

Power Quality and Grounding Integrity Service

- Improve process availability
- Reduce time and cost of resolving power quality and grounding issues
- Make better decisions



Our experts are trained and skilled in resolving difficult Power and Grounding issues.

Introduction

Issues related to Power Quality and Grounding system integrity can occur at any time. These problems don't always manifest themselves in predictable ways. Troubleshooting these elusive types of issues can be difficult and time consuming.

Our experts have a wealth of experience resolving tough electrical and environmental issues surrounding the control system. Expertise is required for DeltaV™ distributed control system (DCS) and Emerson products on conventional I/O, digital field communications and wireless. These experts have extensive experience in plant instrumentation, installation and control system guidelines and practices, and solid experience handling grounding and power problems in the field; experience needed to quickly troubleshoot plant electrical integrity issues.

Power Quality and Grounding Integrity Service modules are specifically designed to address all aspects of system inspection and maintenance throughout the system lifecycle. All services are performed by certified specialists.

Benefits

Improve process availability: Spurious unexplained failures on the system can be systemic of power quality and grounding issues. If left unchecked, these failures can ultimately reduce process availability and increase production costs. Before any failures begin to manifest themselves, it is best to perform a Power Quality and Grounding health check of the system. If preventive measures have not been employed, and issues are occurring, troubleshooting and recommended mitigation are the course of action. Emerson's power and grounding experts can determine the best grounding architecture for your facility and locate power quality issues effecting the control system.

Reduce time and cost of resolving power quality and grounding issues: Power and Grounding Services bring two elements to bear: tools and knowledge. Specialized tools are often necessary to troubleshoot any electrical issue on any bus. Each specialist is trained at getting to the bottom of issues fast.

Emerson certified power and ground experts' experience with diagnosing, troubleshooting, and rectifying electrical issues combined with the extensive tools available to them leads to the most rapid and cost effective outcome for your issues.

Make better decisions: Information from trained and experienced experts is critical to determining the best course of action in resolving Power Quality and Grounding anomalies. The findings and recommendations from this investigation and assessment will guide you in better decision making to improving system health and availability in addition to guiding the plant to make modifications to the grounding architecture.

Scope of Service

Each situation and plant is different and our methodology involves listening to the customer as a starting point. This starting point of listening to our customer allows the service to be flexible by providing coverage to a wide variety of requests. Typically, the scope of the Power Quality and Grounding Integrity Service will include the following phases:

Investigation Preparation: A front end identification of the Power and Ground anomalies through research and discussions with the customer is undertaken in order to assess the nature of the issue. This work includes a review of the site data, documentation, facility configuration and other items available to develop a plan for additional investigation. This preliminary work will result in a plan for further investigation into the identified issues and areas.

Power and Grounding Investigation and Assessment:

Using the information in researching the problem, our experts will begin probing the system to test and identify the power and grounding anomalies through on-site inspections and troubleshooting. In probing and testing the system, our experts will follow a comprehensive and established set of procedures and steps that may include:

- Measuring Grounding Quality (impedance/resistance of the actual grounding).
- Measuring Quality of Enclosure Grounds (i.e., connections, ground bars).
- Checking build drawings for new projects for possible issues before installation.
- Checking as-built drawings for possible issues after installation.
- Visually checking the as-built grounding system and compare to known grounding standards.
- Measuring and verifying noise and power levels of several different types of power and communications leading in and out of a DeltaV DCS System.

- Validating that the DeltaV DCS system installation is within the specifications of Emerson Process Management.
- Checking for known problematic areas based on experience in the industry.
- Monitoring/checking FF segments for problems with noise, power, installation, and termination on request.
- Monitoring/checking other Protocols including HART, ASI, Profibus DP, and DeviceNet on request.
- Verifying that the environmental conditions of the DeltaV DCS system meet Emerson Process Management Specifications.

Data Analysis, Report and Recommendations - Upon completion of the investigation, the team will provide an analysis of the findings in a detailed report. This comprehensive report will prioritize actionable items to mitigate the identified risks into the following categories:

- **Advised action:** advisory actions, can wait until next scheduled plant-shutdown, actions to improve the overall health of the system. System will also function correctly without these actions.
- **Required action:** required actions, can wait until next scheduled plant-shutdown, actions to prevent errors/warnings on the system. System might mal-function without these corrective actions.
- **Direct action:** direct actions required, can NOT wait until next scheduled plant-shutdown, actions to prevent errors/warnings on the system. System might mal-function without these corrective actions.

The report also provides recommendations to correct discovered issues. These recommendations are based on our experiences in abating noise and power problems in the field, and our post site study consultation and research.

Our specialists are available for additional consultation as needed or can work with local service entities to implement recommended solutions.

Service Notes

Spares or consumable material necessary to replace worn, unserviceable, or faulty items will be provided by the customer or by Emerson at additional cost. Fast, dependable access to spares for your system is available through our Component Coverage service.

On-site service visits will be scheduled by mutual agreement. After-hours availability of a specialist for on-site support can be purchased with Emergency On-Site Service.

The frequency and duration of service visits, specific services to be performed, and equipment to be serviced will be established in advance.

Ordering Information

Description	Model Number
Power Quality and Grounding Integrity Services	FSTECHSUPPORT-1 (Please consult your local Emerson office for availability)

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