Larson Electronics LLC
9419 E US HWY 175, Kemp, TX 75143
Phone: 800.369.6671

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.498.3364

MT-PML-R51-3P-DMR-300KVA-YT-RT-DF-A6-BB-CS-2B2-M1

NV Energy 300 KVA Pad Mount Transformer - 12470V Delta Pri., 208Y/120 Sec. - Copper, KNAN/Bell Green - 304 Stainless Steel

Product ID: 297908



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-PML-R51-3P-DMR-300KVA-YT-RT-DF-A6-BB-CS-2B2-M1 3PH Pad Mount Transformer

Transformer Type: Pad Mounted, Compartmental-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: 300 KVA
Vector Group: DYN1
Primary Voltage: 12470V
Primary Voltage Switch: N/A
Primary Voltage Class: 15 kV Class
Primary Phasor: Delta
Primary BIL: 95 KV
Secondary Voltage: 208Y/120
Secondary Voltage Class: 1.2 kV Class
Secondary Phasor: Wye-N
Secondary BIL: 30 KV
Frequency: 60 Hz
Temperature Rise: 65°C
Insulation Rating: Class E Insulation - 120°C, 248°F
Cooling Class: KNAN; Self-Cooled
Forced Air (Fans): None
Tap Changer: 5-position Tap Changer
Tap Qty: (2) FCAN Above Taps, (2) FCBN Below Taps
Tap %: 2.5%
Tap Changer Switch Rating: 200-Amp, 15 kV
Tap Changer Switch Location: High Voltage (HV) [Left Side] Front Compartment
Impedance: 1.2-6.0% Typical, Target 3.10-5.75%

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
Complies with CSA C227.5

Primary Connection Type: Dead Front
Primary Termination Arrangement: V Terminal Arrangement
Primary Termination: Clamped Well Bushings w/ Removable Studs, 200A Load Break Elbows w/ Inserts
Primary Connection Qty: (3) Primary Connections for use w/ Elbow Connectors
Primary Parking Stand Qty: (3) Welded Brackets for Installing Accessory Parking Stand Bushings
Primary Bushing Rating: 15 kV Class, 95 kV BIL, 200A, Load Break, IEEE 386 Color Red
Primary Neutral Connection: N/A
Primary Surge Arrestors: (3) High Voltage Elbow Surge Arrestors, Included
Primary Surge Arrestor Voltage Rating: 18 kV Class Elbow Arrestor
Primary Surge Arrestor MCOV Rating: 15.3 kVrms
Primary Over Current Protection (OCP): Bayonet Expulsion Fuse in series w/ Partial-Range Current-Limiting Fuse
Primary Over Current Protection Method: Fused, Oil-Immersed
Primary Over Current Protection Holder: Bayonet Fuse Holder w/ Flapper Valve and External Drip Shield
Primary Grounding Provisions: (1) NEMA Ground Bar attached to tank via (2) Welded Ground Bungs in HV Cabinet

Secondary Connection Type: Live Front

Secondary Termination Arrangement: Staggered Terminal Arrangement
Secondary Connections: NEMA Spade Terminals, 4-Hole Spade, Externally Clamped, Accepts up to (4) Double Lug connections with (2) cables per side of Spade connector
Secondary Connection Qty: (4) Externally Clamped One-Piece Epoxy Bushings Copper Threaded Studs

Secondary Connection Supports: N/A

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 in LV Cabinet
Metering Current Transformer (CT): N/A
Metering Panel: N/A
Auxiliary Control Panel : N/A
Load Break Switch: 2-Position Load Break Switch
Load Break Switch Qty: (1)
Load Break Switch Rating: 200-Amp, 15 kV
Load Break Switch Location: High Voltage (HV) Front Compartment
Efficiency Standard(s): Meets DOE 2016 Standards, Meets CSA Standards Meets ANSI/IEEE Standards
K-Factor Rating (Harmonic Mitigation): K-1 (Standard)
Pulse Drive Rating: N/A
Insulation Fluid: Biodegradable Natural Vegetable Oil Ester Insulating Fluid - Non-PCB Fluid
Fluid (Oil) Capacity*: 133 Gallons
Fluid (Oil) Weight*: 1,019 lbs
Liquid Level Indicator: Analog Dial Gauge
Temperature Indicator: Analog Dial Gauge

