

PROFIBUS Troubleshooting and Maintenance course in conjunction with EMC Awareness for Industrial Automation and Certified Installers course.

This is a combination course that combines three of our popular courses into one three-day course; PROFIBUS Troubleshooting and Maintenance, Certified PROFIBUS Installer, EMC Awareness for Industrial Automation.

Learn the skills to understand PROFIBUS DP and PA concepts, components, cabling, and be able to find, analyze and solve problems in PROFIBUS installations. Get hands-on experience with the latest PROFIBUS troubleshooting tools including, the all-in-one troubleshooting tool ProfiTrace 2 with Scopeware, and the permanent network monitor COMBRICK.

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

With the increased use of variable frequency drives (VFD) and other switching devices, the overall Electro-magnetic interference (EMI) in plants has been increasing. This increase has caused many electro-magnetic compatibility (EMC) issues in both Automation system and in particular the communication systems that join automation components together.

This course aims to raise awareness of the issues, the theory behind them, and how to ensure that the design and installation of Industrial Automation systems can reduce the likelihood of Electro-Magnetic Compatibility (EMC) related issues in the future.

Upon completion of this course, the student shall be able to:

- Have an understanding of PROFIBUS concepts, components, and cabling
- Find, analyze, and solve PROFIBUS installation problems
- Use troubleshooting and maintenance tools
- Understand how VFD basically work and the issues around them
- Know how a basic grounding system works
- Know the proper installation methods to mitigate against EMC issues
- Understand how to use the basic tools to test for EMC issues

Course outline

- What is PROFIBUS DP
- The different physical layers (RS-485 and MBP)
- Cabling techniques
- Fundamentals of EMC
- Low voltage distribution systems
- Equipotential bonding techniques
- Grounding and shielding
- Variable speed drives issues
- Best installation methods
- DP/PA segment couplers, repeaters and OLMs
- Diagnostic message
- Fault finding strategies
- Measurement tools

Hands-on Exercises:

- What a good network looks like
- Common errors on DP
- Common errors on PA
- Permanent monitoring
- Wiring
- Setting up a PROFIBUS master and slave
- Diagnostic message
- Common troubleshooting methods

Training Equipment:

- S7-1200 PROFIBUS Master or Molex SST PROFIBUS Master
- IO-Devices include: Helmholz TB-20 IO rack, PROCENTEC I/O Simulators, COMBRICK, SITRANS TH400, P+F Digital valve controller.
- ProfiTrace bus monitor
- HP-25 PROFIBUS cable tester

Class Day Information

- Students will receive course notes and writing materials
- Students will receive a certificate of attendance and 15 verifiable professional development hours
- Certificate as a Certified PROFIBUS Installer. The certificate is given only if the student passes the written and practical test.
- Students will receive a digital 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 three days long. Each day includes 8 hours of instruction which includes two 15 minute breaks and one 30 minute lunch break.

Course cost

- \$ 3,442 CAD per person, plus applicable taxes

Scheduled Classes

- September 25,26,27, 2023 – Calgary, Alberta
- On-site classes are available upon request

Course code and Prerequisites

- Course code: C-PROFIBUS-02m
- There are no prerequisites for this course.

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 jamesp@jcomautomation.ca or +1-705-868-8745.