

APT® Programming Training Course

Prerequisite knowledge

- Participants should have a basic knowledge of industrial automation and low voltage electrical circuitry in industrial environment.
- Participants should have basic Computer knowledge and be able to execute basic operations on a PC.

Goals

- Participants will be able to troubleshoot problems on an Industrial Automation Unit based on CTI series 2500® / TI555 PLC's programmed with APT®.
- Participants will be able to write programs to handle typical PLC application problem: designing the APT® program and selecting the best available tool to program each part of the application and debugging the result to test each part of the program.

Method

- Various demonstrations
- Exercises

Number of participants

- Maximum 6

Duration

- Programming training : 5 days

APT® Programming Training Course

Contents

1. Principles

- Programming with APT®: an object oriented approach
- Approach to APT® Program Design
- Process Control Solutions:
Modular Approach
APT® Philosophy
- APT® program Structure and the Physical Process
- Understanding the benefits of FTSolution for APT®

2. Basics

- DOS file structure
- Creating an APT® program
- APT® Objects
- APT® Languages
- Program Levels
- Configuring the Compile Control File

3. Tables

- Configuring I/O Modules, Module types
- Configuring I/O's, I/O types
- Declaring Variables, variable types
- Declaring Devices, device types, properties
- Recipes, recipe templates

4. Subroutines

- Creating a subroutine, parameter declaration
- MATH in a user defined Subroutine

5. CFC's & CFB's

- Using the CFC Editor
- Creating and changing CFC's
- Using CFB's; linking & connecting CFB's
- Math CFB's
- Interlock CFB
- Analog Alarm CFB
- PID CFB

APT® Trainings

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6. SFC's

- Overview
- Using the SFC Editor
- Steps & Transitions
- Using the SFC Sub-Editor
- Testing an SFC
- Creating a Safe State SFC

7. Validating, Compiling and downloading a program

- The Compile Control File
- Validating the program
- Compilation Options; understanding different compile types
- Compilation Errors and compile Report
- Downloading the Program to the PLC
- Running the program, PLC Run modes

8. Debugging Mode

- Using the Cross Reference
- Monitoring Variables
- Changing I/O and Variables: Using the Modify Option : Using the Force Option
- Tracing SFC Program Flow
- Using the Breakpoint, Single Step and Step Logger Option
- Using the Activate Option.

9. Archiving & Restoring an APT® program

- Archiving
- Restoring
- Files types and file storage location
- Archive & restore commands from the DOS prompt

10. APT® documentation

- Overview of available manuals.
- Where to find which information?