ABB

新型IRC5机器人控制器
The new IRC5 robot controller

IRC5为各位备下了各种美味的巧克力糖果。

您最喜欢什么味儿的？

IRC5 has enough goodies for everyone.

Which one is your favorite?

模块化控制器
Modular Controller

强大的软件工具
Powerful Software Tools

Multimove

图形界面的示教器
Graphical FlexPendant

网络功能
Network capabilities

使用方便
Easy-to-use

IRC5为机器人控制器设立了新技术标准。它将成为机器人工作站的核心，优化机器人和外轴的所有动作。这款全新产品融合了30年的世界领先机器人技术，可帮助您加快工艺过程，缩短生产周期，为您展现更为有效的生产理念。

凭借简便的编程设计软件工具、令人耳目一新的图形化示教器，IRC5在用户方便性领域实现了一次大变革。

IRC5 sets the benchmark for robot controllers. The heart of your robot cell, it optimizes all motion for robots and external axes. This brand new product is built on 30 years of world leading robot technology. It comes packed with fresh possibilities for faster processes, shorter cycle times and more effective production concepts.

Smooth software tools for programming and design, as well as a new graphical FlexPendant, help to make IRC5 a revolotion in user-friendliness.

IRC5－掌控盈利能力
IRC5-control your profitability

有效降低成本

只通过一个接入点与整个工作站的机器人通信。这意味着网络设计和连接PLC、以太网及安全电路的成本已降到最低限度。IRC5可帮助您实现更快速、更经济的工作站安装和改进，如您想多加一台机器人，您需要做的全部工作就是另增一个驱动模块而已。

The point at which you cut your costs

There's only one point of entry for communication with an entire cell of robots. Which means the cost of network design and connections to the PLC, Ethernet and safety circuitry is minimized. You can look forward to faster and more cost effective cell installation and modification. If you want to add another robot, all you need is another drive module.

示教器
FlexPendant

驱动模块
Drive module

驱动模块
Drive module

驱动模块
Drive module

RobotStudio^Online

以 太 网 Ethernet
PLC链路 PLC link
安全网络 Safety network

控制模块
Control module

模块化成为技术标准

IRC5控制和驱动模块的积木式设计实现了随需应变。每添加一台机器人只需另增一个驱动模块，IRC5凭借这一可扩展优势助您轻松应对不断增加的生产要求。甚至软件也实现了模块化，所有基本功能在一开始均已备齐，您只需根据实际需求的变化增加功能即可。

Modularity comes as standard

The building-block design of the control and drive modules allows IRC5 to grow with your demands. It is expandable and matches increased production requirements by the simple addition of a drive unit for each extra robot. Even the software is modularized. All the basics are there from the start; you simply add more functionality over time as demands change.

- 可叠放模块节省宝贵的车间面积。
- 控制模块可相距75米分开布置，显著提高整体灵活性。
- 可按最佳方案布置模块，比如驱动和过程模块靠近机器人布置，控制模块则安排在操作员工作站。
- 可选择紧凑型控制器——控制模块和驱动模块共用一个机箱。
- 连接外部信号的快速、方便的正面接线。
- 免去断开电缆、缩短服务和维护时间便可轻松拆装所有关键部件。

- Stackable modules save valuable floor-space
- Control modules can be distributed 75 m apart for total flexibility
- Each module can be optimally placed, for example drive and process modules together with the robot , and the controller module at the operator station
- Compact controller option-control and drive modules in one cabinet
- Quick and easy front connections for external signals
- All key parts are accessible without disconnecting cables, cutting service and maintenance time

过程模块
Process module

所有接线工作已全部完成并配备充足电源，您的任务只是专业过程设备的安装。模块高度可根据您应用的需求灵活调整。

Complete with connections and an ample power supply, all you have to do is install your process-specific equipment. The height of the module is variable according to the demands of your application.

