

KUKA



Mobile platforms and mobile robots.
Open up new dimensions of mobility.



KMP 600-S diffDrive.

Mobile freedom thanks to AGVs: material transport in dynamic environments.

The KUKA Mobile Platform KMP 600-S diffDrive opens up new avenues and more flexibility for production intralogistics. The KMP 600-S diffDrive provides support as an automated guided vehicle (AGV) with a payload of up to 600 kilograms. In

addition, it allows maximum freedom of movement for employees, as it does not require any protective fencing. The laser scanners at the front and rear provide maximum safety and allow high speeds in all directions when cycle times require it.



What advantages do the AGVs offer for in-house logistics?

AGVs bring required goods and raw materials fully automatically to the right place at the right time. They take on physically demanding transportation tasks and are able to share passageways with human operators and conventional industrial trucks thanks to their comprehensive safety technology. Through the use of camera-based 3D object detection, they integrate seamlessly into existing production environments.

The KMP 600-S diffDrive can also be expanded with 3D object detection. This allows the AGV to autonomously detect obstacles that are between 30 millimeters and 2.10 meters above the ground. At the same time, the KMP 600-S diffDrive is ideally equipped for the tough everyday environment of industrial production: thanks to its IP 54 design, it is protected against splashes of water and dust, for example.

High safety standard

- Laser scanners at the front and rear
- 3D obstacle detection available
- Four emergency stops
- Eight safety zones at both the front and rear of the vehicle

Extremely fast

- The AGV travels up to 2 meters per second
- Full speed in all directions
- Integrated lift of up to 60 millimeters in under 3 seconds

Protection class IP 54

- Optimally equipped for the daily work of industrial production
- Protection against foreign objects such as (metal) dust
- Protected against water spray from any direction

Intelligent navigation

- Fleet manager software for the entire KUKA AGV portfolio
- Navigation via laser scanner and a pre-generated environment map
- Identifies the fastest route – even in complex environments



Automated guided vehicles from KUKA: Fast commissioning, simple maintenance. Applications can be programmed via JAVA. In order for KUKA's intelligent, autonomous vehicles to optimally support in-house material flows, they must first be taught. The KMP 600-S diffDrive is commissioned quickly and easily via a wireless controller. Maintenance is just as easy as start-up: No tools are required to access AGV components, such as rollers, laser scanners and service interfaces – for inspection, firmware updates, calibration, and repairs.

Eight security zones. There are eight safety zones in front of and behind the KMP 600-S diffDrive, which customers can customize to suit the application situation. The size of the protective field changes dynamically depending on the speed and direction of travel.

KMP 600S-2 diffDrive	
Dimensions (L×W×H)	1,000×750×353
Weight	246 kg
Rated payload	600 kg
Maximum speed straight ahead	2 m/s
Maximum acceleration	1.25 m/s
Maximum braking acceleration	1.5 m/s
Battery capacity	at least 8 hours
Charging time	2 hours
Interfaces	48 VDC, 24 VDC, EtherCAT, I/O, STO
Integrated lifting device	up to 60 mm
Pose accuracy	±10 mm



KMP 1500P. The smart AMR platform maximizes efficiency in production halls and warehouses.

The autonomous mobile platform, is designed to enhance intralogistics, material supply for production lines and process linkage applications. With its cutting-edge slam navigation, precision positioning, advanced load identification, 3D cameras, and innovative charging technology, this AMR offers a package of high-performance features, safety, and flexibility in automated transport and material handling.

The autonomous mobile robot (AMR) is a game-changing solution to optimize intralogistics operation. The KMP 1500P lifts all types of load carriers and could be easily implemented into existing industrial projects to deliver exceptional solutions, whether it is optimizing warehouse processes, streamlining assembly lines, or enhancing material handling in complex industrial environments.

The AMR platform can identify the load due to its technology and QR code readers, which improves material traceability and operational efficiency. In addition, the 3D cameras provide an additional layer of safety, detecting obstacles in three-dimensional space, and ensuring the well-being of the AMR, the load and equipment.

The KMP 1500P offers easy programming that allows workflows to be quickly adapted and optimized, reducing the time and resources required for implementation, and resulting in increased operational efficiency and flexibility.

