

MT-PSTC-R7-3P-DMV-2MVA-YK-HNS-LNS-A5-AFM-CZ-Z-M1

**2 MVA Conservator Substation Transformer - 11000V Delta Primary, 400Y/231V Wye-N
Secondary, ONAN, Grey**

Product ID: 326776

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



Image: MT-PSTC-R7-3P-DMV-2MVA-YK-HNS-LNS-A5-AFM-CZ-Z-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-PSTC-R7-3P-DMV-2MVA-YK-HNS-LNS-A5-AFM-CZ-Z-M1 Conservator Transformer

Transformer Type: Power Transformer Substation, Conservator Type

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 MVA (2,000 KVA)

Vector Group: Dyn11

Primary Voltage: 11000V

Primary Voltage Switch: N/A

Primary Voltage Class: 15 kV Class

Primary Phasor: Delta

Primary BIL: 75 kV Impulse Withstand

Secondary Voltage: 400Y/231

Secondary Voltage Class: 1.2 kV Class

Secondary Phasor: Wye-N

Secondary BIL: 30 KV

Frequency: 50 Hz

Oil Temperature Rise: 50°C

Winding Temperature Rise: 55°C

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 CSA C2.1-06

Complies with 10 CFR Part 431

Core Temperature Rise: 55°C
Insulation Rating: Class E Insulation - 120°C, 248°F
Cooling Class: ONAN (Self-Cooled)
Forced Air (Fans): None
Radiators: Pressed Steel, Welded to Main Tank
Tap Changer: 5-Position Off-Load Tap Changer
Tap Qty: (2) FCAN Above Taps, (4) FCBN Below Taps
Tap %: $\pm 2 \times 2.5 \%$
Tap Changer Switch Rating: 15 kV, Off-Load Rated
Tap Changer Switch Location: High Voltage (HV) [Left Side]
Impedance (Typical): 6 % $\pm$ 10 % @ Principal Tapping
Primary Connection Type: HNS (HV Side Enclosed, Plug-In Bushings 250 A)
Primary Termination Arrangement: Side Mounted Cable Box
Primary Connection: Elbow Connectors for 150 mm² XLPE Cable
Primary Connection Qty: (3) Primary Connections
Primary Bushing Rating: 12 kV Class, 75 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: (1) Earthing Terminal 25-70 mm²

Secondary Connection Type: LNS (LV Side Enclosed, Cable Box)
Secondary Termination Arrangement: Side Mounted Cable Box
Secondary Connections: LV Porcelain Bushings with Cable Lugs
Secondary Connection Qty: (4) Terminals (3 Phase + 1 Neutral)
Secondary Connection Supports: N/A
Secondary Over Current Protection (OCP): N/A
Secondary Neutral Connection: Secondary X0 Neutral Grounded to Tank via 1/2"-13 UNC Tapped Hole, 7/16" Deep Bung & Copper Ground Strap
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: (1)
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 - Non-PCB Fluid
Fluid (Oil) Capacity*: TBD
Fluid (Oil) Weight*: TBD
Liquid Level Indicator: Analog Dial Gauge w/ alarm and Trip Contacts
Liquid Temperature Indicator: Analog Dial Gauge w/ alarm and Trip Contacts
Winding Temperature Indicator: Analog Dial Gauge w/ alarm and Trip Contacts
Pressure/Vacuum Indicator: Analog Dial Gauge
Pressure Relief Device: Included, Automatic Action
Oil Surge Relay: Included, Mounted between OLTC Tank And OLTC Conservator
Fault Indicator: Included, Buchholz Relay, (1) For main tank & (1) For OLTC Tank, Double Float Type, w/ (1) set of alarm contacts & (1) set of trip contacts
Silica Gel Breather: Included
Gas Sampler Valve: Included, Schrader Valve
Fill Valve: 1" NPT Port w/ Removable Bolt Plug

Complies with ASTM D6871
Complies with NEMA 260-1996
Complies with CSA C802.1
Complies with CSA C802-3
Complies with CSA C227.5
Complies with CSA C50
Complies with CSA C88
Complies with CSA C88.1
Complies with CSA C88-16
Complies with CSA C227.4

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 3S Wiring Compartment

Efficiency %: $\geq 98.9 \%$ @ 100 % Load, PF = 1.0

Based on transformer operating at 100% of nameplate base kVA.

