

EPSON Micro PowerDrive

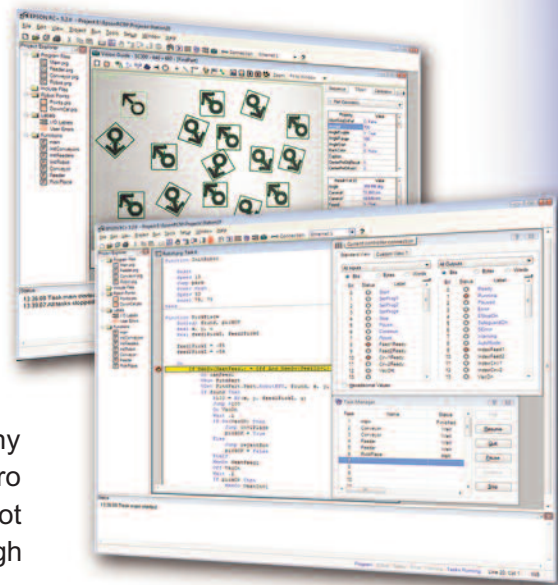
EPSON®
EXCEED YOUR VISION

RC180 Controller

- Low Cost AND High Performance
- Industry Leading Ease of Use with EPSON RC+ Software
- Fast Robot Cycle and Program Execution Times
- Compact Size - Small Footprint
- Use as Standalone, PLC Slave or with PC
- PowerDrive Servo System Ensures Maximum Robot Performance
- High Installation Flexibility
- Fully Integrated Options including: Vision Guidance, .NET Connectivity, EtherNet/IP, DeviceNet, Profibus, Expansion I/O and more