The driverless transport system is the perfect solution for automating material supply. Small and medium-sized companies also benefit from lower operating costs and a high degree of flexibility when using mobile robotics.

Demands on mobile robotics in the age of Logistics 4.0

The autonomous mobile platform KMP 1500P provides a safe and autonomous transport solution for heavy loads in factories and logistics centers. With its flexible movement, the KMP 1500P can navigate complex and dynamic environments, adapt to changing requirements and optimize material flow. This provides agility and versatility in operations, ultimately helping businesses to respond quickly to evolving market demands and achieve higher productivity.



Versatile use of driverless robotics in intralogistics

The AMR automatically delivers the required goods and raw materials to the right place at the right time. The Autonomous Mobile Robot (AMR), with its differential drive technology, is optimally equipped for tasks in production and in-plant logistics. A wide range of applications can be supported.

- **Material supply to stations and lines.** Enables efficient just in time material supply from the warehouse or supermarket to stations, assembly and pre-assembly lines.
- **Process linkage/chaining.** Autonomous transport of components and workpieces from station to station by the KMP 1500P increases the flexibility in the production and makes unflexible conveyers obsolete.
- **Commissioning.** Flexible picking processes, goods-to-person, autonomous piece picking or flexible sorting.
- **Warehousing and point-to-point transports.** Reliable stock management and inventory control thanks to the KMP 1500P and its capable fleetmanager KUKA.AMR Fleet.

Configuring instead of programming – the KUKA.AMR Fleet navigation system

The No-Code-Platform with AI functionality is easy and intuitive to use. The navigation system KUKA.AMR Fleet makes it possible to configure settings by courser in the browser instead of programming them. This allows new or modified routes to be planned quickly and efficiently. Additional comfort and AI functions as automatic rack recognition increase the efficiency during integration.

The software also enables comprehensive fleet management of the entire AMR system. It fully regulates all fleet traffic and is able to automatically reschedule in the event of obstacles.

Smart traffic management for optimized material flow: different AMRs and AMRs on one digital platform.

The autonomous transport system is characterized by high flexibility, safety and scalability

Autonomous navigation	Highest safety standards	Intelligent charging management	Extras for flexible use	International certification
• Slam-Navigation • Camera underneath the mobile platform, reading QR-codes for high positioning accuracy ±5 mm • Easy to integrate, operate and maintain due to No-Code-Platform with AI functionality KUKA.AMR Fleet • Connection via Wi-Fi, 5G capable	• Laser scanners for safe obstacle detection • 3D cameras additionally detect obstacles and people, protecting AMR, load and employees • Bumper / safety edge for extra safety • Acoustic and optical signals, as well as 4 emergency stop switches (at each corner of the platform)	• Docking station for conductive charging with digital touch screen • As soon as the battery level gets low, the AMR is automatically routed to a free charging station • No installation of special power supply required due to single phase • 2 h charge for 8 h of use. 1 h charge for 20-80 % capacity • Inductive charging available in 2024	• Lift with treated hole grid pattern (for pins, etc.) • Lifting height: 60 mm • High load capacity up to 1,5 t • Max. speed: 1.8 m/s without load, 1.5 m/s loaded • On-platform camera for QR load identification • Sound module for notifications, alarms, music	• IP 54 protection class: protection against splash water, dust, and chips • ICE and FCC approval for the IoT devices



KMP 3000P. Working tirelessly for the perfect flow.

With the KMP 3000P platform, KUKA is introducing a real heavyweight in the area of AMR to the market. The platform can transport loads of up to three tonnes. Its omnidirectional drive guarantees maximum flexibility in the narrowest of spaces in intralogistics. Thanks to its inductive charging concept, the platform is constantly ready for operation, which allows for flexible charging in the process.



Transport capacity of up to three tonnes.

Mobile robotics is a crucial factor when it comes to optimizing intralogistical processes. The KMP 3000P builds on the success of its little sister, the KMP 1500P, and adds an extra one and a half tonnes in terms of transport capacity. With the ability to move up to three tonnes, it opens up a variety of possible applications for various sectors. Whether material supply in production, process linking without conveyor belts or classic point-to-point transport – the KMP 3000P effortlessly masters the transport of large, unwieldy and heavy components.

Functions in the smallest of spaces.

