



# IRC5

## Industrial Robot Controller



### High performance robot controller

IRC5 is ABB's fifth generation robot controller. It sets new standards with its modular concept, a completely new ergonomically designed portable interface unit, the FlexPendant and fully synchronous multiple (up to four) robot control through the MultiMove function.

The new controller is focussed directly at the customer with greatly simplified application planning, set-up, operation and serviceability of single and multiple robot cells. A key element in this superior 'customer friendliness' is the new class-leading portable interface unit, the FlexPendant, with its intuitive Windows layout and touch-screen operation.

The modular concept also means every system is a cost-efficient investment, designed to match the exact needs of the user, and yet is readily expandable to meet future demands. It is a true lean solution that will lead to increased customer life-time profitability.

The modularity of the IRC5 is a major step forward in robot control with a logical split of functions into control, axis drives and process. Each module is housed in its own cabinet with an identical footprint so they may be stacked for minimal floor occupancy or distributed depending on the user's need.

There is minimum dependency between the modules, each having its own computer power and supervision and linked to the others by Ethernet. This flexibility makes it possible to optimize cell layouts and to upgrade or replace one module with minimal interference to the others.

### MultiMove

IRC5 has the ability to control multiple robots with the potential to reduce costs, improve quality, increase productivity and expand robot applications. MultiMove allows applications that were previously impossible – all thanks to the perfect coordination of complex motion patterns.

### TECHNICAL DATA, IRC5 INDUSTRIAL ROBOT CONTROLLER

#### PERFORMANCE

|                  |   |
|------------------|---|
| Control hardware | Multi-processor system<br>PCI bus<br>Flash disk or hard disk for mass memory<br>Energy back-up for power failure handling<br>USB memory interface   |
| Control software | Object-oriented design<br>High-level RAPID robot programming language<br>Portable, open, expandable<br>PC-DOS file format<br>RobotWare software products<br>Pre-loaded software. Also available on CD-ROM |

#### ELECTRICAL CONNECTIONS

|                |  |
|----------------|--|
| Supply voltage | 200-600 V, 50-60 Hz<br>Integrated transformer or direct mains connection |
|----------------|--|

| PHYSICAL       | Size H x W x D                  | Weight  |
|----------------|---------------------------------|---------|
| Single cabinet | 970 x 725 x 710 mm              | 150 kg  |
| Dual cabinet   |                                 |         |
| Control module | 720 x 725 x 710 mm              | 50 kg   |
| Drive module   | 720 x 725 x 710 mm              | 130 kg  |
| Panel Mounted* |                                 |         |
| Control module | 375 x 498 x 271 mm              | 20 kg** |
| Drive Module   | 375 x 498 x 289 mm              | 25 kg** |
|                | * IRB 140, 340, 1600, 260, 2400 |         |
|                | ** without fan and transformer  |         |
| Wheels         | Available as option             |         |

#### ENVIRONMENT

|                           |  |
|---------------------------|--|
| Ambient temperature       | 0-45°C (32-113°F) option 0-52°C (32-125°F)   |
| Relative humidity         | Max. 95%   |
| Level of protection       | IP 54  |
| Fulfilment of regulations | Machine directive 98/37/EC regulations<br>Annex II B<br>EN 60204<br>ISO 10218, EN 775<br>ANSI/RIA 15.06/1999<br>ANSI/UL 1740-1998 (option) |

#### USER INTERFACES

|               |   |
|---------------|---|
| Control panel | On cabinet or remote  |
| FlexPendant   | Weight 1.3 kg<br>Graphical color touch screen<br>Joystick<br>Emergency stop<br>8 hard keys only<br>Hot plug<br>For additional details, see separate data sheet. |
| Maintenance   | Status LEDs<br>Diagnostic software<br>Recovery procedures<br>Logging with time stamp  |
| Safety        | Safety and emergency stops<br>2-channel safety circuits with supervision<br>3-position enabling device  |

#### MACHINE INTERFACES

|                                |   |
|--------------------------------|---|
| Inputs/outputs                 | Up to 2040 signals  |
| Digital                        | 24V DC or relay signals   |
| Analogue                       | 2 x 0-10V, 3 x ±10V, 1 x 4-20mA   |
| Serial channels                | 3 x RS 232/RS 422   |
| Network                        | Network Ethernet(10/100 Mbps per second)  |
| Two channels                   | Service and LAN   |
| Fieldbus scanners and gateways | DeviceNet<br>Interbus<br>Profibus DP<br>Allen-Bradley Remote I/O                            |
| Process encoder                | Up to 6 channels  |
| Process interfaces             | Connections for signals to manipulator upper arm<br>Space in controller for extra equipment |

#### SENSOR INTERFACES

|  |
|--|
| Search stop with automatic program shift |
| Seam tracking                            |
| Contour tracking                         |
| Conveyor tracking                        |

#### FEATURES AND FUNCTIONALITY

See separate RobotWare data sheet

*Data and dimensions may be changed without notice.*

*ABB reserves the right to change specifications without notice.*



Single cabinet



Dual cabinet



Panel Mounted