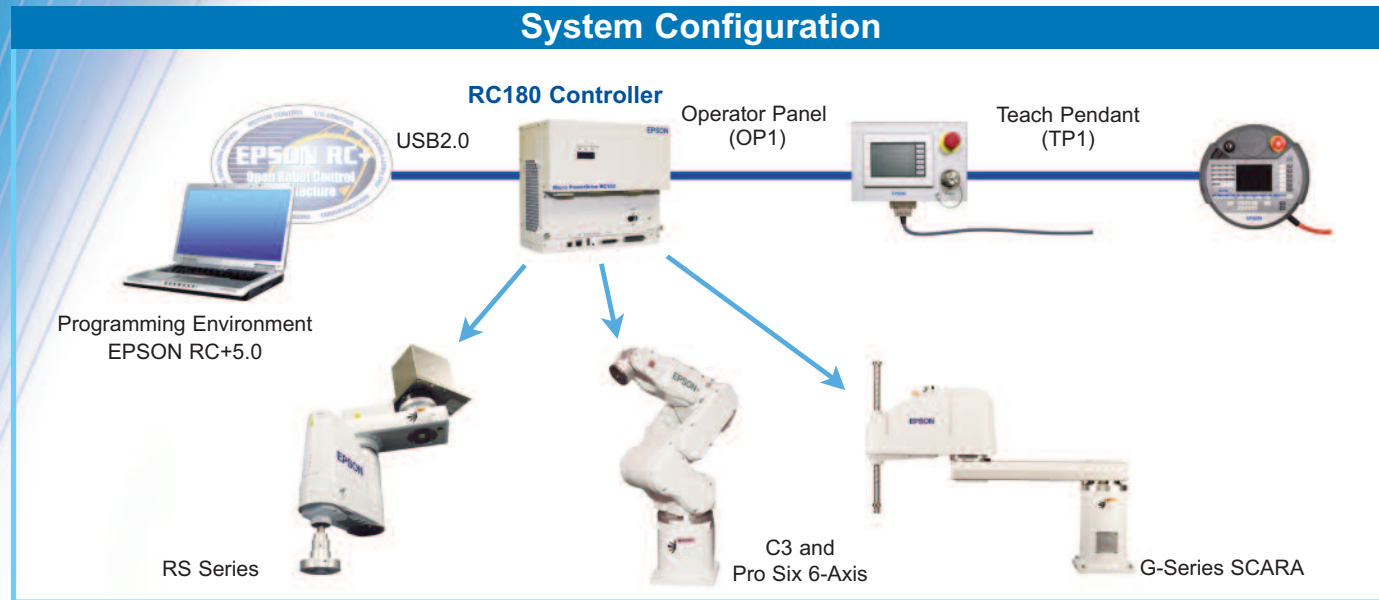


The EPSON Micro PowerDrive RC180 controller is a low cost, high performance robot controller that provides the ultimate experience in ease of use, compact size, and reliability at an incredible low cost. At the heart of the Micro PowerDrive is the new EPSON PowerDrive servo technology that provides superior path control, incredibly fast accel/decel times, and tremendous overall motion capabilities in an ultra compact form factor. In addition to all these great features, the RC180 controller also provides our industry leading EPSON RC+ Controls software and lots of fully integrated options. With core performance features superior to many other robot vendors high end controllers, the EPSON Micro PowerDrive RC180 creates a whole new class of robot controllers for customers seeking the best mix of low cost, high performance and small footprint.



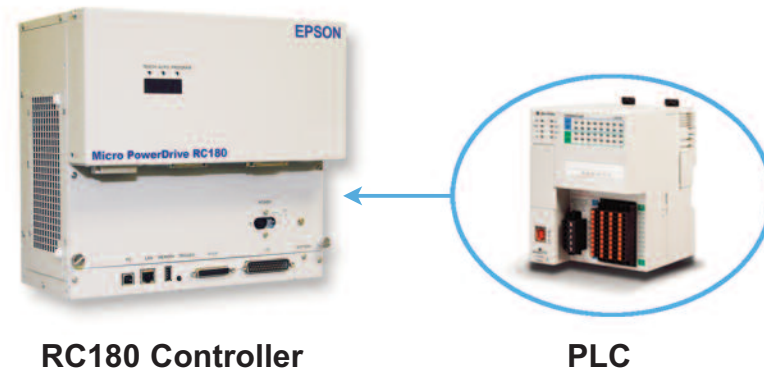
EPSON Micro PowerDrive RC180

Options



The Power of a True PLC Slave Controller

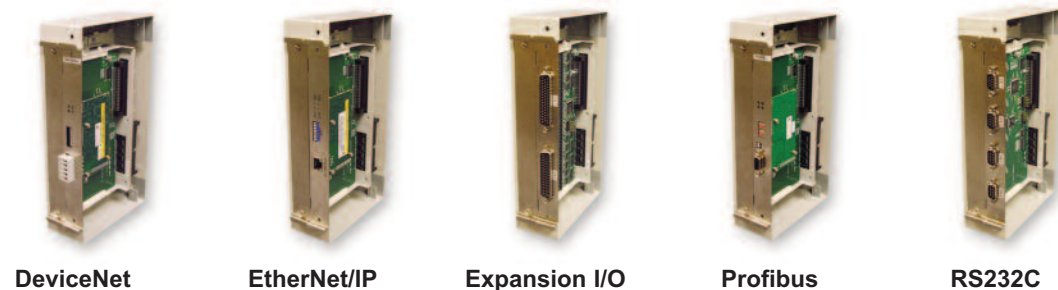
The Micro PowerDrive RC180 controller combines tremendous power and flexibility that allows it to be used for stand alone, PLC Slave, and PC driven applications. It is built from the ground up to be controlled by PLC's. The compact size allows for it to be mounted in the same electrical enclosure as a PLC. The RC180 controller is able to drive 4 or 6 axis robots with either a PLC master controller or a push button interface panel. All safety circuits and amplifiers are built into the overall form factor of the controller which provides a fully integrated servo system.



Fully Integrated Options

The Micro PowerDrive RC180 controller also provides EPSON's Industry Leading RC+ software and fully integrated options such as Vision Guidance, .Net Connectivity, Fieldbus, Expansion I/O and more.

