
ACCERION
Positioning for mobile robots and autonomous vehicles
ACCERION
www.accerion.tech

Accerion

The fast-growing **mobile robotics** industry requires solutions to be increasingly mobile and autonomous

This has started a **trend** towards **infrastructure free navigation**

Current systems require recognizable landmarks in the environment

We want to go one step further

Accerion's technology uses **advanced optical technology** to scan the **floor surface**

This determines **movement, position and orientation** of the robot or vehicle, which is communicated to the navigation system

Accerion enables new modes of navigation, including:

- Indoor and outdoor navigation with a single system
- Large spaces (e.g., warehouses, shipyards)
- Dynamic environments (e.g., moving people, equipment, material)

“A sensor module that can easily be integrated in existing mobile robots and AGVs”

Technology

Measurement principle

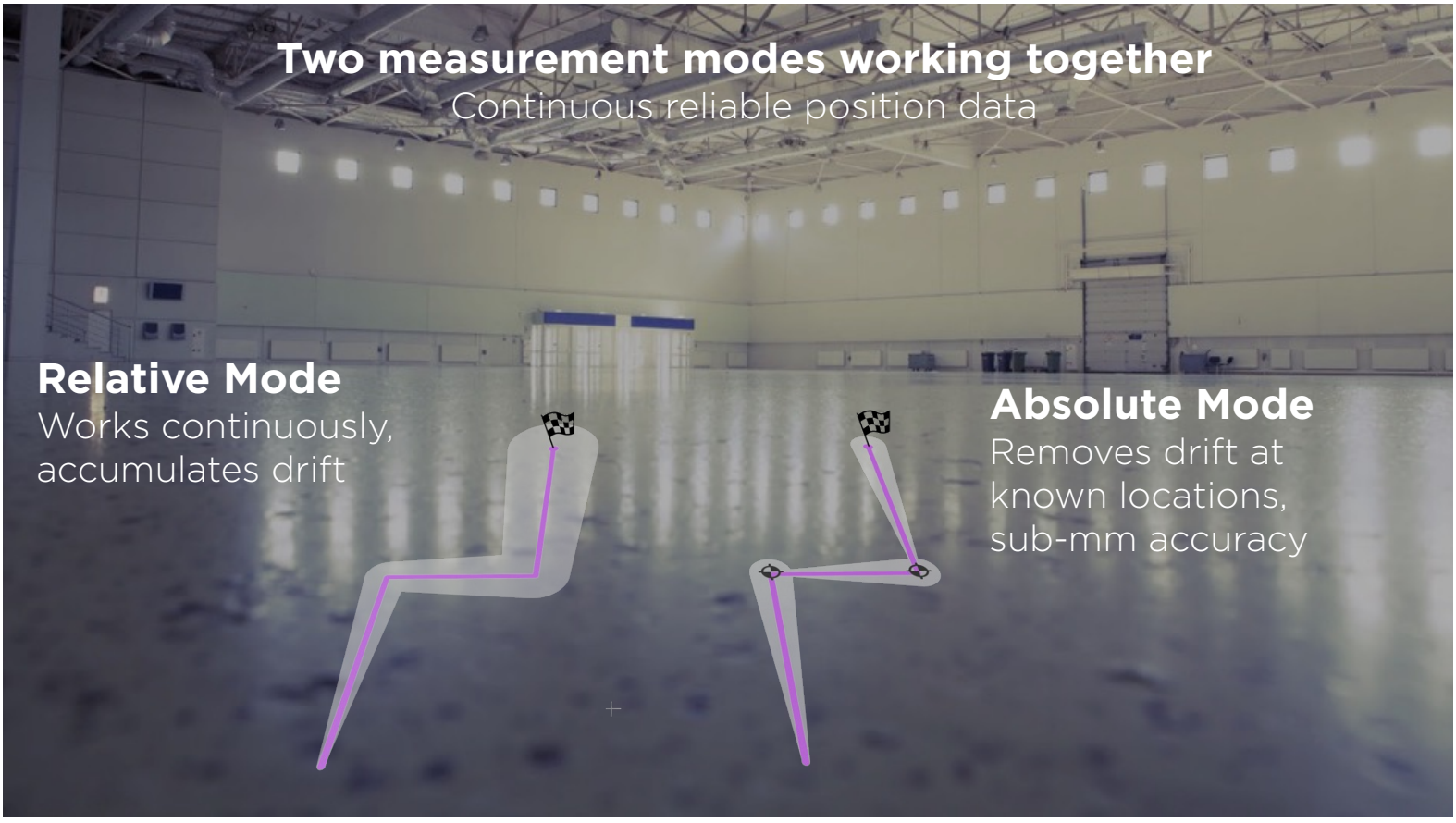
- Advanced optical system, using floor surface as reference
- Determines location, orientation and movement

