



A PI-Certified Competency and Training Center

Certified PROFIBUS Engineer

An Internationally Accredited In-depth Course covering PROFIBUS Network Design, Commissioning and Live Fault-finding

Who should attend this Course?

The Certified PROFIBUS Engineer Course is for engineers who already have a thorough basic technical knowledge of PROFIBUS or other fieldbus systems.



This 3½ day hands-on course covers the detailed theory of PROFIBUS DP and PA network operation. On the course you will learn first-hand how to properly design, install, commission and troubleshoot PROFIBUS networks. You will learn how to use modern diagnostic tools to detect faults and identify their causes.

Those who pass the written examination and practical test will gain a valuable and internationally recognised certificate as to their competence to design and trouble-shoot PROFIBUS networks. Graduates of the course will also have the right to have their name listed in the Certified PROFIBUS Engineer section of the PROFIBUS web site at www.profibus.com.

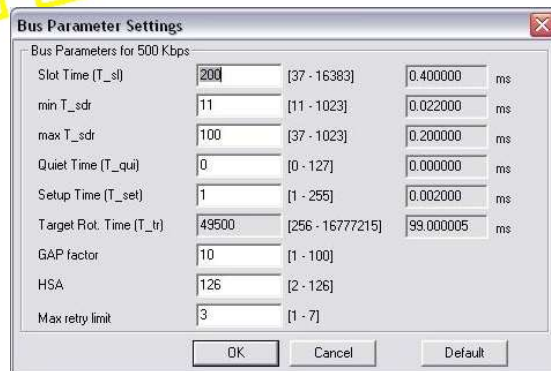
What will I learn on the course?

This is an in-depth course that teaches the details of what goes on in a PROFIBUS network. You will learn about the telegrams that pass between PROFIBUS devices, how the network is configured and started up, how the network deals with conflicts and other errors. You will learn how to use modern tools including a high speed analyser to capture and interpret telegrams and an oscilloscope to quickly diagnose and locate a wide range of faults. You will see first hand the effects of failed devices, wiring and layout faults, configuration errors etc.

Because this is a certified course, accredited by PROFIBUS and PROFINET International (PI), the learning outcomes are fully defined. These include being able to break down and analyse all the class-1 and class-2 telegrams in a network, understand network timing parameters, understand how GSD files are structured and how to use these files to best advantage.

What equipment will I use?

Students on the course work in pairs, each with a laptop PC running ProfiTrace Ultra, a modern PROFIBUS engineering tool with analyser, built-in oscilloscope, DP master class-1 and class-2, and network statistical analysis. In addition each pair has a dedicated rack of PROFIBUS DP slaves.





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You will make full use of a modern PROFIBUS analyser and engineering tool, ProfiTrace Ultra. You will learn how to:

- capture and interpret telegrams;
- diagnose different types of fault;
- use the oscilloscope to interpret waveforms;
- diagnose and locate a range of physical faults;
- use a class-2 master to interrogate, exercise and test unknown devices;
- properly perform a network health check;
- identify failed devices, wiring and layout faults.

What happens if I fail the test?

Because this certification is recognised worldwide as a mark of quality training, the course tests are quite rigorous. However, we will provide you with all the information and practice that you need to pass the examinations. A small percentage of delegates will unfortunately fail to achieve a pass grade; however we will try to provide the opportunity to retake the failed tests at a later date, free of charge.

What are the prerequisites for the course?

Because this is an intensive course, we now require attendees to be qualified up to Certified Installer standard. However, don't worry if you are not qualified to this level: we always run the one-day installer course immediately before the engineer course so you can take both in a single week. In addition you should be reasonably familiar with binary and hexadecimal representation and be able to translate between bit patterns and their hex representation. We always send out preliminary material that covers this topic prior to the course.

What does the course cover?

The course starts with the basics of PROFIBUS DP and PA network operation and an overview of developments including extensions to the standard and PROFINET. You learn how to configure PROFIBUS networks and how to interpret the GSD files that are used to describe devices.

Most of the course is involved with understanding and interpreting the various telegrams that pass between devices. You will learn to use ProfiTrace Ultra to diagnose problems and carry out network health checking on real DP and PA systems,

As well as covering basic cyclic data exchange (so-called DP-V0), the course covers DP-V1 extensions that are used in PA devices and more complex DP devices. System timing is also covered. The course covers PA segment design and layout for safe area and hazardous area installation. System configuration using DP/PA couplers and link modules is also covered. The PA profile, which provides a standard user interface to process instruments and actuators, is explored in depth.

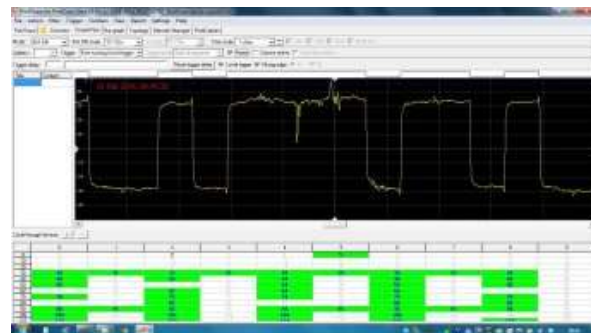
The course retains a good balance of practical, hands-on sessions with in-depth technical presentations. You will learn how cyclic data is used for process data with a class-1 master and how to accomplish asset management functions using modern PA engineering tools with class-2 master functionality.

What don't we cover?

This is an applications course and so does not cover how to design or implement a PROFIBUS device. However, device developers do still find this course extremely useful. We do not cover the details of FMS, which is now no longer supported by PROFIBUS International. Also recent extensions to the application profiles, such as PROFISAFE and PROFIDRIVE etc. are covered in overview only.

On-site delivery

When companies have four or more people to train, it can be cost effective to deliver the course on-site. We can also take the course overseas and have in the past delivered the course in Australia, South Africa, Indonesia and Brazil.





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A sample of comments received

- “Excellent course ... extensive knowledge and experience of the tutor.”
- “Excellent practical set-up, hands-on with real devices.”
- “By far the best technical course I have ever attended ... excellent but intensive”
- “Very well structured course. Really enjoyed the week.”
- “Excellent course: will be recommending that individual site engineers attend.”
- “...would like to thank you for one of the most valuable learning opportunities I have had...”

Booking Information – for dates, costs and booking information, please contact:



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Control Specialists Ltd are a PROFIBUS and PROFINET International Training Centre (PITC) who also provide site-based support on PROFIBUS networks. They also provide training and support on PROFINET, AS-I and CAN and EMC

Peter Thomas of Control Specialists Ltd is the technical officer of PI UK and chairman of the PITC working group which, amongst other things, is responsible for defining the learning outcomes of PI-certified training courses.

