

Single-Phase Pad-mounted

GENERAL

Cooper Power Systems manufactures a complete line of single-phase pad-mounted distribution transformers. They are available in standard ratings and configurations or can be customized to meet specific needs.

Single-phase transformers are available as Shrubline®, MaxiShrub®, and Ranch Runner® transformers. All of these distribution transformers are oil insulated, self-cooled, available in loop or radial feed, and are dead-front.

Both the Shrubline and MaxiShrub versions are manufactured with ratings from 10-167 kVA. All of these transformers meet or exceed ANSI and NEMA standards.

The Shrubline is Cooper's ANSI Type-2 single-phase dead-front pad-mounted transformer. The low profile design blends visually with surroundings – shrubs, low hedges, and home air conditioners – making it ideal for residential applications.

The MaxiShrub is Cooper's ANSI Type-1 single-phase dead-front pad-mounted transformer. The ANSI Type-1 frontplate arrangement allows vertical feed to the primary and secondary bushings. It is ideal for single-phase industrial and residential applications where a wide range of kVAs or heavy cabling is required.

The Ranch Runner is manufactured with ratings from 10-50 kVA. It is Rural Utilities Services (RUS) approved, and meets all ANSI requirements except frontplate arrangements. The Ranch Runner is a very compact pad-mounted transformer. Its compact design makes it ideal for irrigation, oil field and residential applications. It offers an economical design which provides standard transformer capabilities in a very compact space. This unit is shipped complete with its own poly-pad suitable for shipping and installation.

Cooper Power Systems offers poly-pads that are usable with most transformers conforming to ANSI C57.12.25 (Type-1 or Type-2). This polymer pad serves as a shipping pallet as well as an installation pad.



Figure 1. Shrubline single-phase pad-mounted transformer.



Figure 2. MaxiShrub single-phase pad-mounted transformer.



Figure 3. Ranch Runner single-phase pad-mounted transformer.



Figure 4.
Single-phase pad-mounted transformer.

STANDARD FEATURES

- Meet or exceeds ANSI and NEMA standards¹
- Tank coating exceeds ANSI C57.12.28 and C57.12.29
- Full compliance with ANSI C57.12.28 enclosure integrity requirements
- Laser engraved nameplate
- Recessed stainless steel lifting provisions
- Tank grounding provisions
- Automatic pressure relief device
- Electrical grade mineral oil
- Hinged door with stainless steel hinge pins and barrels
- Floating lock pocket for easy alignment
- Captive stainless steel pentahead door locking bolt

- Oil fill and drain provisions
- Removable sill
- Welded domed tank cover
- High-voltage bushing wells - 200 A
- Ground strap from X₂ to tank ground
- Tamper strips of noncorrosive material
- Decal bushing designations
- Quality System ISO 9001 certified

OPTIONAL FEATURES

- Various multiple voltages or taps
- Externally-operable multiple voltage or tap changer switches for safe operation
- Stainless steel tank, tank bottom, sill, door, and/or hardware
- Service entrance in sill
- Various spades and terminals

- available for secondary bushings
- Stencilled bushing designations
- Various other designations available, e.g., kVA, voltages, fuse number
- High-voltage bushing inserts
- Ground connectors
- Captive stainless steel hexhead door locking bolt
- RUS design
- One piece high-voltage bushings
- High-voltage bushing wells with removable studs
- R-Temp® fluid where less-flammable liquid is required
- Envirotemp® FR3™ fluid where less-flammable fluid is required and where superior environmental characteristics are desired

- CSA and CEA designs
- Special designs to meet international specifications are also available
- Loadbreak switches¹
- Drain/sampling valve¹
- Pressure vacuum gauge¹
- Liquid level gauge¹
- Temperature gauge¹
- Combination shipping and installation poly-pad³

PROTECTION OPTIONS

- Bay-O-Net expulsion fuse with Flapper™ valve
- Bay-O-Net and partial range current-limiting fuses

- Weak link fuse
- Weak link and partial range current-limiting fuses
- Secondary breaker with weak link¹
- MagneX® Interrupter with isolation link¹
- MagneX Interrupter with partial range current-limiting fuse¹
- Under-oil high-voltage MOV arrester¹
- Low-voltage distribution class MOV arrester, internally or externally mounted

- Kyle® Vacuum Fault Interrupter (VFI) for electronic breaker trip control²

¹ Not available with the Ranch Runner.
² Only available with ANSI Type-2 front plate configurations.
³ Standard with the Ranch Runner transformer.

SINGLE-PHASE PAD-MOUNTED SHRUBLINE

Product Scope:
 kVA: 10-167
 Primary Voltage: 2400-19,920 V
 Secondary Voltage: 120-600 V

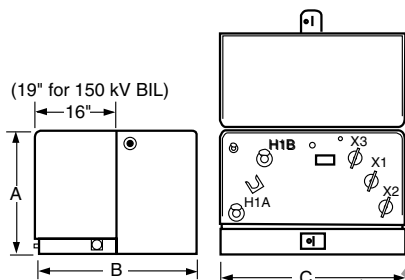


Figure 5.
 Single-phase Pad-mounted Shrubline.

SINGLE-PHASE PAD-MOUNTED MAXISHRUB

Product Scope:
 kVA: 10-167
 Primary Voltage: 2400-19,920 V
 Secondary Voltage: 120-600 V

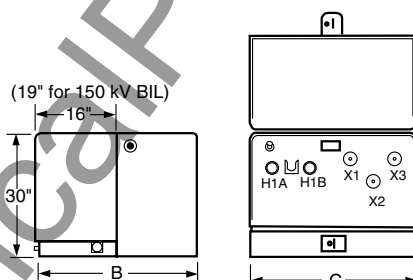


Figure 6.
 Single-phase Pad-mounted MaxiShrub.