控制模块—控制器的心脏
Control module – the heart of the controller

IRC5控制模块容纳了CPU、电源、服务端口、操作面板、安全接口、客户自备接线和示教器接线。控制模块还提供客户设备的安装空间。

IRC5的一大特色是具有两条以太网通道，一条用于局域网，另一条用于本地连接。IRC5还提供两条串行通道，可实现与传感器、I/O单元、计算机、其它生产设备、终端和打印机的点到点通信。

IRC5's control module houses the CPU, power supply, service port, operator panel, safety interface, customer and FlexPendant connections. The control module includes space for customer equipment.

IRC5 features two Ethernet channels, one for LAN and one for local connection. IRC5 also has two serial channels for communication point-to-point with sensors, I/O units, computers, other production equipment, terminals and printers.

驱动模块
Drive module

驱动模块容纳了机器人电源和驱动装置以及辅助电机。它还包括轴计算机，可调节机器人电机供电。正面入口便于维护。

The drive module houses power supply and the drive units of the robot as well as additional motors. It also includes the axis computer, which regulates power feed to the robot motors. Front access facilitates smooth maintenance.

IRC5集机器人业界最先进操作系统之大成

IRC5融合了业界控制机器人及外围设备的最先进的操作系统。以RAPID语言和ABB运动技术和通信技术为特色的RobotWare Os是目前市场上最强大的控制器操作系统。

IRC5 – built on the robot industry's most advanced operating system

IRC5 is built on the industry's most advanced operating system for controlling robots and peripheral equipment. Featuring RAPID Language, ABB's Motion Technology and Communication, RobotWare OS is the most powerful controller operating system available today.

RAPID编程

这是世界上首套机器人编程语言的升级版本，完美地结合了使用便利性、灵活性和功能性。

RAPID programming

This upgraded version of the world's premier robot programming language offers the perfect combination of user-friendliness, flexibility and power.
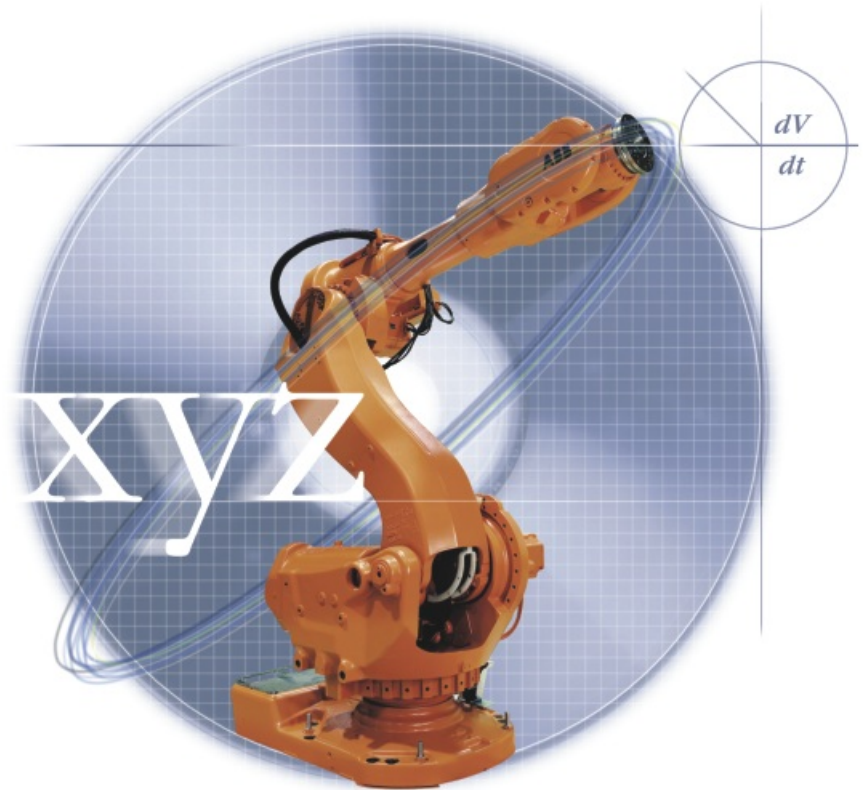
值得信赖的运动工具

已在全世界车间久经磨炼和测试的ABB QuickMove和TrueMove为您带来最佳的同步路径和速度保持，将您编制的程序付诸现实。优化的路径生成还可助您大幅缩短周期时间。

