



Off-road Platform MIRANDA

Mobile Intelligent Robot for Autonomous Navigation in Demanding Areas

The robot MIRANDA (Mobile Intelligent Robot for Autonomous Navigation in Demanding Areas) was specifically designed for the use in rough terrain. Besides the robust mechanics, two powerful electric motors allow to climb slopes of up to 45°.

For the development of a robust and lightweight chassis, a common aluminium profile system was used (compatible to Bosch, Norcan, Minitec, and many more). Critical components and connection points for the wheel suspension, steering and impulse are made of high-quality machinery steel and a corrosion resistant protection layer.

MIRANDA is very flexible and comes with various options some of which are listed below.

technical data

width:	1400 mm
length:	1500 mm
height:	850 mm
weight:	approx. 350 kg
payload:	approx. 150 kg
wheel track:	1100 mm
wheel base:	800 mm
wheel diameter:	front: 770 mm (off-road tires on 16" light alloy rims) rear: 460 mm (off-road tires)
ground clearance:	~ 250 mm
spring travel:	115 mm (-45 mm to +70 mm)
on-board Voltage:	48 V
energy source:	4 deep cycle batteries with 12 V and 55 Ah each (total: 2640 Wh)
control interface:	ROS (http://ros.org) Finroc (http://finroc.org)

- steered front wheel drive with 0.9 kW per wheel
- integrated incremental encoder and holding brake
- offroad gear (max. 7km/h)
(other gear reductions for higher velocities are possible)
- chassis with Minitec profiles; sealing related to IP 65
- mounting option for Sick laser scanners
- mounting option for Laser Ranger 3D (Robot Makers GmbH)
- optional:
 - springmounted industrial safety bumpers (front and rear side)
 - software packages for perception, navigation, and simulation
 - localisation package (GPS, IMU, odometry)