The KMP 3000P has an omnidirectional drive. This allows it to move in all directions. "This makes the platform extremely flexible. It can move diagonally and therefore handle narrow curves. This delivers considerable advantages in a cramped production environment," explains Julian Stocksclaeder, Head of AMR Business Development at KUKA. Four integrated 3D cameras and two laser scanners offer a 360° view, meaning that the platform can effortlessly detect and avoid obstacles. This not only increases efficiency, but also increases safety in various working environments.

Ready to operate, day and night, thanks to the new inductive charging principle.

The best platform is one that operates 24 hours a day, 7 days a week. Thanks to its inductive charging principle, the KMP 3000P does just that. This means that the platform can be charged wirelessly, both centrally at the station as well as non-centrally within the application area at various, freely selectable locations. It can also be charged via inductive pads, which are attached to the floor of the hall. Based on the operational plan for the KMP 3000P, breaks that arise during operation – for example while the robot is loading a machine – can be used to charge the platform during the process. This guarantees round-the-clock operation.

New drive concept reduces maintenance requirements.

The new, omnidirectional drive concept of the KMP 3000P combines the advantages of mecanum wheels from the OmniMove series with the cost-effective diffDrive: The driven casters guarantee extremely smooth running and allow for high speeds. Each of the two drive units consists of two wheels each. Since the weight is distributed over two wheels, there is a lower point load on the individual wheel, which reduces wear. In addition to replacing the entire drive unit, it is also possible, if required, to replace the covering on individual casters. The fact that the parts that are used are common standard components that are widely available contributes to the simple and cost-effective maintenance. "If something has to be replaced, parts are easy to access: A service hatch provides easy access to the inside of the platform," reports Julian Stocksclaeder.

Intuitive configuration with the KUKA.AMR Fleet software instead of tedious programming.

The KMP 3000P is controlled using the suitable software KUKA.AMR Fleet – an intelligent, AI-based and easy-to-use fleet management system. Furthermore, the VDA 5050 standard communication interface guarantees maximum compatibility between the AMR and different control systems.



KUKA omniMove.

We move big things – with millimeter precision.

Simply move underneath and lift. The KUKA omniMove mobile heavy-duty platform can move your XXL loads with ease.

Specially developed wheels allow the mobile heavy-duty platform to move in any direction – even from a standing start. The sophisticated navigation system KUKA.NavigationSolution ensures autonomous maneuvering without risk of collision and without requiring artificial floor markings.

The KUKA omniMove can be freely scaled in size, width and length within a modular system – to suit your requirements.

Mecanum wheel for maximum mobility: the specially developed KUKA omniMove drive technology based on the Mecanum wheel ensures that the KUKA omniMove can maneuver omnidirectionally. The wheels with individual, barrel-shaped rollers can move independently of each other. This allows the KUKA omniMove to perform translational and rotational motions in the tightest of spaces from a standing start. It can thus move swiftly in all directions and is characterized by maximum positioning accuracy.



Powerful. Depending on the vehicle variant, the KUKA omniMove can move even the heaviest XXL components safely and conveniently. It has a payload capacity of up to 100 tonnes and – in the maximum version – reaches a length up to 30 meters.

Precise. The KUKA omniMove positions even enormous payloads to within ±3 millimeters without contact.

Modular. We design your ideal solution. You can choose from different vehicle variants, and we will then personalize your selection with individual option packages and modules – fully in accordance with your requirements and wishes.



Wheel sizes E375	3000	7000
Payload	3,000 kg	7,000 kg
Height	420 mm	420 mm
Length (with laser scanner)	2,750 mm	3,650 mm
Width (with laser scanner)	1,600 mm	1,600 mm
Number of wheels	4	8
Weight	1,650 kg	2,600 kg
Travel speed	3.0 km/h	3.0 km/h

Wheel sizes E575	7000	12000	17000	25000
Payload	7,000 kg	12,000 kg	17,000 kg	25,000 kg
Height	650 mm	650 mm	650 mm	650 mm
Length (with laser scanner)	3,220 mm	3,520 mm	4,620 mm	5,610 mm
Width (with laser scanner)	2,050 mm	2,050 mm	2,050 mm	2,050 mm
Number of wheels	4	6	8	12
Weight	3,700 kg	4,500 kg	5,200 kg	8,700 kg
Travel speed	3.0 km/h	3.0 km/h	3.0 km/h	3.0 km/h

Operating condition	
Ambient temperature	+5 to 40 °C

Power supply connection	
Charger, type 1	400 V / 50 Hz / 32 A CEE
Charger, type 2	480 V / 60 Hz / 30 A Hubbell HBL2731; UL



KMR iisy. Flexibility and reliability combined: the autonomous mobile cobot as the optimal solution for industrial environments.

