



Reliable to a Fault

Shrubline™ Single-Phase
VFI Pad-mounted Transformers
and Switchgear

**COOPER** Power Systems

For Enhanced Reliability, Put Cooper in Your URD Loop

Because No One Can Prevent Fault-Related Outages ...

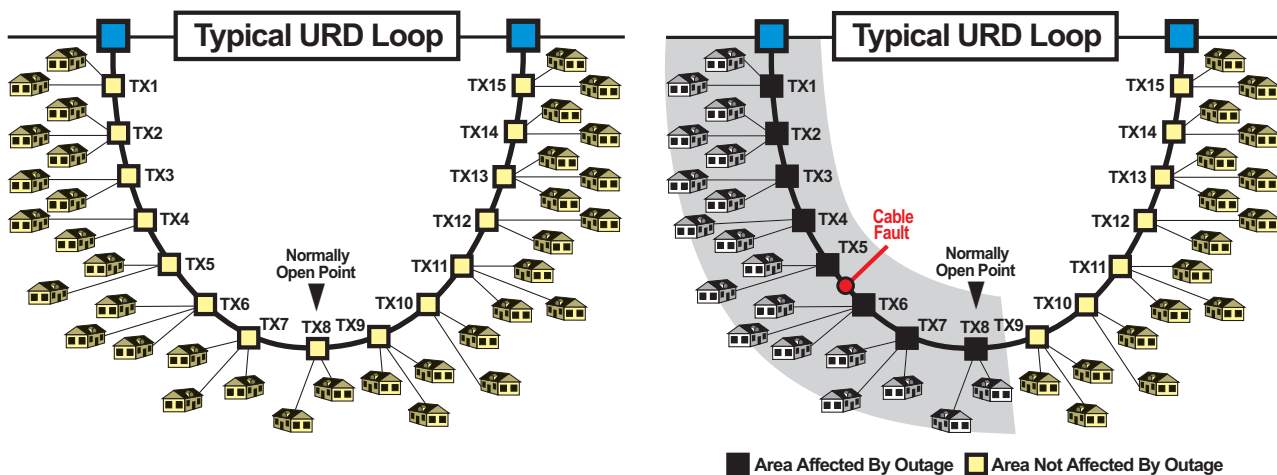
Cooper Power Systems' Shrubline™ Single-Phase VFI Pad-mounted Transformers and Switchgear are simply the best choices you can make when designing new URD systems... or upgrading existing ones. Not only do Vacuum Fault Interrupters (VFIs) make it safer, faster and easier to restore customers' power, they also offer:

- Superior overcurrent and fault protection
- Elimination of expenses associated with stocking or changing out fuses
- Resettable breaker operation
- Programmability
- Breaker that doubles as an open/close loadbreak switch for the loop
- Safe, secure deadfront construction
- Reduction of outage duration and outage area
- Ease of coordination with upstream and downstream protection devices
- Reduced installation, maintenance and inventory costs
- An aesthetically pleasing, low profile design



Don't Leave Your Customers in the Dark.

Your customers count on you to provide reliable electric power. However, with traditional URD loop protection, half of the customers in a loop are out of power if a cable fault occurs.



Superior Protection, Coordination, and Flexibility

Turn Big Faults into Small Faults.

Power outages in a standard distribution configuration can plunge entire subdivisions into darkness. Unfortunately, no one has invented a way to avoid them — but Cooper Power Systems can help you reduce the number of customers they affect.

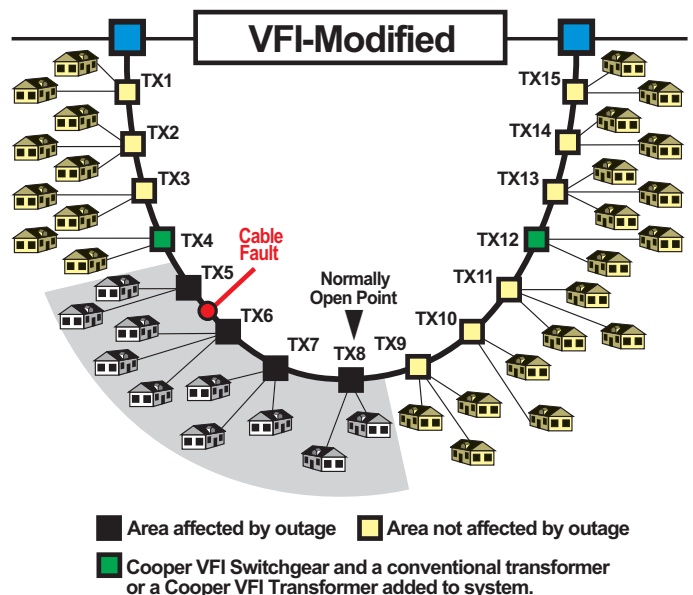
Reliability... Swiftly, Safely and Simply.

Face it: No one likes to think about outages... but you know you're going to have to deal with them immediately when they occur. That's why you should include VFI Pad-mounted Transformers and Switchgear in your URD plans. They'll help you resolve your outage problems simply, safely and swiftly.



