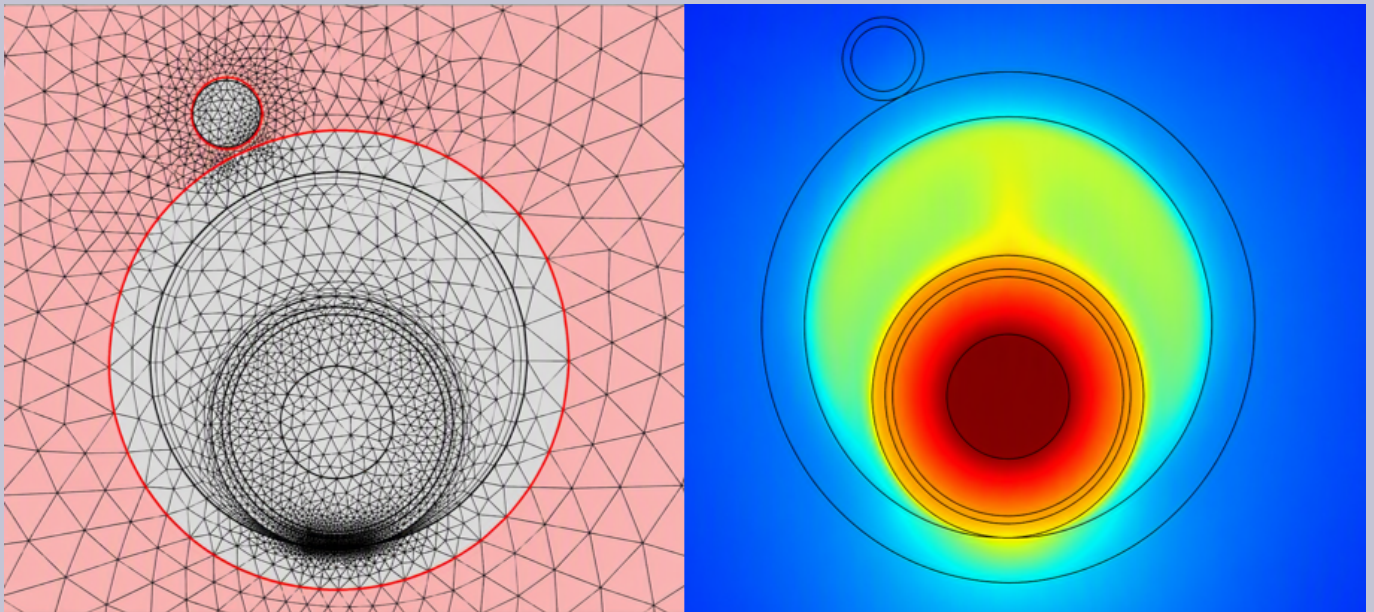


EOSS RTTR

Real Time Thermal Rating Software



Advanced Thermal Rating for Critical Power Cable Monitoring

PRODUCT DESCRIPTION

The EOSS Real Time Thermal Rating (RTTR), also known as Dynamic Cable Rating (DCR), is an advanced software module designed to enhance monitoring systems for high-voltage power cables. The solution combines distributed temperature sensing (DTS) measurements with Finite Element Model (FEM) thermal computations to provide accurate thermal and operational insights. The ratings provided comply with IEC standards. EOSS RTTR enables precise evaluation of cable conditions in both onshore and offshore environments, ensuring safe and optimized operation under varying load conditions.

APPLICATIONS

- Monitoring and safety enhancement of high-voltage cable installations
- Temporary overloading management of transmission or export cables while preventing overheating
- Optimization of wind farm production through improved cable utilization
- Load balancing and management across inter-array cable systems

KEY FEATURES

- Real-time computation of cable ampacity and emergency ratings
- Integration of IEC models and FEM-based thermal simulations
- Continuous monitoring of cable load ratio and temperature profile
- Seamless integration with SCADA and monitoring platforms
- Advanced data visualization, forecasting and export capabilities

EOSS RTTR'S FEATURES AND TECHNICAL SPECIFICATIONS

Computation Output	• Conductor Temperature Profile • Insulation Drop Temperature (optional for DC power cables) • Steady State Ampacity • Emergency Ratings (time, load and temperature)
Output to SCADA	• Maximum Conductor Temperature • Insulation Drop Temperature (optional for DC power cables) • Steady State Ampacity • Emergency Ratings (time, load and temperature) • Pre-alarms, alarms and fault conditions Available protocols are Modbus; DNP3; IEC 60870-5-104; IEC 61850
Data Visualization	• Overview (max conductor temperature, steady state ampacity, load ratio, predefined emergency ratings) • Graph (RTTR output vs time, RTTR output vs. distance, Load vs. time) • Forecast (max conductor temperature and ampacity due to a user defined load cycle, emergency rating calculator)
Data Export	All historical RTTR data can be exported in csv format
Available Installation Models	Installation type: • Buried (directly or in pipe) • Thermal back-fill • Multiple duct-bancks • Tunnel (with forced ventilation) • Cables in water or air • External heat sources and cable crossings • Horizontal Directional Drilling (HDD) • J-tube Cable formations • Flat formation • Trefoils • Bundles DTS fiber position • Embedded in power cable • In contact to power cable • Inside duct next to power cable More installation sections available upon request

Features

Requirements

	RTTR Input for engineering	• Power circuit line diagram • Cable parameters as defined in the datasheet, featuring dimensions and material. • Installation section (trefoil, split phases, HDD, etc) • Cable route with associated installation sections • Survey data with soil/seabed thermal resistivity (recommended)
	RTTR Input for live computation	• Measured cable temperature profile (acquired by DTS) • Real time Cable load, including active and reactive power (directly measured or retrieved via TCP/IP communications)
	Operating System	Linux
	Hardware for RTTR engine and database	To be determined by EOSS on a project specific basis
	Hardware for Visualization Client	PC with dual core processor 4 GB of RAM memory Chrome or Edge Web-Browser 5 GB of free hard disk capacity 19" or larger screen recommended

ED_PD014 Datasheet EOSS RTTR

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