

S4 Advanced Programming Stage 2

Course Outline

Duration 5 days

Beneficial to programmers, operators and maintenance staff

Students must have completed the S4 Advanced Programming Stage 1 Course and have ongoing S4 Experience

Subject areas

Safety Instructions

Emergency stops

Dot Notation

Accessing Data type parts.

Checking robot at home

Creating Routines with arguments

Creating instructions with parameters

INOUT

Optional Arguments

Present() Function

Switches

Mutually Exclusive Arguments

Global and Local Routines

Global and Local Data

PERS/VAR

“Present()” Versus “?”

Functions with Parameters

Variables inside Routines

Arrays

Creation

Manipulation

Printing

Resetting

In combination with routines and parameters

1,2 and 3 dimensional arrays

MultiTasking

General Description

Creating a parallel program

System parameter setting

Task Data

Synchronising using a common variable

Synchronising using interrupt

Synchronising using a dispatcher

Common data in several tasks

Teach pendant messages from parallel tasks

String Manipulation

Concatenation

Converting Values to Strings

Converting Strings to Values

Finding the length of Strings

Searching for characters in Strings

Create new strings from string parts

Common string functions

8 bit hexadecimal ASCII codes

Loop Instructions

FOR

WHILE

Communications

Reading and writing to text files

Reading and writing to Serial Channels/Ports

Binary two way communication

FTP Remote Mounted Disk

PC Software Configuration (Distinct)

Robot Configuration S4C □ S4C+

FTP Client using IIS

NFS Remote Mounted Disk

PC Software Configuration (Distinct)

Robot Configuration S4C □ S4C+

Objectives

On completion, participants will be able to perform:

- Demonstrate the techniques of advanced programming
- Use Dot notation
- Create instructions to suit any purpose
- Create and manipulate Arrays
- Utilise MultiTasking to program background tasks
- Synchronising foreground and background tasks
- Create and demonstrate a working background task
- Manipulate Strings
- Utilise Loop instructions
- Communicate using different mediums
- Mount an NFS and FTP Drive