Find Faults Faster. Fix Faults Faster.

Cooper Power Systems' Shrubline Single-Phase VFI Pad-mounted Transformers and Switchgear are specifically designed to enable you to find faults faster — and isolate them faster — than with conventional fused equipment. This means fewer customers are out of power and they're back up sooner. And the sooner you restore your customers' power, the happier they'll be.



Shrubline Single-Phase VFI Pad-mounted Transformer



Everything You Need in a Single, Space-Saving Package.

Only Cooper Power Systems can provide you with the best transformer and overcurrent protection for URD systems in the least amount of space: the Shrubline Single-Phase VFI Pad-mounted Transformer. It combines a distribution transformer and vacuum fault interrupter switchgear in one enclosure.

It's the ideal choice for residential applications where:

- Space is limited
- Inline fault or radial tap protection is difficult or impossible to coordinate
- Minimizing outage area and/or duration are critical

Enhanced Protection. Enhanced Coordination.

The Shrubline Single-Phase VFI Pad-mounted Transformer provides both overcurrent and fault protection, and can be easily coordinated with upline and downline protective devices as changes in the system occur.

Application Situations:

- At taps off a main URD feeder
- In place of a 3-way junction cabinet
- Sectionalizing points on a long feeder or a densely loaded feeder
- High cable failure areas
- Tie point between two systems



Shrubline Single-Phase VFI Pad-mounted Switchgear

The Superior Choice for URD Systems.

If you're looking for high reliability in a low-profile design for your URD loop, count on Cooper's Shrubline VFI Pad-mounted Switchgear. Because it employs a sealed Vacuum Fault Interrupter for switching and overcurrent protection, it will remain in operation without requiring repair or replacement of its internal parts.

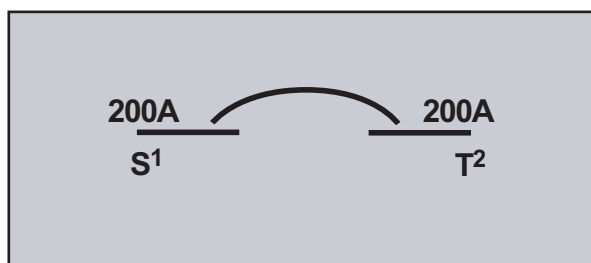
Its resettable breaker mechanism allows immediate service restoration. And because of its ability to "localize" the fault, it can help minimize both outage duration and outage area.

Setting New Standards for Performance.

Cooper's Shrubline VFI Pad-mounted Switchgear employs a Tri-Phase electronic breaker control offering field settable DIP switch minimum trip settings for easy Time Current Curve coordination, and also serves as a vacuum loadbreak switch. Just a simple push-pull of the operating handle switches the tap.

The Shrubline VFI Pad-mounted Switchgear is also an economical, reliable and maintenance-free means of individually protecting isolated loads. And when retrofitted into mature URD developments, it provides superior terminal-point protection.

And one more thing: it's easy on the eyes.



Optional bushings and feed-thru inserts are available to provide two source and/or taps configurations.



Closed

Open

Tripped

Keeping a Low Profile

One Pad. One Enclosure. Lots of Features.

The Shrubline Single-Phase VFI Pad-mounted Transformer offers:

- A Tri-Phase electronic breaker control offering field settable DIP switch trip settings for enhanced Time Current Curve coordination
- Kyle® Vacuum Fault Interrupter (VFI) with axial magnetic field vacuum interruption
- Overcurrent protection anywhere on the high-voltage loop, including radial taps
- Resettable inline fault protection to 35kV
- Resettable breaker mechanism for immediate service restoration
- Trip-free operation that prevents the breaker mechanism from being held in the closed position in the event of a fault
- Reduction of downtime and expenses associated with changing out conventional fuses
- A breaker that doubles as an open/close loadbreak switch

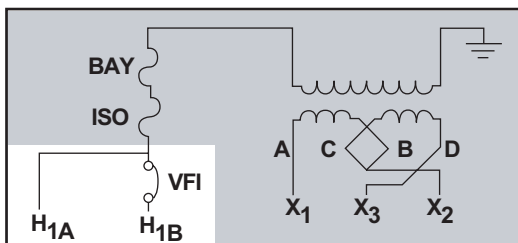


Single-Phase VFI Pad-mounted Transformer



Product Scope.

- Single-phase pad-mounted transformer with VFI breaker in one unit
- 10 - 167 kVA, deadfront
- Maximum 35 kV, 150 kV BIL
- VFI rating: 200A continuous; 12,000 A RMS interrupting rating with Tri-Phase control
- Shrubline construction meeting ANSI/IEEE or CSA/CEA standards
- Low-profile, tamper-resistant construction
- Bay-O-Net™ Expulsion Fuse
- Under-oil back-up ELSP current-limiting fuse (optional)
- Two-position loadbreak switch (optional)
- Secondary Stormtrapper™ Arrester (optional)
- Primary under oil arrester (optional)
- Envirotemp® FR3™ Fluid, Mineral oil



Envirotemp® FR3™ is a Cooper Power Systems' value – added, safer, high performance, environmentally–preferred dielectric fluid. Find out how it can improve your equipment — and add value to your bottom line.

