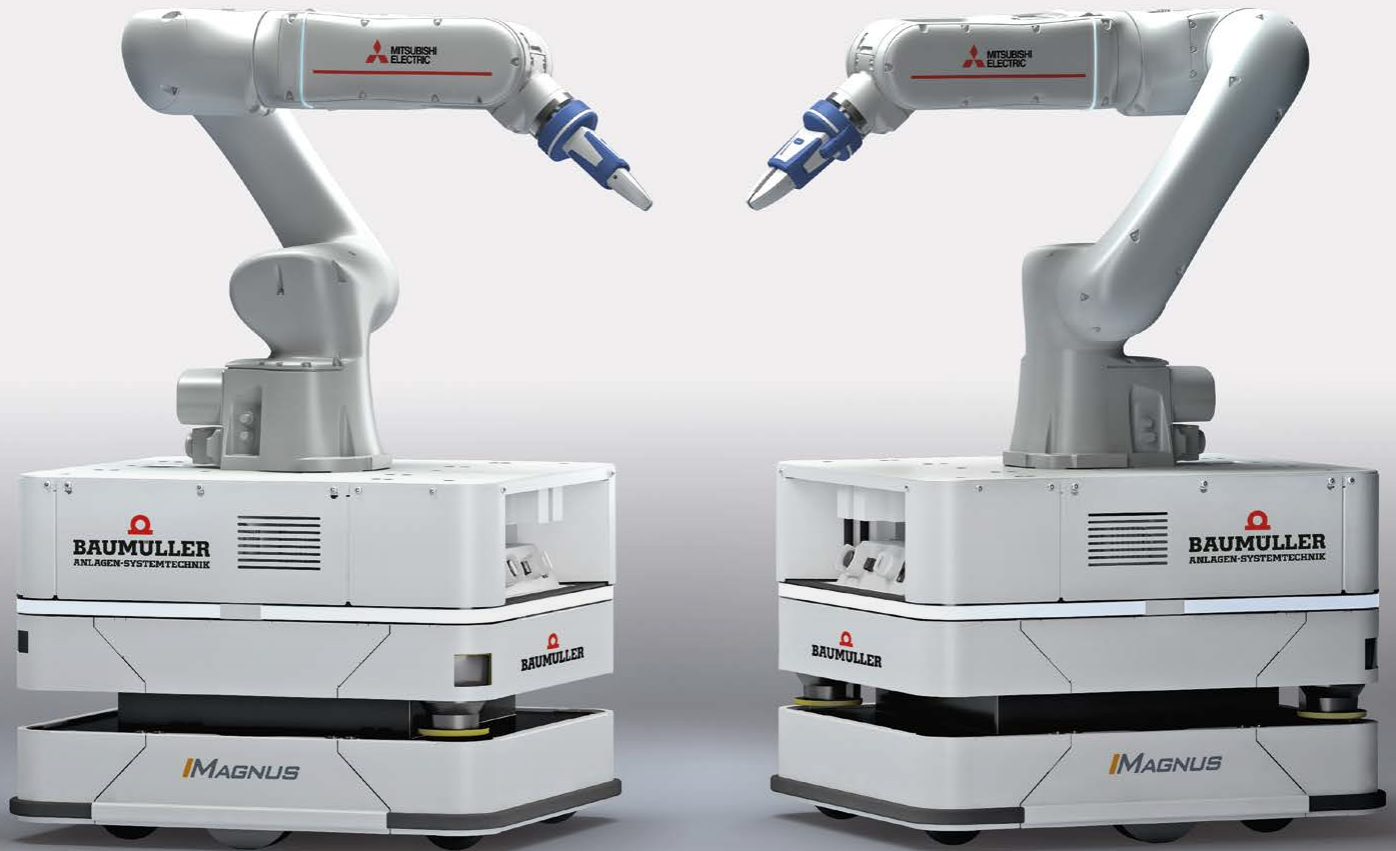




**BAUMÜLLER**  
ANLAGEN-SYSTEMTECHNIK



# AMR SOLUTIONS

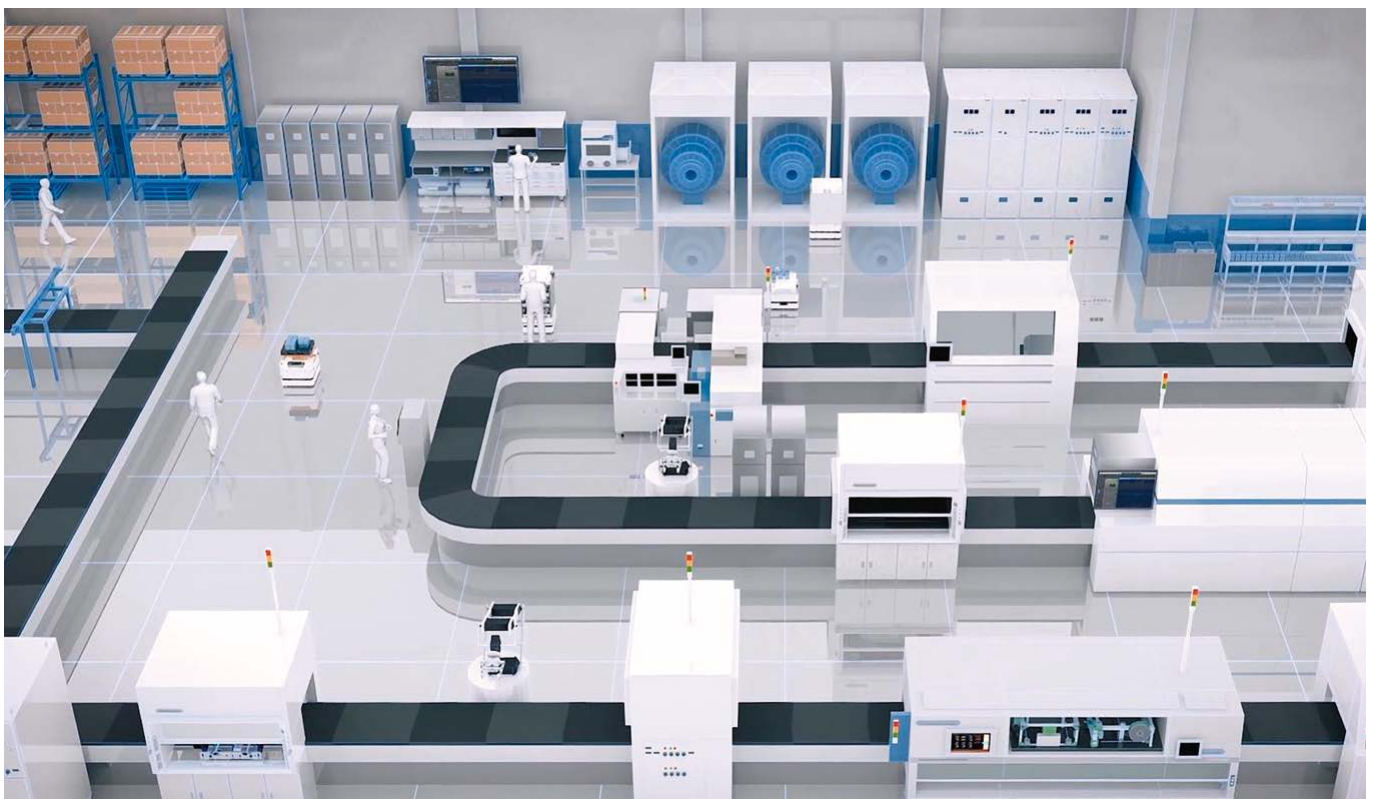
Everything from a single source –  
Autonomous Mobile Robots from Baumüller Systems

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Complete systems, material handling and transport processes in production, logistics, intralogistics, electronics manufacturing, pharma, medical technology and clean rooms.

# AMR SOLUTIONS

Baumüller Systems – Your reliable partner for innovative system solutions



With our wide range of services in the field of solutions for Autonomous Mobile Robots (AMR) we are able to offer every customer an individual system solution.

