



Control Specialists Ltd

PID Loop Optimisation Training

Training courses covering the application, operation, tuning and implementation of three-term or PID (Proportional+Integral+Derivative) controllers.

Who should attend this training?

This training is aimed at technicians and engineers who are involved in the operation, implementation and tuning of feedback controllers in a wide variety of applications and industries. Many different aspects of feedback control systems are covered so that the training will benefit a wide range of needs. For example, if you need to:

- Apply quantitative feedback control to real processes and machinery;
- Improve the performance or tune controllers in your plant;
- Identify loop-related problems and the causes of poor control performance;
- Gain experience in the more advanced aspects of PID control.

How is the training delivered?

- This is available in two, one-day courses. The one-day **Basic PID Course** is aimed at those who have little or no previous experience with feedback control. This module takes the trainee up to the stage where they can tune a simple feedback control system and identify the basic reasons for poor control performance. The one-day **Advanced PID Course** builds on the skills and knowledge gained in the basic course to cover additional tuning exercises as well as the theory and implementation of valve testing, Cascade and Feedforward control.
- It uses software-based simulators to allow delegates to gain a detailed understanding of process dynamics and their importance to the tuning of PID loops.
- It also introduces commercially available process loop optimisers and a live demonstration of a plant-wide loop optimisation techniques.
- The material in the course is delivered in a manufacturer independent way but will include the use of the Neles PID Loop Optimizer and Neles PlantTriage applications as examples of commercially-available loop optimisation solutions.

What does this course cover?

The course provides an introduction to control system terminology and technology and introduces three-term

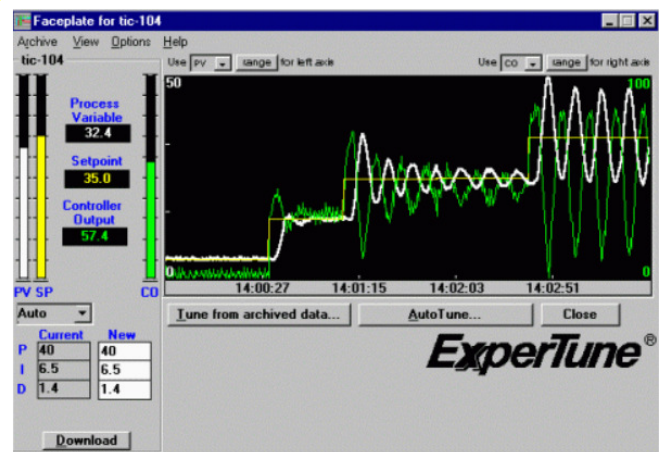
control using a practical, hands-on approach. The course teaches how the controller terms operate and interact and how to use simple but practical techniques to select and adjust a controller for a range of applications. The training also covers the various causes of poor performance, which are often not concerned with controller tuning.

Basic PID Course Modules:

- Plant Dynamics
- Controller Actions
- Loop Tuning Techniques
- Loop Optimisation Software

Advanced PID Course Modules:

- Practice in the tuning of self-regulating and integrating processes.
- Final control Elements – identification of problems
- Cascade Control – theory and implementation
- Feedforward Control Loop – theory and implementation
- Implementing PID control in PLC's
- The courses are highly practical and are delivered in hands-on manner.



PID Loop Optimizer Faceplate



Certified PROFIBUS Installer Training Course

A sample of comments from previous attendees

- “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:



Control Specialists Ltd

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The course can be delivered at your premises for up to 6 people or at the Manchester Offices of Endress+Hauser.

Each delegate will have hands-on access to the loop simulation software and will receive a full-colour set of course notes,

Peter Thomas of Control Specialists Ltd has over 30 years of practical experience in the process and factory automation industry. This experience has included the development of PLC programs for PID control and the tuning of PID loops manually or with commercially available optimisation software from the likes of Neles (ExperTune) and Techmation (Protuner).

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