

Product ID: 305581

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



Image:

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-DNF-2.5MVA-DE-HS-LNS-A6-BMP-CZ-Z-M1 Conservator Substation 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: 2.5 MVA (2500 KVA)

Vector Group: Dd0

Primary Voltage: 4160V

Primary Voltage Switch: N/A

Primary Voltage Class: 5 kV Class

Primary Phasor: Delta

Primary BIL: 60 kV

Secondary Voltage: 480V

Secondary Voltage Class: 1.2 kV Class

Secondary Phasor: Delta

Secondary BIL: 30 KV

Frequency: 60 Hz

Temperature Rise: 65°C

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

Cooling Class: ONAN; Self-Cooled

Forced Air (Fans): None

Mounting Provisions For Fans And Radiators: Included

Tap Changer: Tap Changer Type: 8627C97H01, RTE 2237179C02M

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 C802.1

Complies with CSA C50

Tap Changer Switch Location: High Voltage (HV) [Left Side]
Impedance (Typical): 7.0% - 10.0%
Primary Connection Type: Live Front
Primary Termination Arrangement: Sidewall Busduct Entrance (provision only)
Primary Termination: Porcelain Bushings, 600A , 2-hole spade terminals
Primary Connection Qty: (3) Primary Connections
Primary Bushing Rating: 5 kV Class, 60 kV BIL
Primary Bushing Full-Height: 30" deep ATC with hinged door
Primary Bushing Dimensions: 55" Height
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: N/A

Secondary Connection Type: Live Front

Secondary Termination Arrangement: Sidewall Busduct Entrance (Provision Only)
Secondary Connections: Copper bushings with integral 6-hole spades
Secondary Connection Qty: (3)
Secondary Connection Supports: N/A
Secondary Bushing Full-Height: 30" deep ATC with hinged door
Secondary Bushing Dimensions: 55" Height, 0.1.25" thick, Coord 999P751 Rev05
Secondary Over Current Protection (OCP): N/A
Secondary Neutral Connection: Secondary X2 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: Included, Standard 3M Mild Steel 24"-W x 26"-D x 12"-H (ANSI 61), 120V, w/ Fan Control Switch Manual/Auto/ON/OFF
HAWK Infrared Window: Included, (1) For HV & (1) For LV
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 DOE 2016 Efficiency Ratings
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, Q 030-017-02 4965B50H01
Temperature Indicator: Thermometer w/ 2 alarm contacts (1 NO & 1 NC), Type: Qualitrol 167-288-01, P/N: 30C6637H01
Pressure/Vacuum Indicator: Analog Dial Gauge, w/ purge, Type: Qualitrol 50-35E, P/N: 2B13527H01
Pressure Relief Device: Included, Automatic Action, Model: 208-60E, P/N: 1B25045031
Pressure Relief Valve: 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

Complies with CSA C802-3
Complies with CSA C227.5
Complies with CSA C227.4
Complies with CSA C88
Complies with CSA C88.1
Complies with CSA C88-16

Features

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
Hot Stick Included, HV Door Mount

Efficiency %: 99.41%

Based on transformer operating at 50% of nameplate base kVA.

Load Losses Based on 85°C Reference Temp.

No Load Loss (in watts): 2,200 Watts

Full Load Loss (in watts) at 100%: 23,450 Watts

Total Load Loss (in watts) at 100%: 25,650 Watts

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
UL Listed

Factory Tests:

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

Shipping:

Shipped on pallet on open flatbed

Ambient Temperature Rating: 30°C

Ambient Operating Temperature Range: -40°C to +40°C (-50°F to +104°F)

Sound Level: 62 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

Finish Color: Munsell 8.3G 6.1/0.54 ANSI #61, Light Gray

Mounting: Pad Mounted

Conduit Opening: N/A

Tank Cover Access Handhole: N/A

Dimensions*: 83"-L x 75"-D x 75"-W

Dry Weight (w/o Oil)*: 9,920 Lbs

Total Weight (Liquid Filled)*: 31,900 lb

*Please note that numbers are approximate and subject to change

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

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-DNF-2.5MVA-DE-HS-LNS-A6-BMP-CZ-Z-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 4160V Delta and a secondary voltage of three-phase 480V Delta. This system is rated for 2.5 MVA (2500 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 special tap changer switch to allow small changes for voltage. There are no rapid rise relays or protection fuses present on the system.

The MT-PSTC-R7-3P-DNF-2.5MVA-DE-HS-LNS-A6-BMP-CZ-Z-M1 does not have fans for forced air cooling but has mounting provisions for fans. 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 2.5 MVA (2500 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-DNF-2.5MVA-DE-HS-LNS-A6-BMP-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, 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-DNF-2.5MVA-DE-HS-LNS-A6-BMP-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-DNF-2.5MVA-DE-HS-LNS-A6-BMP-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 Faqs



Product ID: 305581

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/305581.PDF>)
- **HigResPic1** (<https://www.larsonelectronics.com/images/product/HigResPic1/305581.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>)