

MT-PSTC-R7-3P-DMP-12.5MVA-GNZ-HT-LS-A6-CM-CZ-2ZZ-M1

**12.5 MVA Conservator Substation - 13800V Delta Primary, 6900Y/3984 Grounded Wye Secondary
- ONAN, Grey**

Product ID: 301212



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-PSTC-R7-3P-DMP-12.5MVA-GNZ-HT-LS-A6-CM-CZ-2ZZ-M1 Conservator Transformer

Transformer Type: Substation Power Transformer, Conservator Type

Transformer Configuration: Liquid Filled Pad Mounted

Transformer Feed Type: Radial Feed

Operation: Approved for Step-Up and Step-Down Operations

Phase: Three Phase

Capacity: 12.5 MVA (12,500 KVA) / 16 MVA (16,000 KVA)

Vector Group: DYN1

Primary Voltage: 13800V

Primary Voltage Switch: N/A

Primary Voltage Class: 15 kV Class

Primary Phasor: Delta

Primary BIL: 110 KV

Secondary Voltage: 6900GrdY/3984

Secondary Voltage Class: 15 kV Class

Secondary Phasor: Grounded Wye

Secondary BIL: 110 KV

Frequency: 60 Hz

Temperature Rise: 55/65°C

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

Cooling Class: ONAN/ONAF

Forced Air (Fans): Included, (1) 120/208Vac, 1 phase

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: 2000-Amp, 72.5 kV, Off-Load Rated

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

Impedance (Typical): 8% +/- 7.5%

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 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

Complies with 10 CFR Part 431

Complies with CSA C2.1-06

Complies with CSA C50

Complies with CSA C88

Complies with CSA C88.1

Complies with CSA C88-16

Complies with CSA C227.4 & C227.5

Complies with CSA C802.1

Primary Connection Type: Live Front
Primary Termination Arrangement: Top Mounted Terminals
Primary Termination: Top Mounted Porcelain Bushings
Primary Connection Qty: (3) Primary Connections
Primary Bushing Rating: 72.5 kV Class, 350 kV BIL
Primary Neutral Connection: N/A
Primary Surge Arrestors: Included, (3)
Primary Surge Arrestor Voltage Rating: 72kV, Station class metal oxide gapless
Primary Surge Arrestor MCOV Rating: 57kV
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 Porcelain Bushings
Secondary Connections: Externally Clamped One-Piece Epoxy Bushings Copper Threaded Studs w/ NEMA Spade Terminals
Secondary Connection Qty: (3) Externally Clamped One-Piece Epoxy Bushings Copper Threaded Studs
Secondary Connection Supports: Flanged Throat
Secondary Over Current Protection (OCP): N/A
Secondary Neutral Connection: (1) Phase rated voltage 8kV, BIL rating 110kV
Secondary Grounding Provisions: (4) NEMA Ground Bar attached to tank via (2) Welded Ground Bungs
Metering Current Transformer (CT): Included, (2) Single Ratio 50:5, Accuracy Class C400
Metering Panel: N/A
Auxiliary Control Panel : Included, weatherproof, NEMA 4X
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 (Oil) Capacity*: TBD
Fluid (Oil) Weight*: TBD
Gas Detector Relay: Included
Oil Gas Analyzer: Included, Calisto 2
Liquid Level Indicator: Analog Dial Gauge
Temperature Indicator: Analog Dial Gauge, for oil and winding, Qualitrol 509-DW

Pressure/Vacuum Indicator: Analog Dial Gauge

Pressure Relief Device: Included, Automatic Action
Sudden Pressure Relay: Included
Silica Breather & Relief Diaphragm: Included
Fault Indicator: Included, Buchholz Relay
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
Drain Valve Location: Front Compartment
Winding Material: Copper
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
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: Yes
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating

Complies with CSA C802-3

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 %: 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): TBD

Full Load Loss (in watts) at 100%: TBD

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 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 and Reactance Test
Insulation Resistance Test
Short-circuit Impedance Test
Voltage Ratio Error Test
No-load Loss (Wattage) Test & Load Loss (Wattage) Test
Induced Voltage Withstand Test & Separate Source Voltage Withstand Test
Pressure Integrity Test Test
Frequency Sweep Test
Thermal Time Constant Test
Transformer X0, R0 Test
Impulse Voltage Test & Dielectric Absorption Test
Polarization Index Test, Capacitance Bridge Test & Insulation Power Factor Test
Oil dielectric Strength Test & Gas Analysis
Control Function Test & Current Transformer 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

Finish Color: ANSI 61 Grey

Mounting: Pad Mounted

Conduit Opening: N/A

Tank Cover Access Handhole: N/A

Dimensions*: 189"-L x 175"-W x 169"-H

Dry Weight (w/o Oil)*: TBD

Total Weight (Liquid Filled)*: 50,000 lb

*Please note that numbers are approximate and subject to change

Special Orders - Special Requirements

Contact us for special requirements

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E-mail: sales@larsonelectronics.com

The MT-PSTC-R7-3P-DMP-12.5MVA-GNZ-HT-LS-A6-CM-CZ-2ZZ-M1 Conservator Substation 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 69000V Delta and a secondary voltage of three-phase 13800Y/7968 Grounded Wye. This system is rated for 25 MVA (35,000 KVA) and is approved for step up or step down operations. We offer systems with loop or radial feed, as well as dead front or live front primary connections. This 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 are no 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-PSTC-R7-3P-DMP-12.5MVA-GNZ-HT-LS-A6-CM-CZ-2ZZ-M1 does not have fans for forced air cooling. This non-sealed system features breathers for cooling when operating temperatures increase.

Temperature Rise: This unit features 55°C temperature rise for reduced heat waste, increased reliability, and longer life. At 55°C temperature rise, the transformer offers 35 MVA (35,000 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-PSTC-R7-3P-DMP-12.5MVA-GNZ-HT-LS-A6-CM-CZ-2ZZ-M1 features biodegradable fluid (KNAN). We offer transformers with mineral oil or FR-3 fluid, 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, 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 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 does not come with surge arresters on the primary side.

Load Break Switch: The transformer is not equipped with a load break switch.

Valves: The MT-PSTC-R7-3P-DMP-12.5MVA-GNZ-HT-LS-A6-CM-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, up stream protection is provided. We recommend provisions for protection fuses when possible, as blown fuses may require more frequent oil changes.

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

Benefits: The MT-PSTC-R7-3P-DMP-12.5MVA-GNZ-HT-LS-A6-CM-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.

Frequently Asked Questions (FAQ)