AMR Series

One-Stop Factory Transport Solution

AUO Corporation
友達光電股份有限公司

9F., No.618, Songhe St.,
Taipei City 115023, Taiwan
mamd.design@auo.com
www.auo.com

AUO Website   Digital Brochure

AUO

AMR Solution

One-Stop Factory Transport Solution

In the rapidly evolving landscape of automation, we are leading the wave of AMR technology, providing a comprehensive AMR solution to enhance automation efficiency. Our management system is designed to seamlessly control and monitor AMRs, aming to fullfil a wide range of application needs.

AMR Models
AMR150M/ AMR250M/ AMR500M

Versatile Top Modules

Management System
FMS / AMRUI

AMR Models

Modular System

Key Features

- **SLAM Automomous Navigation**
- **AI Obstacle Detection**
- **Omni-Direction Movement** 360°
- **Safe Human-Robot Collaboration**
- **Safe Battery Management**
- **Modular System**

Robot Module

Pick and Place   Assembly Work

Quality Inspection

The AMR integrates a multi-joint robotic arm, offering high flexibility and precision for delicate object handling and manipulation.

Lifting Module

Material Handling   Assembly Work

Warehouse Management

Equipped with a lifting platform, the AMR enables precise height adjustments for lifting, securing, and transporting materials, optimizing material flow.

Roller Conveyor Module

Material Transport   Packaging Handling

Warehouse Automation

Designed with a roller conveyor system, the AMR efficiently supports and transports materials, seamlessly integrating with automated conveyor lines.

Management System

FMS │ Fleet Mangement System

FMS is an integrated web-based system to control multiple AMRs. It features responsive web design (RWD) and provides functions such as data synchronization, path planning, and intelligent traffic management. Users can monitor real-time data for multiple AMRs, query/export historical records, and generate various reports.

AMRUI │ AMR User Interface

AMRUI is a web-based integration system designed to control a **single** AMR. The user-friendly interface enables users to remotely operate the AMR, manage site setup processes, execute point-to-point missions, monitor real-time AMR data (including sensor information and battery status), and access/export operation history.

MES → MCS

1
• Fleet Management
• AMR Task Assignment
• Path Planning

FMS
Fleet Management System

2   3   4

AMRUI

AMR   **E-Rack**   **Charger**

System Architecture

1 Intelligent Scheduling & Management

MES/MCS transmits data to FMS via MQTT/SECS, enabling AMR fleet management, task assignment.

2 AMR Control & Flexible Deployment

FMS manages multiple AMRs with intelligent traffic control, AMRUI allows for remote control of a single AMR, facilitating site setup, real-time monitoring and and optimal path planning.

3 E-Rack Storage Management

FMS integrates with E-Rack via ModBus TCP, enabling storage management and retrieval scheduling, optimizing material transport.

4 Charging Management & Scheduling

FMS manages AMR charging schedules, ensuring sufficient power levels, allowing for extended for operational uptime.

All-in-One Monitoring

Daily Operation Management

Smart Integration

Precise Scheduling

User-Friendly

Real-Time Factory Operation Digital Boardroom

Dashboard   Mission Queue

Fleet Efficiency Analysis

Reports & Logs

Equipment Status Management

Equipment Management

- Optimized path and traffic control
- Intuitive visualization of all device statuses

- Remote troubleshooting for multiple AMRs
- Real-time backup of FMS host data
- Data transfer completed within 5 minutes in case of failure

Solution Cases

Explore our innovative automation solutions, tailored for diverse industries to enhance efficiency and precision.

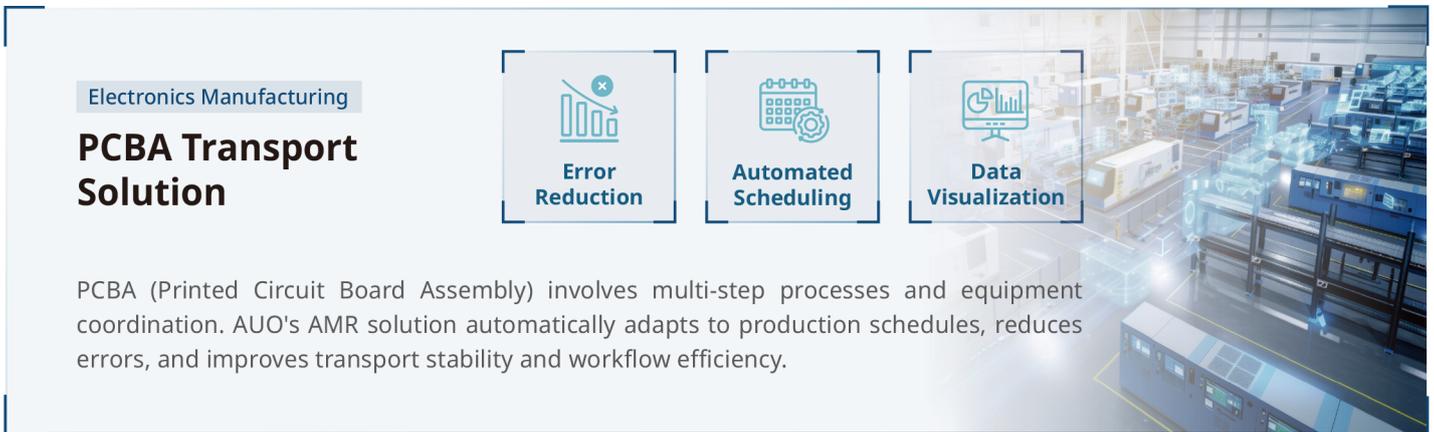Semiconductor Manufacturing

Wafer Transport Solution

Precision Handling

Optimized Pathing

Human-Robot Safety

Wafer transport requires high precision and stability. AUO's AMR smart transport solution seamlessly integrates with equipment, using intelligent scheduling and optimized path planning to ensure safe transport in clean environments. This enhances yield rates and production efficiency in semiconductor manufacturing.

