Three-Phase
Pad-Mounted Transformer

Overview

Chuanli Electric's three-phase pad-mounted transformers deliver high performance, exceptional reliability, and eco-conscious design. Engineered for both indoor and outdoor applications, these transformers combine operational efficiency with advanced equipment protection while minimizing operating costs and thermal emissions.

Three-Phase
Pad-Mounted Transformer

Key Features

- Robust Construction: Heavy-gauge steel enclosures with powder-coated baked-on finish for tamper-resistance and weatherproof durability
- Flexible Configurations: Available in both live-front and dead-front designs, supporting radial or loop-feed applications
- Eco-Safe Technology: Filled with sustainable biodegradable dielectric fluid for superior fire protection and extended service life

Primary Applications

- Utilities: Step-down transformer solutions
- Bitcoin Mining: Specialized 415V (Y-configuration) load-side transformers
- Solar Farms: Step-up transformer systems
- Industrial: Suitable for demanding environments including hazardous locations

Technical Advantages

- 20 years of North American market experience
- Complete liquid-filled pad-mounted distribution transformer product line
- Compliance with stringent North American operational standards
- Custom engineering solutions available

Service Coverage

Providing professional transformer solutions for utility, renewable energy, and industrial sectors across North America.

Types of Insulating Fluids

A liquid-immersed transformer is generally used outdoors due to concerns over oil spills or fires if the oil reaches its flash point level. Recently, new insulating liquids (e.g., silicone fluid, FR3) have been developed with a higher flashpoint temperature than mineral oil, and transformers with such liquids can be used indoors. However, it is important to note that these less-flammable liquid-immersed transformers have higher initial costs relative to their dry-type counterparts, preventing their widespread market adoption.

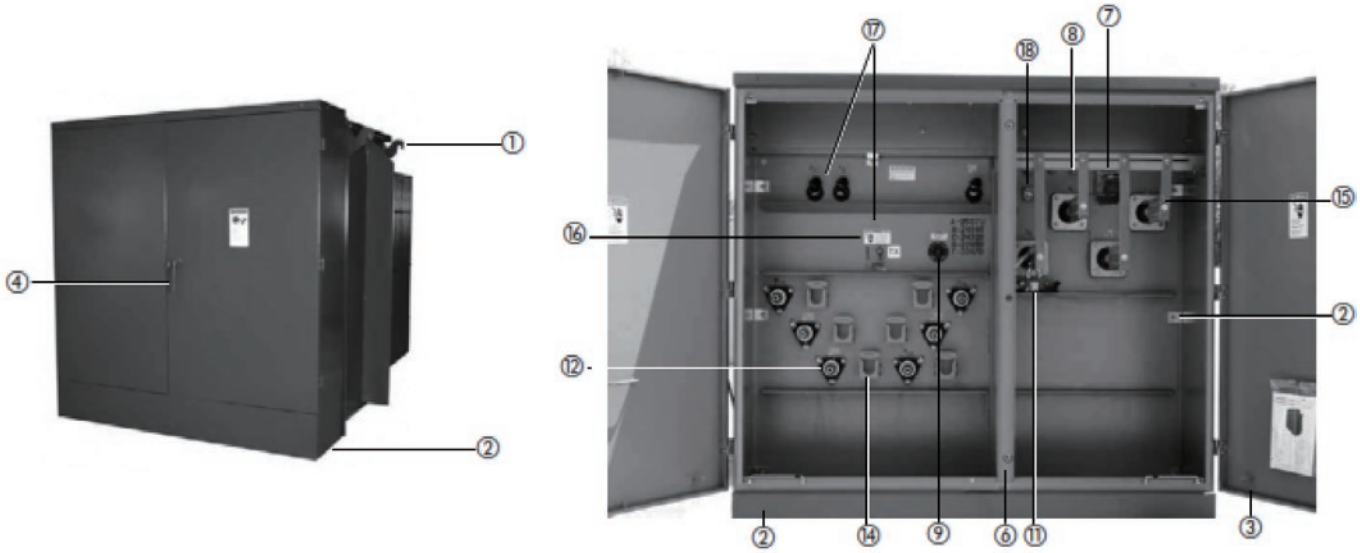
For transformer applications, silicone is ideal because of its heat stability, material compatibility, low flammability, and low toxicity. Silicone′s high fire point of 340 oC makes it a less flammable fluid that is UL Listed and factory mutual approved for indoor and outdoor applications. It is ideal in locations where fire hazards are present and special fire-suppression systems are in place.

The FR3 dielectric fluid is fully biodegradable and environmentally friendly. It is appropriate for indoor use and for areas with high environmental sensitivity where any spilled insulating fluid could require extensive cleanup.

Minimum and Specific Dimensions

There are two configurations for deadfront design: minimum dimensions and specific dimensions. The minimum dimensions cover minimum bushing spacing, bushing height, and compartment depth. In contrast, the specific dimensions cover dimensions other than the minimum ones while considering the installations, maintenance, and ease of connections.

