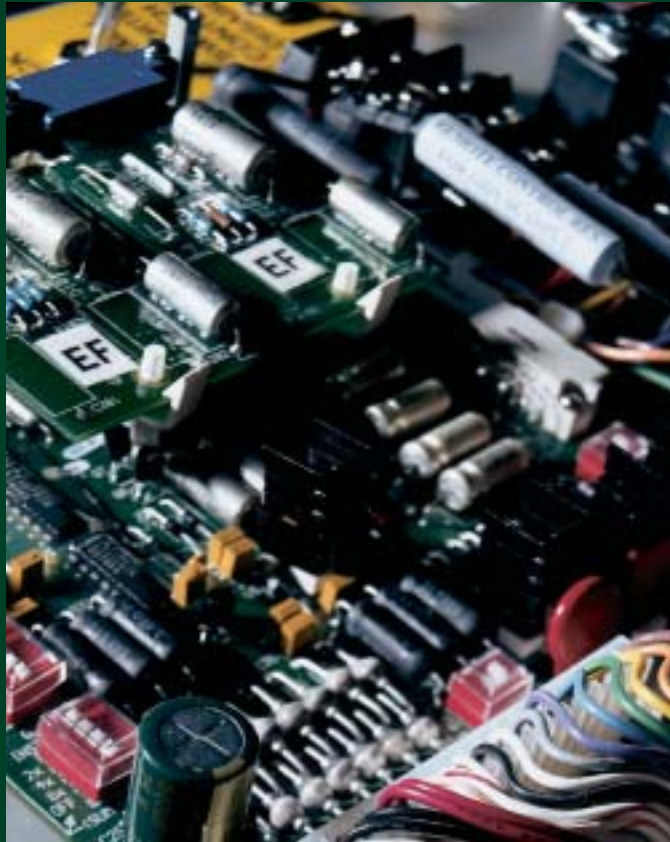


D.A.

Distribution Automation Tools  
Get Your System Under Control.



**COOPER** Power Systems

# KYLE<sup>®</sup> DISTRIBUTION AUTOMATION

Improve your system performance with Cooper Power Systems' Distribution Automation tools. If you need source transfer, loop sectionalizing, circuit reconfiguration, or remote control/communication packages, you need D.A. from Cooper Power Systems.



Loop or Radial Systems

Transfer Packages

Loop Reconfiguration

Loop Automation

Communications

Improved System Performance

Customized Design



As a result of economical and technical changes in the electrical power distribution industry, the growth of Distribution Automation (D.A.) is rapidly accelerating. At the same time, utilities, as well as industrial/commercial customers, are taking a closer look at reliability, power quality, and operation, training and maintenance costs. Product development targeted at meeting existing and future system requirements, while optimizing lifecycle expenditures has been the goal of Cooper Power Systems. Decades of experience in distribution systems, as well as electronic controls technology, have combined at Cooper to provide you with the D.A. tools your distribution system needs.

For Underground Distribution Systems, Cooper Power Systems offers a variety of Distribution Automation tools and applications that will contribute to enhance system performance and monitoring, facilitate circuit/load reconfiguration, reduce outage frequency and duration, and improve power restoration time.

### **Automatic Loop Sectionalizing**

Improvements in URD reliability are directly tied to outage

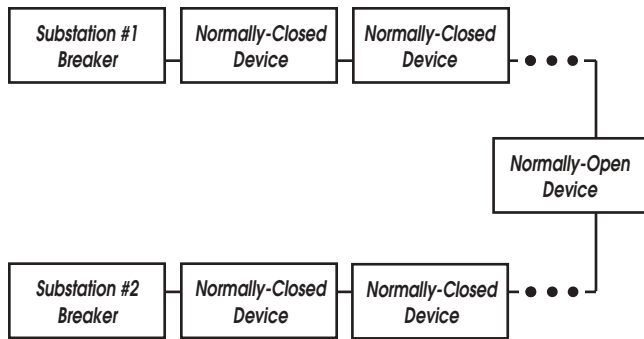
duration. In the presence of a permanent fault, it is important to not only interrupt the fault, but also to isolate the faulted section of the circuit affecting the least amount of customers possible. In loop type feeders, Intelliteam, FILS and Loop Scheme Controls provide the intelligence to optimize circuit reconfiguration and improve the overall system reliability.

