S4 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 TeachPendant overview Start up and Shut down procedures

Program Operation

Starting and stopping the program The program test and Production windows Manual and Automatic modes of operation Override speed Stepping through program Instruction by instruction Continuous & cycle running modes The Program Pointer and Cursor

Jogging the robot using the joystick

Axis and Linear jogging Tool Re-Orientation Co-ordinate systems Fine positioning

Error codes

Error identification Error recovery Error logs

Basic tool point definition

Why use a tool centre point (TCP) Define a TCP using the approach method

Work object coordinate definition

Why use a custom work piece coordinate system Definition using calibration points

Basic Programming Theory

Creating a new program Main routine Instructions pick lists Move instructions (MoveJ & MoveL) Editing a move instruction Saving and retrieving a program (Floppy disc & RAM disc / HD0A) File Management & Backup. (S4C, S4C Plus)

Basic instructions

Input / Output definition Input / output control (Set, Reset) Wait time / Wait Input

Program editing

Deleting, inserting, changing & marking Cut, copy, paste

Routines & modules

Creating, calling & returning from routines System modules Program modules

Data

Data definition local / global Robtarget, speed, zone, tool, numbers Decision making If Then Changing an instructions structure Compact If Comment Label While

Working with numbers

Increment / decrement Clear Using Then with If and Test

Teach pendant communications

TP erase / TP write TP Read NUM / TP Read FK

Objectives On completion, participants will be able to perform:

Safe robot operation

☑ TeachPendant operation

☑ System start up, shut down and error recovery ☑ RAPID programming and editing

Programming and operating inputs and outputs

☑ Tool and Workobject definition

☑ Backup and Restore system information

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