PEAK™ single-phase overhead distribution transformer

General

Eaton's Cooper Power™ series single-phase PEAK™ transformers are available as conventional (5-167 kVA), completely self-protected (CSP) (5-75 kVA), or MagneX® interrupter protected (5-167 kVA) in a variety of ratings to meet or exceed the requirements of applicable ANSI® and NEMA® standards. Units designed per Rural Utilities Service (RUS) standards are also available.

PEAK transformers are a class of transformer technologies that are designed to improve performance in terms of kVA rating, compact dimensions, lighter weight, safety, and sustainability. Conventional transformers operate at 65 °C for the Average Winding Rise (AWR) at full load. PEAK transformers are currently available with ratings up to 75 °C AWR.

PEAK transformers are ANSI® compliant, available with all current conventional transformer options and are backed by Eaton's quality control assurances. They are offered in either 65/75 °C slash rated or 75 °C rise rated configurations. A 65/75 °C rated PEAK transformer is comparable in size to a conventional transformer but has nameplated overload capability. A 75 °C rise rated PEAK transformer is smaller in size but delivers the same kVA as its conventional counterpart.

All PEAK transformers use Envirotemp™ FR3™ dielectric fluid as their cooling fluid. Envirotemp™ FR3™ fluid has a higher flash point than conventional transformer fluids which increases PEAK transformers fire protection. Envirotemp™ FR3™ fluid increases the life span of the core and fluid insulation to a point where the overall life expectancy of PEAK transformers is significantly increased. Envirotemp™ FR3™ fluid is also a green product that has nearly neutral carbon footprint.

CSP transformers have direct connected primary arresters, secondary circuit breakers, and internal primary voltage fuses. This eliminates the need for separately mounted protective devices and provides reduced installation costs.

The MagneX interrupter is an overcurrent protective device that protects distribution transformers from damaging overloads and secondary faults, and is also used for switching the transformer "on" or "off."

Transformers shown are the PEAK single-phase overhead conventional transformers and (bottom) PEAK MagneX interrupter protected transformer.

