

IRC5 – Controller upgrade

Bring the latest controller technology to your robot cell



If your business needs to be more productive, but you don't need a new production cell, ABB has the solution for you. The IRC5 controller is a small and affordable upgrade to your equipment, but a large boost to your robot cell.

The IRC5 is an intelligent way of giving your old robot system and your operation a significant boost. By simply replacing the old controller with an IRC5, a range of new possibilities are unleashed for the entire robot cell.

Give a boost to your robot system:

- Faster processing speed
- Enhanced motion control
- Increased flexibility
- Upgraded Teach Pendant
- Integrated safety
- Control multiple robots using one controller
- Low cost of ownership

Looking for a solution to improve your robot cell performance?

Lower cost – Upgraded value

Do you have robot systems which do not exactly meet your requirements? Well, in entire robot systems, the robot arms may have many hours left in operation, but the controller cannot handle the new challenging demands. Instead of investing in a new robot cell, the value of an older cell can be enhanced many times simply over by enabling it to work more freely and productively with a new controller. In short – a small maintenance cost in controller replacement can replace a larger investment in a robot system, with the same end result.

Harmonized controller types

Numerous different components in your systems are always more complicated than having a few. As the IRC5 controller is so flexible and compatible, this allows you to minimize the number of different components. Simply put – one controller type gives less parts handling and better flexibility to maximise your system use.

Service friendly

There are a number of different cabinets available for the IRC5. All designed to make it as easy as possible to upgrade without the need to change anything more than necessary in the cell. All cabinets are easy to access for service and maintenance, and enable optimization of footprint and cell layout.

Easy to install

We know you will not upgrade if it gives you a headache, so we are pleased to offer you assistance to handle the modifications required in your original application software to make it 100% compatible with the new IRC 5. When replacing an S4C+ with an IRC5, only minor modifications are required for the I/O setting, the rest is simply plug and play. No fuss, no surprises.



The key features



Cabinet

With a wide range of cabinets, there is always a model for your needs. All designed for cell layout flexibility and minimized footprint. Needless to say that service friendliness is built in.



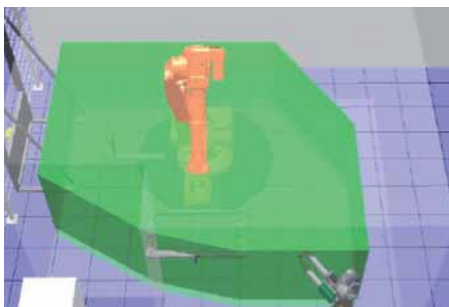
Flexpendant

The performance will never be better than the operator's interaction with the robot. The Flexpendant is easy to use from both interface and ergonomic perspectives. The intuitive joystick enables the operator to work with an eye on the robot instead of on the control. Extensive language support, USB connection, high contrast touch screen and possibility to customize applications make this the operator's best friend.



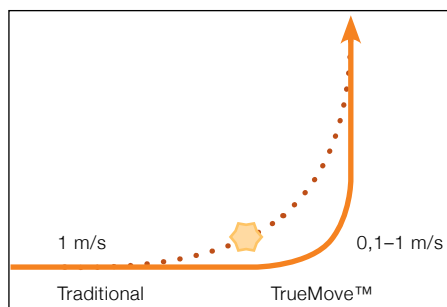
MultiMove

With IRC5 a shared control solution can be used to control multiple robots through one single connection point, and sharing cell level equipment such as fixtures. This not only lowers investment and installation costs, but also saves space.



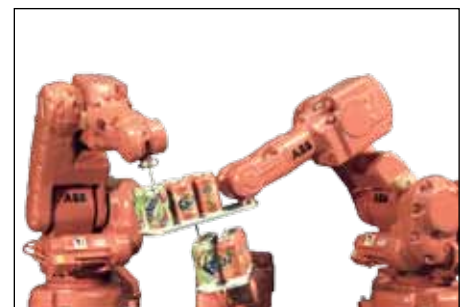
SafeMove

Not only faster and more accurate – IRC5 is also increasing safety for both operator and equipment, as supervision and control of operation is improved with collision detection and supervised speed, position and orientation.



TrueMove

Absolute accuracy in following the defined path regardless of speed, ensures a boost to the process quality in your operation. And to increase usability even more, the programming time is shorter than ever.