Reaching Absolute position

- Relative measurement with continuous drift correction
- Recognises known areas of the floor surface, without markers

Operation

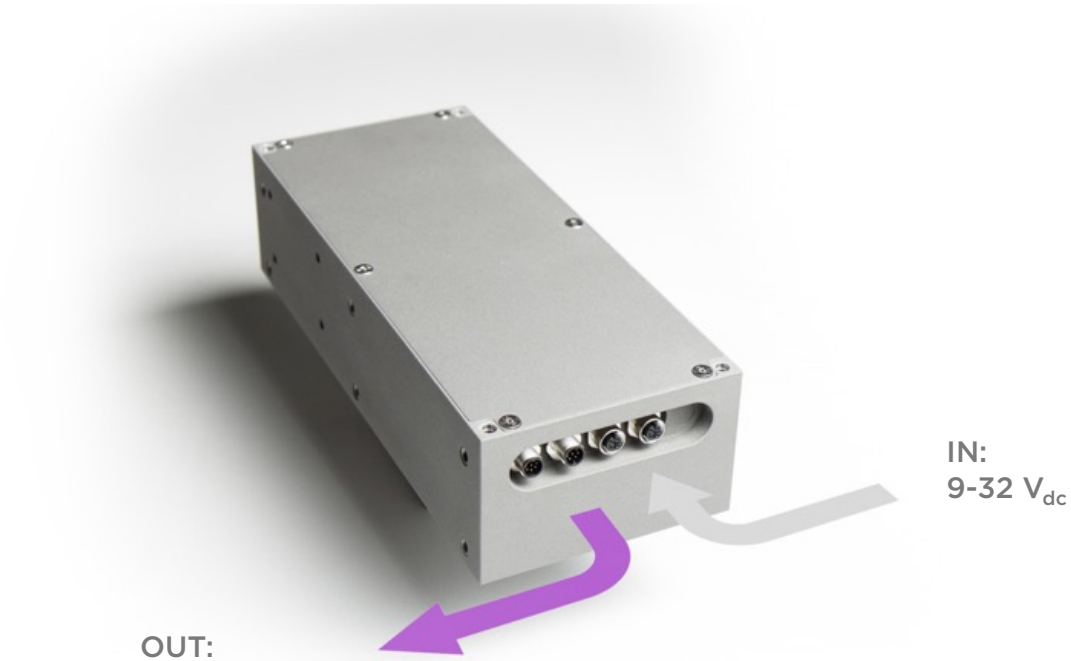
- Infrastructure free, position immediately found after power-up
- Robust in coping with gradual floor changes (dirt, wear)
- Immediate deployment of additional robots in the same operation


Two measurement modes working together
Continuous reliable position data
Relative Mode
Works continuously, accumulates drift
Absolute Mode
Removes drift at known locations, sub-mm accuracy

Specifications

Jupiter

Accuracy	
Relative	>99.8%
Absolute	10mm continuous sub-mm at area of interest
Geometry	
Components	1 single sensor module
Weight	2.4 kg
Volume (HxWxD)	90x120x300 mm
Clearance to ground	75 mm (custom on request)
Vehicle speed	2m/s
Area	40.000m² (higher on request)
Power consumption	<30W (9-32V_{DC})
Communication Protocol	Ethernet, ROS (on request: EtherCat, CAN, RS-232, custom)
Environments	
Floor surface	Industrial surfaces (indoor & outdoor)
Air quality	Industrial environments
Temperature	-10˚C - 50˚C
IP rating	IP65 (IP67 on request)
Light	No impact from external light
Delivery time	small quantity on stock, avg. 4 weeks from order



IN:
9-32 V_{dc}

OUT:
position: x, y, θ
velocity: v_x, v_y, v_θ