

# US354

## S4 Electrical Service (In Plant Only)

This course is available for S4 generation of robots and controller. The course is to teach students how to identify the electrical components, theory of operation, and proper troubleshooting procedures. Approximately 40% of the course is hands-on troubleshooting of actual robot systems.



### Topics include

- Operation of S4 robot control and mechanical unit
- Safety precautions used while troubleshooting the S4 electrical system
- Description of components in the S4 robot controller
- Principles of logical troubleshooting from power up, through emergency stop loop and servo system
- Input/Output interfacing between the S4 robot controller and peripheral equipment

### Course objectives

After successfully completing the course, the participant should be able to:

- Operate the S4 control panel and programming unit
- Read and interpret ABB circuit diagrams on the S4 robot controller
- Analyze and interpret system fault codes
- Diagnose and repair basic electrical faults
- Analyze servo-system data and make basic adjustments
- Diagnose and rectify emergency stop conditions
- Make I/O connections to peripheral equipment and safety devices
- Repair and replacement of systems components
- Perform "Cold-Boot" procedure

### Student profile

- Industrial electricians
- Electrical service technicians
- Engineers
- Supervisory personnel

### Prerequisites

- Familiarity with use of electronic test equipment (voltmeter and oscilloscope)
- Basic understanding of digital electronics is helpful
- S4 robot programming US312 is recommended

### Duration

The course duration is 4.5 days.

### Customer Service – Robotics

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