Loop Scheme is used in PWE/PWVE padmounted reclosers to protect against overcurrent, and automatically isolate the faulted portion of the system, minimizing the outage duration



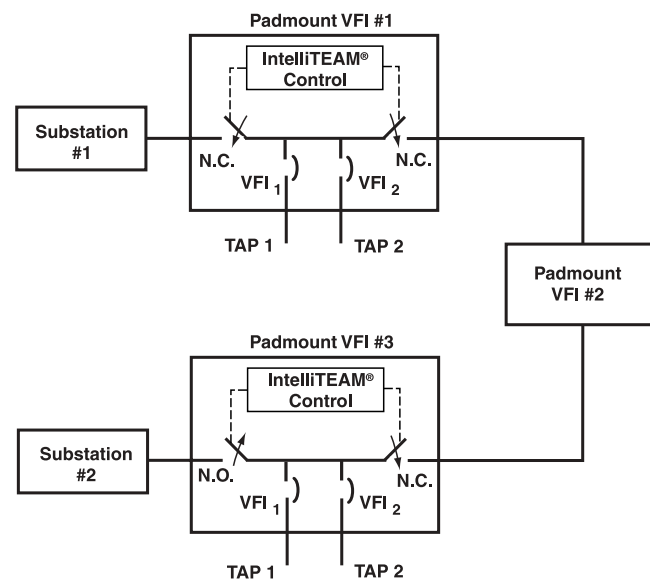
for customers not directly affected. This reconfiguration is done based on loss of voltage detection, and it does not require any type of remote communications to function. Once the feeder is re-configured the overcurrent protection settings are automatically modified to fit the new load configuration. A Loop Scheme system may be comprised of two sectionalizing reclosers (normally closed), and one open-tie

recloser (normally open). Additional sectionalizing devices can be added to further sectionalize the loop. Loop Scheme is an accessory to the Kyle controls. Kyle controls also feature standard current and power metering, event recording, load profiling, and digital communications accessories.



IntelliTEAM® can be used both in PWE/PWVE padmounted reclosers (as a Form 5 accessory), and in the VFI padmounted switchgear (as a stand-alone control). It provides the system with the intelligence to sectionalize the system based on loss of voltage detection. An Intelliteam system is comprised of at least two team members. A team member is either a normally open or a normally closed device. Once a permanent fault occurs, the team member upstream from the fault will lock out. The team

member immediately downstream from the fault will detect a loss of voltage. If the loss of voltage is detected by a normally open device, the device will close after verifying that the fault was not between it and the adjacent devices, and that the feeder is capable of handling the additional load. Service will be restored to not-affected customers, minimizing outage duration and frequency. Intelliteam relies on communications between all members of the team, and with a master SCADA station. Up to 17 members may be included in a team.



FILS (Fault Interrupting Line Sectionalizing) control is used to isolate faulted portions of underground cable in closed loop systems. FILS control is an accessory to VACpac switchgear, and operates based on neutral current imbalance. FILS senses current at both ends of the cable, and when a significant difference is detected, a trip signal is sent to VACpac® devices located at both ends of the cable, isolating the faulted portion. Change of contact status is then communicated via SCADA so that loop reconfiguration can take place.

### Automatic Source Transfer

When protecting critical loads such as hospitals, financial and manufacturing facilities, transfer packages contribute significantly to minimize the duration of an outage by transferring the load from the faulted source to a backup source. VFI switchgear with motor operators is packaged with the S control to provide transfer functionality, where allowed transfer time can be of the order of seconds.



PST (Padmount Source Transfer) switchgear provides total transfer time of 6 cycles or less. PST uses the S control, and CI interrupters with quick-close / quick-open mechanisms. The S control is a time-proven device, which provides the timing and control logic required to perform the source transfer. Discrete SCADA contacts for remote operation, are provided as an accessory to the transfer S control.

For sub-surface applications, VACpac source transfer packages provide fast transfer times for critical loads.

### Remote Operation and Status Indication

Cooper Power Systems padmounted products can be operated and interrogated remotely, via analog or digital communications. To remotely operate the source or tap vacuum interrupter mechanisms, VFI and RVAC switchgear can be provided with DC motor operators. One motor operator control is capable of handling up to six motors, and it has SCADA contacts for remote operation and status indication. For the VFI switchgear, the TPG control can be provided with a SCADA board, which has discrete contacts for remote tripping, monitoring of fault targets, target reset and setting modifications.



The PWE and PWVE padmounted reclosers offer analog or digital communications provisions. Form 4C, Form 5, and Form 6 controls can be provided with either analog or digital communication accessories for remote monitoring, operation, and setting modification of the devices. Radio or modem mounting provisions, allow the user to locate these devices within the control cabinet.



### Additional Information

For additional information on these or other applications of padmount switchgear, please contact your local Cooper Power Systems representative.

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