

COURSE OVERVIEW IE0303
CCC Anti-Surge Controls Series 3
Operations, Maintenance and Implementation

Course Title

CCC Anti-Surge Controls Series 3: Operations, Maintenance and Implementation

Course Date/Venue

Session 1: April 06-10, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
 Session 2: September 08-12, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

IE0303

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of CCC Anti-Surge Control Series 3+ & 3++ Maintenance & Implementation. It covers the principles of compression and surge; the features, advantages and potential use cases of CCC Series 3+ and 3++; the hardware, software and other essential components of Series 3+ and 3++; the differences, similarities and unique selling points of Series 3+ and 3++; the in-built control algorithms, their functions and execution logic; and the step-by-step guidance on mounting, wiring and ensuring the physical integrity of the equipment.



Further, the course will also discuss the system initialization and setting up control parameters; the techniques and best practices for calibrating sensors, actuators and ensuring optimal control performance; the routine maintenance procedures covering periodic checks, cleaning, software updates and other essential maintenance tasks; the data integrity, procedures for system backup, restoration and updating to newer software versions; and the communication with external DCS/SCADA systems, MODBUS setup and other integration aspects.



During this interactive course, participants will learn the built-in diagnostic tools, error logs and other troubleshooting aids; the frequently encountered problems in Series 3+ and 3++ systems including their causes and mitigation steps; the advanced setup options, custom algorithms and specific use-case configurations; and the safe operations, safety features and best practices to avoid common pitfalls.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a good working knowledge on CCC anti-surge control series 3+ and 3++ maintenance and implementation
- Discuss the principles of compression and surge as well as the features, advantages and potential use cases of CCC Series 3+ and 3++
- Identify the hardware, software and other essential components of Series 3+ and 3++
- Discuss the differences, similarities and unique selling points of Series 3+ and 3++
- Recognize the in-built control algorithms, their functions and execution logic
- Illustrate the step-by-step guidance on mounting, wiring and ensuring the physical integrity of the equipment
- Initialize the system, set-up control parameters and apply techniques and best practices for calibrating sensors, actuators and ensuring optimal control performance
- Employ routine maintenance procedures covering periodic checks, cleaning, software updates and other essential maintenance tasks
- Ensure the data integrity, procedures for system backup, restoration and updating to newer software versions
- Set-up communication with external DCS/SCADA systems, MODBUS setup and other integration aspects
- Use built-in diagnostic tools, identify error logs and apply other troubleshooting aids
- Identify the frequently encountered problems in Series 3+ and 3++ systems including their causes and mitigation steps
- Implement advanced setup options, custom algorithms, and specific use-case configurations
- Ensure safe operations, safety features and best practices to avoid common pitfalls

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of on CCC anti-surge control series 3+ and 3++ maintenance and implementation for instrument, control, electrical, mechanical, process, operations and rotating equipment engineers and supervisors.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Fee

US\$ 5,500 per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation


Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)


Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET- USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Dr. Alaa Abdel Kerim, PhD, MSc, BSc, is a Senior Electrical, Instrumentation & Control Engineer with 45 years of extensive experience in the Power, Petrochemical, Refinery, Oil and Gas industries. He specializes in Plant Control System, Instrumented Control System, Process Control & Instrumentation, DCS, PLC, SCADA Systems, HMI, Programmable Logic Controller (PLC) Operations, Maintenance & Troubleshooting (Siemens Simatic S7-300/400), Allen Bradley, Modern PLC/SCADA for ATS, Generator Parallel Operation, Electricity Distribution Networks, Electrical Transmission & Tie Lines, HMI Wire, Wireless & Communication Network, Modern Instrumentations/Automatic Control Principals for Water & Wastewater Lifting Plants and Water & Wastewater Treatment Plants, Substation Automation Systems & Its Applications, Siemens SIMATIC S7 Maintenance & Configuration, Modern Automation Control Systems, Hydrocarbon, Measurement Instrumentation, Pressure Measurement, Level & Flow Measurement, Temperature & Vibration Measurement, Analytical Instrumentation, Calibration & Testing Safety Procedures, Find Control Elements, Control Loop Operation, Industrial System Equipment & Building Installation, Artificial Intelligence (AI), Data Acquisition & Transmission, Electronics Technology, Power Systems Control, Modern Electric Power Systems, Power Systems Security, Series Reactors in Power System, Power Transmissions, Power Generation, Electrical Troubleshooting Techniques, Electrical Substations and MV/LV Electrical System.

