PROFINET Troubleshooting and Maintenance course

Learn the skills to quickly find, analyze, and isolate PROFINET network problems. This course will provide you with the knowledge and skills you need to run the communication cables, wire the connectors, test the cables, and setup basic equipment. You will also learn how to minimize the impact of EMC on the network. Get hands-on experience with the latest PROFINET troubleshooting tools including; Wireshark, Netilities, and the permanent network monitor Atlas.

This course meets all the requirements of the Certified PROFINET Installers course. The course ends with a written and practical test. Successful students will be certified by PROFIBUS and PROFINET International as a Certified PROFINET Installer.

Upon completion of this course, the student shall be able to:
- Add devices to an existing PROFINET network
- Understand how the network functions
- Install and setup a PROFINET network
- Troubleshoot common and uncommon problems

Course outline
- Introduction to industrial Ethernet
- OSI 7-layer model
- Ethernet protocols
- Hubs, switches, routers, and firewalls
- Basic network design
- Physical layer and installation
- Setting up a PROFINET project
- Diagnostic model
- Fault finding strategies
- Measurement tools

Hands-on Exercises:
- IP addresses and ping
- Wiring lab
- Setting up a switch
- Configuring a PROFINET network
- Diagnostics lab
- Using Wireshark and other troubleshooting tools

Training Equipment:
- IO-Controller (Codesys software running on a Raspberry Pi)
- IO-Devices include Helmholz TB-20 IO rack, Wago IO rack, Helmholz 4 port managed switch
- PROCENTEC Atlas permanent monitoring system
- PROCENTEC Netilities IO-Supervisor/Monitor
- Wireshark Protocol Analyzer
- Ethermet cable tester

Class Day Information
- Attendees must bring a laptop or tablet which can read a USB drive.
- Attendees will receive a support USB drive with an electronic version of the materials plus key PI documents
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- Students will receive a certificate of attendance and 15 verifiable professional development hours
- Certificate as a Certified PROFINET Installer. The certificate is given only if the student passes the written and practical test.

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- Attendees will also receive a copy of *'Catching the process Fieldbus – An introduction to PROFIBUS and PROFINET'* co-written by the instructor James Powell
- Class size is limited to a maximum of 8 students (2 students per training rack).

Course duration

This course is delivered over two days. Each day requires 7.5 hours of instruction which includes two 15 minute breaks and one 30 minute lunch break.

Scheduled Classes
- Please contact us to arrange a training date
- On-site classes are available upon request
- This class can be on-site, online or in a classroom in Peterborough

Course code and Prerequisites
- Course code: C-PROFINET-02
- There are no prerequisites for this course. However, it is highly recommended that the student has been introduced to PROFINET before.

Instructor

James Powell, P.Eng., is the principal engineer and owner of JCOM Automation Inc. He has written many articles and two books: *HART Communication Protocol – a practical guide,* and *Catching the process fieldbus – An introduction to PROFIBUS and PROFINET*. James is a certified PROFIBUS DP, PA, and PROFINET network engineer, PROFIBUS System Design Engineer and has over 20 years of experience with PROFIBUS, PROFINET, EtherNet/IP, Modbus, and HART installations.

JCOM Automation is a member of PROFIBUS PROFINET North America and is a certified PROFIBUS and PROFINET training center and Competence Center.

To book this course for yourself or your team, please contact JCOM Automation at admin@jcomautomation.ca or +1-705-868-8745.

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