Powering Business Worldwide

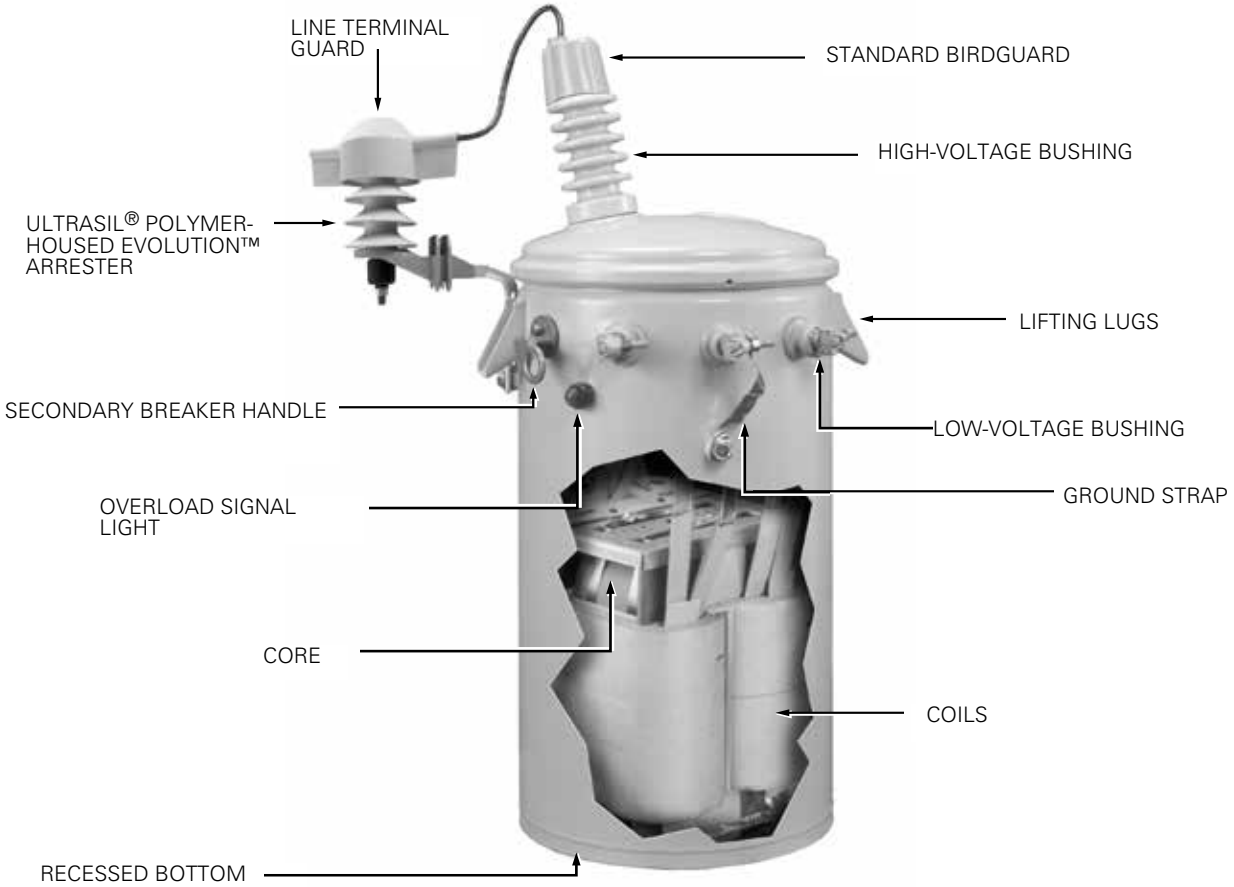


Figure 1. Single-phase overhead CSP transformer.

Standard features

- Meet or exceeds ANSI® and NEMA® standards
- Meets U.S. Department of Energy (DOE) Energy Efficiency Standard 10 CFR Part 431 for distribution transformers
- Electric Power Research Institute (EPRI) recommended interlaced core-type design (5-75 kVA)
- Tank coating exceeds IEEE Std C57.12.31™-2002 standard
- Cover with a minimum dielectric strength of 8 kV
- Tin-plated high and low-voltage bushing terminals to accommodate aluminum or copper conductors
- Laser-engraved nameplate
- Wet process porcelain high-voltage bushings resistant to high-voltage corona
- Tank grounding provisions
- Envirotemp™ FR3™ fluid
- Heavy-duty lifting lugs and hanger brackets per ANSI® requirements[1]
- Visible cover ground on units with cover-mounted bushings
- Recessed tank bottom that offers protection when sliding over rough surfaces
- Automatic pressure relief device
- Polymer low-voltage bushings (5-75 kVA)
- Arrester mounting and grounding provisions
- Internal mark indicating the proper fluid level
- Permanently stamped secondary leads to ensure proper identification
- Corrosion-resistant cover band
- Quality System ISO 9001 certified

Optional accessories

- Taps either two 2.5% above and below; four 2.5% below; NEMA® taps or special taps
- Externally-operable tap-changer switches for safe operation
- Multiple voltage primaries (5-75 kVA)
- Externally-operable multiple voltage switches for safe operation
- High corrosion area protection with 304 or 409 stainless steel hardware and tanks
- MagneX interrupter protection
- Birdguards
- Cover with a minimum dielectric strength of 15 kV
- Extra creep high voltage bushings (up to 150 kV BIL)
- Porcelain low-voltage bushings
- Canadian Standards Association (CSA) conforming design
- Special designs conforming to international specifications
- Drain/sampling valve
- Pressure vacuum gauge (tank size limitations apply)
- Filter press connections
- Temperature gauge (tank size limitations apply)
- Liquid level gauge (tank size limitations apply)
- High efficiency transformers at 0.05% or higher above U.S. Department of Energy (DOE) efficiency

[1]Lugs and brackets per ANSI® requirements up to 4500 lbs.

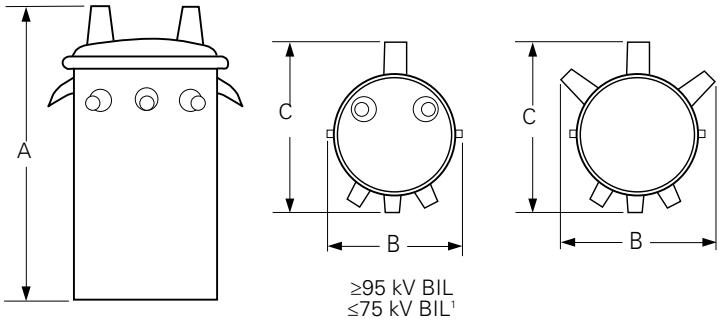
PEAK single-phase overhead conventional transformer

Product Scope:

kVA: 5-167

Primary Voltage: 2400-19,920 V

Secondary Voltage: 120-600 V



≥95 kV BIL
≤75 kV BIL[1]

Table 1. Typical Dimensions and Weights 2,3

	Dimensions (in.)							
	"A"				"B"		"C"[1]	
kVA	≤75 kV BIL	95 kV BIL	125 kV BIL	150 kV BIL	≤75 kV BIL	≥95 kV BIL	≤ 150 kV BIL	Approx. Weight (lbs.)
5	26	34	37	41	25[1]	17	20	220
10	26	34	37	41	25[1]	17	20	220
15	28	36	39	43	25[1]	17	20	260
25	30	38	41	45	26[1]	19	22	340
37.5	32	38	44	48	27[1]	19	24	440
50	33	41	44	48	29[1]	22	25	580
75	36	48	51	53	31[1]	24	28	800
100	37	52	53	57	31[1]	27	31	1050
167	44	52	53	57	33[1]	35	37	1350

1 Includes sidewall mount H.V. bushings.

2 Includes Radiators

3 Weights, gallons of fluid and dimensions are for reference only, and not for construction. Please contact your Eaton representative for exact dimensions.

