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MT-PML-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-M1

4.5 MVA Pad Mount Transformer - 12000V Delta Primary, 690Y/400 Wye Secondary - KNAN/Bell Green

Product ID: 327645

Image: MT-PML-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-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-PML-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-M1 Pad Mount Transformer

Transformer Type: Pad Mounted, Compartmental-Type
Transformer Configuration: Liquid Filled Pad Mounted
Transformer Feed Type: Loop Feed
Operation: Step-Down Operation (Not Approved for Step-Up)
Phase: Three Phase
Capacity: 4.5 MVA (4500 KVA)
Vector Group: DYN1
Primary Voltage: 12000V
Primary Voltage Switch: N/A
Primary Voltage Class: 15 kV Class
Primary Phasor: Delta
Primary BIL: 95 KV
Secondary Voltage: 690Y/400
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: 900-Amp, 15 kV

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

Tap Changer Switch Location: High Voltage (HV) [Left Side] Front Compartment
Impedance: 5.0-7.5% Typical, Target 6%
Primary Connection Type: Dead Front
Primary Termination Arrangement: V Terminal Arrangement
Primary Termination: Externally Clamped Well Bushings w/ Removable Studs, 200A Load Break Elbows w/ Inserts
Primary Connection Qty: (6) Primary Connections for use w/ Elbow Connectors
Primary Parking Stand Qty: (6) Welded Brackets for Installing Accessory Parking Stand Bushings
Primary Bushing Rating: 15 kV Class, 95 kV BIL, 900A, Load Break, IEEE 386 Color Red
Primary Neutral Connection: Primary HO Neutral Internally Bonded to Tank
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, 12-Hole Spade, Externally Clamped, Accepts up to (12) Double Lug connections with (6) 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: 4-Position Load Break Switch
Load Break Switch Qty: (1)
Load Break Switch Rating: 900-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*: 700 Gallons
Fluid (Oil) Weight*: 5,390 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: 65 dBA

Complies with CSA C227.4
Complies with CSA C227.5
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

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): +/- 8,889W

Full Load Loss (in watts) at 100%: +/- 34,996W

Total Load Loss (in watts) at 100%: +/- 43,885W

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

Total Load Loss (in watts) at 50%: +/- 17,640W

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
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*

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: Compartmental Air-Filled Cabinet w/ Locking Doors, HV Compartment Left, 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*: 21"-W x 7"-D
LV Compartment Base Wireway Dimensions*: 26"-W x 9"-D
MV/LV Compartment Cabinet Depth*: 24"-D
Tank Cover Access Handhole: N/A
Dimensions*: 96"-W x 108"-D x 94"-H
Dry Weight (w/o Oil)*: 10,462 Lbs
Total Weight (Liquid Filled)*: 16,518 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-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-M1 from Larson Electronics is an Industrial Pad Mount Transformer that 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.

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

Transformer Features: With a transformer rating of 4500 KVA (4.5 MVA), the industrial transformer features a dual rated primary voltage of three-phase 12000V Delta and a secondary voltage of three-phase 690Y/400 Wye. An input voltage switch allows the transformer to be switched between primary voltages. The unit has a primary loop feed for single installations and dead-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.

Aluminum transformer winding material helps improve performance, reduce weight and lower cost. Compared to copper, aluminum windings have lower eddy losses due to higher resistivity. 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-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-M1 is air cooled and does not have fans or mounting provision for fans.

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 4500 KVA

(4.5 MVA). 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-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-M1 features biodegradable cooling fluid (KNAN). 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 arresters: This system comes with high elbow surge arresters 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 arresters that have mounting provisions for customer-provided surge arresters.

Load Break Switch: The transformer is equipped with a load break switch. This switch has four positions: A side on + transformer on, B side on + transformer on, A and B sides + transformer on, and A and B sides + transformer off.

Valves: The MT-PML-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-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.