Good moves

Tried and tested on shop floors the world over, ABB's QuickMove and TrueMove provide the best possible simultaneous path and speed holding. With QuickMove and TrueMove, you get what you program. And thanks to optimized path generation you get dramatically cut cycle times.

$$\frac{dV}{dt}$$

xyz

过程集成选项

IRC5的各项内置功能适用于多种过程应用、过程设备精度控制以及先进的出错处理。这些选项与工具箱极为相似，可针对机器人和设备的高效集成提供指示说明。RobotWare的各种选项涵盖了弧焊、点焊、堆垛、拾料和分配。

Process integration options

IRC5 offers built-in functions for numerous process applications, precision control of process equipment and advanced error handling. Much like toolboxes, these options include instructions for efficient integration of robots and equipment. RobotWare includes options for arc welding, spot welding, palletizing, picking and dispensing.
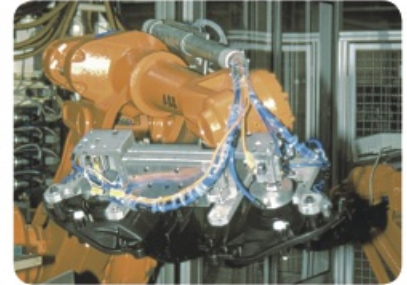
通信

IRC5符合各项相关标准，提供理想网络公民应提供的所有服务，是真正意义上的"网络化"工具。

Communication

IRC5 is truly "network enabled" by adhering to all relevant standards and by providing all services requested to become an ideal network citizen.

用户授权系统

该系统为每位用户定义了正确的访问级别，防止未经授权擅自使用系统。

User Authorization System

Defines the correct access level for each user, protecting the system from unauthorized usage.

ABB

便于车间使用

易用易懂

操作员可通过窗口化显示、定制菜单和图形化触摸屏轻松了解新型示教器的各项要素。示教器融合了与微软紧密合作开发而成的尖端技术。因本身就是一台完整的计算机，示教器不受控制器负载的任何影响。

Easy-to-use on the shop floor

Easy to use and understand

Thanks to its Windows-based display, custom designed menus and graphical touch screen, operators will easily understand the essentials of the new FlexPendant. It is built on state-of-the-art technology developed in close co-operation with Microsoft. A complete computer in itself, the FlexPendant is unaffected by controller load.

新型示教器令您受益非浅

■ 设计符合人机工程学。左右手均操作自如。ABB标准的3向操纵杆可实现机器人精确的微动控制。8个快速访问按钮，固定式和可分配式各4个。

■ 采用最高级的微软编程工具，实现快速、强大的定制功能。

■ 真正国际化。具有增强型语言支持功能，可支持各种亚洲文字。业务合作伙伴和系统承建商无需重装软件便可在不同国家使用示教器。

■ 兼容现有RAPID解决方案。

■ 从同一示教器上的一个接入点便可访问多台机器人和其它机械设备。

■ 具备热插拔功能。操作中连接和断开不妨碍系统运行。

Our new FlexPendant offers a handful of benefits

■ Ergonomic design. Can be used by both right and left handed operators. ABB standard 3-way joystick for intuitive jogging of robot. Eight buttons for fast access-four fixed, and four assignable.

■ Quick, powerful custom design possibilities using the most sophisticated Microsoft programming tools.

■ Truly international. Featuring enhanced language support, including support for Asian characters. Partners and system builders can now integrate in different countries without having to reload the software.

■ Compatible with existing RAPID solutions.

■ One access point for several robots and other mechanical equipment from the same FlexPendant.

