

# UK R557

## IRC5

### Advanced Programming Stage 2

#### Course Outline

Duration 5 days

Beneficial to programmers, operators and maintenance staff

Students must have completed the IRC5 Programming and Operation & IRC5 Advanced Programming Stage 1 Courses and have ongoing IRC5 Experience

#### Subject areas

##### 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

##### Strings

String Concatenation and String Manipulation  
String Functions  
8 Bit Hexadecimal ASCII Codes

##### Serial Communication

Reading, Writing & Appending Files  
COM Port Communication

##### File Handling

Copying, Renaming and Removing Files  
Making, Removing and Opening Directories  
Directory Listings  
File Handling Functions

##### Socket Messaging

Client Configuration  
Server Configuration

##### FTP Client

FTP Server Configuration  
FTP Robot Client Configuration  
Mounting an FTP Network Drive

##### 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

##### NFS Client

NFS Server Configuration  
NFS Robot Client Configuration  
Mounting an NFS Network Drive

##### Objectives

On completion, participants will be able to perform:

- ☒ Demonstrate the techniques of advanced programming
- ☒ Use Dot notation
- ☒ Create instructions and functions to suit any purpose
- ☒ Create and manipulate Arrays
- ☒ Manipulate Strings
- ☒ Communicate using Serial Channels
- ☒ Handle Files and Directories
- ☒ Utilise MultiTasking to create and program Background tasks
- ☒ Socket Messaging for Client and Server configurations
- ☒ Configure the robot to communicate with an FTP Server
- ☒ Configure the robot to communicate with an NFS Server