Expansion I/O and Fieldbus boards inside an Option Unit



Vision Guide 5.0

Vision Guide leads the industry in ease of use for integrated Robot/Vision systems. With a point and click interface, users are constantly amazed with how quickly they get their EPSON Robots running for vision guided robotic applications. With powerful tools such as Geometric Search, Normalized Correlation, Image Analysis, Polar Search, and of course Blob tools and much much more, Vision Guide is more than just another vision system. It is an integrated package designed from the ground up to solve vision guided robotic applications.



VB Guide 5.0 (.Net Tools)

EPSON VB Guide has led the robot industry for years in connectivity using Microsoft standards. Starting with DDE, OLE, Active X and now .NET connectivity, we are dedicated to providing solid tools for using Microsoft Visual Basic, .NET, C/C++ or other .NET based solutions to run EPSON Robots. EPSON VB Guide 5.0 provides the power to create sophisticated user interfaces or to connect to 3rd party software/hardware products to make the most out of your EPSON Robot system.



Teach Pendant TP1

The EPSON TP1 (Teach Pendant) allows for easy jogging of the robot and the teaching of points. It has features to allow the editing and saving of point data, program editing, I/O and task monitoring, easy calibration guidance, system history display and much more. It has a backlit liquid-crystal display and is a universal design that allows for left or right handed use. The TP1 is fully IP65 compliant and comes with all UL and RIA safety features such as E-Stop, 3 position deadman switch, single point of control, and slow speed control in Teach Mode to name a few.



Operator Panel OP1

The EPSON OP1 (Operating Panel) is commonly used as the primary point of control in place of a PLC or pushbutton panel. With an easy to read backlit touch screen panel, users can start, stop and pause programs, check task execution, view the I/O monitor screen, view system history or even run custom application screens which can be used to gather input from and display information to operators. For applications requiring a simple operator interface, the OP1 is the easy way to go.



Option Unit

To keep the Micro PowerDrive RC180 Controller compact in size, adding options is done through an extension to the core chassis using option units. An option unit is a board carrier that houses and protects option boards and connects them to the controller. Up to 2 option units can be added to a controller with each unit housing up to 2 option boards for a 4 board maximum. The following option boards are supported:

- Expansion I/O, EtherNet/IP, DeviceNet, Profibus, CC-Link, RS-232C



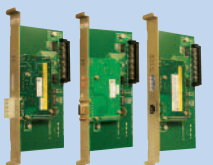
Expansion I/O Board

Each expansion I/O board provides 32 inputs and 32 outputs. The number of I/O that can be expanded per RC180 controller is a maximum of 4 boards (128 inputs and 128 outputs). When an expansion I/O board is mounted to the option unit, the EPSON RC+ controller software automatically identifies the expansion I/O board. No software configuration is needed.



Fieldbus I/O (EtherNet/IP, DeviceNet, Profibus and CC-Link)

The Micro PowerDrive RC180 controller provides powerful fieldbus connectivity using the latest industrial standards. EtherNet/IP, DeviceNet, Profibus and CC-Link are all supported with single card solutions. Because of the open communication standards, users can easily build the fieldbus solution of their choice using off the shelf devices.



RS-232C – Communication Board

The RS-232C option provides a mechanism to communicate with external RS232 devices such as other controllers, scales, or many other devices. A maximum of 2 boards can be installed into an RC180 controller. With 4 ports per expansion board, a maximum of 8 RS-232C ports are available. When the RS-232C board is mounted in an option unit, the EPSON RC+ controller software automatically identifies the RS-232C board. No software configuration is needed.



External Control Point (ECP) Motion

ECP is a powerful motion profile function that allows datums external to the robot's coordinate system to influence robot motion paths. For example...externally mounting a fixed process dispense unit and allowing the robot to hold a part and maintain path and velocity for the part relative to the fixed dispensing point.



