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MT-PSTC-R4-3P-GMR-40MVA-GMA-HNS-LNS-A6-BM-CZ-2ZZ-M1

40 MVA Substation Power Transformer, Conservator Type - 12470Y/7200 Grounded Wye Primary, 34500Y/19920 Grounded Wye Secondary - ONAN, Mineral Oil - Light Grey

Product ID: 344249

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



Image: MT-PSTC-R4-3P-GMR-40MVA-GMA-HNS-LNS-A6-BM-CZ-2ZZ-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-GMR-40MVA-GMA-HNS-LNS-A6-BM-CZ-2ZZ-M1 Conservator Transformer

Transformer Type: Substation Power Transformer, Conservator Type
Transformer Configuration: Liquid Filled
Transformer Feed Type: -
Operation: Step-Up Operation (Reverse Feed) or Step Down Operation
Phase: Three Phase
Capacity: 40 MVA (40,000 KVA)
Vector Group: YnYn0
Primary Voltage: 12470Y/7200
Primary Voltage Switch: N/A
Primary Voltage Class: 15 kV Class
Primary Phasor: Grounded Wye
Primary BIL: 95 KV
Secondary Voltage: 34500Y/19920
Secondary Voltage Class: 35 kV Class
Secondary Phasor: Grounded Wye
Secondary BIL: 200 KV
Secondary Neutral BIL: 95 kV
Short-circuit Withstand Current: 50 kA rms (2 Sec.)
Frequency: 60 Hz

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 IEEE Std 693-2018
Complies with 10 CFR Part 431
Complies with ASTM D3487

Temperature Rise: 65°C
Insulation Rating: Class A Insulation
Cooling Class: ONAN
Forced Air (Fans): N/A
Cooling Radiator: Included, Has Upper And Lower Drain Plugs, ANSI #70 Light Grey
H.V Tap Changer: 5-Position De-energized Tap Changer (DETC), Suitable for Bi-directional flow of power
H.V Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
H.V Tap %: 2.5%
H.V Tap Changer Switch Rating: 15 KV
H.V Tap Changer Switch Location: H.V Side
L.V Tap Changer: N/A
L.V Tap Qty: N/A
L.V Tap %: N/A
L.V Tap Changer Switch Rating: N/A
L.V Tap Changer Switch Location: N/A
Impedance: 11%
Primary Connection Type: Live Front
Primary Termination Arrangement: Side Mounted Terminals, Enclosed in Full Air Terminal Chamber (ATC) with IR windows
Primary Termination: Silicone rubber, interchangeable condenser bushings with tinned bronze NEMA 4-hole pads, Suitable for 4x750KCMIL cables per phase without stacking
Primary Bushing Qty: (3)
Primary Bushing Rating: 15 kV Class, 110 kV BIL, 2000A
Primary Neutral Connection: N/A
Primary Surge Arrestors: Included
Primary Surge Arrestor Duty Cycle: 15 kV
Primary Surge Arrestor MCOV Rating: 12.7 kV
Primary Over Current Protection (OCP): N/A
Primary Bushing CT: N/A
Primary Overcurrent Protection Holder: N/A
Primary Grounding Provisions: N/A
Secondary Connection Type: Live Front
Secondary Termination Arrangement: Side Mounted Terminals, Enclosed in Full Air Terminal Chamber (ATC) with IR windows
Secondary Termination: Porcelain Bushings, w/ Pads suitable for 4x750KCMIL cables per phase without stacking
Secondary Bushing Qty: (4)
Secondary Bushing Rating: 35 KV Class, 200 KV BIL, 800A, Porcelain, 4-Hole NEMA Tin-plated Terminals
Secondary Neutral Connection: Included, 35 kV Class, 125 kV BIL, w/ 4-Hole NEMA Tin-plated Terminal
Secondary Over Current Protection (OCP): N/A
Secondary Bushing CT: Included, (2) Per Each Phase (800:5 Multi-Ratio, C400 Accuracy Class)
Secondary Surge Arrestors: N/A
Secondary Surge Arrestor Voltage Rating: N/A
Secondary Surge Arrestor MCOV Rating: N/A
Secondary Grounding Provisions: (1) NEMA Ground Bar Attached to Tank via (2) Welded Ground Bungs
Neutral Bushing CT: Included, (2) 600:5 Multi-Ratio, C400 Accuracy Class
Metering Current Transformer (CT): N/A
Metering Panel: N/A
Protection Control Power: Included, 125 VDC, 10kAIC
Auxiliary Control Panel: Included, 3P, 4W, 60Hz, 208/120V
Load Break Switch: N/A
Load Break Switch Qty: N/A
Load Break Switch Rating: N/A
Load Break Switch Location: N/A

Complies with ASTM D6871
Complies with NEMA 260-1996
Complies with CSA C50
Complies with CSA C2.1-06
Complies with CSA C227.5
Complies with CSA C802.1
Complies with CSA C88
Complies with CSA C88.1
Complies with CSA C88-16
Complies with CSA C227.4
Complies with CSA C802-3

Features
Penta-head 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 %: -
Based on transformer operating at 50% of nameplate base kVA.