As an end customer, we support you with a complete solution or as a system integrator we assist you with our infrastructure.

As an experienced systems supplier, Baumüller contributes its know-how for successful and smooth integration into the existing environment and the available automation concept.

With our premium cooperation with the leading solution provider for AMR technology, Sesto Robotics, we offer everything from a single source. Complete systems, material handling and transport processes in production, logistics, intralogistics, electronics manufacturing, pharma, medical technology and clean rooms.

- ✓ Certified Hardware
- ✓ Customized Payloads
- ✓ Integrated Intelligence
- ✓ Complete Solutions

# Baumüller Systems & SESTO enables Industrie 4.0 with innovative AMR technology and customized solutions



## Use cases

- ✓ Machinery
- ✓ Finished parts retrieval
- ✓ Laboratory assistance
- ✓ Pick-and-place
- ✓ Assembly and handling
- ✓ Feed systems
- ✓ Labeling
- ✓ Sorting and palleting
- ✓ Testing and inspection

## Robots as a platform

Industrial and collaborative robots from different manufacturers (ABB, Yaskawa, Fanuc, Kuka, Mitsubishi, UR, etc.)

## Grippers

- ✓ Suction grippers
- ✓ Magnetic grippers
- ✓ Finger grippers
- ✓ Switch systems
- ✓ Camera support
- ✓ Reach into the box

# MAGNUS AMR

## Compact mobile robots

### Magnus 2.0 – compact mobile robot with the highest payload in its class

Magnus is a bidirectional, compact AMR. It is designed for applications in commerce, health care and production and despite its compact size, it is suitable for payloads up to 300 kilograms. With the highest payload of its class, the compact Magnus is specifically designed for precise navigation in confined spaces.



#### Application areas

- ✓ Production & logistics
- ✓ Health care
- ✓ Pharmaceutical industry
- ✓ Clean rooms

### Magnus Lite – economic low-end device with no technical trade-offs

**Perfect for small payloads:** The Magnus Lite is a compact AMR with the same dimensions as its big brother, the Magnus. It is designed for smaller payloads up to 100 kg with otherwise identical technical options with regard to navigation, safety, connectivity and accessories and is perfectly suitable for transport tasks.



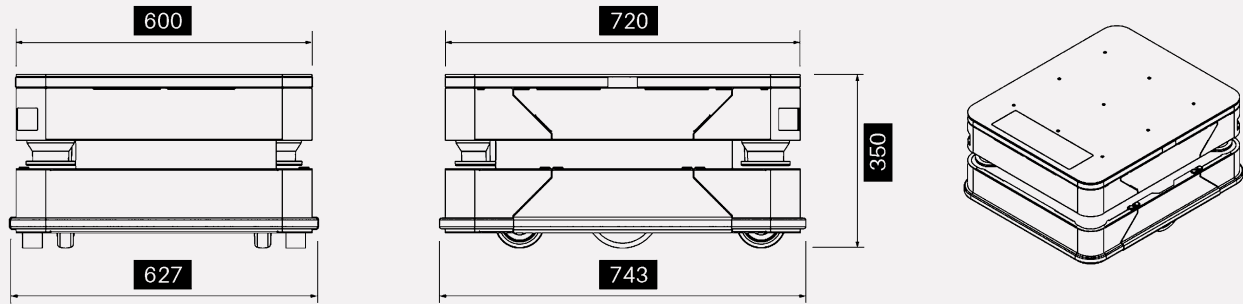
#### Application areas

- ✓ Intralogistics
- ✓ Semiconductor

### Advantages

- ✓ Highest payload of its class (up to 300 kg)
- ✓ Up to 10 hours operating time with a single charge
- ✓ Precise navigation in free space and in narrow aisles from 90 cm wide
- ✓ Forward and backwards movement with the same speed
- ✓ 3D-obstacle detection and avoidance by means of cameras in both directions of travel
- ✓ Third camera can be optionally used for platform (e.g. scanning QR code)
- ✓ Setting up and control using a tablet or laptop and web-based interface
- ✓ Various possible uses due to configurable add-on modules