RC180 Controller Specifications

Hardware Specifications

Mounting Options	Desktop, Wall, Rack, Floor, Ceiling	
CPU	32 bit Ultra Low Voltage Processor	
Robot Manipulator Control	Joint Control	Up to 6 joints simultaneous control (AC Servo)
	Motion Type	CP (Continuous Path) motion, PTP (Point to Point) motion
	Speed/ Accel/ Decel	Fully programmable
Memory	64 MB Flash, 64MB DRAM, 128K SRAM (for backup variables)	
Teaching Method	Remote, Direct, MDI (Manual Data Input)	
Digital I/O	Standard I/O	16 Inputs/ 8 Outputs (Optically Isolated)
	Remote I/O	8 Inputs/ 8 Outputs (may be configured as additional standard I/O)
Communication Interfaces	Ethernet	10/100Base-T Ethernet - High speed connection to 1 or more controllers via network
	USB 1.1 or 2.0	USB port 1 - Direct 1 to 1 high speed connection to 1 controller
		USB port 2 - for USB memory
Power Source	200-240 VAC Single Phase 50/60 Hz	
Environment	Temperature	5-40 deg C
	Humidity	20-80% (no condensation)
	Standards for Environment	RoHS
Safety Standards	CE Compliance, ANSI/RIA 15.06-1999, UL1740 (coming soon)	
Safety Features	Emergency stop switch, Safety door input, Low power mode, Dynamic brake, Encoder cable disconnection error detection, Motor overload detection, Irregular motor torque detection, Motor speed error detection, Positioning overflow, Speed overflow, Servo error detection, CPU irregularity detection, Memory check-sum error detection, Overheat detection at the Motor Driver Module, Relay welding detection, Over-voltage detection, AC power supply voltage reduction detection, Temperature error detection, Fan error detection	
Dimensions (mm)	Base Unit (for SCARA robot)	302(w) x 170.5(d) x 275(h)
	Extension Unit drive (for Six-Axis robot)	75(w) x 130(d) x 275(h)
	Extension Option Unit	55(w) x 136(d) x 240(h)
Weight	For SCARA robot	9.0 kg*
	For Six-axis robot	10.5 kg*
	Option unit	1.0 kg*

Software Specifications

Programming Language	SPEL+	
PC Requirements	Operating System	Windows XP, Windows Vista or Windows 7
	CPU Speed	850 MHz (or faster)
	Required HDD Space	500MB (minimum)
Multitasking	up to 16 simultaneous tasks	
Error Handling	Error History	Automatic error logging
	User Errors	User defined errors and messages
Languages	English, French, German, Japanese, Chinese	
Source Code Editor	Color coded with auto syntax assist, code indent, and built-in EPSON SmartSense™ technology	
Debugger	Source level debugger with single step, breakpoints, watch variables, and built-in EPSON SmartSense™ technology	
SPEL+ Language	Powerful, easy to learn structured language with features such as: functions, parameter passing, variable types, long variable names, event traps, error handling and much more	
RC+ Development Environment (EPSON RC+ 5.0)	Project based development environment with advanced ease of use features such as: <ul style="list-style-type: none"> • Project Explorer for easy access to application files • Point and click configuration wizards • Point file spreadsheets for editing points • Operator Window for easy production use • Run Window for fast development • Integrated help system is always just a click away • Robot Manager for jogging, teaching points, and configuring robot parameters • I/O Monitor and I/O Label Editor allow easy setup and viewing of I/O status • Task Manager provides debugging/monitoring dialog for all actively running tasks 	
PLC Connection	Easy to use controller as PLC slave through DeviceNet, Profibus, EtherNet/IP or Remote I/O connection	
Available Robots	RS-Series, G-Series, C-Series, S-Series and Pro Six	

Options

- Expansion I/O (32 Inputs/ 32 Outputs) up to 4 boards
- RS232-C board (up to 8 ports available with 2 option boards)
- ECP Software Option (External Control Point motion)
- Operator Panel (OP1)
- Fieldbus boards (EtherNet/IP, DeviceNet, Profibus, CC-Link)
- VB Guide (Microsoft .Net Communication Module)
- Teach Pendant (TP1)

* Weight of the Controller

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