Load Losses Based on 75°C Reference Temp.
Off-Load Loss (in watts): -
On-Load Loss (in watts): -
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%: -
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

Efficiency Standard(s): Meets ANSI/IEEE Standards
K-Factor Rating (Harmonic Mitigation): K-1 (Standard)
Pulse Drive Rating: N/A
Ground Pads: Included, Suitable for NEMA 2-hole grounding terminals at each corner of the tank base
Insulation Fluid: Mineral oil, Non-PCB Fluid
Fluid (Oil) Capacity*: 3,015 gal
Fluid (Oil) Weight*: 21,000 lbs
Silica Gel Breather: Included, Messko MTraB/DB 200-T (HT)
Oil Level Indicator: Analog Dial Gauge, Qualitrol 039-012-01
Oil Temperature Indicator: Analog Dial Gauge, Qualitrol 104 Series
Winding Temperature Indicator: Included, Analog Dial Gauge, Qualitrol 104 Series
Liquid Temperature Indicator: Included
Pressure/Vacuum Indicator: Analog Dial Gauge
Rapid Rise Relay: Included, (63) Qualitrol 910-013-03
Pressure Relief Device: Included, Automatic Action, Qualitrol 208 Series Qualitrol 900 Series
Nitrogen Oil Preservation System: Included With A Nitrogen Tank And All Necessary Accessories
Ground Relay: Included, Littlefuse SE-330-07-00
Loss Of Power Relay: Included
Cabinet Heater: Included, w/ metal guards

RTD: Included, Resistance Thermometers PT100

Ground Fault Protection: Included, A 120 volt, 20 amp, 3--wire grounding duplex receptacle with ground fault protection mounted in the control cabinet
Gas Sampler Valve: N/A
Fill Valve: Included
Fill Valve Location: Top Mounted
Drain Valve: Included, 2” Globe Type With 3/8” Sampling Valve
Drain Valve Location: -
Winding Material: Copper
Ambient Temperature Rating: 40°C

Ambient Operating Temperature Range: -30°C to +50°C

Sound Level: Complies to NEMA TR-1
Elevation (Altitude): 3300ft (1000 meters) Above Sea Level
Risk Category: II
Seismic Standard: ASCE 7-16, 7-16, §12.8
Seismic Design Category: C
Seismic Rating: 0.360g SDS, 0.190g SD1
Maximum Wind Velocity (10-min average): 61.52 mph
Maximum Wind Velocity (3-sec gust): 120 mph
Maximum ice loading: 1.5” thick with 40mph wind
Uniform Gnd Snow Load: 30 psf
Contamination Condition: Medium
Specific creepage value (L-G): 35 mm/kV min
Core Construction: Three limb core type
Core Material: Silicon Steel, Grain Oriented
Tank Material: Coated Steel
Cabinet Material: Coated Steel
Base Platform Material: Coated 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 4 Weatherproof Wiring Cabinet, Sealed Tank
Paint Type: Weatherproof and UV Resistant Epoxy Coating and Undercoating
External Barcode Label
Internal Busing & Accessory Labeling
Stainless Steel Riveted Nameplate

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

Pressure Integrity Test

Vacuum leak test

Core ground test
Doble bushing tests
Excitation test
Insulation resistance test (winding-to-winding and windings-to-ground)

Current transformer ratio and polarity test

Current transformer excitation curve test
Fan operation, Gauge operation, Heater operation
Oil sample analysis

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 #70 Light Grey
Mounting: Skid Type Base w/ Lifting Lugs
Conduit Opening: N/A
Tank Cover Access Handhole: Included
Dimensions: 157"-W x 256"-D x 216"-H
Dry Weight (w/o Oil)*: 103,617 lbs
Total Weight (Liquid Filled)*: 138,891 lbs
*Please note that numbers are approximate and subject to change

Special Orders - Special Requirements
Contact us for special requirements
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The MT-PSTC-R4-3P-GMR-40MVA-GMA-HNS-LNS-A6-BM-CZ-2ZZ-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 make 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 12470Y/7200 Grounded Wye and a secondary voltage of three-phase 34500Y/19920 Grounded Wye. This system is rated for 40 MVA (40,000 KVA). 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 in 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 a rectangular coil and a 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-R4-3P-GMR-40MVA-GMA-HNS-LNS-A6-BM-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 65°C temperature rise for reduced heat waste, increased reliability and longer life. At 65°C temperature rise, the transformer offers 40 MVA (40,000 KVA). 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-PSTC-R4-3P-GMR-40MVA-GMA-HNS-LNS-A6-BM-CZ-2ZZ-M1 features mineral oil insulation 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 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 Rapid Pressure Rise Relay and Seal-In Relay 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 the primary side.

