

# S2 and S3 Programming and Operation

## Course Outline

Duration 5 days

Beneficial to programmers, operators and maintenance staff

Note: Both S2 and S3 controllers share the same Asea robot language, courses run at ABB use an S3 controller and although there are differences between the S2 and S3 pendants students can adapt their knowledge to either system.

## Subject areas

### Safety Instructions

Safe working practices  
Pinch and Trapping points  
Emergency stops & enabling device  
Teach velocity

### System Description

Robot mechanical unit and control system description  
Operators panel  
Programming Unit

### Operations

Start up procedures  
Manually moving robot using joy stick  
Co-ordinate systems  
Singular points  
Shut down procedures  
Recovery from an emergency stop

### Error codes

Error identification  
Error recovery  
Error logs

### Basic Programming Theory

Creating a new program  
Main Program  
Instruction menu  
Basic Move instructions  
Circle & Time positions  
Velocity control  
Editing a move instruction  
Saving and retrieving a program in a block (Floppy disc)  
Saving and retrieving parameters (Floppy disc)

### Basic tool centre point definition

Why use a tool centre point (TCP)  
Importance of TCP  
TCP definition manual & automatic

### Basic instructions

Input / Output control (Set, Reset, Pulse)  
Wait time / Wait input  
Registers  
Gripper

### Program editing

Erasing, Deleting, inserting, modifying & copying  
Sub Programs  
Creating, calling & returning from Programs  
Pattern Calling  
Repeat Calling  
Decision making  
Jump IF

### Teach pendant communications

Comment instruction

### Objectives:

On completion participants will be able to perform:

- System start up, shut down and error recovery
- Jogging the robot and modifying positions
- ARLA programming and editing
- Save programs and parameters to disk