Haward Technology Middle East

COURSE OVERVIEW IE0921
Honeywell Uniformness System: Troubleshooting & Maintenance

Course Title
Honeywell Uniformness System: Troubleshooting & Maintenance

Course Date/Venue
Session 1: January 12-16, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: July 14-18, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
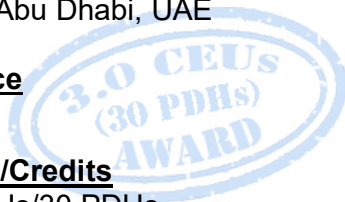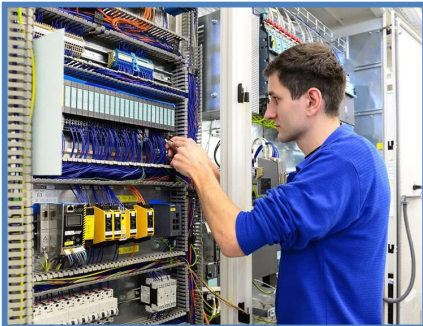

Course Reference
IE0921

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 BMS PLC. It covers the block diagram and building management system; the benefits of building management system in enhancing staff productivity, reducing operating cost, increasing reliability of plants and services and protection of people and equipment; the different functions of Honeywell building management system in controlling, monitoring, optimizing and reporting; the installation, management and control of energy management functions, risk-management functions, information-processing functions, facility-management functions, fault detection, diagnosis and maintenance management; and the sensors of Honeywell building management system and control devices.
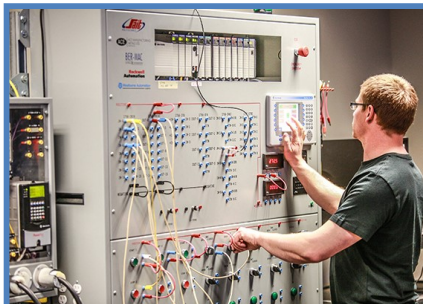
During this interactive course, participants will learn the conceptual design of PLC and product application ranges for micro PLC's, small PLC's, medium PLC's and large PLC's; the PLC components and the role of PLC in input and output devices; the timers and counters as well as communication module for remote terminal units, master terminal units, modbus and RS-232; and the Honeywell building management system configuration.

Course Objectives

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

• Apply and gain an in-depth knowledge on BMS PLC

• Discuss block diagram and building management system

• Identify the benefits of building management system in enhancing staff productivity, reducing operating cost, increasing reliability of plants and services and protection of people and equipment

• Describe the different functions of Honeywell building management system in controlling, monitoring, optimizing and reporting

• Carryout proper installation, management and control of energy management functions, risk-management functions, information-processing functions, facility-management functions, fault detection, diagnosis and maintenance management

• Recognize sensors of Honeywell building management system and control devices

• Explain the conceptual design of PLC and product application ranges for micro PLC's, small PLC's, medium PLC's and large PLC's

• Enumerate PLC components and the role of PLC in input and output devices

• Determine timers and counters as well as communication module for remote terminal units, master terminal units, modbus and RS-232

• Employ Honeywell building management system configuration in a professional manner

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 for all significant aspects and considerations of BMS PLC for engineers and other technical staff requiring specialist knowledge and/or familiarization with Honeywell building management system, mainly in the areas of operation and maintenance.

Course Fee

US$ 5,500 per Delegate + **VAT**. 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.

Certificate Accreditations
Certificates are accredited by the following international accreditation organizations: -

- **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.