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

Valves: The MT-PSTC-R4-3P-GMR-40MVA-GMA-HNS-LNS-A6-BM-CZ-2ZZ-M1 is equipped with a pressure relief valve.

Protection Fuses: This transformer does not have vacuum fault interrupter 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 conservator substation transformer is installed on supporting structures, such as the roof of the transformer main tank.

Benefits: The MT-PSTC-R4-3P-GMR-40MVA-GMA-HNS-LNS-A6-BM-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)

There are no Faqs

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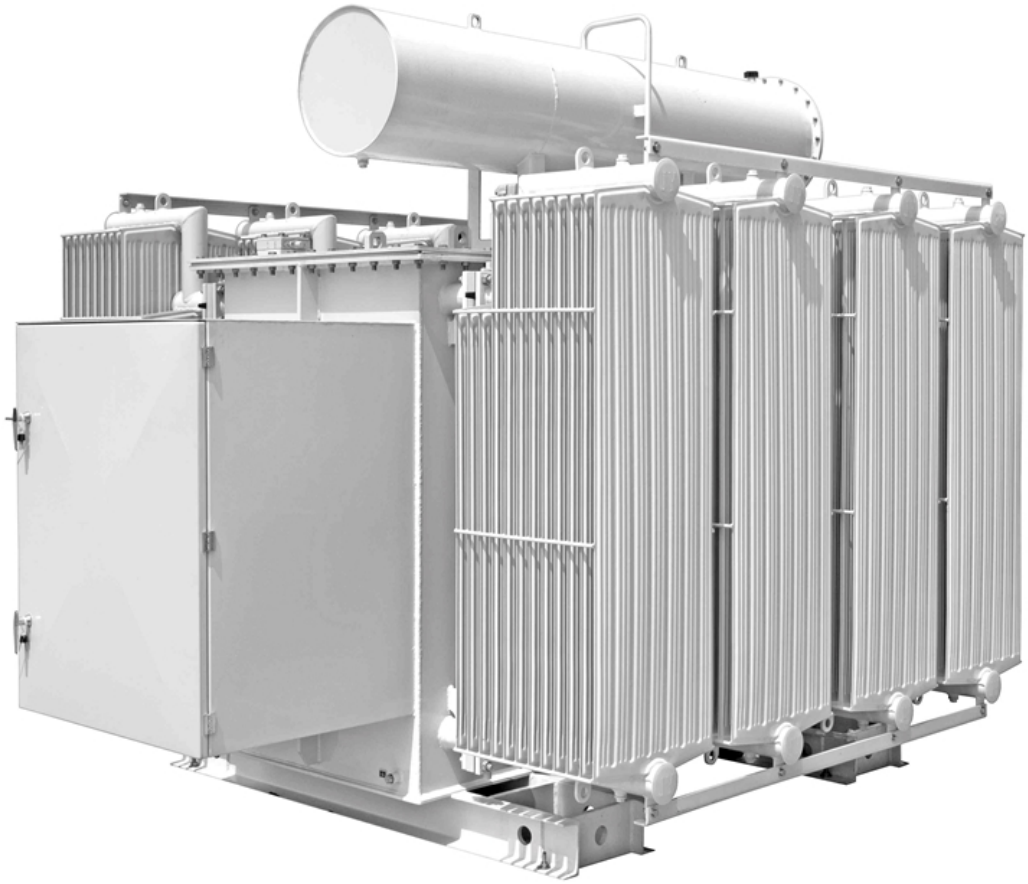


Image: MT-PSTC-R4-3P-GMR-40MVA-GMA-HNS-LNS-A6-BM-CZ-2ZZ-M1

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Warranty: 24 Months.

Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

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- **HigResPic2**(https://www.larsonelectronics.com/images/product/HigResPic2/344249.JPG)
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- **Video1**(https://www.youtube.com/watch?v=fktbJv3GlDg)
- **Video6**(https://www.youtube.com/watch?v=olihKUo24KU)
- **Video7**(https://www.youtube.com/watch?v=Yez7eCilgDE)
- **Video8**(https://www.youtube.com/watch?v=Ac5BDPSy964)
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