

ABB Single Arm YuMi

IRB14050 Collaborative Robot System

Versatile installation for convenient deployment

The single-arm YuMi is compact and lightweight (9.5kg / 21 lb) and supports mounting in any direction including ceiling, table, and wall mounting for rapid and flexible installation of existing production lines. The ultra-light magnesium arm rotates on seven axes to mimic human-like movements with greater agility. The robot offers versatility in applications such as small part assembly, pick & place, or load / unload applications.

Wizard easy programming - An easy and intuitive way to program!

ABB's Wizard easy programming is an easy graphical programming interface for your robot. Only a few minutes after the installation you will be able to operate your YuMi - no specialized training or programming skills are required.

> [Learn more](#)



Video Links:

[Introducing the single arm YuMi](#)

[Integrated Vision with single arm YuMi](#)

[Simple inspection example with YuMi](#)

Robot System includes:

- Robot arm*
- Robot controller
- FlexPendant
- Cables & Software

P/N IRB14050-CONFIG1

*Robot gripper sold separately

ABB Single Arm YuMi

IRB14050 Collaborative Robot Arm

Robot Features	
Description	Specification
No. of Axes	7
Weight	9.5 Kg / 21 lbs.
Robot Reach	559 mm / 22 inches
Payload Capacity With Gripper	250 grams / 8.8 oz
Payload Capacity Without Gripper	500 grams / 17.6 oz
Position Repeatability	0.02 mm / .0008 in
Protection Class	IP30
Max Velocity	1.5 m/s or 4.9 ft / sec
Integrated air line	4 bar or 58 psi
Integrated electrical signals	24 VDC, 4 signal lines
Robot cable	3 m / 9.8 ft
Electric Servo Controlled Gripper with Vacuum	Gripper Stroke = 50 mm / 1.97 in

Key features

- 500g rated payload
- Small footprint, 7-axis dexterity
- Very lightweight manipulator, 9.5 kg
- Mounting in any position
- Integrated gripper with vision and vacuum
- Best-in-class safety design
- High speed and accuracy
- PL d Cat 3 Protective stop and emergency stop
- Powered by ABB OmniCore Controller

Customer benefits

- Short cycle times
- Fenceless operation
- Easy programming with lead-through
- Lower investment
- Easier to integrate



ABB OmniCore™ robot controller for single-arm YuMi

OmniCore™ C30 Desktop Controller

OmniCore™ C30 Robot Controller Features

Description	Specification
Weight ¹	22 -28 Kg / 48 – 62 lbs.
Dimensions	509 mm x 514 mm x 193 mm 20.0 in x 20.2 in x 7.6 in
Protection Class	IP20
Communication	Ethernet: Private LAN, IO LAN, & WAN (Public)
Optional IO Gateways	Ethernet IP, ProfiNet, ProfiSafe, CC-Link, DeviceNet
Power Input Requirements	100 – 230 VAC, Single Phase
Digital I/O	24 VDC, 16 inputs / 16 Outputs
Programming Teach Pendant	ABB FlexPendant with 3 m cable, USB 3.0, graphical multi-touch 8" color screen with joystick and 12 button membrane keyboard
Software	Programming through the FlexPendant or ABB's Programming Wizard is standard. Robot Studio is optional

¹ Depending on robot variant

Key features

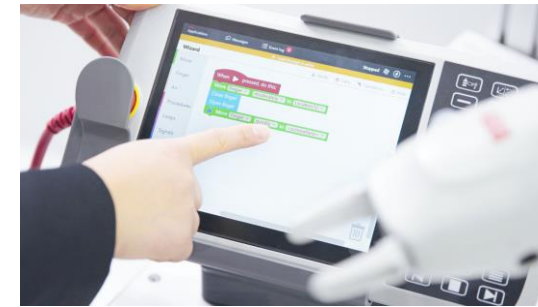
- Extensive integration possibilities
- Desktop version for elegant cable management for easy integration
- New FlexPendant Design (Robot Teach Pendant)
- Best In Class Motion
- Cyber security features protect the robot from intrusion and unverified software installation

FlexPendant key features

- Modern, intuitive, and powerful
- Large multi-touch display with standard gestures such as pinch, swipe and tap
- Hot swappable (Optional). Unplug during operation and share among several robots
- Extensive customization possibilities

Customer benefits

- The OmniCore controller's compact design offers space saving benefits along with a variety of flexible integration possibilities
- ABB's Wizard graphical programming software makes it easy to begin programming the robot without any specialized training or programming skills



YuMi Servo Gripper Variations

Gripper Variations





Gripper	Gripper with single vacuum	Gripper with dual vacuum	Gripper with single vacuum and vision sensor
P/N 1512	P/N 1512.13	P/N 1512.13.14	P/N 1512.13.15
 A white, rounded rectangular gripper with two black, curved fingers extending downwards. The red "ABB" logo is centered on the front face.	 A white gripper with two black fingers and the red "ABB" logo. A single vacuum port is located on the left side of the gripper's body.	 A white gripper with two black fingers and the red "ABB" logo. Two vacuum ports are located on the left and right sides of the gripper's body.	 A white gripper with two black fingers and the red "ABB" logo. A single vacuum port is on the right side, and a vision sensor is mounted on the front face, partially covered by a clear protective window.