During his career life, Dr. Alaa has been practically and academically involved in different **Power System** and **Instrumentation & Control** international companies and universities as the **Senior Professor & Consultant, Lecturer/Trainer, Instrumentation & Control Engineer/Trainer** and **Electrical Engineer/Trainer**. His recent practical applications experience includes the design, supply, installation, operation of full **DCS, SCADA, PLC, HMI Automation System** for **Sumid Line Petroleum, Siemens USA, AREVA USA** to name a few. His experience also includes electrical coordination, protection level adjustments and electrical testing.

Dr. Alaa has a **PhD** degree in **Electrical Engineering** from the **Technical University of Gdansk, Poland** and has **Master's** and **Bachelor's** degree in **Electrical Machine & Power Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor** by the **Institute of Leadership & Management (ILM)** and has further delivered numerous trainings and workshops worldwide.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	Introduction & Course Objectives <i>Overview, Goals and Expected Outcomes of the Training</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Background of Compression & Surge <i>A Quick Recap of the Principles of Compression and the Surge Phenomenon</i>
1100 - 1230	CCC Series 3+ & 3++ Features <i>Highlighting the Distinctive Features, Advantages and Potential Use Cases</i>
1230 – 1245	<i>Break</i>
1245 – 1420	CCC Series 3+ & 3++ Features (cont'd) <i>Highlighting the Distinctive Features, Advantages and Potential Use Cases (cont'd)</i>
1420 – 1430	Recap
1430	<i>End of Day One</i>

Day 2

0730 – 0930	System Architecture & Components <i>Overview of the Hardware, Software and Other Essential Components of Series 3+ and 3++</i>
0930 – 0945	<i>Break</i>
0945 – 1100	System Architecture & Components (cont'd) <i>Overview of the Hardware, Software and Other Essential Components of Series 3+ and 3++ (cont'd)</i>
1100 – 1230	Comparison Between Series 3+ & 3++ <i>Discussing Differences, Similarities and Unique Selling Points of Both Models</i>
1230 – 1245	<i>Break</i>
1245 – 1420	Understanding Control Algorithms & Logic <i>Introduction to the in-Built Control Algorithms, their Functions, and Execution Logic</i>
1420 – 1430	Recap
1430	<i>End of Day Two</i>

Day 3

0730 – 0930	Physical Installation of Hardware <i>Step-by-Step Guidance on Mounting, Wiring, and Ensuring the Physical Integrity of the Equipment</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Software Configuration & Setup <i>Detailed Process of Initializing the System, Setting Up Control Parameters and Understanding the Software's GUI</i>
1100 – 1230	Calibration & Performance Optimization <i>Techniques and Best Practices for Calibrating Sensors, Actuators and Ensuring Optimal Control Performance</i>

1230 – 1245	Break
1245 – 1330	Routine Maintenance Procedures <i>Periodic Checks, Cleaning, Software Updates and Other Essential Maintenance Tasks</i>
1420 – 1430	Recap
1430	End of Day Two

Day 4

0730 – 0930	Backup, Restore, & Software Upgrades <i>Ensuring Data Integrity, Procedures for System Backup, Restoration, and Updating to Newer Software Versions</i>
0930 – 0945	Break
0945 – 1100	Integration & Communication with Other Systems <i>Setting up Communication with External DCS/SCADA Systems, MODBUS Setup and Other Integration Aspects</i>
1100 – 1230	Diagnostic Tools & Techniques <i>Using Built-in Diagnostic Tools, Understanding Error Logs and Other Troubleshooting Aids</i>
1230 – 1245	Break
1245 – 1420	Common Issues & Resolutions <i>Discussing Frequently Encountered Problems in Series 3+ and 3++ Systems, their Causes and Mitigation Steps</i>
1420 – 1430	Recap
1430	End of Day Two

Day 5

0730 – 0930	Advanced Configuration & Customization <i>More Advanced Setup Options, Custom Algorithms and Specific Use-Case Configurations</i>
0930 – 0945	Break
0945 – 1100	Advanced Configuration & Customization <i>More Advanced Setup Options, Custom Algorithms and Specific Use-Case Configurations</i>
1100 – 1230	Safety Protocols & Best Practices <i>Ensuring Safe Operations, Understanding Safety Features and Best Practices to Avoid Common Pitfalls</i>
1230 – 1245	Break
1245 – 1345	Case Study Discussion <i>Analyzing Real-World Scenarios where CCC Series 3+ and 3++ were Pivotal • Challenges Faced, Solutions Implemented and the Results Achieved</i>
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	End of Course

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

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