Pressure/Vacuum Indicator: Analog Dial Gauge

Pressure Relief Device: Included, Automatic Action
Fault Indicator: N/A
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: 55 dBA
Elevation (Altitude): 3300ft (1000 meters) Above Sea Level
Core Material: Grain Oriented Steel
Tank Material: 304 Stainless Steel
Cabinet Material: 304 Stainless Steel

Base Platform Material: 304 Stainless Steel

Portability: Lifting lugs, provisions for jacking under base, w/ base construction suitable for using rollers or skidding
Housing Type: Compartmental Air-Filled Cabinet w/ Locking Doors, HV Compartment Left,

Complies with CSA C802-3
Complies with CSA C802.1

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

100% Stainless Steel Construction, Corrosion Resistant

Efficiency %: 99.00%

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

Load Losses Based on 85°C Reference Temp.

No Load Loss (in watts): +/- 500W, +10% tolerance

Full Load Loss (in watts) at 100%: +/- 4,413W, +10% tolerance
Total Load Loss (in watts) at 100%: 4,913W, +10% tolerance

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

Total Load Loss (in watts) at 50%: +/- 1,164W
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

External Barcode Label
Internal Busing & Accessory Labeling

Stainless Steel Riveted Nameplate

NV Energy Spec
Complies with NVE Spec EBU DX-S03
Complies with NVE Drawing MT-8

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
Separate Source Voltage Withstand Test
Pressure Integrity Test 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

LV Compartment Right, Steel Barrier Separation, HV Door Spring-Loaded Release Pin in LV Compartment
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™ 7.0 GY 3.29/1.5 Bell Green
Mounting: Pad Mounted
Conduit Opening: Bottom Feed Underground Entry/Exit
HV Compartment Base Wireway Dimensions*: 20"-W x 5"-D
LV Compartment Base Wireway Dimensions*: 16"-W x 5"-D
MV/LV Compartment Cabinet Depth*: 20"-D
Tank Cover Access Handhole: N/A
Dimensions*: 53"-W x 57"-D x 67"-H
Dry Weight (w/o Oil)*: 1,580 lbs
Total Weight (Liquid Filled)*: 3,580 lbs
*Please note that numbers are approximate and subject to change

Special Orders - Requirements
Contact us for special requirements

Toll Free: 1-800-369-6671
Intl: 1-214-616-6180
Fax: 1-903-498-3364
E-mail: sales@larsonelectronics.com

The MT-PML-R51-3P-DMR-300KVA-YT-RT-DF-A6-BB-CS-2B2-M1 Industrial Pad Mount Transformer from Larson Electronics offers powerful, reliable and efficient power distribution in indoor, outdoor and public 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. An enclosed design caters to installations on concrete pads without protective fencing. This transformer is built to Berkshire Hathaway Energy / NV Energy design and complies with the following Specification: EBU DX-S03 Distribution Transformer -- Three-Phase, Pad-Mounted -- 75 kVA - 2500 kVA.

PLEASE NOTE: ANY FREE SHIPPING OFFERS DO NOT APPLY TO POWER DISTRIBUTION PANELS, TRANSFORMERS, OR SUBSTATIONS

Transformer Features: With a transformer rating of 300 KVA, the industrial transformer features a primary voltage of three-phase 12470V Delta and a secondary voltage of three-phase 208Y/120 Wye. The unit has a primary radial feed for single installations and dead-front primary connections. We also offer systems with loop feed and 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 for voltage.

