

Incorporated with HRDF Registered **AS Automation Systems Training Centre PLT.**

## **Omron Model CPiE/L – Basic+ Int+ Adv+ HMI Scada (5 days) PLC Programming Training Course & Pricing Outline.**

### **1) Training Course Objectives:**

This training program for Omron Basic & Intermediate & Advance PLC Programming course provides a deep and advance understanding of Omron PLCs programming capabilities. Control strategies and deep programming will be reviewed. Data Movement, Floating Point Math, Shift, Compare, Distribute, Collection, Transfer, Control Projects and instructions will be covered.

### **2) Training Course Content:**

#### **Day1**

##### **LESSON 1 – Introduction and Overview**

- Course Objectives.
- Course Prerequisites.
- Computer Numbering Systems.

##### **LESSON 2 – Number Systems**

- Binary Numbers.
- Hexadecimal Numbers.
- Octal Numbers.
- Binary Coded Decimal.
- Integer (16/32 Bit).
- Decimal (16/32 Bit).

##### **LESSON 3 – C- Series Hardware Review**

- Hardware Components.
- Inputs and Addressing.
- Outputs and Addressing.
- Power Supplies.
- Memory Types.

##### **LESSON 4 – Programming Equipment**

- Programming Software.
- CX- Programmer overview.
- File Format.
- Hardware Connection.
- Communication (USB;Serial ; Ethernet).

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### **LESSON 5 – Basic Instructions**

- Symbols..
- Ladder Logic.
- STL (Statement List).
- Common Instructions.

### **LESSON 6– Develop and Edit Programs**

- Launching CX-Programmer.
- Creating a New Project.
- Editing the Ladder.
- Exercise – Contacts and Coils.
- Program Transfer.
- Online Editing.
- Monitor the Program Operation.
- Forcing Bits and Changing Registers.

### **Day2**

### **LESSON 7 – Programming Functions with Projects**

- Timers, Counters Math functions, MOV other Advance functions.
- Program Examples and programming functions.
- Indirect Addressing.
- Monitor the Program Operation.
- Forcing Bits and Changing Registers.
- Troubleshooting Methodology
- Best Practices in Programming (GPP)
- Additional Timer Commands.
- Exercise – Timers, Counters,
- Exercise – Conveyors

### **Day3**

### **LESSON 8 – Integration to HMI & SCADA**

- Introduction to HMI Vsft and Tellus.
- Various Functions display in HMI
- Mixer Tank Project creation in PLC
- Downloading to PLC and Debugging.
- Creating Screens to Control Mixer Tank and Monitor.
- Establishing comm to PLC and HMI.
- Debugging and Monitoring.
- Creating V-Server and Tellus PC based.

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## **Day4**

### **LESSON 9 – Advance programming using Function Blocks**

- Introduction to Analog input and Output.
- Programming Analog Input and Analog Output.
- Scaling Analog Input.
- Scaling Analog Output.
- Downloading and Testing with Signal Injector.

## **Day5**

- Integration of AIAO to Mixer Tank Project creation in PLC Downloading to PLC and Debugging.
- Creating Screens to Control Mixer Tank and Monitor. Establishing comm. To PLC and HMI.
- Debugging and Monitoring.
- Creating V-Server and Tellus PC based.
- Project Methods (FDS;FAT;SAT;Project Commissioning).

### **3) Training Course Aims:**

**Upon completion of this course, the students will be able to:**

- Construct, test and run PLC programs using instructions.
- Utilize advanced trouble shooting tools online.
- Download, Upload, Save and copy programs.
- Formulate a control strategy for creating PLC programs.
- Fully document a PLC program.
- Use multiple PLCs in a project.
- Utilize advanced troubleshooting tools.

### **4) Durations:**

Duration is 5 Days

### **5) Recommended Audience:**

Electricians, Technicians, Engineers, Maintenance Personnel, Control Engineers, Individuals who need to be able to understand the advanced capabilities of Omron PLCs.

### **6) Prerequisites:**

- Basic computer skills are required.
- Basic Electricity.
- Basic Knowledge on Electrical /Electronics.

### **7) Equipment:**

- PLC OMRON CP1E/L Model, Touch Panel Hakko/Omron, Fluke Process Meter.
- Training Laptop with CX Programmer & HMI Software Installed for 2 Person Share.

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## **8)Trainer's Introduction:**

**Mr. Sunderasen (TSoon)** has more than 25 years of industry experience in PLC and HMI programming as a Project Engineer in Singapore. Trained in Australia as an Electrical and Instrument Engineer, he then got his formal PLC and Robotics Training from Ngee Ann Poly Singapore. Mr.TSoon has worked in an OEM company for machine fabrication as a programmer and has commissioned machines in Germany, Thailand, India, China, Philippines and Malaysia. Throughout his years of industry experience, he has undergone specialized training and massive exposure towards different PLC systems, i.e. Siemens (Siemens Singapore), Allen Bradley (Rockwell Singapore), Omron (Precision Singapore), Adept Robot (Adept Singapore), and GE Fanuc (TDS Singapore). He has also vast experience in Building Management System, integrating HVAC, Security, Fire Fighting System, Electrical and Utilities into one centralized monitoring station.

## **9) Pricing:**

- Basic & Intermediate & Advance, 5 Days for Per Pax: **RM 4900**. (MOST FAVORABLE COURSE CHOICE BY PARTICIPANTS).
- **1 Pax: RM4900(Per Pax), 4 Pax: RM4000(Per Pax), 8 Pax: RM3800(Per Pax).**
- **(\*Need 4 Participant to be claimable under HRDF for company sponsor,depends on company HR). Depending on company.**
- **Negotiable through phone call us.**
- Registration can be done by direct call through **Whatsapp: +60163329691 (MR.TSoon)** and date conformation will be done through Email.

\*Price may vary according to Market Condition.