Electronics Manufacturing

PCBA Transport Solution

Error Reduction

Automated Scheduling

Data Visualization

PCBA (Printed Circuit Board Assembly) involves multi-step processes and equipment coordination. AUO's AMR solution automatically adapts to production schedules, reduces errors, and improves transport stability and workflow efficiency.

Panel Manufacturing

Panel Transport Solution

Dust-Free Quality

Shockproof Transport

Smart Navigation

Display panel transport demands shockproof, dustproof, and highly precise handling. AUO's AMR solution provides stable, reliable, and clean transport, ensuring contact-free delivery while reducing damage and defects.

Smart Factory

Automated Inspection Solution

Efficiency Optimization

Real-Time Monitoring

Flexible Expansion

Automated inspection is crucial for modern manufacturing. AUO's AMR inspection solution seamlessly integrates with quality control workflows, utilizing intelligent transport and real-time data synchronization to create a more efficient, precise, and fully automated inspection process.
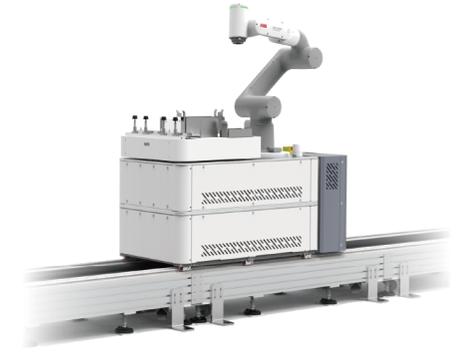
	AMR 150M	AMR 250M	AMR 500M_w Fork Module	RGV
Technical Specification				
Dimension (mm)	L1032 x W 602 x H 372	L 1111 x W 714 x H 441	L 1770 x W 800 x H 1805	Cart: L 1286 x W 586 x H 552 Rail unit: L 1500 x W 550 x H 300
Position Accuracy	Accuracy +/- 10mm, +/- 1˚ (with landmark)	Accuracy +/- 10mm, +/- 1˚ (with landmark)	Accuracy +/- 10mm, +/- 1˚ (with landmark)	Repeatability +/- 0.05mm Straightness +/- 0.1mm/1000mm
Payload (kg)	150	250	500	250
Maximum Speed (m/s)	1	1	1	1.2
Charging Time (h)	1	1	1	-
Driving Mode	Omni-directional Drive	Omni-directional Drive	Omni-directional Drive	Rack and Pinion
Navigation	SLAM / QR code	SLAM	SLAM	Servo Positioning
Environment				
Ambient Temperature Range	15~45 ℃	15~45 ℃	15~45 ℃	15~45 ℃
Humidity	45~70%	45~70%	45~70%	45~70%
Floor Conditions	No water, no oil, no dirt	No water, no oil, no dirt	No water, no oil, no dirt	No water, no oil, no dirt
Sensors	Safety laser scanners and quad 3D cameras	Safety laser scanners and quad 3D cameras	Safety laser scanners and quad 3D cameras	Optical Sensor (+/- limit Home)
	Around hardware bumper	Around hardware bumper	Around hardware bumper	
Power				
Battery Type	LiFePO4 (LFP) battery, 48V, 51Ah	LiFePO4 (LFP) battery, 48V, 51Ah	LiFePO4 (LFP) battery, 48V, 50Ah	Power supply type: CPS (Contactless Power Supply)
Charging Current	Up to 50Ah	Up to 50Ah	Up to 100Ah	
Compliance	• SEMI S8 • SEMI S17	• CE: EN ISO 3691-4 / IEC 60204-1 • CE: EN 1175 • CE: EN IEC 61000-6-2:2019 • CE: EN IEC 61000-6-4:2019 • SEMI S2: SEMIS22 / IEC 60204-33 • SEMI S8 / ISO 13849-1	-	-

	AMR Charger	**500M Charger**	**AMR Slim Charger**	**E-Rack**
Technical Specification				
Dimension (mm)	L 362 x W 600 x H 640	L 362 x W 600 x H 1310	L 102 x W 510 x H 410	Customizable
Weight (kg)	60	70	Main Unit: 67 Detachable Module (1 pc): 6.5	200
Compatible AMR	AMR 250M	AMR 500M	AMR 150M	-
Power				
Output Range	54V ~ 57.6V	54V ~ 57.6V	54V ~ 57.6V	-
Output EC	55A at 110V / 110A at 220V	55A at 110V / 110A at 220V	55A at 110V / 110A at 220V	-
Input	100V ~ 240V, 40A, 50~60 Hz	100V ~ 240V, 40A, 50~60 Hz	100V ~ 240V, 40A, 50~60 Hz	100V ~ 240V, 5A, 50~60 Hz
Environment				
Ambient Temperature Range	+5~40 ℃	+5~40℃	+5~40 ℃	+5~40 ℃
Humidity	<50% RH (IEC 60204-1)	<50% RH (IEC 60204-1)	<50% RH (IEC 60204-1)	<50% RH (IEC 60204-1)
Features	Equipped electric cylinder, extends docking range	Equipped electric cylinder, extends docking range	Minimal space usage, charges two AMR150M simultaneously	Customizable storage compartments, capable of recognizing 2D or 3D QR codes.
Compliance	• CE: EN ISO 3691-4 / IEC 60204-1 • ISO 13849-1	–	• CE: EN ISO 3691-4 / IEC 60204-1 • ISO 13849-1	–

AUO Website

Digital Brochure