- **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. Ahmed El-Sayed, PhD, MSc, BSc, is a **Senior Electrical & Instrumentation Engineer** with **30 years** of extensive experience within the **Oil**, **Gas**, **Power**, **Petroleum**, **Petrochemical** and **Utilities** industries. His experience widely covers in the areas of Advanced Distributed Control System (**DCS**), **DCS** Operation & Configuration, **DCS** Troubleshooting, **DCS Yokogawa** ProSafe-RS Safety Instrumented System, **DCS Yokogawa** Centum VP, **DCS Emerson** DeltaV, **DCS GE Mark VI**, Programable Logic Controller (**PLC**), Supervisory Control & Data Acquisition (**SCADA**) Systems, Siemens **PLC Simatic S7-400/S7-300/S7-200**, **Siemens SIMATIC S7** Maintenance & Configuration, **Siemens WINCC**, SCADA System: Siemens **SIMATIC & WinCC**, **Process Control**, **Control Systems & Data Communications**, **Instrumentation**, **Automation**, **Valve Tuning**, Safety Instrumented Systems (**SIS**), Safety Integrity Level (**SIL**), Emergency Shutdown (**ESD**), **Telemetry** Systems, **Boiler Control & Instrumentation**, Advanced Process Control (**APC**) Technology, Practical **Fiber-Optics** Technology, **Compressor** Control & Protection, **GE Gas Turbines**, **Alarm** Management Systems, **Engine** Management System, **Fieldbus** Systems, **NEC** (National Electrical Code), **NESC** (National Electrical Safety Code), **Electrical Safety**, **Electrical Hazards** Assessment, **Electrical Equipment**, Electrical Transient Analysis Program (**ETAP**), Power **Quality**, Power **Network**, Power **Distribution**, **Distribution Systems**, **Power Systems Control**, **Power Systems Security**, Power **Electronics**, **Power System** Harmonics, **Power System** Planning, Control & Stability, **Power Flow** Analysis, **Smart Grid & Renewable** Integration, **Power System Protection & Relaying**, Economic Dispatch & Grid Stability Constraints in Power Plants, Electrical Demand Side Management (DSM), Electrical **Substations**, **Substation Automation** Systems & Application (IEC 61850), **Distribution Network** System Design, **Distribution Network Load**, Electrical **Distribution** Systems, **Load Forecasting** & System Upgrade (Distribution), **Overhead Power Line** Maintenance & Patrolling, High Voltage **Switching** Operations, Industrial **UPS Systems & Battery** Power Supplies, Electric **Motors & Variable Speed Drives**, **Generator** Maintenance & Troubleshooting, **Generator** Excitation Systems & AVR, **Transformer** Maintenance & Testing, Lock-Out & Tag-Out (**LOTO**), Confined Workspaces and **Earthing & Grounding**, He is currently the **Systems Control Manager** of **Siemens** where he is in-charge of Security & Control of Power **Transmission Distribution** & **High Voltage** Systems and he further takes part in the Load Records Evaluation & Transmission Services Pricing.

During his career life, Dr. Ahmed has been actively involved in different Power System Activities including Roles in Power System Planning, Analysis, Engineering, **HV Substation** Design, Electrical Service Pricing, Evaluations & Tariffs, Project Management, Teaching and Consulting. His vast industrial experience was honed greatly when he joined many International and National Companies such as **Siemens**, **Electricity Authority**, Egyptian Electricity Holding, Egyptian Refining Company (ERC), **GASCO**, Tahrir Petrochemicals Project, and **ACETO** industries as the **Instrumentation & Electrical Service Project Manager**, **Energy Management Engineer**, **Department Head**, **Assistant Professor**, **Project Coordinator**, **Project Assistant and Managing Board Member** where he focused more on dealing with Technology Transfer, System Integration Process and Improving Localization. He was further greatly involved in manufacturing some of **Power System** and **Control & Instrumentation Components** such as Series of Digital Protection **Relays**, MV **VFD**, **PLC** and **SCADA** System with intelligent features.

Dr. Ahmed has **PhD**, **Master's** & **Bachelor's** degree in **Electrical Engineering** from the **University of Wisconsin Madison**, **USA** and **Ain Shams University**, respectively. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/ Assessor/Trainer** by the **Institute of Leadership and Management** (**ILM**), an active member of IEEE and ISA as well as numerous technical and scientific papers published internationally in the areas of Power Quality, Superconductive Magnetic Energy Storage, SMES role in Power Systems, Power System **Blackout** Analysis, and Intelligent Load Shedding Techniques for preventing Power System Blackouts, HV **Substation Automation** and Power System Stability.

