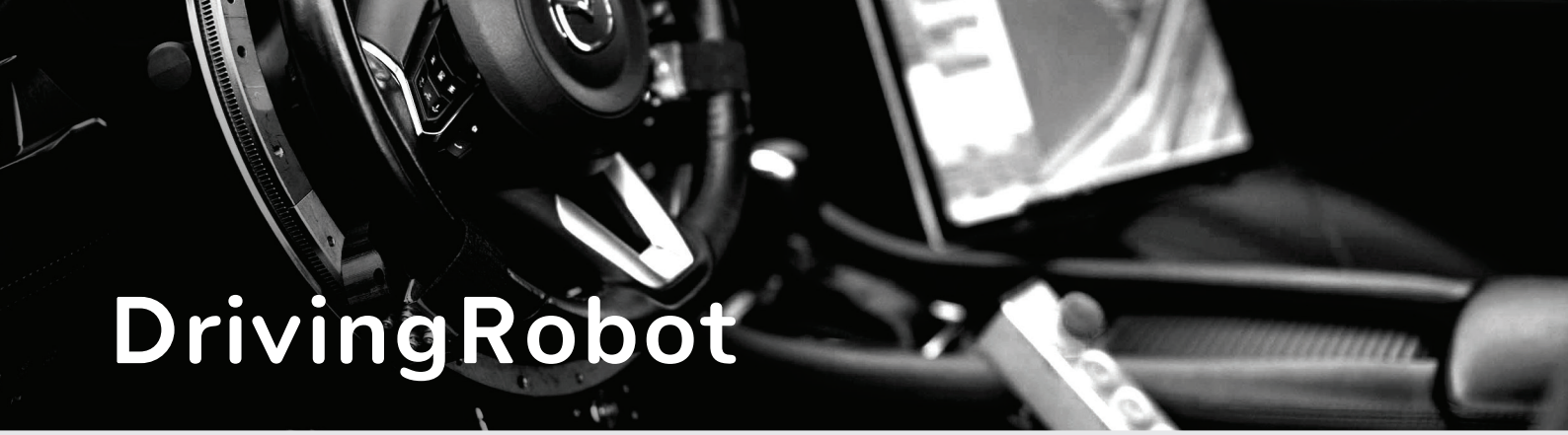

DrivingRobot

The **DrivingRobot** is able to control the steering, braking and acceleration of a test vehicle. The test vehicle can be navigated around the test track automated with highly precise measurements of position, velocity, acceleration and more. Fully synchronized tests are made possible when used with the different UFO target carriers and its GNSS-aided navigation system.

The **DrivingRobot** is also characterized by its compact design that frees up space and enables quick and hassle-free installation. The steering and throttle/brake robots are interconnected to provide ample room for electronics and data acquisition systems as well as easy access for test engineers. In addition, the all-inclusive **DrivingRobot** Box, containing all electronic components, can be easily installed with ISOFIX in the rear seat into the trunk.

Moreover, the **DrivingRobot** can be installed without interfering with the original steering wheel, airbag or the seating position of the operator. The robot turntable is installed behind the vehicle's steering wheel, and is activated with the grasp of the operator. In the event of an emergency, the operator can simply let go of the robot wheel and immediately take manual control of the vehicle's steering wheel. The seating knee area is also kept clear so the safety of the occupant is not compromised. The robot is free of any support-arm structures to the windshield or passenger side window. The friction compensation limits the influence of the robot to the vehicle's steering system and can be used to simulate the grip of the driver on the steering wheel. It is adjustable in four steps, from holding the steering wheel tight to hands off.

The **DrivingRobot** can be perfectly integrated into the UFO product family by sharing the same UFObase Software as the UFO target carrier line; no learning curve is needed for additional software. Multiple UFOs and/or **DrivingRobots** for swarm testing can be controlled, managed and analyzed from just one computer.

See the DrivingRobot in action.

DrivingRobot

ROBOT CONTROL	
Power Supply	48 V battery system, 760 Wh
Swarm Testing	Yes
Signal Channels and Interfaces	CAN, RS232, Ethernet
Sampling Frequency Range	100 Hz
Compatibility	Humanetics UFO target carrier products (third party systems on request/interfaces)
Power-Off Protection	Dedicated battery system
Screen	Tablet PC or in-car use
STEERING ACTUATOR	
Drive Mode	Brushless electric motor
Max Torque	40 Nm at 1300°/s
Rated Torque	15 Nm at 1800°/s
Max Velocity	2100°/s at 10 Nm
Rotational Inertia	0,0656 kgm² incl. Ring guide
Steering Wheel Diameter	329-389 mm
System Angle Control Accuracy	+/- 0.5°
Control Mode	Path following, wheel angle control, steering wheel angle control, friction compensation
Space Behind Steering Wheel	For fixation of clamps
THROTTLE PEDAL ACTUATOR	
Max Continuous Pedal Force	56 N
Max Throttle Pedal Force	156 N
Max Throttle Pedal Speed	1 m/s
Max Stroke	104 mm
Control Mode	Speed Control, Position Control, Force Control
BRAKE PEDAL ACTUATOR	
Security	Safe Design – driver can overrule the brake and take over control at any time
Drive Mode	Brushless electric motor
Max Braking Force	1000 N (depending on mounting angle)
Max Velocity	1 m/s
Max Stroke	140 mm (depending on mounting angle)
Control Mode	Speed Control, Position Control, Force Control

Key Features

» **Compact design** with slim central stand to eliminate the need for struts to passenger windshield; trunk free for data acquisition

» **Adjustable friction compensation mode** (4 levels) allows testing of LKA scenarios and scenarios where active intervention of steering is involved

» **No dismounting of the airbag or steering wheel needed** – vehicle retains its full safety features, and no special training for the installation team required

» **Comfortable seating position** for the driver with clear view to the proving ground

» Electronic components housed in robust and easy-to-handle **DrivingRobot Box**

» **Self-contained 48V battery** – no additional electricity supply needed from the vehicle

» **Seamless integration with the UFO target carrier environment** – utilizes same intuitive and user-friendly UFObase Software

» **Smart hardware design** allows simple, quick installation

» **Self-calibration software** ensures fast, effortless start-up

HUMANETICS