

Certified PROFINET Engineer

(incorporating Installer, Commissioning & Maintenance course)

[Course Overview](#)



Profibus Association of
Australia and NZ Inc.
Unit 7, 2-8 South St.
Rydalmere NSW 2116
AUSTRALIA

An internationally accredited in-depth course covering PROFINET network design, commissioning, and live fault-finding.

What is PROFINET?

PROFINET is an important new Industrial Ethernet technology from the PROFIBUS and PROFINET International organisation (PI). PROFINET has become the leading Industrial Ethernet Standard in the market with a wide range of solutions for factory automation, high-speed robotics and process control.

Who should attend this course?

The Certified PROFINET Engineer course is an in-depth four-day course that is suitable for a wide range of engineers working in a wide variety of industries. The course is suitable for anyone who is working at a technical level in automation and control systems. Because this is an intensive course, we require attendees to be qualified up to Certified PROFINET 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. We always send out preliminary material that covers this topic prior to the course.



Although the course only deals with PROFINET, it is also suitable for those working with other industrial Ethernet systems since much of the technology and many of the tools and techniques taught on this course are applicable to other similar technologies. People in the IT world often find themselves having to deal with PROFINET systems and this course is also suitable for those with an IT background.

Course outline

This course follows the internationally agreed PI learning outcomes and covers the more in-depth analysis of PROFINET.

The course content includes:

- Basics of Ethernet, IEEE802.3, the ISO/OSI model, TCP, UDP, IP, ARP, Ping, and the Ethernet frame.
- Network Addressing: MAC Address, IP Address, Subnet Mask and subnetting.
- Network Infrastructure - switches, hubs, routers, gateways and firewalls
- Switch features for industrial applications and PROFINET.
- Monitoring Ethernet traffic with switch port mirroring or a network tap
- Network topologies and wireless.
- Network diagnostics using SNMP, DCP, DHCP and LLDP. Tools for network management.
- PROFINET installation, cables and connectors. Cable testing.
- PROFINET IO: Device types, certification requirements, conformance classes.
- Application Relations (AR's) and Communication Relations (CR's).
- Device names and name setting.
- Real Time (RT) communications, timing parameters and cycle times. Communication optimisation.
- Isochronous Real Time (IRT) communications, IEEE 1588 V2, synchronisation, IRT communication classes, cycle time, jitter and frame scheduling/bandwidth optimisation.
- Controller and device start-up sequence, fast start-up, troubleshooting.
- Read and Write services, diagnostics and alarm handling.
- Configuring a PROFINET system, GSDML files, use of PROFINET XML-Viewer.
- Integration with fieldbus using a proxy.
- Ethernet and PROFINET Frame analysis using Wireshark and other tools.
- Additional features including redundancy, I&M functions etc.,

Attendees work in pairs, each with their own rack of PROFINET IO devices, hand tools, cables and connectors, test tools and a with a modern laptop.

Practical work features the following hands-on exercises:

- Cable Certification.
- Setting up a network and sub-network.
- Switch configuration and setup.
- PROFINET system configuration.
- Ethernet and PROFINET frame analysis using Wireshark.
- Handling errors and alarms
- Wireless, Media Redundancy.
- Use of network management and diagnostic software.

Course assessments

The course includes both a theory test and a practical test. The tests are quite rigorous but we will provide you with all the information and practice that you need to pass the examinations. Some people may unfortunately fail to achieve a pass grade. However, we will try to provide the opportunity to retake the failed tests free of charge at a later date.

Booking Information – dates, costs and booking information,

Melbourne – Monday 22 July-Friday 26 July, 2019
Venue – TBA

Sydney – Monday 29 July-Friday 2 August, 2019
Venue – TBA

Perth – Monday 5 August-Friday 9 August, 2019
Venue – TBA

Cost – Members \$5,500, Non-members \$6,500

Booking – complete details below for initial registration, confirmations will only be issued when a Purchase Order is received, or when pre-payment is made

Participant Name: _____

Company Name: _____

Address: _____

Email: _____

Phone: _____

Do you require a formal quotation? Y or N (please circle)

Please indicate your preferred location

Melbourne Sydney Perth

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This course is delivered by:



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

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