

[Mitsubishi FX, A and Q Series PLC Level 1](#)

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Software	IEC GX Developer
Duration	5 Days
PLC-Type	Mitsubishi Q Series PLC
Pre-Requisites	No prerequisites this is a beginners course
Maximum Delegates	6

Brief Description

- * Be able to recognise Mitsubishi FX , A and Q Series hardware and be able to locate and cure most faults that occur.
- * Be able to operate the IEC GX Developer software to make it perform certain tasks.
- * Understand basic FX, A and Q 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.

Course Documentation

- * Beginners guide to IEC GX Developer

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?

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- * 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 and On line
- * Check or create a monitor table to establish parameter status
- * Call up reference data to assist with software diagnostics
- * Display Documentation (Symbols, Comments)
- * Reassign an I/O address and change software addresses
- * Printing Cross Reference / Program Listings etc.
- * Intermediate Instructions
- * Jumps, Subroutines
- * Linking via EtherNet
- * PLC to PLC Comms
- * Linking to HMIs
- * Remote IO via CClink 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
 - * Back tracking through a program to establish where power flow stops
 - * Reset procedure
 - * Fault finding tips

Equipment

- * FX, A or Q series PLC
- * PC or Laptop
- * Simulator

Solutions, Not Courses.