

## Power Management System (PMS)

UK Training

# PARTNER



# Power Management System (PMS)

## Introduction:

Modern industrial, utility, and infrastructure facilities demand robust and intelligent power management to ensure safety, efficiency, reliability, and cost optimization. A Power Management System PMS serves as the brain behind effective monitoring, control, automation, and protection of electrical power systems.

This comprehensive 10-day course provides a deep dive into the design, operation, configuration, and integration of PMS, focusing on real-world applications, industry standards, and practical use cases. Whether you're upgrading systems, integrating with SCADA/DCS, or troubleshooting issues, this course is structured to elevate your understanding and capabilities in Power Management Systems.

## Course Objectives:

By the end of this training, participants will be able to:

- Understand the architecture and components of a Power Management System
- Analyze power distribution and consumption patterns
- Configure PMS for energy efficiency and operational reliability
- Integrate PMS with automation systems SCADA, DCS, BMS, etc.
- Perform advanced diagnostics, alarms, and event tracking
- Apply international standards and cybersecurity best practices

## Course Outline:

### Day 1: Introduction to Power Management Systems

- Fundamentals of power systems and electrical distribution
- Role and importance of PMS
- PMS vs. SCADA vs. EMS vs. BMS
- Applications in industrial, utility, and commercial sectors

### Day 2: PMS Architecture and Communication Protocols

- Components: meters, IEDs, PLCs, controllers
- Network topology Ethernet, Modbus, IEC 61850, DNP3
- System integration layers
- Redundancy and failover strategies

### Day 3: Power Monitoring and Measurement

- Real-time monitoring: voltage, current, power factor, harmonics
- Load profiling and demand forecasting
- Energy metering and billing interfaces
- Alarms and event management



## Day 4: Load Shedding and Demand Management

- Automatic Load Shedding schemes
- Priority-based load control
- Peak demand management and optimization
- Black start and islanding considerations

## Day 5: Power Quality Management

- Harmonics, transients, sags, swells, interruptions
- Monitoring and analyzing power quality events
- Use of PQ analyzers and correction methods
- Integration with UPS and generators

## Day 6: System Configuration and PMS Software

- PMS user interface and dashboard
- Configuration of parameters and logic
- Data logging, trending, and reporting tools
- Remote control and local HMI integration

## Day 7: Integration with SCADA, DCS & Other Systems

- PMS and SCADA data exchange
- OPC, APIs, and third-party software integration
- Interfacing with energy storage and renewable sources
- Cybersecurity considerations in integrated systems

## Day 8: Protection and Reliability Strategies

- □ Fault detection and isolation
- □ Coordination with protection relays
- □ Power system reliability indices SAIDI, SAIFI
- □ Maintenance and contingency planning

## Day 9: Case Studies and Industry Applications

- □ PMS in oil & gas, manufacturing, hospitals, data centers
- □ Real-life failure scenarios and solutions
- □ Best practices in system commissioning and acceptance tests



## Day 10: Hands-On Simulation & Final Assessment

- PMS simulation and control exercises
- System diagnostics walkthrough
- Group activity: PMS design challenge
- Review, feedback, and certification

## Why Attend This Course

- Gain technical expertise in modern Power Management Systems
- Learn from industry professionals and real-world case studies
- Enhance your capability to design, manage, and troubleshoot PMS
- Network with peers and discuss regional/sector-specific challenges
- Receive a certificate of completion recognized internationally

## Conclusion

A strong foundation in Power Management Systems is essential for ensuring reliable, safe, and efficient electrical operations in modern facilities. This course offers a unique combination of theoretical knowledge, practical skills, and real-world insights, empowering you to excel in your professional role. Join us and take a significant step forward in mastering power management technologies.





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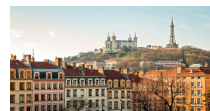
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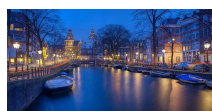
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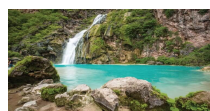
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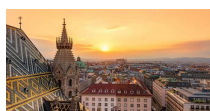
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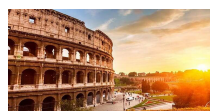
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