Autonomous, flexible and with an eye on all obstacles – the KMR iisy is a smart partner in warehouse logistics and production as a fully integrated combination of cobot and transport platform.

The autonomous mobile robot KMR iisy enables the dynamic use of cobot at different workstations and is therefore indispensable as an automation solution. With the HRC-capable KMR iisy, we offer an AMR (Autonomous Mobile Robot) that can move quickly and safely. This is made possible by safety scanners and 3D cameras in combination with cobot LBR iisy. It detects not only humans around the platform with its lidar scanner, but also potential collisions with humans and the cobot LBR iisy. 3D cameras spot obstacles up to two meters above the ground.

Mobile cobots in cleanrooms: efficient automation for demanding environments.

Due to its low particle and emission levels and its ESD certification, the KMR iisy is also suitable for use in cleanrooms. Pick-and-place applications, material transport and palletizing tasks in the semiconductor or electronics industry can be carried out more efficiently and cost-effectively.

Design and intelligent technology of AMR: ideal for collaborative operation in assembly, intralogistics and as a service robot system. Due to its adaptability, high flexibility and free navigation, the KMR iisy can be used in the warehouse or as a workpiece carrier.

Get more out of Industry 4.0 with the use of mobile cobot platforms

Safe collaboration between humans and robotics, automation of more complex, physically demanding tasks for humans, flexible travel paths, collision protection and uninterrupted operation – the autonomous mobile cobot KMR iisy offers numerous advantages for loading and unloading, quality testing in the production line as well as workpiece and material transport. It enables companies to design processes more cost-effectively and efficiently than before.



Demands on our autonomous mobile cobot

Flexible and cost effective transportation. The mobile KMR iisy Cobot links any number of stations in the desired sequence, without the limitations of conventional material transport solutions. This allows smaller batches and different products to be produced in parallel, enabling rapid response to changing customer requirements. Additionally, the AMR allows switching between products fast and less costly, resulting in the ability to deliver small batches with competitive pricing.

Smart operation. Both the cobot and the mobile platform are controlled by a single teach pendant, smartPAD pro. This is integrated into the platform and acts as a status display. Decoupling the smartPad pro is therefore not required, preventing misplacement and ensuring direct access if needed. There is no need for an additional control panel.

Autonomous navigation. Free navigation via Slam ensures that the robot can drive autonomously and stop in front of unforeseen obstacles. QR codes can be used to increase the positioning accuracy in workstations.

High safety. The collaborative AMR is equipped with safety components. Sensors, safety scanners and 3D cameras detect workers and obstacles up to 2 m above the ground. A high level of collision protection is guaranteed.

Predictability. KMR iisy documents its tasks automatically and on-the-fly and constantly transmits its coordinates, so the status and location of the load is known at any time. This increases the material traceability, prevents failures in the material supply.

24/7 operation. The AMR platform can be used in 24/7 operation thanks to its inductive charging pads. The lithium-ion battery can be charged in a charging station as well as in workstation during the process.

Easy maintenance. Maintenance on the KMR iisy is quick and easy. The platform components are easily accessible via the large access hatches on both broad sides. A control cabinet provides space for additional customer-specific applications.

Protected construction. IP 54 protection makes the KMR iisy a reliable AMR solution in demanding environments. Clean room class 3 and ESD protection to ISO 61340-5-1 and ANSI ESD S20.20 further qualify it for sensitive workspaces.

Designed to work dynamically.

- Load capacity cobot: 11 kg or 15 kg
- Mobile platform capacity: up to 200 kg
- Size of platform area: 695 x 850 mm
- Max. speed: 1,5 m/s
- Precise positioning using QR code technology in workstations

International certification

- ICE and FCC approval for the IoT devices
- TÜV Saar tested MRK system (robotics, grippers)



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