# S4P+

## Precision Paint Robot Controller


## High Performance

The ultimate controller for industrial paint robots comes with computing power and advanced paint process functions. The powerful S4P+ brings motion and process together, providing our systems with unrivalled overall performance.

### Easy installation

The system software is delivered on a CD which also contains documentation, circuit diagrams and spare-part list. Software is installed from a PC using the easy to use RobInstall program. The possibility to keep several software systems in parallel on the flash-disc makes software upgrades safe and fast. Two built-in Ethernet channels provide for easier service and factory networking.

### Fast and Accurate

The Paint process is handled by the powerful Integrated Process System (IPS). It features closed loop regulation, high speed and control for paint and airflow adjustment. The unique distributed time synchronized network will bring perfect timing to all process involved components.

ABB's unique IPS ensures high finish quality and significant paint savings.

### Low maintenance/easy diagnostics

The new Control Cabinet is completely sealed to separate internal and external air circulation. A large front door provides easy access to the swing-out computer frame as well as to the back-wall connections and components, where I/O modules and extra equipment can be installed.

The cabinets are prepared for a cooler unit, mounted either on the top (both cabinet types) or on the side of the cabinet (only for the extended cabinet type).

Important system signals for fast diagnostics are shown on a LED panel on the front of the cabinet.

The two versions of the S4P+ control cabinet are called "Compact" and "Extended". Both cabinets provide room for additional pump drives or external axis drives.

# S4P+

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## TECHNICAL DATA, S4P+ PAINT ROBOT CONTROLLER

### PERFORMANCE

| | |
|---|---|
| Control principles | Dynamic model; TrueMove, QuickMove<br>Self optimization<br>Coordinated external axes control<br>12 axes interpolation<br>7 frame coordinate chain<br>Corner path concept<br>Automatic singularity handling<br>Motion supervision |
| Control hardware | Multi-processor system<br>PCI bus with DRAM<br>Pentium CPU<br>64/128 MB Flash disk for mass storage<br>20s UPS back-up on power failure |
| Control software | BaseWare OS Robot operating system, multi tasking capability<br>Object-orientated design<br>Powerful RAPID application programming language<br>Portable, open, expandable<br>PC-DOS file format<br>RobotWare software products<br>Pre-loaded software. Also available on CD-ROM. |
| Conveyor tracking | Accurate synchronization of robotic motion, paint process regulation and the moving part for both linear and circular objects in any direction |

### ELECTRICAL PERFORMANCE

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|---|---|
| Supply voltage | 200-600 V, 50-60 Hz<br>Transformer included |

### PHYSICAL

| | |
|---|---|
| Compact version | 1250 x 800 x 580 mm (HxWxD)<br>7-axis robot with 4 pump motor drives + I/O modules |
| Extended version | 2200 x 800 x 580 mm (HxWxD)<br>7-axis robot with 4 pump motor drives + I/O modules + project specific hardware |

### ENVIRONMENT

| | |
|---|---|
| Explosion protection: | |
| North America | Class 1, Division 1, Group C&D |
| Japan | IIGT4 |
| Europe | II B T4 (Zone 1) |
| EMC | Electro Magnetic Compability approved |
| Ambient temperature | 5-52° C (with external cooler) |
| Relative humidity max. | 95% |
| Degree of protection | IP 54 |
| Monitoring of | Cooling fans<br>Temperature<br>Supply voltage<br>Battery |

### USER INTERFACES

| | |
|---|---|
| Operator panel | In cabinet or external |
| Programming unit | Exi protected. Portable, joystick and keyboard<br>Display 16 lines * 40 characters<br>Graphical 240 * 320 pixels<br>Distributed intelligence<br>Configurable on screen menus |
| Safety | EMY stop, Enable device, General mode stop, Auto mode stop, Test mode stop, Cabin interlock |

### MACHINE INTERFACES

| | |
|---|---|
| Digital inputs/outputs | 512/512 |
| Analog inputs/outputs | 24/16 |
| Fieldbuses | Interbus-S 64/64<br>Allan Bradley RIO 128/128<br>Profibus DP 128/128<br>CC Link 128/128 |
| Serial Channels | RS-232, RS-422/485 |
| Network | 2 x Ethernet (10/100 Mbit per second)<br>NFS/FTP Client<br>FTP Server<br>Factory Ware interface (RAP)<br>High speed IPS link<br>Real Time Data Logger |
| Diskette drive | 3,5” MS-DOS format (option) |

### PROCESSWARE

| | |
|---|---|
| IPS | Integrated Process System. Unique system for closed loop regulation and high speed control for paint and air flow adjustments. Based on open, flexible and adjustable architecture philosophy |

### PC TOOLS

| | |
|---|---|
| CAP | A Computer Aided Painting Package containing Shop Floor Editor and RobView. |
| ShopFloor Editor | Off-Line editing of programs using 3D graphics for path and process tuning.<br>Graphical programming and tuning of color change sequences. |
| RobView | Monitoring of robots and processes while in production.<br>Easy design of user screens. |
| FlexUI | Custom built GUI application for system supervision and control. |

*Data and dimensions may be changed without notice.*

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