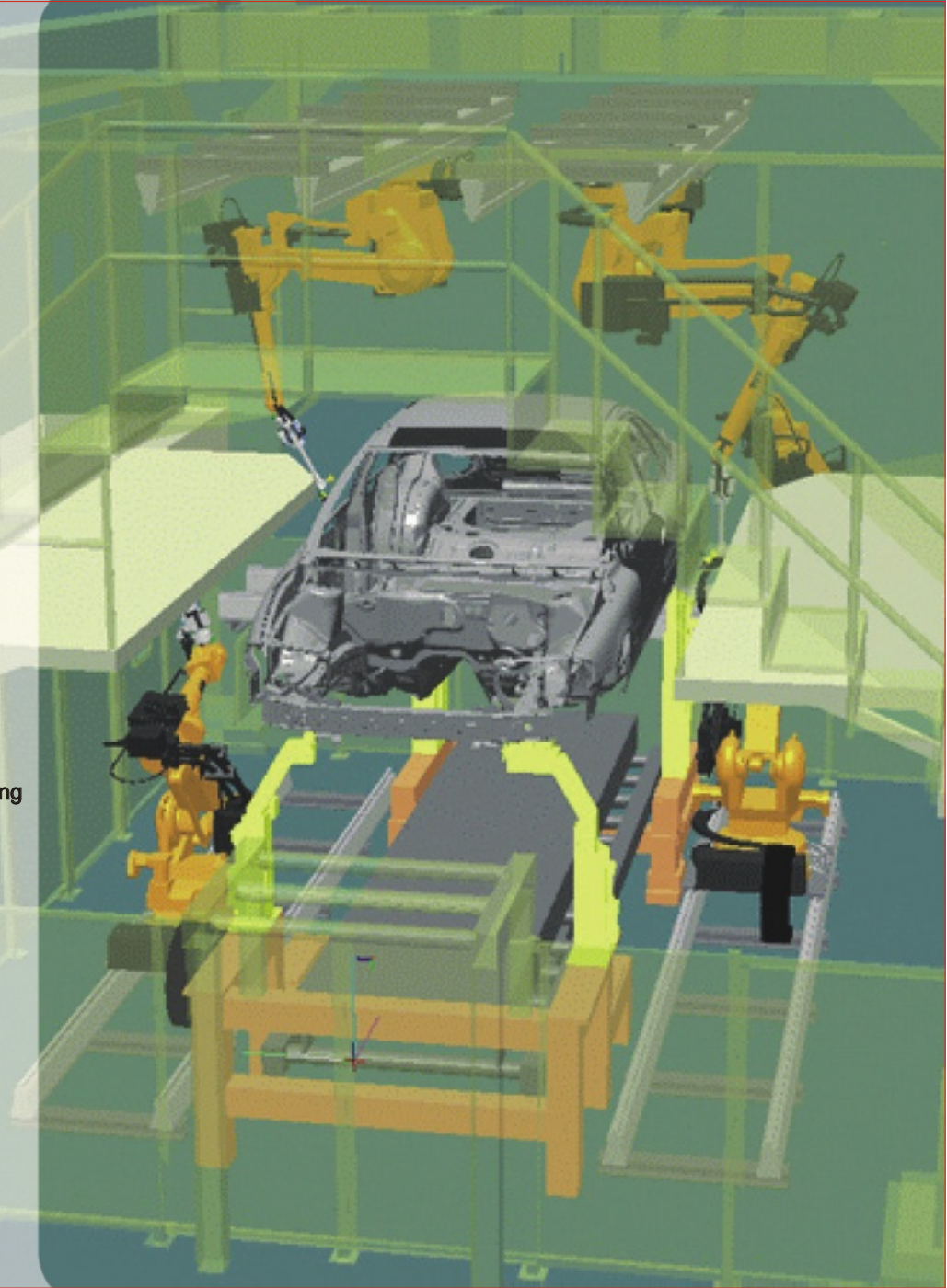■ Hot plug. Possible to connect and disconnect during operation.

RobotStudio—真正离线编程

您无需亲临生产现场体会ABB控制器解决方案的优越性。任何利益相关方都将感受到以强大软件作后盾的新型IRC5所带来的明显效益。

我们致力于客户效率的一个绝好例子就是RobotStudio，目前市场上功能最强大的离线编程工具。它能确保程序正确、可投入使用，是一款真正在台式电脑上实现离线编程的工具。

RobotStudio – True Offline Programming

You don't have to work in production to enjoy the benefits of ABB's controller solutions. Anybody taking an interest in the bottom-line, will appreciate what the new IRC5 - supported by powerful software - has to offer.

