

MAGNI 6 MIDI 2WD ROBOT

GENERAL OVERVIEW

The **Magni 6 Midi 2WD** is a sturdy, versatile robot designed for industrial assistance, research, and professional applications. It combines high payload capacity with modular expansion, making it suitable for factory tasks, navigation experiments, and robotics development.

KEY SPECIFICATIONS

- **Max Payload:** ~100 Kg
- **Weight (without batteries):** 11.5 Kg
- **Weight (with 2x FG20721 batteries):** 16.5 Kg
- **Weight (with large 33 Ah battery):** 33 kg
- **Power Supply:** 2x12 V Batteries (24V system), 33 Ah Capacity
- **Motor Control:** Custom Magni 6 Motor Controller
- **Motors:** Equipped with gearless direct-drive hub motors equipped with 4096 PPR encoder for smooth motion.

APPLICATIONS

- Factory floor transport and material handling
- Indoor and outdoor navigation and mapping - SLAM
- Warehouse automation and indoor logistics
- Security and facility inspection tasks
- Healthcare and service robotics (supply delivery, assistance)
- Custom robotics development with modular add-ons.

SOFTWARE SUPPORT

- Ubuntu 24.04
- ROS2 Jazzy
- RMW Zenoh Middleware
- Open-RMF Fleet Adapter
- EZ-Map Educational (Ubiquity Robotics, SLAM navigation and control software)



The image shown includes a Long Range LiDAR for demonstration purposes; however, the robot is shipped without a LiDAR sensor.

SENSORS AND HARDWARE

- **Compute**
 - **Raspberry Pi 5:** Includes a card with preloaded image for control logic, sensor data processing and communication.
- **Sensors**
 - **Long Range LiDAR (optional):** see reference links under *Included Components* section.
 - **Short Range LiDAR (optional):** see reference links under *Included Components* section.
 - **Camera:** Raspberry Pi Camera 3 Wide
 - 11.9 MP
 - 120° FOV
 - Visual Sensing.
- **Connectivity:**
 - **Magni 6 Connector Board:** Connects the **Magni 6 Motor Controller Board** with the **Raspberry Pi 4/5**.
 - **3.3V UART serial:** For device communication.
 - **WI-FI:** Configurable as Access Point or network connection for integration with workstation.

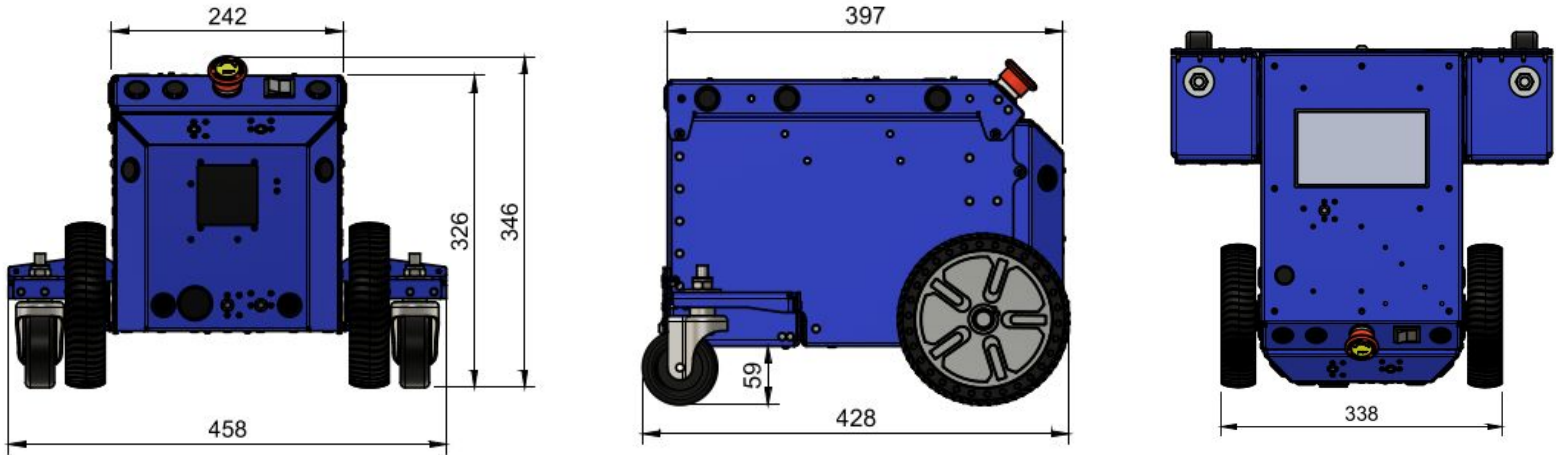
Engineering variant shown some changes to production design possible

Ubiquity Robotics

contact@ubiquityrobotics.com

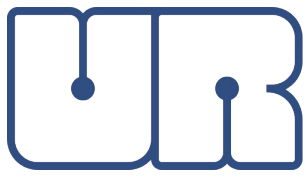
PHYSICAL DIMENSIONS

- **Robots Dimensions:** 428 mm x 458 mm x 346 mm (L x W x H)



INCLUDED COMPONENTS

- **Raspberry Pi 5:** 85.3 mm x ~56.2 mm x ~17 mm (L x W x H)
Link: [Raspberry Pi 5](#)
- **Raspberry Pi Camera 3 Wide Module:** 25 mm x 24 mm x 12 mm (L x W x H)
Link: [Raspberry Pi Camera Module 3 Wide](#)
- **Motor Controller Board (MCB):** 105 mm x 86 mm (L x W)
- **Short Range LiDAR (Optional):** 52x36.1mm (D x H)
Replaces the Long Range LiDAR.
Link: [Short Range LiDAR](#)
- **Long Range LiDAR (Optional):** $\Phi 102$ x 77.9 mm (Diameter x Height)
Can be bought as an optional add-on with the Magni Midi.
Link: [Long Range LiDAR](#)
- **Touch Display 2 (7-inch display):** 189.5 x 120 mm (Outline Dimensions)
For controlling the robot through UI.
Link: [Touch Display 2](#)
- **Magni 6 Connector Board:** 105 mm x 86 mm (L x W)
Connects the Raspberry Pi to the Motor Controller Board.



REFERENCE ARCHITECTURE