How to Specify.

"Transformer shall be a Cooper Power Systems liquid-filled with axial magnetic field transformer designed in accordance with the requirements of ANSI C57.12.00. The transformer loop shall be protected with a Kyle Vacuum Fault Interrupter (VFI) integral to the transformer tank. The VFI electronic breaker shall have a maximum interrupting rating of 12,000 amps RMS symmetrical with resettable fault protection up through 35 kV."

The Best Solution for URD Loop Protection

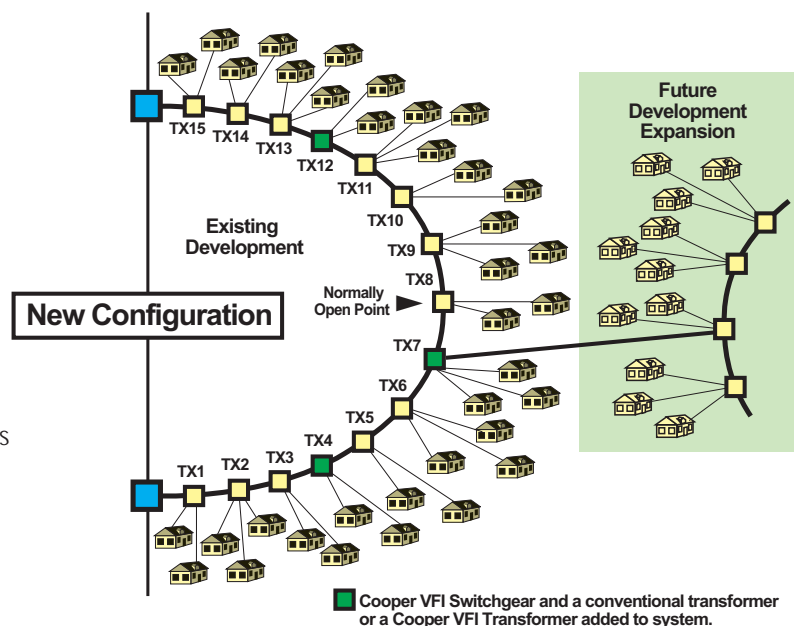
Overcurrent Protection with Circuit-Breaker Ease and Speed.

The Shrubline Single-Phase VFI Pad-mounted Switchgear offers many features, including:

- Resettable breaker-type operation for immediate service restoration
- Low-profile, tamper-resistant dead-front construction for safety
- A Tri-Phase electronic breaker control for precise, easy Time Current Curve coordination with other protective devices
- Kyle® Vacuum Fault Interrupter (VFI) with axial magnetic field vacuum interruption
- Trip settings can be adjusted to accommodate system changes without de-energizing customers
- Resettable inline fault protection to 35 kV
- Switch handle provides visible indication of faulted tap
- VFI breaker eliminates expense associated with stocking and changing out fuses
- VFI breaker doubles as an open/close switch

Product Scope.

- Pad-mounted Vacuum Fault Interrupter (VFI) single-phase breaker
- Maximum 35 kV, 150 kV BIL
- VFI rating: 200A maximum continuous; 12,000A RMS interrupting rating
- Tri-Phase electronic breaker control with field settable DIP switch minimum trip settings and an assortment of Time Current Curves
- Shrubline construction meeting ANSI/NEMA standards
- Low-profile, tamper resistant construction
- Breaker doubles as an open/close two-position loadbreak switch
- Envirotemp® FR3™ Fluid, Mineral oil



Shrubline Switchgear

Envirotemp® FR3™ Fluid is a Cooper Power Systems' value-added, safer, high performance, environmentally-preferred dielectric fluid. Find out how it can improve your equipment – and add value to your bottom line.

How to Specify.

"Switchgear shall be a Cooper Power Systems liquid-filled design in accordance with the requirements of ANSI C57.12.28, ANSI C37.60, and ANSI C37.74. The switchgear loop shall be protected with a Kyle axial magnetic field Vacuum Fault Interrupter (VFI) integral to the tank. The VFI electronic breaker shall have a maximum interrupting rating of 12,000 amps RMS symmetrical with resettable fault protection up through 35 kV. The Tri-Phase electronic breaker control shall include DIP switch selectable minimum trip settings and a choice of time current curves with standard instantaneous trip and optional minimum response curves."

Cooper Power Systems manufactures a wide range of high-quality medium voltage electrical equipment, components and systems that help bring electric power to homes, industries, businesses and institutions throughout the world. With our strong customer focus, superior products, controls and systems applications expertise, nobody does a better job than Cooper Power Systems of supporting your ability to profitably supply your customer with clean, reliable power.



**COOPER** Power Systems

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