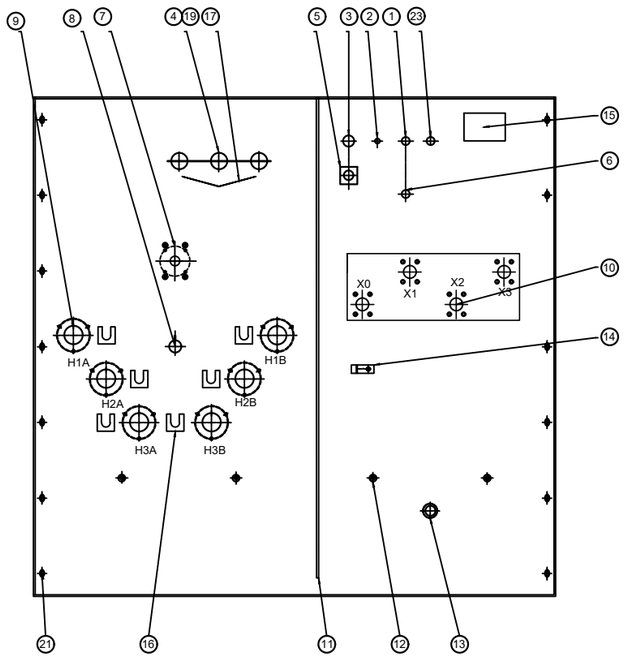
Mount: The heavy-duty enclosure makes the unit suitable for both indoor and outdoor applications. This power distribution system can be pad mounted on concrete pads.

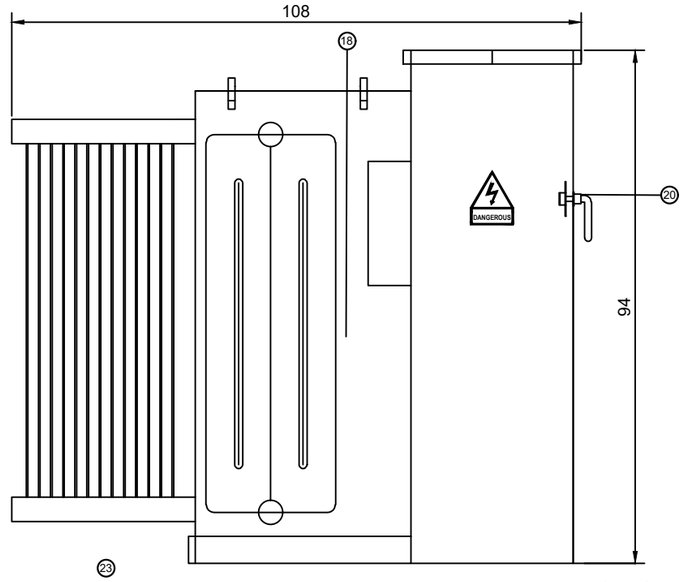
Benefits: The MT-PML-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-M1 pad mount transformer offers many benefits to consumers. This transformer provides owners with significant energy savings, as well as offering environmental benefits. Higher efficiency not

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.

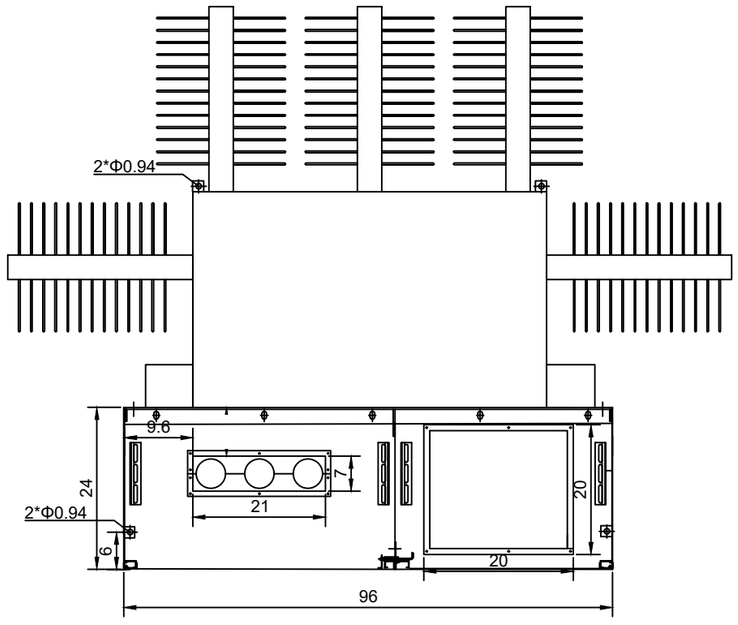
Applications: General purposes, industrial sites, electrical rooms, underground vaults, manufacturing facilities, steel plants, offshore, commercial, military, processing plants, electric power distribution, utilities, public locations, and more.

