Every Delegate

Receives a

Fully Illustrated

Allen Bradley RSLogix 500

LEVEL 1

TRAINING

MANUAL

An Intensive Practical Four Day "Hands On" Workshop

Practical Automation & Process Control Using

Allen Bradley RSLogix 500 PLCs (Level 1)

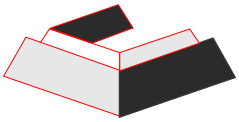
What you will learn:

- Fundamentals of Allen Bradley Hardware/Software
- How to write a simple Allen Bradley RSLogic's 500 Program
- How to troubleshoot a Allen Bradley **SLC500's** & **Micrologix 1100** Systems
- How to engineer a complete Allen Bradley RSLogix System

Who should attend:

- Instrumentation and Control Engineers
- Electrical Engineers
- Design / Consulting Engineers
- Instrumentation & Mechanical Technicians
- Process Control Engineers
- Engineering Managers
- Maintenance Electricians & Mechanical Fitters

Focus Engineering Limited



Technology Training That Works

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For Further Informat on on;

Allen Bradley PLC's

Introduction to PLCs.

- Introduction & Brief History Of PLC's.
- Block Diagram of a Typical PLC.
- Power Supply.
- Central Processing Unit.
- Analogue / Digital Input / Output Modules.
- Introduction to "WORD, BYTE & BIT" Addressing.
- **Summary.**
- **Check What You've Learnt.**

Project & PLC Settings

- Setting up a 'New Project'.
- Using the "Project Wizard" and Settings.
- Saving the "Project Settings".
- Managing Blocks, "Directory, Upload, Download, Delete and Download".
- Structure of the AB RSLogix500 "Directory & File Structure".
- **Summary.**
- **Check What You've Learnt.**

PG Functions & Storage Media

- Program Execution of the CPU "Scan & Cycle Time".
- Methods of RSLogix Representation Ladder "**LAD**".
- Types of RSLogix Programming. Blocks.
- **Summary.**
- **Check What You've Learnt.**

- PLC Memory.
- Program Execution by CPU. Role of OBI.
- Linear Programming.
- Structured Programming.
- Nesting Depths.
- Contact "Normally Open & Normally Closed" Status
- Positive (Rising Edge) & Negative (Lowering Edge) Logic
- Basic Boolean Function
- Simple Logic Operations.
- Exercise Create RSLogix "AND, OR, AND Before OR & OR Before AND User Programs.
- Signal States of Inputs and Outputs.
- Result of Logic Operations.
- Inserting, Deleting, Testing and Uploading New Blocks to the RSLogix CPU.
- Parentheses.
- **Summary.**
- **Check What You've Learnt.**

Addressing & Process Image

- Types of RSLogix PLC systems, "Block, Rack & Fixed Format".
- Addressing "Absolute & Symbolic.
- Addressing Mode "Bit, Byte Word & Double Word.
- Fixed & Variable Slot Addressing.
- Digital / Analogue Module Dip Switch Addressing Configuration.
- Program Execution & Process Image.
- Input/Output Modules as Process Signal Converters.
- Rated Voltage Ranges of Input Modules.
- Input Modules of Process Input Image (PII).
- Output Modules of Process Output Image (PIQ).
- Cycle Monitoring Time.
- Program Scan Cycle.
- **Summary.**
- **Check What You've Learnt.**

Latching Functions

- Latching Function.
- Priority of Latching Functions.
- Latching Functions and response to power failure.
- Retentive and Non Retentive flags.
- Evaluation of the Rising Edge.
- Exercise Evaluation of the Rising Edge.
- Pulse Flags.
- Using Connectors.
- Evaluation of the Falling Edge.
- Exercise Evaluation of the Falling Edge.
- **Summary.**
- **Check What You've Learnt.**

Number Processing in the PLC

- The Decimal System.
- The Binary System.
- The Hexadecimal System.
- Bits, Bytes and Words.
- Force Variable Function.
- Data formats.
- Processing & Storing Numbers in PLC's.
- Calling the Test and Force Variable Editor
- Load & Transfer Operations.
- The Accumulators.
- Arithmetic Operations.
- Representation of Decimal numbers Binary Coded Decimal "BCD".
- Exercise Addition, Subtraction, Multiplication and Division of Variables.
- **Summary.**
- **Check What You've Learnt**

Counter & Comparator Functions

- Counter Functions.
- Inputs and Outputs of Counters.
- Counting Up/Down.
- Setting & Resetting.
- Reading Counters.
- Retentive.
- Comparator Functions.
- Exercise comparing Counters.
- Segment Function Inserting, Deleting, and appending Segments.
- **Summary.**
- **Check What You've Learnt.**

Timer Functions

- Specifying the Timer Value.
- Specifying the Time Base.
- Accuracy
- Retentive Timers
- Inputs and Outputs of Timers.
- Start and Reset Conditions.
- Checking Timers.
- Different Types of Timers.
- On Delay "TON".
- Off Delay "TOFF".
- Exercise Flashing Signals.
- **Summary.**
- **Check What You've Learnt.**

Free reference Manual

Every Delegate receives a fully illustrated **RSLogix 500** with over 100 pages of tables, charts, figures and handy hints, plus considerable reference material.

Extra Workshops

Extra follow on workshops are available.

For further information regarding these Workshops, please contact:

Niamh Cosgrave at: (094) 9370934 or email Focus Engineering Ltd at training@focus-eng.com

This Workshop is designed to benefit you with **practical up-to-date information** on the application of PLC's (Allen Bradley SLC500's) into the automation and process control of plants and factories. It is suitable for people who have little or no exposure to PLCs, but expect to become involved in some or all aspects of PLC installation to trouble shooting and maintaining PLC systems.

It aims to give practical advice from experts in the field, to assist you to correctly program and install a PLC with a shorter learning curve and to create more confidence.

While the Workshop is ideal for electricians, technicians and engineers who are new to PLC's, much of the course and additional material in the extensive manual will be of value to those who already have some basic skills, but need a wider perspective for larger and more challenging tasks ahead.

The information contained in this Workshop advances from the basics to challenge even the most experienced engineer in the industry today.

Practical Sessions

You will undertake a series of practical hands on programming examples, ranging from elementary to advanced, based on the Allen Bradley RSLogix Programming. Full working solutions will be distributed to you after you have attempted the practical.

The practical's are:

Write simple ladder logic programs, creation and use of a simple scan 'pulse', developing a simple program:

- Valve limit switch monitoring.
- Stop / Start Logic Circuit.
- Simple timers and use of retentive timers.
- Setup a Pulse Generator using Timers and also using Time Controlled Interrupts.
- Set-Up Warn & Cold Restarts on the CPU
- Sequential startup of a Phase.

The emphasis on the practicals is to be as useful as possible to you in your work.

Your Instructor ……

An expert in Automation and Process Control Systems

Des Foley, BSc. (Eng)

Des has worked in the Automation Industry for more than 24 years. He has been responsible for activities ranging from Design, PLC & SCADA Program Development, Testing, Commissioning and Validation of Control Systems to the management of automation projects as a senior Projects / Automation Engineer.

His project experience has covered a wide range of industries including: pharmaceutical, mining, oil & gas, textile, paper, rubber, brewing, food and beverage.

Des has presented Workshops in numerous companies throughout Ireland with excellent reviews. He has been retained as a Consultant in the area of Industrial Automation and Control Systems.

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For more information, contact: Niamh Cosgrave at (094) 9370934 or Email Focus Engineering Ltd at training@focus-eng.com