

IRC5

Industrial Robot Controller



Based on more than four decades of robotics experience, the IRC5 is the robotic industry's benchmark in robot controller technology. In addition to ABB's unique motion control it brings flexibility, safety, modularity, application interfaces, multi-robot control and PC tool support.

Fast and accurate

The IRC5 gives our robots the ability to perform their tasks in a highly efficient manner. Based on advanced dynamic modelling, the IRC5 automatically optimizes the performance of the robot by reducing cycle times (QuickMove™) and providing precise path accuracy (TrueMove™). Thanks to ABB's IRC5 technology, a robot's motion is predictable and its performance high, with no tuning required by the programmer. What you program is what you get.

Safe

Operator safety is a leading benefit of the IRC5. It fulfills all relevant regulations and is certified by third party inspectors world wide.

SafeMove2™ represent a new generation of safety, enabling more flexible robotic cell safety concepts, e.g. enabling floor space reduction and collaboration between robot and humans.

Compatible

No matter where in the world your robot is located, and regardless of what regulatory standards apply, the IRC5 is up to the task. ABB's controller is compatible with various types of main voltages and can handle a broad spectrum of environmental conditions. IRC5 communicates with other machines in a manufacturing environment; in a safe and predictable way.

It supports the majority of all state-of-the-art industrial networks for I/O. Sensor interfaces, remote access and a rich set of programmable interfaces are examples of the IRC5's many powerful networking features.

Programmable

All ABB robot systems are programmed with RAPID™, ABB's flexible, high-level programming language. On the surface RAPID's basic features and functionality are easy to use, but dig deeper and you will find that this programming language allows you to create highly sophisticated solutions. It is a truly universal language on and off the shop floor which supports structured programs, and advanced features. It also incorporates powerful support for the most common robot process applications such as welding and assembly.

Reliable

The IRC5 is practically maintenance free, and its outstanding quality ensures unmatched up-time. Built-in diagnostic functions help ensure fast recovery and production restarts when operations are interrupted on the factory floor.

The IRC5 also comes equipped with remote monitoring technology, ABB Remote Service. Advanced diagnostics allow quick investigation of failures as well as real-time monitoring of the robot condition throughout its life-cycle; all made to increase your productivity.

Versions, a cabinet range covering every need. The IRC5 comes in different variants to provide a cost-effective and optimized solutions for every need.



IRC5 Single Cabinet Controller

- Designed for high IP protection and full expandability.
- Provides a protected environment for axillary equipment in the robot system.
- Capable of control of up to four robots in a MultiMove™ setup. Just add a compact drive module to each additional robot.
- MultiMove opens up previously unthinkable operations, thanks to the perfect coordination of complex motion patterns.

Technical information

Electrical Connections

Supply voltage	3 phase, 200-600 V, 50-60 Hz
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Physical

Dimensions

Single cabinet	970 x 725 x 710 mm
MultiMove drive modules	720 x 725 x 710 mm

Weight

Single cabinet	150 kg
MultiMove drive modules	130 kg

Environment

Ambient temperature	0-45°C option 0-52°C
Relative humidity	Max. 95% non condensing

Safety	SafeMove. Supervision of stand-still, speed, position and orientation (robot and additional axes): 8 safe inputs for function activation, 8 safe monitoring outputs
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Extended safety	Electronic Position Switches: 5 safe outputs monitoring axis 1-7
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Level of protection	IP54 (cooling ducts IP33)
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IRC5C Compact Controller

- Offers the capabilities of the powerful IRC5 controller in a compact format.
- Delivers space saving benefits and easy commissioning through one phase power input
- External connectors for all signals and a built in expandable 16 in, 16 out I/O system.

