Service Data Sheet
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Online Partial Discharge Testing

Performed without disrupting plant or facility operations

- *Non-destructive, non-invasive predictive maintenance tool.*
- *Does not require a plant shutdown.*
- *Helps identify the location of partial discharges in the cable and accessories, enabling replacement before any failure occurs.*
- *Helps eliminate unplanned plant outages and lost income as a result of system downtime.*
- *Identifies and helps prioritize cable sections and terminations for replacement.*

Introduction

Partial discharge (PD) testing can be performed without disrupting plant or facility operations. It is a non-destructive, non-invasive predictive maintenance tool that assesses the condition of aging cable systems, including splices and terminations. This proven technology will identify the location of partial discharges in the cable and accessories, enabling trending and ongoing assessment.

Partial Discharge can occur at voids, gaps and similar defects in medium and high voltage cable systems. If allowed to continue, partial discharge will erode the insulation, usually forming a tree-shaped pattern of deterioration (electrical tree) and eventually result in complete breakdown and failure of the cable or accessory. Such failures cause unplanned power outages, loss of plant production, equipment damage, and/or personnel injury. By detecting and trending partial discharge, repair or replacement is possible before failure occurs.

Online Testing

Partial discharge testing does not require a plant power outage. Using our specialized equipment and procedures, our mobile Partial Discharge testing service is able to detect partial discharges without a system shutdown.

Non-invasive Testing

Partial Discharge testing does not subject cables to the destructive over voltages typically used in DC or VLF hi-pot testing. Instead, the cable remains energized at normal line voltage and we use specially designed sensors and detection equipment to identify the characteristic electromagnetic pulses produced by partial discharges.

Predictive Technology

By trending Partial Discharge magnitude, we can help customers identify and prioritize cable sections and terminations for replacement. We provide a comprehensive written report rating each cable circuit by levels of severity.

Problem Identification

Using our Partial Discharge testing technology, our technical staff can identify the location and severity of defective insulation.

Measuring Method

The measuring method applied is capable of detecting and localizing partial discharges in medium and high voltage cable circuits from 2.4 KV up to 345 KV.

Site Visit

The site visit is performed by our technical staff and includes a comprehensive check of your cable systems, including splices and terminations. The actual characteristics and partial discharge activities are monitored and recorded for further evaluation, utilizing our specialized Partial Discharge analytical software and tools.

Report of Findings

Upon completion of the site visit and data collection, we will provide a written engineering report containing detailed information about the test results, the condition of your cable and accessories and recommendations for prioritizing replacement or corrective actions.

Optional Follow Up Visit

With low or moderate levels of partial discharge occurring, we recommend retesting the cable system within 12 to 36 months, depending on severity. A follow up assessment will enable you to monitor and trend the partial discharge activity and prioritize the repair or replacement of failing cables and accessories before an outage occurs. The follow up site visit includes a written report of findings, recommendations and a comparative analysis demonstrating trends in partial discharge activity.

Benefits

Early identification of cable deterioration can save money and provide a safer workplace.

Benefits from Online Partial Discharge Testing include:

- Early identification of incipient failures in cables and accessories, reducing the number of emergency repairs and decreasing overall repair costs.
- Non-destructive, non-invasive testing methodology enables the tested cable system to remain in service until corrective action can be taken.
- Testing is conducted without disrupting power.
- Locating the problem area to ensure replacement of only the problem cable section and/or accessories.
- Meets Public Utilities requirements for Predictive Maintenance Cable Systems testing.

Ordering Information

To learn more about this service and other Emerson Process Management service solutions, please contact your local HVM sales representative office or visit our web page at: **www.hvmcorp.com.** In the U.S, call us at 1-866-HVM-TEAM.

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