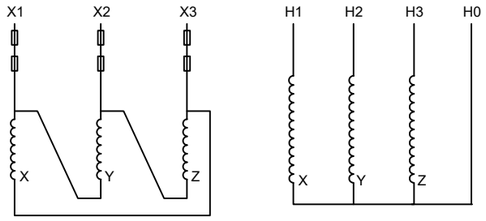
Larson Electronics is a manufacturer and as such can build stationary and portable transformer systems to your specifications. Although we carry several models of power distribution transformer systems, we can deliver custom ordered units almost as quickly as our prebuilt units. If this model does not meet your needs, please contact us at 1-800-369-6671 or sales@larsonelectronics.com to discuss your specific requirements.



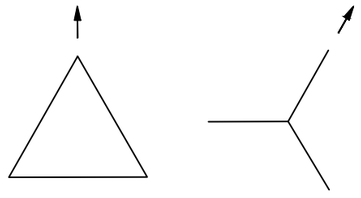


Approx. Weight: 16,518LBS





WIRING CONNECTION



PHASOR DIAGRAM

No.	Name	Model	Qty.	Material	Remark
23	gas sampler valve				Schrader valve
22	painting	Munsell green			
21	SS hinges&pins				
20	padlock	penta-head bolt	1		
19	current limiting fuse		3		
18	insulation oil	Biodegradable oil			
17	drip shield		1		
16	parking stand		6		
15	nameplate		2		
14	grounding lug		1		
13	drain valve w/ sampler		1		
12	grounding lug	Ø25*20, M10	4		with copper bar
11	reinforcing rib	8mm steel	1		
10	LV bushing		4		12-hole spade
9	HV bushing	900A bushing	6	load brake	with (3) arrester
8	off-circuit tap changer		1		
7	load breaker switch		1		4 position
6	temperature indicator		1		
5	oil indicator		1		
4	Bayonet fuse		1		
3	oil fill valve		1		
2	pressure relief valve		1		automatic action
1	pressure indicator		1		

Remark: Dimensions here are in inches. Only for approval/preliminary design.