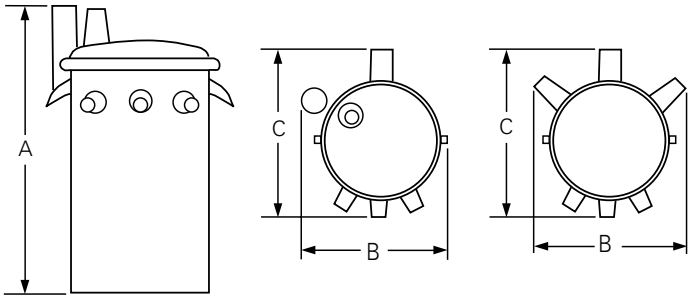
PEAK single-phase overhead completely self protected transformer

Product Scope:

kVA: 5-75

Primary Voltage: 2400-19,920 V

Secondary Voltage: 120-600 V



≥95 kV BIL
≤75 kV BIL[1]

Table 2. Typical Dimensions and Weights[2,3]

	Dimensions (in.)							
	"A"				"B"		"C"1	
kVA	≤75 kV BIL	95 kV BIL	125 kV BIL	150 kV BIL	≤75 kV BIL	≥95 kV BIL	≤ 150 kV BIL	Approx. Weight (lbs.)
5	26	38	37	41	25[1]	17	20	240
10	26	38	37	41	25[1]	17	20	240
15	28	43	39	43	25[1]	17	20	280
25	30	44	41	45	26[1]	19	22	390
37.5	32	44	44	48	27[1]	19	25	490
50	33	43	44	48	29[1]	22	26	580
75	36	48	51	53	31[1]	24	30	880
100[4]	37	52	53	57	31[1]	27	34	1050
167[4]	44	52	53	57	33[1]	35	40	1550

1 Includes sidewall mount H.V. bushings.

2 Includes Radiators

3 Weights, gallons of fluid and dimensions are for reference only, and not for construction. Please contact your Eaton representative for exact dimensions.

4 MagneX interrupter Only

Protection options

- Secondary breaker with weak link for secondary fault and overload protection (5-75 kVA)
- Primary weak link fuse
- Current-limiting fuse for high interrupting ratings and limiting fault currents
- MagneX interrupter (Primary Breaker) with isolation link
- MagneX interrupter (Primary Breaker) with partial range current-limiting fuse
- Surge arresters for primary overvoltage protection:
- Direct connected UltraSIL® Polymer-Housed VariSTAR® arrester, normal-duty or heavy-duty
- Direct connected UltraSIL Polymer-Housed Evolution™ arrester
- Internal, under-oil VariSTAR arrester
- Surge arrester for secondary overvoltage protection:
- Storm Trapper® H.E. (High Energy), low voltage distribution-class surge arrester, internally or externally mounted

Quality control

Eaton's Cooper Power series single-phase overhead-type transformers provide outstanding performance. All transformers pass tests as prescribed by ANSI® prior to shipment. Cores and coils are designed for high reliability and low field failure rates. The domed cover design in conjunction with the formed cover band provides increased pressure withstand capability, eliminates bushing overhang and improves cover retention. The high-voltage bushing design improves gasket protection and seal. The low-voltage polymer bushing virtually eliminates ultraviolet deterioration with its captured gasket, compression-limiting design.

Transformers are designed and manufactured to be corrosion-resistant. Special attention is given to all welded external parts, to avoid moisture entrapment that can lead to corrosion problems. The recessed bottom design, as well as the stainless steel cover band ends, provide corrosion protection in areas that are more susceptible to coating damage during handling. All coating systems exceed IEEE Std C57.12.31™-2002 standard.

The Quality System at Eaton's Cooper Power Systems Division Transformer Products is ISO 9001 certified.

Additional Information

PA201001EN	Stretch your Distribution System Investment with PEAK Transformers
PA132008EN	Defend the Backbone of your Distribution System
S201-10-1	Instructions for Mineral Oil-Filled, Single-Phase Overhead Distribution Transformers
CA201004EN	PEAK Single-Phase Pad-mounted Distribution-Class Transformer
CA235018EN	UltraSIL Polymer-Housed Evolution Surge Arrester
CA132016EN	MagneX Single-Phase Interrupter
CA235015EN	Storm Trapper H.E. (High Energy) Low-Voltage Distribution-Class MOV Surge Arrester
CA235016EN	VariSTAR Type AZU Heavy Duty Distribution-Class Under-Oil MOV Arrester
240-31	Oil Immersed Current Sensing Weak Link Cartridge
240-32	Oil Immersed Dual Sensing Weak Link Cartridge
CA132013EN	ELSP Current-Limiting Backup Fuse

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton's Cooper Power Systems Division
2300 Badger Drive
Waukesha, WI 53188
United States
Eaton.com/cooperpowerseries

Powering Business Worldwide

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For Eaton's Cooper Power series PEAK transformer product information call 1-877-277-4636 or visit: www.eaton.com/cooperpowerseries.