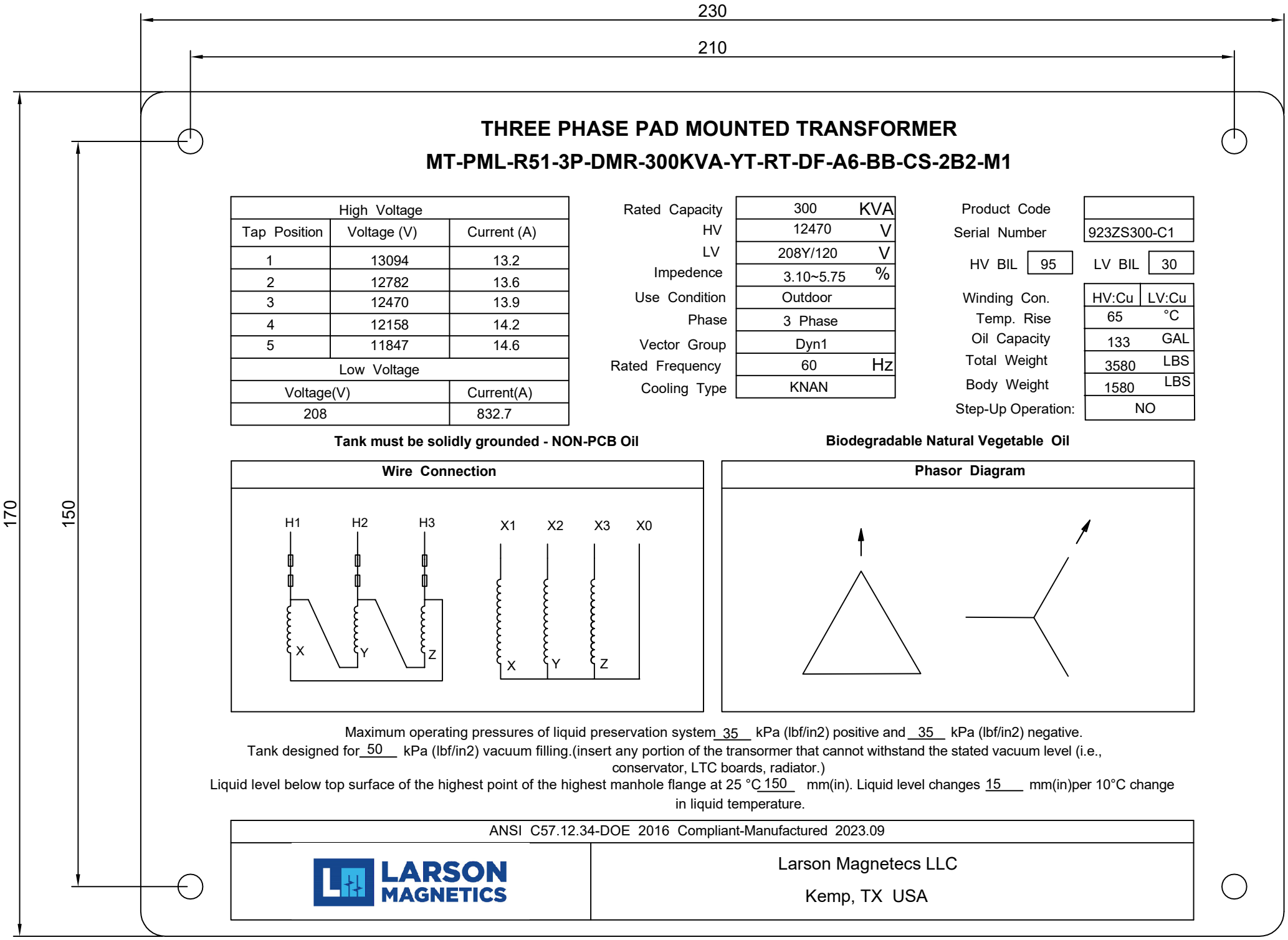
The system features copper windings for high strength and thermal/electrical conductivity. This transformer consists of rectangular coil and five-legged wound core design with three coils and four core loops (this is for three-phase transformers only; single-phase units have one coil and two core loops).

