Robotics

UK R552
IRC5
Programming and Operation

Course Outline
Duration 5 days
Beneficial to programmers, operators and maintenance staff

Subject areas

Safety Instructions
Emergency stops
Enabling device
Cell interlocking and modes of operation
Brake release and Pinch points
Program reset and Collision awareness

System Description
Robot and external mechanical units
Control system and Operators panel
FlexPendant

Program Operation
Starting, stopping and stepwise program operation
The program Editor and Production windows
Teach, Test and Production operation
Override speeds
Continuous & Cycle running modes
The Program and Motion pointers
Start up and Shut down procedures

Jogging the robot using the joystick
Axis and Linear jogging
Tool Re-Orientation
Coordinate systems
Jog speed and incremental positioning

Event messages and logs
Error identification
Recovery

Programming Theory
Creating a new program
Instructions and pick-lists
Move instructions (MoveJ, MoveL & MoveC)
Modifying move instructions
Saving and opening programs
File Management & Backup.

Program editing
Deleting, inserting and changing
Cut, copy, paste
Selecting range

Tool point definition
Tool centre point (TCP) theory
Create a TCP using the approach point method

Work object coordinate definition
Workobject theory (User and Object frames)
Create a workobject using calibration points

Logical Instructions
Inputs (WaitDI, WaitUntil)
Outputs (Set, Reset, SetDO)
Wait time

Routines
Program flow and call chain
Creating, calling & returning from routines
Debug menu and program reset

Modules
Task structure
Program and System modules
Backup and Restore
Mass memory storage (hd0a and memory stick)

Data
Robtarget, speed, zone, tool, workobject, numbers
Data definition local / global
Variable, Persistent and Constant

Decision making Instructions
IF Then… and editing structure
Compact IF
While
Test

Working with numbers
Increment / decrement
Clear

FlexPendant communications
TPErase / TPWrite
TPRead NUM / TPRead FK
Comment

Evaluating Cylce times
Clock data
Sarting, stopping and reading clocks

Objectives
On completion, participants will be able to perform:

☑ Safe robot operation
☑ FlexPendant operation
☑ System start up, shut down and error recovery
☑ RAPID programming and editing
☑ Programming and operation of inputs / outputs
☑ Tool and Workobject definition
☑ Backup and Restore system information

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