

# S4Cplus

## Industrial Robot Controller



### High performance robot controller

S4Cplus gives you superior motion control. It features dynamic model based control, QuickMove™ for short cycle times, and the TrueMove™ function for high precision path following ability independent of robot speed.

The S4Cplus system configuration capability and the powerful programming language RAPID™ make it easy to set up the controller for a wide range of applications. The controller itself enables quick integration of additional hardware. The unit is adaptable for use in harsh environments and offers a high level of reliability and user safety. S4Cplus is used with all ABB robots.

S4Cplus offers extensive communications possibilities to reduce installation costs and facilitate integrated solutions. Two built-in Ethernet channels provide for easier service and factory networking. There are field bus and serial channels for PLC and PC connections. The controller supports TCP/IP, DNS and other protocols. A dedicated robot protocol, RAP, is available for control and monitoring.

Superior performance and easy maintenance are assured by extensive monitoring of fans, battery, temperature and supply voltages. Robot movements are monitored continuously.

### TECHNICAL DATA, S4CPLUS INDUSTRIAL ROBOT CONTROLLER

#### PERFORMANCE

Control principles	Dynamic model Self optimisation Coordinated external axes control 12 axes interpolation 7-frame coordinate chain Corner path concept Automatic singularity handling Motion supervision
Control hardware	Multi-processor system PCI bus Pentium® CPU Flash disk for mass storage 20s UPS back-up on power failure
Control software	Object-oriented design High-level RAPID robot programming language Portable, open, expandable PC-DOS file format RobotWare software products Pre-loaded software. Also available on CD-ROM

#### ELECTRICAL CONNECTIONS

Supply voltage	200-600 V, 50-60 Hz Transformer included
----------------	---

#### PHYSICAL

Cabinet size (HxWxD)	950 x 800 x 620 mm same size for complete robot range
Weight	250 kg
Cabinet variants	For process hardware
Wheels	Can be mounted

#### ENVIRONMENT

Ambient temperature	5-52°C (41-125°F)
Relative humidity	Max. 95%
Form of protection	IP 54
Monitoring of	Cooling fans Temperature Supply voltage Battery

EMC	Immune and emission-free
-----	--------------------------

#### USER INTERFACES

Control panel	On cabinet or external
Control pendant	Portable and light Joystick and keypad 5 user-designated keys Display 16 lines x 40 characters Windows-style communication Emergency stop and enabling device All programming functions available
PC	Connections for PC (Ethernet and serial channels)
On-line	FactoryWare interface for monitoring and control
Off-line	S4Cplus software on your PC (Virtual Controller™) – QuickTeach for training – ProgramMaker for programming – RobotStudio for robot simulation
RRS	For robot simulation tools
Languages	Choice between 11 national languages for communication and manuals. Possibility to add user dialogues and references
Maintenance	LEDs and test points Diagnostic software Recovery procedures Logging with time stamp

Safety	Safety and emergency stops 2-channel safety circuits with supervision 3-position enable device Software functions Passwords
--------	---

#### MACHINE INTERFACES

Inputs/outputs	Up to 1 024 signals
Digital	24V DC 120V AC or relay signals
Analogue	±10V ±4-20 mA
Serial channels	2 x RS 232 and 1 x RS 422
Network	2 x Ethernet (100 Mbits per second)
Fieldbuses	Allen-Bradley Remote I/O CAN/Device Net (2 channels) Interbus Profibus DP
Process interfaces	Media and signals for upper arm Space in controller for extra equipment
Encoder	Interface
Diskette drive	3.5" MS-DOS (option)

#### SENSOR INTERFACES

Search stop with automatic program shift
Seam tracking
Contour tracking
Conveyor following

#### USER DEFINED FUNCTIONALITY

Program instructions
Operator dialogues
Names for all objects and data
I/O and instruction pick lists
Predefined data
Robot configuration
Start-up sequences
Corner paths
Process monitoring
Event logging
Diagnostics, error messages
Error handling

#### PROGRAM FEATURES (a few examples)

Pull-down menus, dialogues, joystick for robot motion, function keys and windows
Cut-and-paste, copy, delete, search, change and undo functions
File handling
RAPID – powerful and open robot language
ProcessWare, application software packages
Motion to a position or fly-by at a defined distance
Linear, joint and circular interpolation
Mirror function
Soft servo function
Unlimited rotating axes 4 and 6
Restart on path
Forward/backward/simulated wait and input testing
Multi-tasking functions
Automatic load identification
Collision detection function
Concurrent I/O function
Independent motion of external axes
Position fixed I/O setting
Master-slave functions
Conveyor tracking function
Real time clock function
Hot-edit functions

*Data and dimensions may be changed without notice.  
Pentium is an Intel trademark.*