The MT-PML-R51-3P-DMR-300KVA-YT-RT-DF-A6-BB-CS-2B2-M1 is air cooled and does not have fans or mounting provision for fans.

Enclosure Design: This pad mounted transformer is a compartmental design. The tank and housing are fabricated from 304 stainless steel. The front electrical enclosure carries a NEMA 3R rating. The high voltage and low voltage compartments are located in front of the transformer tank, with the high voltage compartment on the left side and low voltage compartment on the right side. The HV and LV compartments are air filled and separated by a full length steel barrier between the compartments. A removable steel plate at the base of the HV and LV compartments prevents rodents and other intrusions from entering the enclosure once installed. This steel plate allows for underground conduit entry into the enclosure compartments. Two hinged exterior doors allows for access into the compartments. A single pad lockable handle on the low voltage compartment door allows for securing the transformer. A spring loaded pin within the low voltage compartment prevents the high voltage door from being opened without pulling the safety pin. A hot stick is included in the high voltage compartment, mounted to the HV door.

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 300 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-PML-R51-3P-DMR-300KVA-YT-RT-DF-A6-BB-CS-2B2-M1 features biodegradable cooling fluid (KNAN) with a capacity of 133 gallons. We offer transformers with FR-3 oil 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% loan 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. These gauges do not have auxiliary contacts.
Fault Pressure Devices: This transformer features an automatic action fault pressure device. 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 Arrestors: This system comes with high elbow surge arrestors on the primary side. Designed for over-voltage and transient voltage protection, the components prevent damage caused by lightning, internal switching or voltage surges. We can offer models without high elbow surge arrestors that have mounting provisions for customer-provided surge arrestors.
Load Break Switch: The transformer is equipped with a load break switch. The transformer is equipped with a load break switch. This switch has two positions: transformer on and transformer off.
Valves: The MT-PML-R51-3P-DMR-300KVA-YT-RT-DF-A6-BB-CS-2B2-M1 is equipped with a pressure relief valve, fill valve and drain valve with sampler port.
Protection Fuses: This transformer contains 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: The heavy-duty enclosure makes the unit suitable for both indoor and outdoor applications. This power distribution system can be pad mounted on concrete pads.
Benefits: The MT-PML-R51-3P-DMR-300KVA-YT-RT-DF-A6-BB-CS-2B2-M1 pad mount 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, public locations 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.



THREE PHASE PAD MOUNTED TRANSFORMER

MT-PML-R51-3P-DMR-300KVA-YT-RT-DF-A6-BB-CS-2B2-M1

High Voltage		
Tap Position	Voltage (V)	Current (A)
1	13094	13.2
2	12782	13.6
3	12470	13.9
4	12158	14.2
5	11847	14.6
Low Voltage		
Voltage(V)		Current(A)
208		832.7

Rated Capacity	300	KVA
HV	12470	V
LV	208Y/120	V
Impedence	3.10~5.75	%
Use Condition	Outdoor	
Phase	3 Phase	
Vector Group	Dyn1	
Rated Frequency	60	Hz
Cooling Type	KNAN	

Product Code			
Serial Number	923ZS300-C1		
HV BIL	95	LV BIL	30
Winding Con.	HV:Cu	LV:Cu	
Temp. Rise	65	°C	
Oil Capacity	133	GAL	
Total Weight	3580	LBS	
Body Weight	1580	LBS	
Step-Up Operation:	NO		

