Robotnik

JR2

JR2 is a completely integrated Collaborative Mobile Manipulator (CMM), designed for the development of industrial tasks.

Product

JR2 is an autonomous mobile manipulator, specially designed for the development of industrial mobile manipulation applications. JR2 has been developed by Robotnik, Gaitech and Smokie Robotics.

The arm

JR2 arm is a 6 DOF high quality industrial collaborative robot that can handle payloads up to 5 Kg (completely extended). The arm can mount almost any standard end effector, including 2 finger servo-grippers by Schunk or Weiss Robotics.

Platform

The base platform is omnidirectional using 4 high power motor wheels and is able to carry payloads up to 100 Kg. It mounts two rangefinders for navigation and safety and integrates two RGBD sensors in the front and rear parts to detect obstacles at different heights. The robot includes an optional self-recharging base station. The base is modular and can supply and interface additional application related hardware (internal connectivity: USB, RS232, GPIO and RJ45, external connectivity: USB, RJ45, power supplies 5, 12 VDC and battery).

The control architecture is open-source and modular, based on ROS (http://www.ros.org). ROS framework defines a well organized robot software architecture and includes hundreds of user contributed packages and sets of packages called stacks, that implement functionalities as localization and mapping, planning, manipulation, perception, etc.

This characteristic simplifies the software development cycle and allows easy integration and reutilization of software components whether they are device drivers or state of the art algorithms in vision, SLAM, point cloud processing, grasping, planning, swarming, etc.

Applications

- Logistics, warehouses and other intra-logistics applications
- Industrial mobile manipulation
- Pick & Transport & Place

Advantages

- Integrated software
- Wide range of tutorials and examples in ROS software
- Competitive price
- High speed

Optional components

- Docking station
- Rubber wheels
- Digital&Analog I/O module
- Velodyne
- Magnetic guide sensors
- Sick NAV2XX / NAV3XX

Technical specifications

Mechanical

Platform	
Dimensions	800X550X420mm
Weight	125 Kg
Payload	100 Kg
Speed	3 m/s
Enclosure class	IP 54
Autonomy	8 h.
Batteries	LiFePO4 15Ah@48V
Traction motors	4x500W
Temperature range	0º to 45º C
Range Finders	10m / 20m (Optional)

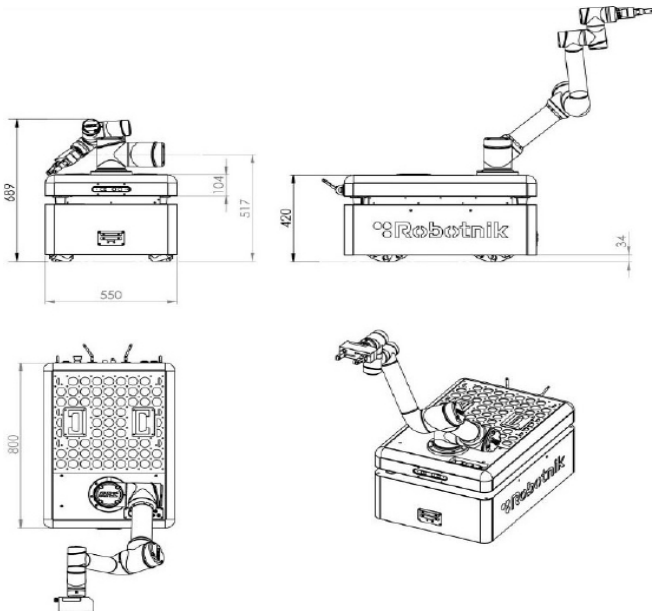
Arm	AUBO-I5
Weigth	24 Kg.
Payload	5 Kg.
Reach	924,5 mm

Gripper (Optional)	WSG-50
Weight	1,15 Kg.
Repeatability	+-0,03
Stroke per finger	55 mm

Control

JR2 uses the ROS (www.ros.org) open architecture. The software of the robot includes a navigation system as well as an HMI for mission planning, diagnostics and remote control.

The JR2 model is available in ROS including the completely configured MoveIt! packages (http://moveit.ros.org/).



ROS.org

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GaiTech

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