Technical information

Electrical Connections

Supply voltage	Supply Voltage: Single phase 220/230 V, 50-60 Hz
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Physical

Dimensions	310 x 449 x 442 mm
Weight	30 kg

Environment

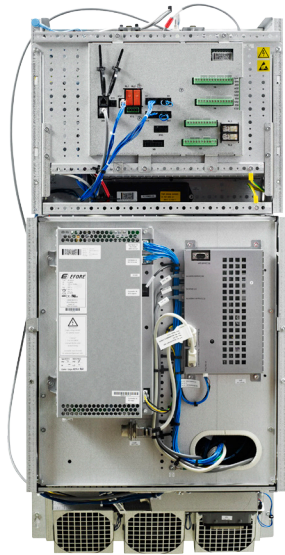
Ambient temperature	0-45°C
Relative humidity	Max. 95% non condensing
Level of protection	IP20

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IRC5 PMC Panel Mounted Controller

- Comes without a cabinet
- Can be integrated into any enclosure for customization or for special environmental requirements

Technical information

Electrical Connections

Supply voltage 3 phase 200-600 V, 50-60 Hz

Physical

Dimensions

Control module	375 x 498 x 271 mm
Drive module small [†]	375 x 498 x 299 mm
Drive module large ^{**}	685 x 498 x 425 mm

Weight

Control module	12 kg
Drive module small [†]	24 kg
Drive module large ^{**}	40 kg

Environment

Ambient temperature 0-45°C
Relative humidity Max. 95% non condensing

Safety SafeMove. Supervision of stand-still, speed, position and orientation (robot and additional axes)
8 safe inputs for function activation,
8 safe monitoring outputs

Extended safety Electronic Position Switches:
5 safe outputs monitoring axis 1-7

Level of protection IP20

[†] IRB 140, 340, 1600, 260

^{**} IRB 2400, 2600, 4400, 4600, 6620, 6640, 6650, 7600, 660, 760

IRC5P Paint Controller

- Provides full control of the paint process by integrating hardware and software seamlessly
- Reduces cycle time, saves paint, and is environmentally-friendly.
- Is certified as an associated equipment for interfacing manipulators/equipment for hazardous location.
- The IRC5P FlexPaint Pendant is Ex certified for use in hazardous locations; includes soft keys, a dual joystick, a 3.5 inch back lit screen; supports Asian language characters and has an emergency stop.
- Includes RobView 5, which automatically adapts the robot system to the specific paint application.

Technical information

Electrical Connections

Supply voltage 3 phase 200-600 V, 50-60 Hz

Physical

Dimensions 1450 x 725 x 710 mm
Weight 180 kg

Environment

Ex classification: II (2) G [Ex ib px] IIB T4
II (2) D [Ex pD 21] T65°C
FM Class I, II. Div.1,
Group C, D, E, F, G 135°C

Ambient temperature Max. 95% non condensing

Relative humidity 0-48°C

Level of protection IP54

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Human Machine Interaction, tools for every need RobotStudio® is a powerful PC tool that interacts with the IRC5 on-line as well as off. On the shopfloor, the FlexPendant or a standard Windows tablet is ideal to jog, calibrate and program your robot system.



RobotStudio Online

RobotStudio Online is a suite of tablet applications for shop floor operations. Utilizing the familiar and user-friendly nature of tablets, these applications make it easy to perform operations such as calibration, editing programs or jogging.

Combined with either an ABB Jokab Safety three position enabling device or a T10 jogging device safety is not compromised.

The T10 jogging device also give you the ability to operate the robot quickly and easily using intuitive gestures in a simple and efficient way.

Technical information, T10 Jogging Device

Environment	
Functions	6D IMU (acceleration and gyro sensors) 2-axis joystick with button functionality 1.45" display Membrane keyboard with 10 buttons
Safety functions	Emergency stop 3-position enabling switch (dual circuit)
Level of protection	IP54

FlexPendant

The FlexPendant is characterized by its clean, color touch screen-based design and 3D joystick for intuitive interaction. Powerful support for tailor-made applications, e.g. operator screens.

Technical information, T10 Jogging Device

Environment	
Functions	Graphical color touch screen Joystick Hot plug- Add/remove during operation Membrane keyboard with 12 buttons USB Memory support
Safety functions	Emergency stop 3-position enabling switch (dual circuit)
Level of protection	IP54

Technical information, JSHD4-3 Three position device

Environment	
Functions	LED status diods
Safety functions	Emergency stop 3-position enabling switch (dual circuit)
Level of protection	IP65

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