

# Polar Semiconductor ensures smooth material flow with autonomous mobile robots

Chip manufacturer streamlines transporting materials to enhance workforce efficiency

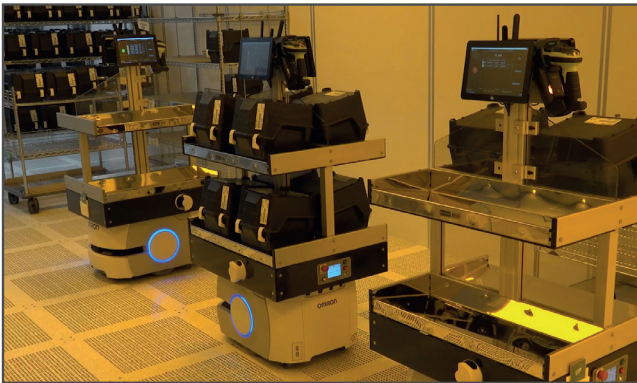
***Polar Semiconductor, a renowned manufacturer of semiconductor chips for the automotive and white goods industries, based at the heart of the US automotive industry, recognized the need to optimize their production processes. With the goal of reducing transportation distances within their facility and enhancing workforce efficiency to accommodate their expansion needs, Polar turned to OMRON's robotics technology for a flexible and cost-effective solution.***

Polar added OMRON's LD 60/90 Mobile Robots to expand their workforce. Finding skilled workers is an industry problem at the moment, and the solution enables Polar employees to utilize their skills and keep the tools running, and not worry about the transport of the product. The LD 60/90 is a self-navigating Autonomous Mobile Robot (AMR) designed for dynamically moving material in challenging environments. It is capable of maneuvering through confined passageways and dynamic areas in the presence of humans.

Before starting the project, Polar mapped out their current processes, to see how long how long the materials were travelling within the factory. This was over 40 miles throughout the life cycle of the product! Polar carried out detailed simulation and mapping exercises in collaboration with OMRON. They analyzed the entire facility and evaluated the speed at which products could be transported throughout the production line. The results provided valuable insights into the feasibility and benefits of integrating OMRON's robotics solution, thereby justifying the investment.

Despite initial concerns regarding operator acceptance of the robotics technology, Polar's operators quickly realized the advantages it brought to their work. The robots simplified their tasks, allowing them to focus on critical activities such as keeping the equipment running, while the robots ensure uninterrupted and timely material flow.





The implementation of the solution involved deploying a fleet of seven robots that efficiently transported materials from the main work-in-progress (WIP) storage area to various points within fabrication. OMRON's robots autonomously handle the transportation of materials over long distances, significantly reducing the need for manual intervention and improving overall efficiency in Polar's manufacturing process.

Throughout the setup phase, OMRON played a pivotal role in supporting Polar. OMRON's team of engineers provided quick assistance whenever challenges arose. The availability and expertise of OMRON ensured the successful implementation and continuous improvement of the project.

Darren Desmarais, Industrial Engineer at Polar, highlights the transformative impact of OMRON's robotics solution, stating, „Having these robots available to move work-in-progress (WIP) quicker, easier, without relying on operators to move from the equipment they're working on. The biggest advantage I've seen is that we've been able to have the robots maneuver more like a person does.“

The initial reluctance from operators and engineers to embrace the robots has evolved into high acceptance and appreciation. The seamless integration of OMRON's robotics solution has resulted in operators relishing their interactions with the robots and appreciating the timely delivery of lots to their respective tools. By eliminating the need for thousands of miles of walking within the facility each year, valuable time is saved for the operators, enhancing productivity and efficiency.

Thanks to OMRON's mobile robotics solution, Polar has successfully achieved its objectives of enhancing productivity, optimizing workflows, and creating a more streamlined and efficient semiconductor manufacturing process.

#### About Polar Semiconductor

With over 60 years of integrated circuit and power semiconductor experience, Polar is a 100% U.S.-based manufacturer of analog and power semiconductor devices and sensors. As a highly specialized pure-play foundry capable of complex, custom orders, they offer flexibility and tailored support to produce the next wave of industry-disrupting technology.

Website: <https://polarsemi.com/>

#### About OMRON Corporation

OMRON Corporation is a global leader in the field of automation, based on its core technology of "Sensing & Control + Think." OMRON's business fields cover a broad spectrum, ranging from industrial automation and electronic components to social infrastructure systems, healthcare and environmental solutions. Established in 1933, OMRON has about 29,000 employees worldwide, providing products and services in some 120 countries and regions. In the field of industrial automation, OMRON supports manufacturing innovation by providing advanced automation technologies and products, as well as extensive customer support, to help to create a better society. For more information, visit OMRON's website at [industrial.omron.eu](http://industrial.omron.eu).