

# Epson RC800A Controller with SafeSense™ Technology



**Built to perform with  
industrial-rated  
safety features.**

**Ultra high performance and flexibility** — powerful servo motion control for smooth motion, precise positioning and fast program execution times

**Fast cycle times** — intelligent servo drivers provide high acceleration, smooth motion and fast settling times to help maximize throughput with proprietary GYROPLUS™ vibration reduction system

**Ultimate ease of use** — intuitive and feature-packed Epson RC+® development software helps create powerful solutions with a simple user interface, integrated debugger and advanced 3D simulator

**Flexible control structures** — Epson RC+ is ideal for creating industrial robot solutions that are standalone with a GUI creation option; PC-based with API options such as LabVIEW®; or PLC-controlled with remote fieldbus options, including Add-On Instructions (AOIs)

**SafeSense technology** — includes standard and advanced features that, with a proper risk assessment, help allow for increased productivity and worker safety while potentially minimizing machine footprint due to the reduction of physical barriers

**Accelerate the development of workcell applications** — fully integrated, optional solutions include vision guidance, parts feeding, force guidance, conveyor tracking and fieldbus; Epson RC+ Solutions Platform allows for seamless expansion of third-party solutions, benefiting developers and end users

**Expandable options** — three available option slots for extended I/O, Force Guide, conveyor tracking, fieldbus slave and analog I/O; seamless software integration with API (.NET), vision guidance and IntelliFlex™ parts feeding

**Compact and convenient** — efficient form factor can be floor-, wall- or rack-mounted; all connections, as well as lockout, backup port and message display, are accessible on the front panel of controller

| Model Name                               | RC800A Controller                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                               |
|------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Model Number                             | RC800A                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                               |
| Robot Manipulator Control                | Programming Language and Robot Control Software   | Epson RC+ 8.x (a multitasking robot OS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                               |
|                                          | Joint Control                                     | Up to six (6) joint simultaneous control, software AC servo control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                               |
|                                          | Speed Control                                     | PTP Motion: Programming in the range of 1% to 100%<br>CP Motion: Programmable (actual value to be manually entered)                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                               |
|                                          | Acceleration/Deceleration Control                 | PTP Motion: Programming in the range of 1% to 100%<br>CP Motion: Programmable (actual value to be manually entered)                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                               |
|                                          | Number of Manipulators                            | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |
|                                          | Positioning Control                               | PTP (Point-to-Point) / CP (Continuous Path)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                               |
| Memory Capacity                          |                                                   | Maximum Object Size: 4MB<br>Point Data Area: 1,000 points (per file)<br>Backup Variable Area: Max. 768KB (includes the memory area for the management table)<br>Approx. 4,000 variables (depends on the size of array variable)                                                                                                                                                                                                                                                                                                                      |                                                                                                               |
| External Input/Output Signals (Standard) | Standard I/O                                      | Input: 24<br>Output: 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                               |
| Communication Interface (Standard)       | Ethernet                                          | 1 port (10Base-T, 100Base-TX, 1000Base-T)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                               |
|                                          | USB                                               | 1 port (Type B)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                               |
| Option Boards (Special Slot)             | I/O                                               | Inputs: 24 per board<br>Outputs: 16 per board                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Maximum of 3 boards allowed                                                                                   |
|                                          | Analog I/O                                        | 1 or 4 channels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                               |
|                                          | RS-232c                                           | 2 channels per board                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Maximum of 2 boards allowed                                                                                   |
|                                          | Fieldbus I/O Slave                                | 1 channel per board, PROFIBUS, PROFIBUS-DP, DeviceNet, CC-Link, Ethernet/IP, EtherCAT®                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Maximum of 1 board allowed                                                                                    |
|                                          | Pulse Generator                                   | 4 axes/board                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Maximum of 3 boards allowed                                                                                   |
| Option Boards (PCI or PCIe Slots)        | Fieldbus I/O Master                               | 1 channel per board, PROFIBUS, PROFIBUS-DP, DeviceNet®, Ethernet/IP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Maximum of 1 board allowed                                                                                    |
| Safety Features                          | Safety Standards                                  | TUV Certified to meet ISO 10218-1, UL 1740, CSA Z434, ISO 13849                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                               |
|                                          |                                                   | Emergency Stop Switch, Safety Door Input, Low Power Mode, Dynamic Brake, Encoder Cable Disconnection Error Detection, Motor Overload Detection, Irregular Motor Torque (Out of Control Manipulator) Detection, Motor Speed Error Detection, Positioning Overflow - Servo Error Detection, CPU Irregularity Detection, Memory Check-Sum Error Detection, Overheat Detection at the Motor Drive Module, Relay Welding Detection, Over-Voltage Detection, AC Power Supply Voltage Reduction Detection, Temperature Error Detection, Fan Error Detection |                                                                                                               |
|                                          | Integrated Safety Board                           | Safety Input: 5 dual signal inputs<br>Safety Output: 3 dual signal outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Safe Torque Off (STO), Safety Stop (SS1), Emergency Stop, Enable, Soft Axis Limit, Safeguard (SG)/Safety Gate |
|                                          | Optional Safety Functions                         | Safety Limited Speed (SLS), Safety Limited Position (SLP), Joint Angle Monitoring                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                               |
|                                          | Integrated Safety and Optional Safety Performance | Category 3, PLd¹                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                               |
| Power Source                             |                                                   | AC 200 V to 240 V / Single phase 50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                               |
| Weight                                   |                                                   | 24.25 lb / 11 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                               |

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¹ Reference Standards ISO 13849-1: 2015.

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