Telephone: 01536 409666
Email: info@plctraining.co.uk
Website: https://www.plc-training.co.uk

Mitsubishi FX5 or IQ-R Series PLC & GOT 2000 HMI Level 1

Software: GX Works3 + GT Designer
PLC Type: Mitsubishi iQ-R Series PLC
Duration: 5 Days
Pre-requisites: None
Maximum Delegates: 6

Brief Description

- Be able to recognise Mitsubishi IR-Q Series hardware and be able to locate and cure most faults that occur.
- Be able to operate the GX Works software to make it perform certain tasks.
- Understand basic FX Series instruction set and be able to make minor modifications to software.
- Be able to backup and restore a PLC program when required.
- Be able to perform basic system diagnostics when a problem occurs.
- Understand PLC to HMI Communications
- Create a screen to control a machine /process with pushbuttons, indicators
- Create a screen to display and edit data used in the PLC
- Create a screen to display data in various formats, Bargraph, Meters etc

Course Content

To fault find a system you need to know EXACTLY how it works

HOW EXACTLY DOES A PLC WORK?

- Am I getting the input to the PLC?
- The Led on the output card means i am getting voltage out right? does it?
- What exactly happens in between? theres more than just a program in the CPU
- How exactly does it scan the program?
- What is this Watchdog Timer? Is it that important?
- Can I use the same output twice? That’s bad programming isn’t it?
- A PLC is a logic controller, so use a logical approach to fault find it.
- What are the 8 simple test points to check?
- The PLC is in RUN, that means theres a program right? does it?
- FORCING a bit and toggling a bit is pretty much the same yeah? depends on which PLC

Then you need to know the specifics

HOW DO I DO THE FOLLOWING? (some straight forward some not so)

- How do I check power is ON and PLC is in right mode (RUN or Program)
- Check for a fault condition
- Establish a link between PC and PLC (can be a major issue nowadays)
- If comms problem check interface
- Create a blank project and take a backup (just in case I mess up)
- Open project for PLC and go OnLine
- Interrogate Diagnostics
- Identify if it is a hardware or software fault?
- Change the battery
- Change modules if necessary, (with spares and without spares)
- Identify if it is a PLC or Comms fault
- Check all settings against a template etc.
- Check Hardware (What voltage should be where)
- Clear Memory and Download program
- Check software against latest copy
- Monitor program effectively
- Searching for specific operands and instructions
- Changing timer, counter values On Line
- Making minor mods Off Line
- Check or create a monitor table to establish parameter status
- Force a parameter if required
- Call up reference data to assist with software diagnostics
- Display Documentation (Symbols, Comments)
- Printing Cross Reference / Program Listings etc.
- **HMI**
- Understand PLC to HMI Communications
- Create a screen to control a machine /process with pushbuttons, indicators
- Create a screen to display and edit data used in the PLC
- Create a screen to display data in various formats, Bargraph, Meters etc

Background information also covered

Understanding of the following:

- Number formats, bits, bytes, words, double words
- Binary, HEX,octal,floating point, integer
- Data types and parameter types, Bool etc.
- On Line and Off Line modes
- Basic Instructions, contacts, Set, reset etc.
- Timers, Counters
- Comparators, Maths
- How to make minor mods
- Altering values in a monitor table
- Using Device Monitor function
- Using Force function
- Back tracking through a program to establish where power flow stops

- Reset procedure
- Fault finding tips

Course Equipment (per delegate)

- iQ-R Series PLC
- GOT 2000 HMI
- PC or Laptop
- Simulator