## Dimensions [mm]



Technical data		Magnus 2.0	Magnus Lite
Platform	Platform configuration	Base for lifting tables, rack transportation, robots, third-party equipment	
	Payload	up to 300 kg	up to 100 kg
	Weight	120 kg (incl. rechargeable battery)	105 kg (incl. rechargeable battery)
	Dimensions (L x W x H)	742 x 627 x 350 mm	
Safety	Localization and navigation	Laser-based (LIDAR) on front and rear; 40m range; 360° coverage	
	Safety bumpers	Front and rear	
	Status lights	LED lights (RGB)	
	Warning audio	During navigation and in case of obstacle detection	
Performance	Battery type and lifespan	LiFePO4, 48 V, 50 Ah, est. 3 years, 2000 cycles	
	Charging time and running time	Charging time 3 h, running time 8–10 h with continuous movement (w/o load)	
	Crossovers	Threshold height: 10 mm, Gap: 35 mm	
	Charger type	Auto-docking	
	Maximum speed	1.2 m/s	
	Direction and turning radius	Bi-directional/spot turn, radius 0.6 m	
	Slope	< 3°	
Intelligence	Reaction to obstacle	up to 2 m distance, automatic speed control and stopping; 3D cameras for obstacle detection	
	Fleet traffic management	Basic: up to 5 AMRs; Enterprise: max. 30 AMR	
User Integration	Operating system for server	Ubuntu, Redhat, Centos	
	Interface	Web-based UI	
	Elevator and door interface	available through API	
Communication	Wifi	2.4 GHz, 5 GHz, 802.11 a/b/g/n/ac	
	Software interface	SESTO REST API	
Compliance	Clean room	Class 100	
	Degree of protection	IP31	
	Vibration	< 0.5 G	
	Surface resistance	< 10 MΩ	
	International safety standards	EN1525, EN1526, EN1175-1, EN/ISO 3691, ISO13849-1, EN 60204-1, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4, EN 61000-6-7, CE	

Options	Order no.	
Integrated lifting unit	270354	120 mm, min. platform: 110 mm, working load limit: 250 kg, Integrated in the configuration software
8DE 8DA	270347	Integrated in the configuration software
V-Marker	270350	Positioning accuracy improvement ±20 mm
Magnetic sensor	270346	Positioning accuracy improvement ±10 mm at target positions in combination with magnetic tape
Fleet Manager Bundle	270442	Bundle of hardware and lifelong licenses, for 2–5 AMRs
Fleet Manager Enterprise	270343	For fleets > 5 AMRs
Charging station	270540	Automatic charging station 230 V AC 1~
Intermediate level for attachment prep.	on request	Different preparations available for robots, conveying technology, etc.
Cobot attachment	on request	Mitsubishi Electric MELFA-Assista, Fanuc CRX, Yaskawa HC, etc.
API development environment	270344	HTTP interface for external applications



# NAVIGATION

## Free navigation in space



For free navigation in the room, the AMR's LIDAR sensors register the spatial situation in a teach-in run and stores this information as a map for the vehicle fleet. The map is modified using an editor integrated in the web-based interface. The positions and the "road network" are then positioned with different functions.

During the trip, the scanned actual situation is continuously compared with the the map and the AMR responds to

obstacles or potential hazards with speed adjustment or independent circumnavigation/detour. Additional localization sensors are not required for this.

Doors and elevators are operated via ethernet I/O modules. Operation over several stories and rooms is therefore possible.

The AMR provides its payload a power supply of 48 V DC / 25 A.

# A SINGLE SOURCE

## Innovative AMR system solutions



In modern production environments with short product life cycles, tailor-made solutions are of decisive importance. To stay competitive, manufacturers must be able to produce individual products just as easily and cost-effectively as in series.

This means: production facilities must be flexible so that production lines can be changed or made ready at short notice. With our wide range of services in the field of AMR system solutions, as our customer, we are able to offer you an individual and innovative system solution.

**If you have further questions on the AMR system solutions of the Baumüller Group, please contact us by email:**



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# AMR SOLUTIONS



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