

## Online Resistance Testing

- *Performed online without disrupting plant or facilities*
- *Helps eliminate unplanned outages and lost income as a result of downtime*
- *Better than infrared scanning – even hidden components can be measured*
- *Nondestructive testing helps extend equipment life*



### Introduction

The Online Resistance Testing service provides a proactive assessment of your electrical distribution equipment. This assessment includes a review of the contact resistance, fuse resistance, bolted connections and other equipment resistance while the equipment remains energized at up to 480V AC. Utilizing our Online Resistance Meter, a patented new test instrument, we are able to measure electrical bus resistance while facilities remain online. Since there is no need to shut down the power, critical facilities can continue to operate – eliminating any lost production.

- **Access Hidden Equipment** - The Online Resistance Meter is a constant source and digital meter system combined to measure circuit resistance. Unlike infrared cameras,

no line of site or minimum equipment load is necessary. Even hidden areas can be investigated with our patented meter.

- **Focus Maintenance Efforts Where Needed** - Conducting Online Resistance Testing before a planned shutdown can help you identify undetected equipment problems in advance so you can get the most out of the available time for shutdown maintenance.

- **Extend the Life of Electrical Equipment** - The Online Resistance Meter can determine the tightness of a joint without repeated retorquing. By eliminating unnecessary and destructive retorquing, the life of electrical distribution equipment is maximized.

## ■ Designed for Safe Operation -

The Online Resistance Meter is configured with insulated probes, current limiting fuses, and voltage sensing circuits to prevent damage to the tester and the equipment. The insulated probes prevent any conductive phase-to-phase or phase-to-ground exposure. The voltage sensing circuit detects the presence of conductor voltage above a preset "safe" threshold and prevents instrument operation. The current limiting fuses protect the tester from over-potential failure by limiting any fault currents. In addition, only personnel who have been specifically trained and certified and wear proper Personal Protective Equipment (PPE) are permitted to operate the instrument on energized equipment.

■ **Proven Results** - Our trained, qualified technical staff has been using the Online Resistance Meter since 1995 at critical facilities where 100% uptime is imperative. This service has saved hundreds of hours of lost production and has identified equipment deterioration that was missed by infrared thermographic scanning, preventing almost certain catastrophic failures.

## Service Deliverables

### Pre-Assessment Planning Review

This review is performed by our technical staff working closely with your personnel. This review will utilize single-line diagrams to identify equipment and components to be tested.

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## Onsite Assessment

The onsite assessment will be performed by our technical staff and will test contact resistance, fuse resistance, bolted connections and other equipment resistance on all conductive components and/or systems including switchboards, panel boards, PDUs, fuses, circuit breakers, etc.

## Engineering Report

Upon completion of the onsite assessment, we will provide a written engineering report that will provide detailed information about the test results, the condition of your electrical distribution equipment, and recommendations for corrective or preventive actions.

**Optional follow up or annual visit:** To effectively monitor the condition of your electrical distribution equipment, we can perform an annual site follow-up visit. Collecting resistance data annually will allow us to trend the condition of your equipment and more accurately provide for advance warning of deterioration – providing you an opportunity to plan for and correct problems before failure.

## Benefits

Your investment in the Online Resistance Testing assessment can help ensure safe and reliable operation of your electrical distribution equipment. This investment can be a fraction of the cost of planned downtime – often valued at thousands of dollars per minute.

■ Predictive maintenance testing while equipment is operating eliminates maintenance shutdowns and maximizes production time

■ Better than infrared scanning because even hidden components can be measured, and minimum equipment load is not required

■ No lost production time, because testing can be performed while equipment is online

■ Identifies undetected equipment problems in advance so you can get the most out of the available time for shutdown maintenance, focusing maintenance efforts where needed

■ Extends equipment life by reducing joint breakage and replacement caused by over torquing

■ Improves power system reliability

■ Early identification of incipient failures reduces the number of emergency repairs and lowers overall repair costs

## Ordering Information

To learn more about this service and other Emerson Process Management service solutions, please contact your local Electrical Reliability Services sales representative office or visit our web page at: [www.ers.assetweb.com](http://www.ers.assetweb.com)  
**In the U.S., call us at 1-877-468-6384.**

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