Tank must be solidly grounded - NON-PCB Oil

Biodegradable Natural Vegetable Oil

Wire Connection

Phasor Diagram

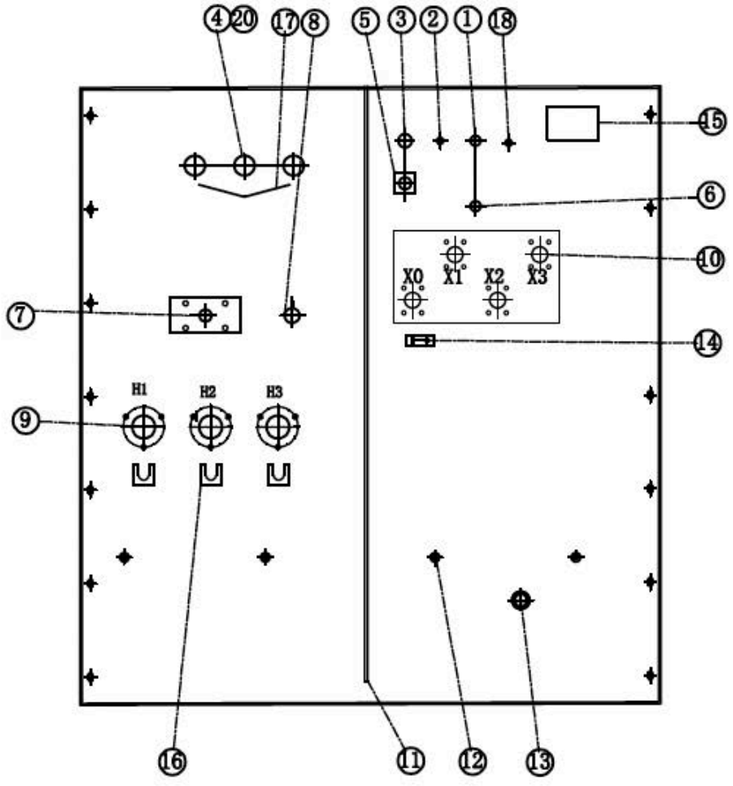
Maximum operating pressures of liquid preservation system 35 kPa (lbf/in2) positive and 35 kPa (lbf/in2) negative.
Tank designed for 50 kPa (lbf/in2) vacuum filling.(insert any portion of the transormer that cannot withstand the stated vacuum level (i.e., conservator, LTC boards, radiator.)
Liquid level below top surface of the highest point of the highest manhole flange at 25 °C 150 mm(in). Liquid level changes 15 mm(in)per 10°C change in liquid temperature.

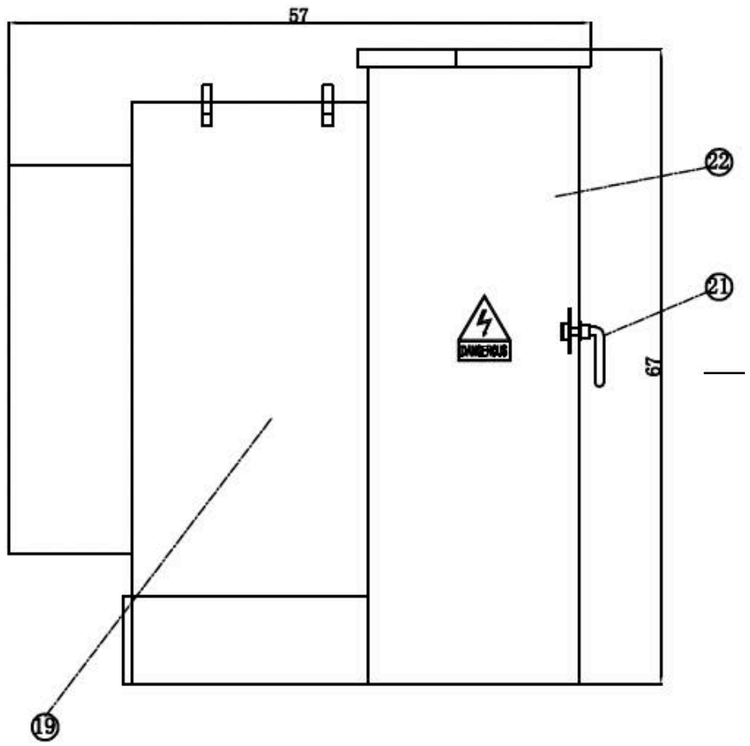
ANSI C57.12.34-DOE 2016 Compliant-Manufactured 2023.09

