

Certified PROFIBUS Network Engineering

Become an elite Certified PROFIBUS DP/PA Network Engineer. Learn the skills to design, install, commission, and troubleshoot both PROFIBUS DP and PA networks. This course illustrates practical installation issues, goes right down to the protocol/packet level, and includes detailed information on the bus parameters.

This course meets and exceeds all the requirements of PI's Certified PROFIBUS DP/PA Network Engineers course and 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 and a Certified PROFIBUS Network Engineer.

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

- Design a PROFIBUS network
- Install and set up a PROFIBUS network
- Decode a PROFIBUS packet and understand how the protocol works
- Understand the basic bus parameters
- Troubleshoot common and uncommon problems.

Course outline

- Introduction to PROFIBUS
- Overview of PROFIBUS Components
 - Basic definitions
 - Different physical layers
- PROFIBUS Design
 - Basics of DP/PA design
- PROFIBUS Advanced design
 - What else to consider
 - Proxy, gateways, and repeaters
- Installation best practice
 - How to approach the installation
 - Grounding and wiring
 - Installation best practice
- Setting up a PROFIBUS Master
 - Setting up master
 - Difference between masters
- Setting up a PA device
 - Profile standard
 - Overview of configuration software
- PROFIBUS Theory
 - OSI 7 layer model
 - Startup cycle
 - Command structure
 - Bus parameters
- Applying the theory
 - How to use the theory
- PROFIBUS Device Diagnostics
 - Diagnostics via cyclic/acyclic
 - Recommended procedures
- Troubleshooting common problems
 - Identifying common problems

Hands-on Exercises

- Wiring
- Network design lab
- Setting up a master
- Setting up an instrument
- What a good network looks like
- What common errors look like on DP
- What common errors look like on PA
- Startup sequence
- Network audits
- Device Diagnostics
- Troubleshooting

Training Equipment

- S7-1200 PROFIBUS Master or Moxel SST PROFIBUS Master
- IO-Devices include: Helmholz TB-20 IO rack, 2 PROCENTEC I/O Simulators, COMBRICK, SITRANS TH400, P+F Digital valve controller.
- ProfiTrace bus monitor
- HP-25 PROFIBUS 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.
- Students will receive a certificate of attendance and 30 verifiable professional development hours
- Certificates as a Certified PROFIBUS Network Engineer and Certified PROFIBUS Installer. The certificates are given only if the student passes the in-class written and practical test.
- 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 people (2 students per training rack).

Course duration

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

Scheduled Classes

- Please check our website for scheduled classes or contact us to arrange a training date
- On-site classes are available upon request

Course code and Prerequisites

- Course code: C-PROFIBUS-03
- There are no prerequisites for this course. However, it is highly recommended that the student has been introduced to PROFIBUS 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.