Training Methodology

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Workshops & Work Presentations
20% Case Studies & Practical Exercises
30% Videos, Software & Simulators

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

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	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	**PRE-TEST**
0830 – 0930	**Honeywell Building Management System** *Description • Block Diagram • BMS Introduction • History • Benefits of BMS (Enhancing Staff Productivity, Reduced Operating Cost, Increased Reliability of Plants & Services, Protection of People & Equipment)*
0930 – 0945	*Break*
0945 – 1100	**Functions of Honeywell Building Management System** *Controlling • Monitoring • Optimizing • Reporting*
1100 – 1230	**Installation -Management & Control Functions** *Energy-Management Functions • Risk-Management Functions • Information-Processing Functions*
1230 – 1245	*Break*
1245 – 1420	**Installation -Management & Control Functions (cont'd)** *Facility-Management Functions • Fault Detection & Diagnosis, Maintenance Management*
1420 - 1430	**Recap**
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	**Sensors of Honeywell Building Management System** *Lighting Control Systems • Purpose of Lighting Control Systems • Basic Components of Lighting Control Systems (Lamps, Ballasts & Dimming Ballasts, Dimmers, Analogue Control & Digital Control)*
0930 – 0945	*Break*
0945 - 1100	**Sensors & Control Devices** *Motion Sensor • Passive Infrared Sensors (PIR) • Ultrasonic Sensors (Fundamental Ultrasonic Properties, Speed of Sound in Air as a Function of Temperature) • Microwave Sensors (Design, Drawbacks of Microwave Sensors) • Door Switch • Light Dependent Register (LDR)*

1100 – 1230	**Programmable Logical Controller (PLC)** *The Conceptual Design of PLC*
1230 – 1245	*Break*
1245 - 1420	**Programmable Logical Controller (PLC) (cont'd)** *Today's Programmable Controller*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Programmable Controllers & the Future***
0930 – 0945	*Break*
0945 - 1100	**PLC Product Application Ranges** *Micro PLC's • Small PLC's • Medium PLC's • Large PLC's*
1100 - 1230	**PLC Components** *Processors • Processor Scan • System Power Supply • The Input Voltage*
1230 - 1245	*Break*
1245 - 1420	**PLC Components (cont'd)** *Memory Overview • Memory Section • Memory Structure & Capacity*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	**The Role of PLC** *Input Devices • Output Devices*
0930 – 0945	*Break*
0945 - 1100	***Ladder Programming Language***
1100 - 1230	***Timers & Counters***
1230 - 1245	*Break*
1245 - 1420	***Timers & Counters (cont'd)***
1420 - 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 - 0930	**Communication Module** *Remote Terminal Units • Master Terminal Units • Modbus • RS-232*
0930 - 0945	*Break*
0945 – 1100	**Honeywell Building Management System Description** *Plumbing Systems Controls • HVAC • Systems Control • Smoke Control • Fire Alarm & Detection • Security & Access Control Systems • Fire Protection System • Power Supply • Fuel Oil Systems • Irrigation System*
1100 - 1230	**Honeywell Building Management System Configuration** *Controller Tools • Symmetric Workstation • Distributed I/O • Smart I/O • Compact I/O • LonWorks Bus Accessories • WEB's System • WEBs-AX Security I/O Modules • Spyder Programmable Controllers*
1230 - 1245	*Break*

1245 – 1345	**Honeywel Building Management System Configuration (cont'd)** *WEBs-R2 System • Light Commercial Building Systems • LonSpec Configuration Software • Constant Volume Air Handling Unit • Variable Air Volume Controllers • Fan Coil Unit Controllers • Unit Vent Controllers • W7761 Remote Input/Output Device*
1345 – 1400	**Course Conclusion**
1400 - 1415	**POST-TEST**
1415 - 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

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

Course Coordinator
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