QuickMove

The QuickMove feature enables the robot cell to work at its best. With advanced calculation models and intelligent interpolation, the robot is enabled to perform at its full physical capacity. Productivity as it should be.



Programming language

The IRC5 controller allows complex programming solutions, without getting stuck in spaghetti code. All tailor-made applications can be reused and are accessible in offline mode.



Motors and Gear Units

Motors and gear units are available in a wide range of cost-efficient, well-proven and standardized packages. Easy installation and commissioning save time throughout the entire project.



Other features

SoftMove, integrated PLC, load identification, collision detection, conveyor tracking... The list to make your robot cell more powerful and flexible, yet easier to operate, is extensive.

Specification	
Control hardware	Multi-processor system
	PCI bus
	Pentium® CPU
	Flash disk for mass memory
	Energy back-up power failure handling
Control software	USB memory interface
	Object-oriented design
	High-level RAPID programming language
	Portable, open, expandable
	PC-DOS file format
	RobotWare software products
Preloaded software, also available on DVD	

Electrical Connections	
Supply voltage	3 phase 200-600 V, 50-60 Hz
	Integrated transformer or direct mains connection
	1 phase 220/230 V, 50-60 Hz (for Compact Controller only)

Physical	Size H x W x D	Weight
Single cabinet	970 x 725 x 710 mm	150 kg
Dual cabinet	1370 x 725 x 710 mm	180 kg
Control module	720 x 725 x 710 mm	50 kg
Drive module	720 x 725 x 710 mm	130 kg
Empty cabinet for customer equipment	small 720 x 725 x 710 mm	35 kg
	large 970 x 725 x 710 mm	42 kg
Panel Mounted *		
Control module	375 x 498 x 271 mm	12 kg
Drive module small *1	375 x 498 x 299 mm	24 kg
Drive module large *2	658 x 498 x 425 mm	40 kg
Compact controller *3	258 x 450 x 580 mm	27.5 kg

*1 IRB 140, 340, 1600, 260
 *2 IRB 2400, 2600, 4400, 4600, 6620, 6640, 6650, 7600, 660, 760
 *3 IRB 120, 140, 260, 360, 1410, 1600

Environment	
Ambient temperature	0-45°C (32-113°F) option 0-52°C (32-125°F)
Relative humidity	Max. 95% non condensing
Level of protection	IP 54 (cooling ducts IP 33)
	Panel Mounted and Compact IP 20
Fulfilment of regulations	Machine directive 98/37/EC regulations
	Annex II B
	EN 60204-1:2006
	ISO 10218-1:2006
	ANSI/RIA R 15.06 - 1999
UL 1740-1998	

User Interfaces	
Control panel	On cabinet or remote
FlexPendant	Weight 1 kg
	Graphical color touch screen
	Joystick
	Emergency stop
	Hot plug
Maintenance	Support for right and left-handed operators
	USB Memory support
	Status LEDs
Maintenance	Diagnostic software
	Recovery procedures
	Logging with time stamp
	Remote Service enabled

Safety	
Basic	Safety and emergency stops
	2-channel safety circuits with supervision
	3-position enabling device
Electronic Position	
Switches	5 safe outputs monitoring axis 1-7
SafeMove *4	Supervision of stand-still, speed, position and orientation (robot and additional axes)
	8 safe inputs for function activation,
	8 safe monitoring outputs

*4 Not available for the IRB 6400 R

Machine Interfaces	
Inputs/outputs	Up to 8192 signals
Digital	24V DC or relay signals
Analogue	2 x 0-10V , 3 x ± 10V , 1 x 4-20mA
Serial channel	1 x RS 232/RS 422 with adapter
Network	Ethernet (10/100 Mbits per second)
Two channels	Service and LAN
	DeviceNet™
Fieldbus Master	PROFINET
	PROFIBUS DP
	Ethernet/IP™
Fieldbus Slave	DeviceNet™
	PROFINET
	PROFIBUS DP
	Ethernet/IP™
	Allen-Bradley Remote I/O
Conveyor encoder	Up to 6 channels
Integrated PLC	AC500

Sensor Interfaces	
Search stop with automatic program shift	
Seam/contour tracking	
Conveyor tracking	
Machine vision	
Force Control	

Data and dimensions may be changed without notice.