SINGLE-PHASE PAD-MOUNTED RANCH RUNNER

Product Scope:
 kVA: 10-50
 Primary Voltage: 2400-14,400 V
 Secondary Voltage: 120-600 V

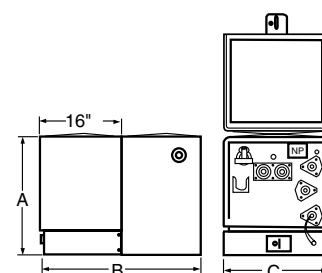


Figure 7.
 Single-phase Pad-mounted Ranch Runner.

TABLE 1
 Typical Dimensions and Weights³

kVA	Dimensions (in.)			Approx. Weight (lbs.)
	"A"	"B"	"C"	
10	24	29 ¹	33	600
15	24	29 ¹	33	625
25	24	29 ¹	33	650
37.5	24	30 ¹	33	700
50	24	32 ¹	33	750
75	24	34 ¹	33	1000
100	30	37 ¹	36	1150
167	30	47 ^{1,2}	36	1650

¹ Add 3" for 150 kV BIL
² Includes corrugate
³ Weights, gallons of fluid and dimensions are for reference only, and not for construction. Please contact Cooper Power Systems for exact dimensions.

TABLE 2
 Typical Dimensions and Weights³

kVA	Dimensions (in.)		Approx. Weight (lbs.)
	"B"	"C"	
10	28 ¹	33-36	700
15	38 ¹	33-36	700
25	28 ¹	33-36	700
37.5	28 ¹	33-36	750
50	30 ¹	33-36	800
75	32 ¹	33-36	1000
100	34 ¹	36	1150
167	46 ^{1,2}	36	1650

¹ Add 3" for 150 kV BIL
² Includes corrugate
³ Weights, gallons of fluid and dimensions are for reference only, and not for construction. Please contact Cooper Power Systems for exact dimensions.

TABLE 3
 Typical Dimensions and Weights¹

kVA	Dimensions (in.)			Approx. Weight (lbs.)
	"A"	"B"	"C"	
10	24	28.5	21	400
15	24	28.5	21	500
25	24	32.5	21	600
37.5	24	35.5	21	650
50	24	35.5	21	720

¹ Weights, gallons of fluid and dimensions are for reference only, and not for construction. Please contact Cooper Power Systems for exact dimensions.

SINGLE-PHASE VFI TRANSFORMER

The VFI transformer combines a conventional Cooper Power Systems distribution transformer with the proven Kyle Vacuum Fault Interrupter (VFI). This combination provides both voltage transformation and overcurrent protection in one space-saving, money-saving package.

The Single-phase Pad-mounted VFI transformer with loop protection is designed to protect the loop or downstream section of a feeder, and provide proper coordination with upstream and downstream protective devices. In this configuration, when a fault occurs downstream, the VFI trips and isolates the fault, leaving the transformer load uninterrupted.

The VFI breaker has an interrupting rating that far exceeds standard riser pole fuses, enabling better fault clearing coordination and thereby minimizing outage area. Because it is resettable, fault locating is simplified and outage time is reduced.

POLY-PAD

Cooper Power Systems offers a poly-pad that is usable with most transformers conforming to ANSI C57.12.25 Type-1 or Type-2. This polymer pad enables transformers to be shipped and installed on the same pad. Use of the poly-pad can eliminate the purchasing, inventory, and administrative costs associated with conventional concrete, polymer or fiberglass pads. Installation costs can also be significantly reduced since the transformer is pre-mounted to its pad. These forkliftable units can be transported damage free during shipping and handling.

QUALITY CONTROL

Single-phase pad-mounted distribution transformers manufactured by Cooper Power Systems provide outstanding performance.

All Cooper transformers pass routine tests as prescribed per ANSI prior to shipment.

MaxiShrub ANSI Type-1, Shrubline ANSI Type-2 and Ranch Runner designs are in full compliance with ANSI C57.12.28 security requirements.

Corrosion resistance is optimized with the utilization of a superior coating system, combined with the strategic use of stainless steel material, and a tank designed to reduce the retention of water. Our coating systems exceed ANSI C57.12.28 and C57.12.29.

Stainless steel components include door hinge pins and barrels, parking stands, mounting studs, and recessed lifting provisions.

Door and tank covers are permanently domed to eliminate retention of water. All external parts are full-welded to eliminate corrosion caused by moisture entrapment. Bumper pads on doors reduce shipping damage. Lifting provisions are recessed to reduce damage during handling.

The Quality System at Cooper Power Systems Transformer Products is ISO 9001 certified.

FLUID OPTIONS

Transformers can be filled with standard electrical grade mineral insulating oil, R-Temp fluid, Envirotemp FR3 fluid, or other dielectric coolants manufactured by Cooper Power Systems.

For fire-sensitive locations, the transformer can be filled with R-Temp fire-resistant natural hydrocarbon fluid or Envirotemp FR3 fluid, a fire resistant natural ester-based fluid. Envirotemp FR3 fluid offers the benefit of a seed oil-based dielectric coolant with food grade additives, in addition to increased fire safety over conventional mineral oil. Check with Cooper Power Systems for the availability of other dielectric coolants in single-phase pad-mounted transformers.

COOPER Power Systems