A good example of our dedication to customer efficiency is RobotStudio, the most powerful off-line programming tool on the market. Thanks to this product you can be assured that your programs are accurate and ready to go. That is true offline programming at your desktop.

RobotStudio—真正离线编程

- 形象展示并确认您的解决方案
- 尽可能降低风险、减少停机时间
- 缩短上市时间
- 提高质量

VirtualRobot技术

RobotStudio根据第二代虚拟机器人技术开发而成。简而言之，虚拟机器人技术是运行于微软Windows环境 的 IRC5控 制 器 软 件。 有 了VirtualRobot我们就可以在每个人的台式电脑上安装机器人控制器。包括编程和培训在内的许多非生产功能可通过VirtualRobot在PC上完成，无需将真正的机器人从生产现场挪来挪去。

RobotStudio^{online}用于机器人安装、调试和维修，经常被维修技师和机器人工程师用来更改配置。这是一款您需要掌握的工具，可以帮助您出色地完成工作。

RobotStudio^{online}提 供 从 个 人 电 脑 到IRC5的即时连接。只需轻按鼠标便可即时访问控制器内的程序、变量、I/O和事件记录。起动IRC5控制器就是这么快速、安全。

RobotStudio – True Offline Programming

- Visualize and confirm your solutions
- Minimize risks and downtime
- Cut time-to-market
- Increase quality

VirtualRobot Technology

RobotStudio is based on the second generation of Virtual Robot Technology. Simply stated, Virtual Robot Technology is the IRC5 controller software running on Microsoft Windows. With VirtualRobot, we can put a robot controller on everyone's desktop. Many non-production functions like programming and training can now be done with a VirtualRobot on a PC – allowing the real robots to stay in production.

RobotStudio^{online}is used to install, commission and service the robot. This is the tool service technicians and robot engineers use to change configurations. It's the one tool you need to learn to get the job done.

RobotStudio^{online} provides instant connection to IRC5 from your PC. With a mouse click you get instant access to programs, variables, I/Os and events in the controller. All to get a quick and safe start of the IRC5 controller.

MultiMove

ABB的运动技术是全球范围内的技术标准，我们还在积极推广机器人技术有史以来最全面的运动控制程序包。其中的新软件MultiMove功能强大，可同时控制多达4台机器人（36轴）。共同的工作对象可在机器人间分享，实现复合协调工作模式。

MultiMove还具有在独立运动和协调运动间动态切换的功能。

ABB's Motion Technology is a world benchmark – and we are now offering the most comprehensive motion control package in the history of robotics. This includes a powerful new feature, MultiMove, allowing you to control as many as 4 robots (36 axes) at a time. Common work objects can now be shared between robots, enabling complex coordinated patterns.

MultiMove also facilitates a dynamic switch between independent and coordinated motion.

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MultiMove的优势

- 采用FlexPositioner标准机器人解决方案在活动工具上移动工件以增强工艺能力。

- 与MultiArc应用的平行焊功能配合使用可提高过程质量。

- 通过运输途中拆装部件缩短周期时间。

- 多台机器人在单轴或多轴定位装置带动的对象上运行（可减少每台机器人的固定装置、缩短周期时间、改善过程效益）。

- 多台机器人协同工作移动重载工件，无需购置昂贵的输送系统。

- 实现外部轴控制（如高架式机器人与6轴机器人协同工作时）。

- 为独立机器人操作留出空间。一个控制器模块可控制多达4台机器人。

MultiMove benefits

- Increased process capacity by moving the workpiece against a moving tool using a standard robot solution, the FlexPositioner

- Improved process quality with parallel welding in MultiArc applications

- Reduced cycle time by accessing parts during transportation

- Multiple robots operating on object moved by singleaxis or multi-axes positioner (reduces fixturing per robot, cuts cycle time and improves process results)

- Multiple robots work in unison to shift heavy objects, rendering costly conveying systems obsolete

- Allows additional axes control, for example when gantry robots work in unison with 6-axes robots

- Saves space for independent robot operation. One controller module can control up to 4 robots

复合运动模式的完美协调使MultiMove将以前无法实现的应用付诸现实。

MultiMove allows applications that were previously impossible – all thanks to the perfect coordination of complex motion patterns.