Load Losses Based on 75°C Reference Temp.

No Load Loss (in watts):

Full Load Loss (in watts) at 100%:

Total Load Loss (in watts) at 100%:

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 Test
Insulation Resistance Test
Voltage Ratio Error Test
Short-circuit Impedance Test
No-load Loss (Wattage) Test
Load Loss (Wattage) Test
Induced Voltage Withstand Test

Pressure Integrity Test

Separate Source Voltage Withstand Test
Sweep Frequency Analysis Test

Fill Valve Location: Front Compartment
Drain Valve: 1" NPT Port w/ 5/8" NPT Sampler Valve
Drain Valve Location: Front Compartment
Winding Material: Copper
Maximum Humidity: 100%
Ambient Temperature Rating: 50°C
Ambient Operating Temperature Range: -10 °C to +50 °C
Sound Level: ≤ 61 dB @ 1 m
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 3S stainless, Weatherproof Wiring Cabinet, Sealed Tank
Seismic Rating: Yes
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
Finish Color: ANSI 61 Grey
Mounting: Pad Mounted
Conduit Opening: N/A
Tank Cover Access Handhole: N/A
Dimensions*: 150"-W x 90"-D x 120"-H
Dry Weight (w/o Oil)*: TBD
Total Weight (Liquid Filled)*: 25,700 Lbs

*Please note that numbers are approximate and subject to change

Shipping:

Shipped on pallet on open flatbed
Pallet Skid Facing Outward Sides of Truck
Palletized on Wooden Pallet w/ Skid Pockets
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: 1-903-765-7664
E-mail: sales@larsonelectronics.com

The MT-PSTC-R7-3P-DMV-2MVA-YK-HNS-LNS-A5-AFM-CZ-Z-M1 Conservator 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 11000V Delta and a secondary voltage of three-phase 400Y/231 Wye-N. This system is rated for 2 MVA (2000 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 MT-PSTC-R7-3P-DMV-2MVA-YK-HNS-LNS-A5-AFM-CZ-Z-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 a 55°C temperature rise (top oil 50°C, winding 55°C) for reliable outdoor performance in high ambient conditions. The conservative design reduces thermal stress on insulation, extending service life and ensuring dependable operation in

ambient temperatures up to 50°C. The transformer meets IEC 60076 efficiency and temperature limits for oil-immersed distribution units.

Insulation Fluid: The MT-PSTC-R7-3P-DMV-2MVA-YK-HNS-LNS-A5-AFM-CZ-Z-M1 features mineral oil fluid (ONAN). 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% load 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 does not come with surge arresters on the primary side.

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

Valves: The MT-PSTC-R7-3P-DMV-2MVA-YK-HNS-LNS-A5-AFM-CZ-Z-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-DMV-2MVA-YK-HNS-LNS-A5-AFM-CZ-Z-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)

There are no Fags



Warranty: 24 Months.

Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

- **Operations Manual**(<https://www.larsonelectronics.com/images/product/Manual/326776.PDF>)
- **HigResPic1**(<https://www.larsonelectronics.com/images/product/HigResPic1/326776.JPG>)
- **Video1**(<https://www.youtube.com/watch?v=4-JEyYeYcn8>)
- **Video6**(<https://www.youtube.com/watch?v=olihKUo24KU>)
- **Video7**(<https://www.youtube.com/watch?v=Yez7eCilgDE>)
- **Video8**(<https://www.youtube.com/watch?v=Ac5BDPSy964>)
- **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>)