ABB Single Arm YuMi™ IRB 14050

Additional robot system details

MANIPULATOR Attributes

3300-5	IRB 14050 .5 Kg, .5 m reach
3350-300	Protection Level: IP 30

OmniCore Controller Attributes

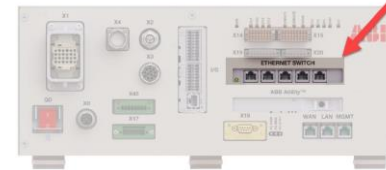
3000-130	OmniCore C30 Controller
3001-2	Desktop Encapsulation Option
3004-1	Max Temp Rating: 45° deg C
3006-1	UL/CSA
3007-2	Power Input: 100-230 VAC, Single Phase
3013-3	Connected Services Gateway: 3G Mobile Network
3014-1	5 Port Ethernet switch option
3016-1	FlexPendant with 3m cable
3024-1	Ethernet IP Scanner option
3032-1	24 VDC Digital I/O: 16 In/16 Out

Floor Cables

3200-1	3 m Manipulator Cables
3203-7	Power Input Cable, 5m

Specifications

- Single Phase 220/230V, 50-60Hz
- 5-45°C Ambient Temp
- IP20 Protection
- 449mm x 443mm x 170mm
- 24kg



Supply voltage	21-28 V DC
Output current, nominal	500 mA per output, short circuit protected
Input voltage levels	30-5 V digital low 15-30 V digital high
Input current	<0.5 mA

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Additional robot system details

Software Attributes (Software which resides on the controller)		Software Option Description (RobotWare)
3101-1	Absolute Accuracy Option	Absolute Accuracy is a calibration concept that improves TCP accuracy. The difference between an ideal robot and a real robot can be several millimeters, resulting from mechanical tolerances and deflection in the robot structure. <i>Absolute Accuracy</i> compensates for these differences.
3120-2	Essential App Package	The option Essential app package includes features that will make it easy and efficient to work with the robot system. Jog functionality is improved with 3D illustrations, and dashboards makes it easy to view the system status at a glance
3151-1	Program Package	The option Program package is required in order to create new and edit existing RAPID programs on the FlexPendant. If the program package is not selected with the FlexPendant, RobotStudio must instead be used on a separate PC to create and edit RAPID programs.
3107-1	Collision Detection	Collision detection is a software option, which reduces collision impact forces on the robot. In this way, the robot and external equipment can be protected from severe damage.
3150-1	Collision Avoidance	Collision avoidance is a software option that enables the possibility to stop the robot before colliding with fixed objects, such as fences, the floor or equipment in the cell. A collision model for the objects need to be built and downloaded to the controller using Robot Studio.
3113-1	Path Recovery	The Path Recovery option is used to store all system data, when an interruption occurs (fault message or other) and restores them after necessary actions have been taken.
3114-1	Multitasking	The Multitasking Option gives the possibility of executing up to 20 programs (tasks) in parallel, including the main program. Multitasking can be used to control peripheral equipment or other processes concurrently with robot motion.
3119-1	Robot Studio Connect	This option allows RobotStudio to connect to the robot using the public network interface (WAN).
3121-1	RW Add-In prepared	RobotWare Add-In prepared makes it possible to run licensed Add-Ins from 3rd party developers on the IRC5 controller.
3127-1	Vision Interface	ABB's Integrated Vision system provides a robust and easy-to-use vision system for general purpose Vision Guided Robotics (VGR) applications.
3108-1	SoftMove	SoftMove is a cartesian soft servo option that allows the robot to be compliant or floating in order to adjust to external forces or variations in work objects.

Single-arm YuMi Product Links

YuMi IRB14050 Robot Data Sheet

[YuMi IRB14050 Link](#)



YuMi IRB14050 Web Page

[More information](#)



Robot Controller Data Sheet

[OmniCore Controller Link](#)



OmniCore Controller Web Page

[More Information](#)

