

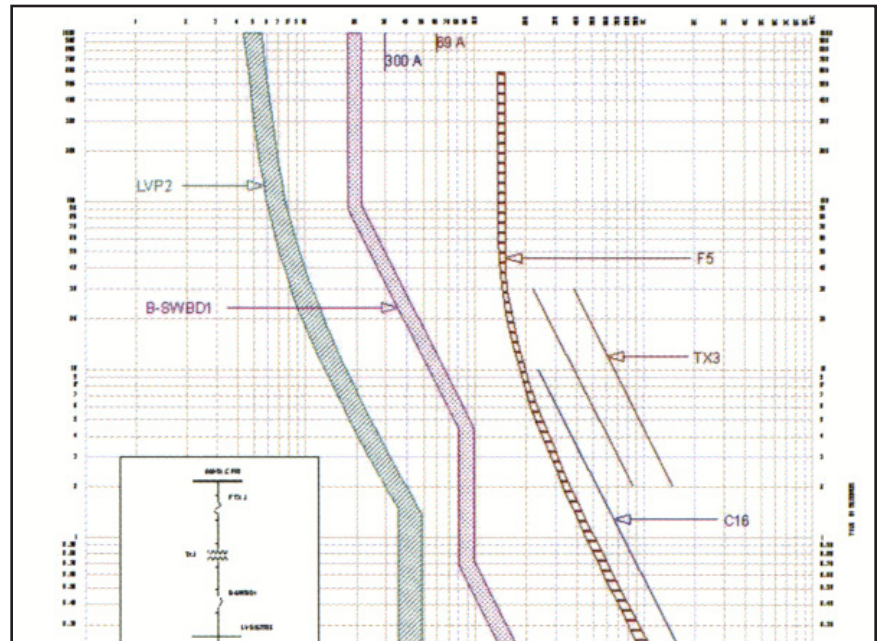
Short Circuit / Coordination Studies

Proper System Evaluation

The electrical distribution system is the foundation of your entire operation. Its reliability is challenged every time an expansion, reconfiguration, additional load or upgrade takes place. Emerson's Electrical Reliability Services (ERS) team is equipped to provide the best possible tools and technical expertise available to help you manage the increasing complexities of maintaining a safe, reliable and efficient electrical distribution system. Avoid accidents, productivity losses, costly fines and higher insurance costs by working with the experts at Emerson.

Benefits

- Minimize system downtime and nuisance device operations
- Avoid equipment damage or failure through increased system protection
- Isolate faulty circuits without loss of power to other parts of the system
- Identify and recommend corrective action for under-protected equipment
- Ensure safety of personnel



Ensure minimum service interruption and equipment protection with Emerson's Short Circuit / Coordination Studies

A protective device coordination study is an evaluation of a system's protective devices, such as relays, fuses and circuit breakers, and the circuits they protect. A coordination study compares the operating levels and times of the protective devices to withstand levels and times which the equipment can sustain without damage or failure. Its goals are to provide power transformers, switchgear, substations, motor control centers, panelboards, and other electrical equipment with the required protection while selecting appropriate types, ampere ratings, and device settings to ensure minimum service interruption under overload and short-circuit conditions.

Coordination Studies are performed to ensure that the protective device closest to the overload or short-circuit condition is the one that operates in order to isolate the failure as quickly as possible. However, if the circuit breaker or other protective devices, are improperly set too low, then the protective devices may trip unnecessarily causing critical loads to be dropped. Conversely, if the protective devices are improperly set too high then the protective device closest to the failure may not trip causing another protective device further upstream to trip resulting in an outage to a much larger part of your distribution system and possibly cause a complete blackout at your facility.

Data Collection

In order to determine the appropriate types, ampere ratings and device settings our technical staff will need to review an up-to-date single-line diagram of your electrical distribution system. Ideally the single-line will provide equipment ratings, wire sizes, lengths, etc. If a current single-line diagram and relevant data is not available, then the engineer will need to collect this data to perform the study. This is also a very good time to update the single-line diagram because all the pertinent information will be accumulated.

Once the data is collected on the electrical distribution system, we then utilize specialized computer hardware and software to assist with the analysis of power system problems. The computer model enables the engineer to determine optimum settings for all adjustable devices ensuring proper coordination.



Ordering Information

To learn more about this service and other Emerson Network Power solutions, please contact your local Electrical Reliability Services sales representative office or visit us on the web at: www.electricalreliability.com In the U.S., call 1-877-468-6384.

Report of Findings

Following the comprehensive computer-based analysis, a report of all the findings are carefully documented in a comprehensive electronic and/or paper report that includes:

- Clear tabular printouts of the suggested settings for all adjustable devices
- Time-current curves of the protective devices illustrating the resulting protection and their coordination
- Computer generated single-line diagram illustrating devices, equipment, system connections, and short-circuit levels

Benefits

Some of the benefits customers will recognize from the results of a protective device coordination study are:

- Minimize system downtime and nuisance device operations
- Avoid equipment damage or failure through increased system protection
- Provide settings for all adjustable devices – relay, ground fault equipment, etc.
- Isolate faulty circuits without loss of power to other parts of the system
- Identify and recommend corrective action for under-protected equipment
- Ensure safety of personnel

Emerson—Your Partner in Reliability

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- **Services**
- Surge Protection

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