (w/ Fans, Stage 1, @ 45°C): 20 MVA (20,000 KVA)	Complies with CSA C802.1
Capacity (w/ Fans, Stage 2, @ 45°C): 25 MVA (25,000 KVA)	Complies with CSA C802-3
Capacity (w/ Fans, Stage 2, @ 55°C): 28 MVA (28,000 KVA)	Complies with CSA C2.1-06
Vector Group: YNyn0+d1	Complies with ANSI / IEEE C57 12.35
Primary Voltage: 92000Y/53116	Complies with ANSI / IEEE C57.12.70
Primary Voltage Switch: N/A	Complies with ANSI / IEEE C57.12.110
Primary Phase Voltage Class: 115 kV Class	Complies with ANSI / IEEE C57.12.131
Primary Phasor: Grounded Wye	Complies with ANSI / IEEE C62.11
Primary Phase Winding BIL: 450 KV	Complies with ANSI / IEEE C62.22
Secondary Voltage: 13200Y/7621	Complies with ANSI / IEEE 386
Secondary Phase Voltage Class: 15 kV Class	Complies with ANSI / IEEE C2

Secondary Phasor: Grounded Wye

Secondary Phase Winding BIL: 110 KV

Tertiary Winding: Included

Tertiary Winding Voltage: 7621V Delta

Tertiary Winding BIL: 95 kV

Tertiary Rating: 5.25 MVA

Winding Insulation Material: Thermally upgraded oil-paper-enamel

Frequency: 60 Hz

Temperature Rise: 45/55°C

Insulation Rating: Class E Insulation - 120°C, 248°F

Cooling Class: ONAN/ONAF/ONAF

Forced Air (Fans): Included, Two-Stages, 120/240V-1Ph rating, totally Enclosed, Individually Protected Type, Fan Blades Of One-Piece Cast aluminum, Galvanized Fan Guards. Fan Motors Are Totally Enclosed And Furnished Without Centrifugal Switches.
Cooling Radiators: Included, Demountable, hot-dipped galvanized steel, w/ Isolation valves, Munsell™ 5BG 7.0/0.4 Light Grey (ANSI #70)

HV Tap Changer: 5-Position De-Energized Tap Changer (DETC)

HV Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps

HV Tap %: 2.5%

HV Tap Changer Switch Rating: 2000-Amp, 115 kV, De-energized Rated

HV Tap Changer Switch Location: High Voltage (HV) [Left Side]

LV Tap Changer: 33-Position On-Load Tap Changer (OLTC), ASEA Typr UZERT 200/300

LV Tap Qty: (16) FCAN Above Taps, (16) FCBN Below Taps

LV Tap %: 0.625%

LV Tap Changer Switch Rating: 15 kV, On-Load Rated

LV Tap Changer Switch Location: Low Voltage (HV) [Right Side]

Impedance (@ 15 MVA): 7.46%

Primary Connection Type: Live Front

Primary Termination Arrangement: Top Mounted Terminals

Primary Termination: Porcelain Bushing, Condenser Type, Draw-lead connection, Oil-impregnated paper Internal Insulation, Hermetically sealed

Primary Connection Qty: (4) Primary Connections

Primary Phase Bushing Rating: 115 KV Class, 550 kV BIL

Primary Neutral Bushing Connection: Included, 115 KV Class, 550 kV BIL

Primary Bushing Current Transformer: Included, [(1) 600/5 MR-C800 ANSI accuracy- 8 Ohms Burden-4.0 Thermal Rating Factor, (1) 2000/5 MR-C800 ANSI accuracy- 8 Ohms Burden-4.0 Thermal Rating Factor, (1) 600/5 MR-0.15sB1.8 ANSI accuracy- 1.8 Ohms Burden-4.0 Thermal Rating Factor] For Each Bushing

Primary Neutral Bushing Current Transformer: N/A

Primary Surge Arrestors: Included, Station Class

Primary Surge Arrestor Voltage Rating: 96 KV

Primary Surge Arrestor MCOV Rating: 76 KV

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 Surge Arrestors: Included, Station Class

Secondary Surge Arrestor Voltage Rating: 15 KV

Secondary Surge Arrestor MCOV Rating: 12.7 KV

Secondary Termination Arrangement: Top Mounted Terminals

Complies with ANSI / IEEE C37.47

Complies with ASTM D3487

Complies with ASTM D6871

Complies with CSA C227.5

Complies with CSA C227.4

Complies with CSA C88-16

Complies with CSA C50

Complies with CSA C88.1

Complies with CSA C88

Complies with NEMA 260-1996

Complies with ANSI Z535.4

Complies with 10 CFR Part 431

Features

Penta-head Bolt Entry Assembly

Hot Stick Included, HV Door Mount

Tamper Proof Housing

Non-PCB Insulating Fluid

NEMA 3R Wiring Compartment

Efficiency %: 99.50%

Based on transformer operating at 50% of nameplate ba

Load Losses Based on 85°C Reference Temp.