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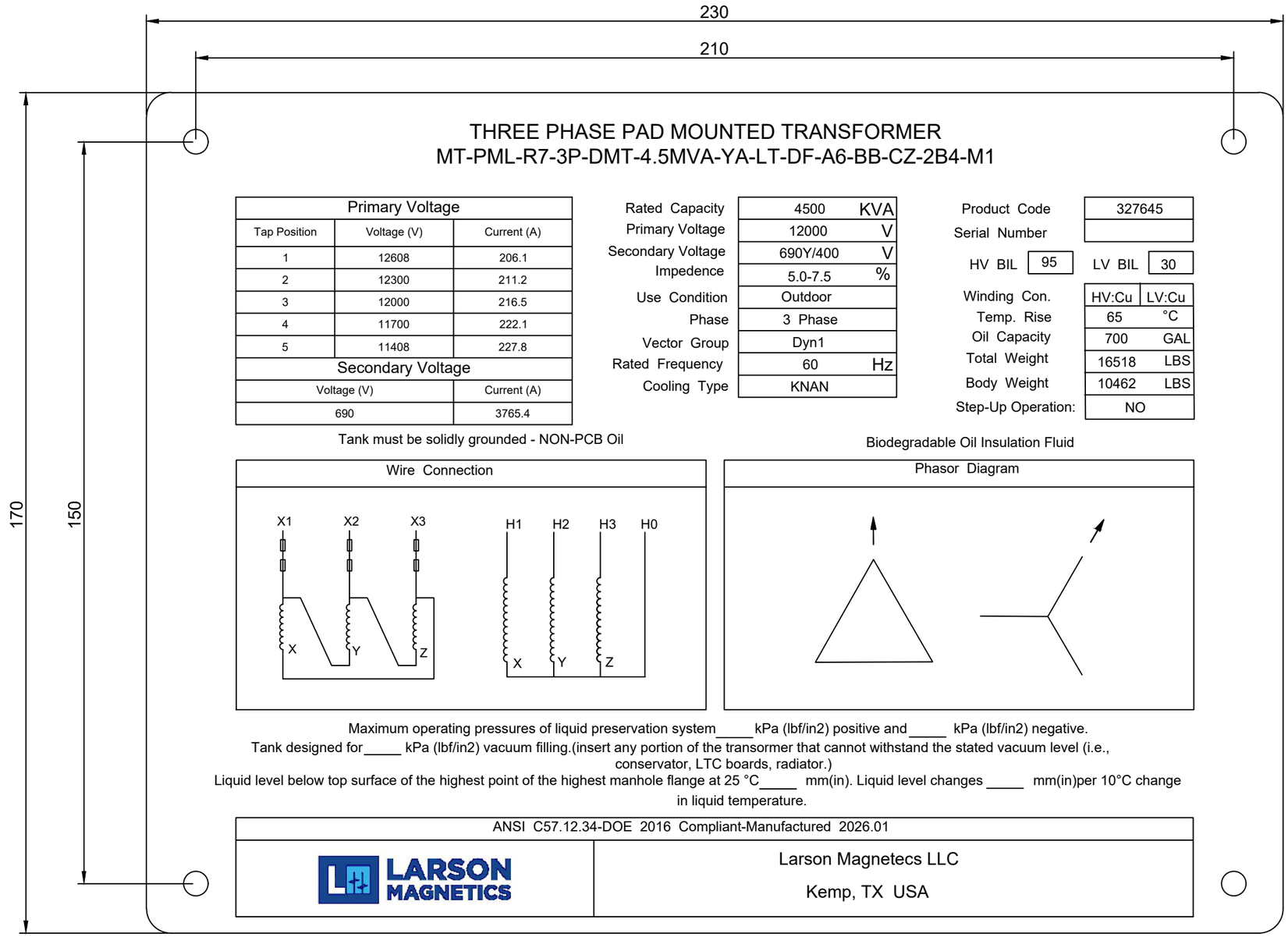

THREE PHASE PAD MOUNTED TRANSFORMER
MT-PML-R7-3P-DMT-4.5MVA-YA-LT-DF-A6-BB-CZ-2B4-M1

Primary Voltage		
Tap Position	Voltage (V)	Current (A)
1	12608	206.1
2	12300	211.2
3	12000	216.5
4	11700	222.1
5	11408	227.8
Secondary Voltage		
Voltage (V)		Current (A)
690		3765.4

Rated Capacity	4500	KVA
Primary Voltage	12000	V
Secondary Voltage	690Y/400	V
Impedence	5.0-7.5	%
Use Condition	Outdoor	
Phase	3 Phase	
Vector Group	Dyn1	
Rated Frequency	60	Hz
Cooling Type	KNAN	

Product Code	327645
Serial Number	

HV BIL 95 LV BIL 30

Winding Con.	HV:Cu	LV:Cu
Temp. Rise	65	°C
Oil Capacity	700	GAL
Total Weight	16518	LBS
Body Weight	10462	LBS
Step-Up Operation:	NO	

Tank must be solidly grounded - NON-PCB Oil

Biodegradable Oil Insulation Fluid

Wire Connection

Phasor Diagram

Maximum operating pressures of liquid preservation system_____kPa (lbf/in2) positive and_____ kPa (lbf/in2) negative.
Tank designed for_____ 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_____ mm(in). Liquid level changes _____ mm(in)per 10°C change in liquid temperature.

ANSI C57.12.34-DOE 2016 Compliant-Manufactured 2026.01

LARSON MAGNETICS

Larson Magnetecs LLC

Kemp, TX USA

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KEMP, TX 75143

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Frequently Asked Questions (FAQ)

There are no Faqs