Standard Features of a Pad-Mounted Transformer

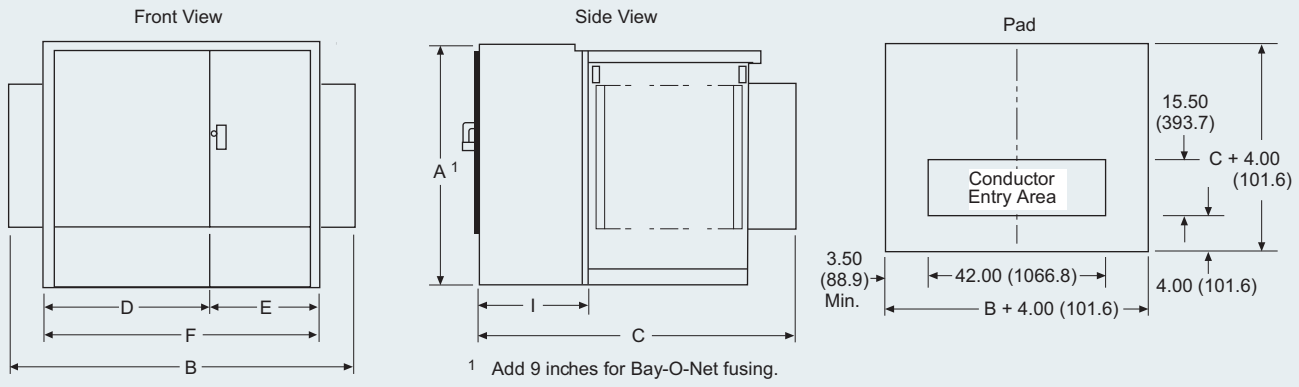


Serial number	Name
1.	Lifting Hooks
2.	Terminal compartment with removable front sill
3.	Hinged, lift-off cabinet doors
4.	Interlocked Penta-head bolt padlock handle
5.	Ground pads (not shown)
6.	Compartment barriers
7.	Nameplate
8.	Pressure relief device
9.	Tap changer
10.	Drain valve
11.	Removable ground strap
12.	Bushing wells (for deadfront design)
13.	Spade bushings (for livefront design)
14.	Parking stands
15.	Spade terminals
16.	Load-break switch
17.	Bay-O-Net fuse
18.	Liquid level gauge

S22M oil to Level 1 energy efficiency

Rated Capacity (kVA)	Primary Voltage (V)	Secondary Voltage (V)	HV Tap Range	Impedance Percentage (%Z)	Rated Line Volatge : Standard BIL (kV)	Certifications
45	440V-35,000V	208/120Y-34,500V	2×±2.5%	2.70-5.75	1.2kV: 30KV 2.5kV: 45KV 5.0kV: 60KV 8.7kV: 75KV 15kV: 95KV 25kV: 125/150KV 34.5kV: 150KV	UL/C-UL
75			2×±2.5%	2.70-5.75		UL/C-UL
112.5			2×±2.5%	3.10-5.75		UL/C-UL
150			2×±2.5%	3.10-5.75		UL/C-UL
225-300			2×±2.5%	3.10-5.75		UL/C-UL
500			2×±2.5%	4.35-5.75		UL/C-UL
750-10,000			2×±2.5%	5.75-6.50		UL/C-UL

Layout Dimensions



Cabinet/Tank Dimensions

Pad-Mounted Transformer—Dimensions in Inches (mm)

kVA	A	B	C	D	E	F	I	Gallons	Approximate Weight	DOE 2016 Efficiency
45	50	68	39	42	26	68	20	115	2150	98.92%
75	50	68	39	42	26	68	20	125	2350	99.03%
112.5	50	68	39	42	26	68	20	135	2600	99.11%
150	50	68	49	42	26	68	20	150	2900	99.16%
225	50	72	53	42	30	72	20	170	3400	99.23%
300	50	72	55	42	30	72	20	190	3950	99.27%
500	50	72	61	42	30	72	20	240	5300	99.35%
750	64	72	63	42	30	72	20	300	7150	99.40%
1000	64	72	64	42	30	72	20	350	8950	99.43%
1500	73	89	71	42	30	72	24	400	11,450	99.48%
2000	73	101	75	42	30	72	24	525	13,800	99.51%
2500	73	101	99	42	30	72	24	600	16,750	99.53%

Note: The reference dimensions in this table cover the following: livefront and deadfront configurations, loop feed and radial feed, mineral oil and FR3 filled units.

Dimensional Variations

Height Variations

1. Add 9.00 inches (228.6 mm) to the height when using bayonet fusing on all kVA ratings.

2. Less flammable natural esther fluid requires deeper tanks on some transformer ratings.

a. Add 2.00 inches (50.8 mm) to the depth of kVA ratings 75–1500. Add 8.00 inches (203.2 mm) to the depth of kVA ratings 2000 and 2500.