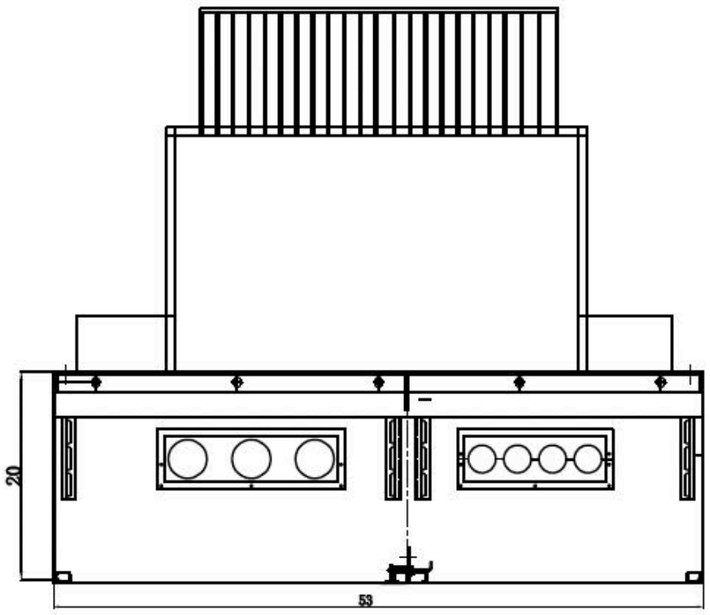
LARSON MAGNETICS

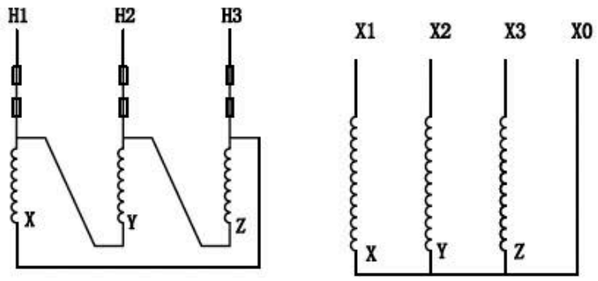
Larson Magnetecs LLC

Kemp, TX USA

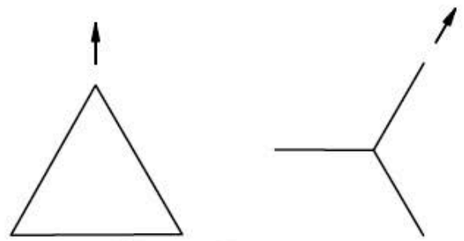








WIRING CONNECTION



PHASOR DIAGRAM

Approx Weight: 3580 Lbs
Non-PCB Containing Oil

No.	Name	Remarks
22	Housing - 304L SS	
21	Padlock	
20	Current-limiting fuses	
19	Insulation oil	
18	Gas sample valve	
17	Drip shield	
16	Parking stand	
15	Nameplate	
14	Grounding strap	
13	Drain valve w/ sampler	
12	Grounding lug	
11	Reinforcing rib	
10	LV bushing	
9	HV bushing	
8	Off-circuit tap changer	
7	Load break switch	
6	Temperature indicator	
5	Oil indicator	
4	Bayonet fuse	
3	Oil fill valve	
2	Pressure relief valve	
1	Pressure indicator	

Designed by:	Checked by:	Approved by:	k.V.A:	Votage:	Date:	Scale:	Note! Do not scale copies

LARSON ELECTRONICS

12470V Delta Pri - 208Y/120V Sec, 300kVA
Pad Mounted Transformer

Drg. No. :	Code:	Paper:	Rev.	Sheet:

All dimensions are in inches

For approval / preliminary design only. Not for order build specific


Non PCB
MINERAL OIL
NOTICE
WARNING
ADVERTENCIA


LARSON MAGNETICS





Frequently Asked Questions (FAQ)