

## **Mitsubishi FX Series – Stepper/Servo + HMI Scada (3 days) PLC Programming Training Course & Pricing Outline.**

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

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

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

#### **PROGRAMMABLE LOGIC CONTROLLERS (PLC). Mitsubishi FX3s-Series + Servo/Stepper Drivers**

##### **Course Contents**

##### **Day1**

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

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

#### **LESSON 2 – Number Systems**

- Binary Numbers.
- Hexadecimal Numbers. Octal 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.
- 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 ;RS232;RS422).

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### **LESSON 5 – Basic Instructions**

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

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

- Launching GX Works2.
- 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 etc.
- Program Examples and programming functions
- Best Practices in Programming (GPP)
- Indirect Addressing.
- Monitor the Program Operation. Forcing Bits and Changing Registers. Troubleshooting Methodology. Additional Timer Commands.
- Exercise – *Servo Control*
- Exercise – *Stepper Control*

### **Day3**

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

- Introduction to HMI Vsft and Tellus. Various Functions display in HMI.
- Servo Control Project creation in PLC. Downloading to PLC and Debugging.
- Creating Screens to Control Servos and Monitor. Establishing communication To PLC and HMI.
- Debugging and Monitoring.
- Creating V-Server and Tellus PC based.

## **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.

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- Formulate a control strategy for creating PLC programs.
- Fully document a PLC program.
- Utilize advanced troubleshooting tools.

#### **4) Durations:**

Duration is 3 Days

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

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

#### **6) Prerequisites:**

- Basic computer skills are required.
- Basic GX works 2 is required
- Basic Electricity.

#### **7) Equipment:**

- PLC Mitsubishi FX Series Model & Hakko Panel
- Training Laptop with GX Works2 & HMI Software Installed for 2 Person Share.

#### **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, 3 Days for Per Pax per day: **RM 1500.**

**(\*Need 4 Participant to be claimable under HRDF for company sponsor).**

**(Negotiable through phone call with 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.