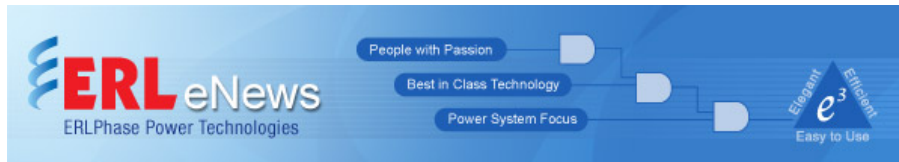


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Jan 2017 Update

ERLPhase Power Technologies

Hope you are all off to a great start for 2017! Here's what's new at ERLPhase...

Harnessing Solar Energy In Hawaii



At this newly commissioned installation on the west side of Oahu in Hawaii, TESLA Lite monitors power output from a solar farm and monitors the operation of invertors. We look forward to supporting any future recording requirements as additional solar farms are designed and constructed in Hawaii.

OG&E Adopts TESLA DFR



In May Oklahoma Gas & Electric made their first purchase of TESLA power system recorders, as part of a complete rack system. Those units performed well, were approved for use, and TESLA recorders have been selected as a standard fault recorder for future installations. ERLPhase provided a complete recording package, including assistance in design of a rack system, drawings, and installation of TESLA units with all wiring completed. OG&E engineers also received 2 days of on-site training to learn about TESLA software installation, communications set-up, hardware, setting software, and event analysis. ERLPhase was pleased to receive 2 subsequent orders from Oklahoma Gas & Electric and looks forward to continuing business in the years to come.

Visit our website to learn more about the [TESLA Power System Recorder](#).

TESLA 4000 Redundancy

The app note will cover selected topics on network redundancy and how they are implemented in the TESLA 4000 recorder.

What is network redundancy?

The principle of network redundancy is to create two or more data paths within a network so that a single point of failure will not disrupt network communication.

The TESLA 4000 is capable of redundancy with the following protocols. Please be aware that in order to use any of the following protocols, the unit will have to be configured at the factory.

- **RSTP (Rapid Spanning Tree Protocol)**: RSTP does not use the traditional all-to-all paths that require a large time to recover. RSTP uses a technique with algorithms to prevent network loops from being passed within the network paths and to use the shortest path that is available to target.
- **IGMP (Internet Group Management Protocol)**: IGMP Class 2 (IGMPv2) specifies that each device in a network is permitted to have its own network interface, which then receives packets and communicates with the other nodes. The first data to arrive will be used and the second data is ignored by the computer.
- **Static (ping) redundancy**: Network redundancy (IGMP Class 2) allows the active principle with four or more IP devices to be connected to one network in a ring topology with messages sent simultaneously in both directions.

Redundant TESLA 4000 connections and configuration

The recorder TESLA 4000 will have a different configuration than the regular TESLA 4000 made with two network cards with different MAC addresses.

This app note covers selected topics on network redundancy and how they are implemented in the TESLA 4000 recorder.

RecordGraph Template



RecordGraph Template Application Note

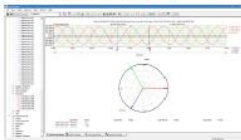
Objective

This app note demonstrates how to use templates on RecordGraph and the benefits of applying them in analysis of B-PRO, F-PRO, L-PRO, T-PRO, TESLA records and COMTRADE files. The concepts to re-use saved configurations from previous record analysis, loading data information with the new recorded channels, thus reducing graph re-creation processing time.

Creating a Template from RecordGraph's View screens

For this example, the following View screens were created from a TESLA record, which shows two protection TESLA 4000 channels that are a channel and its sub configuration:

Please View screen showing phase phase voltage quantities



This app note demonstrates how to use templates on RecordGraph and the benefits of applying them in analysis of B-PRO, F-PRO, L-PRO, T-PRO, TESLA records and COMTRADE files.

Upcoming Events

DistribuTECH

Jan 31-Feb 2, 2017

San Diego, CA

Visit us at booth #1537

Visit using our complimentary [Exhibit Hall pass](#)

[Learn more about DistribuTECH](#)

Iberoamerican Symposium on Power System Protection

Feb 19-24, 2017

Monterrey, Nuevo Leon, Mexico

Visit us at the show!

[Learn more at Conference Website](#)

Doble's Life of a Transformer Seminar

Feb 20-24, 2017

Huntington Beach, CA

Dr. Krish Narendra presents "Transformer Differential Protection Issues and Solutions"

[Learn more about Doble's Life of a Transformer Seminar](#)

Texas A&M

Apr 3-6, 2017

College Station, TX

Visit us in booth #26

ERLPhase presents paper "Commissioning Process and Acceptance Testing of a Sub-Harmonic Protection Relay"

[Learn more about Texas A&M](#)

GA Tech

May 1-5, 2017

Atlanta, GA

Visit our booth!

Learn more about [Fault & Disturbance Analysis](#) and [Protective Relaying](#)

CIGRE 2017

May 29-Jun 2, 2017

Dublin, Ireland

ERLPhase presents paper "Use of a Sub Harmonic Protection Relay to Detect SSO Conditions Associated with Type-III

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