Secondary Termination: Porcelain Bushing, Condenser Type, Draw-lead connection, Oil-impregnated paper Internal Insulation, Hermetically sealed

Secondary Bushing Rating: 15 KV Class, 110 kV BIL

Secondary Connection Qty: (4) Secondary Connections

Secondary Phase Bushing Minimum creepage distance: 0.98 inch/kV

Secondary Connection Supports: N/A

Secondary Bushing Current Transformer: Included, [(2) 2000/5 MR-C800 ANSI accuracy- 8 Ohms Burden-4.0 Thermal Rating Factor, (1) 600/5 MR-0.15sB1.8 ANSI accuracy- 1.8 Ohms Burden-4.0 Thermal Rating Factor] For Each Bushing

Secondary Neutral Bushing Current Transformer: Included, (1) 1200/5 MR-C800 ANSI accuracy- 8 Ohms Burden-4.0 Thermal Rating Factor

Secondary Over Current Protection (OCP): N/A

Secondary Neutral Bushing Connection: Included, 15 KV Class, 110 kV BIL

Secondary Grounding Provisions: (1) NEMA Ground Bar attached to tank via (2) Welded Ground Bungs

Metering Current Transformer (CT): N/A

AC Power Supply: Included, 120/240 Vac, 1-Ph, 60 Hz

DC Control Circuit: 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: N/A

Insulation Fluid: Mineral Oil Insulating Fluid, Type II, Non-PCB Fluid

Fluid (Oil) Capacity*: 4228 Gallons In Main Tank, 154 Gallons In OLTC Compartment, 252 Gallons In OLTC Compartment, 207 Gallons In Conservator Tank.

Fluid (Oil) Weight*: 31710 Lbs In Main Tank, 1155 Lbs Gallons In OLTC Compartment, 1890 Lbs Gallons In OLTC Compartment, 1555 Lbs Gallons In Conservator Tank.

Transformer monitoring and control unit (TMCU): Included, Schweitzer, Model: SEL2414

Liquid Level Indicator: Analog Dial Gauge

Mechanical Top Oil Temperature Indicator (w/ Temperature Sensor): Included, Messko, Model: MTST160/ RM (TT) 0-160C

Mechanical Winding Temperature Indicator (w/ Temperature Sensor): Included, Messko, Model: MTST160W (R)/RM (TT) – 0-180C

Pressure/Vacuum Indicator: Analog Dial Gauge

Pressure Relief Device: Included, Messko, Model: MPREC (10psi)

Fault Indicator: Included, Buchholz Relay

Sudden Pressure Relay: Included

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

No Load Loss (in watts): 35,000W

Full Load Loss (in watts) at 100%: 140,000W

Total Load Loss (in watts) at 100%: 175,000W

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

Total Load Loss (in watts) at 50%: 44,000W

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:

No-load losses for distribution transformer

Control (auxiliary) and cooling consumption losses

Temperature rise Test

Dissolved gas in oil analysis (DGA)

Audible sound level Test

Short-circuit capability test

Proof of the design capability to withstand, without dama
mechanical and thermal stresses caused by short-circuit

Winding insulation resistance Test

Overload Test

Core insulation resistance Test

Insulation power factor and capacitance Test

Single-phase excitation tests on the rated voltage conne

Lightning impulse Test

Drain Valve Location: Front Compartment

Winding Material: Copper

Ambient Temperature Rating: 50°C

Ambient Operating Temperature Range: -20°C to +50°C

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

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: Per IEEE 693-2005 High Seismic Level

Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating

Finish Color: Munsell™ 5BG 7.0/0.4 Light Grey (ANSI #70)

Mounting: Pad Mounted

Conduit Opening: N/A

Tank Cover Access Handhole: N/A

Dimensions*: 267.72"-W x 181.1"-D x 212.6"-H

Dry Weight (w/o Oil)*: TBD

Total Weight (Liquid Filled)*: 131,924 Lbs

*Please note that numbers are approximate and subject to change

Front-of-wave impulse Test

Partial discharge test

Sweep frequency response analysis (SFRA)

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 do request for an additional fee

Special Orders - Special Requirements

Contact us for special requirements

Toll Free: 1-800-369-6671

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Fax: 1-903-498-3364

E-mail: sales@larsonelectronics.com

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 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 92000Y/53116 Grounded Wye and a secondary voltage of three-phase 13200Y/7621 Grounded Wye. This system is rated for 15 MVA (15000 KVA) natural convection, 20 MVA (20,000 KVA) with first stage fan cooled, and 25 MVA (28,000 KVA) second stage 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 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-GTD-15MVA-GMQ-HT-LT-X6-F.AMFF-CZ-2ZZ-M1 has fans for forced air cooling.

Temperature Rise: This unit features 45/55°C temperature rise for reduced heat waste, increased reliability and longer life. At 45°C temperature rise, the transformer offers 15 MVA (15,000 KVA) natural convection, 20 MVA (20,000 KVA) with first stage fan cooled, and 25 MVA (25,000 KVA) second stage fan cooled. At 55°C temperature rise, the transformer offers 28 MVA (28,000 KVA) with 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-GTD-15MVA-GMQ-HT-LT-X6-F.AMFF-CZ-2ZZ-M1 features mineral oil cooling fluid (ONAN/ONAF/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, fault indicator, 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 is a Buchholz relay fault indicator on this unit.

Rapid Rise Relay: There is a rapid rise relay 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 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-GTD-15MVA-GMQ-HT-LT-X6-F.AMFF-CZ-2ZZ-M1 is equipped with a pressure relief valve, fill valve, and drain valve with 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 hermetically sealed substation should be installed on supporting structures, such as the roof of the transformer main tank.
Benefits: The MT-PSTH-R7-3P-GTD-15MVA-GMQ-HT-LT-X6-F.AMFF-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)