

# MAKING LOGISTICS & eCOMMERCE WORK

Automate with confidence, expedience, and intelligence



# AN INDUSTRY IN TRANSITION

**The adoption of automation in logistics and supply chains was always expected to grow. No one could have ever predicted that widespread adoption of automation would occur as quickly as it has. Seemingly overnight, the pressure to accommodate massive eCommerce growth increased tenfold and created a serious profitability problem for grocers and retailers.**

Ongoing labor shortages, rising labor costs and the “Great Resignation” are adding to the “Automate Now” imperative. Finding, training, and keeping workers is tough when everyone is competing for a dwindling labor pool of hourly wage workers.

Retailers, grocers and 3PLs (third-party logistics) providers have no choice but to automate if they want to remain relevant in an era of same-day, single-item shipping and on-demand direct-to-consumer delivery. Consumers won't hesitate to switch brands if they don't get the speed, availability and flexibility they want. They want what they want, when they want it, in the channel that is most convenient at that moment in time.

It's now an omnichannel world. And retailers are in a race to increase storage density, order picking capacity, and operational efficiency.

70% of U.S. households (93 million) received one or more eGrocery orders in 2021.

— BRICK MEETS CLICK



# WE CAN HELP

Digital technology is fueling a fourth industrial revolution. Industry 4.0 is ushering in new levels of automation. According to McKinsey & Company, organizations that embrace Industry 4.0 technologies improve labor productivity and throughput by up to 30% while reducing downtime by as much as 50%.

Mitsubishi Electric Automation designs and manufactures every core automation technology: controllers, visualization systems, drives, motion systems, robotics and software.

These game-changing technologies make automation work in modern supply chains. They also help retailers, grocers and 3PLs keep operations running during disruptions and are critical to crisis response.



No one sells more PLCs than we do.

Our motion systems are reliably rock-solid.

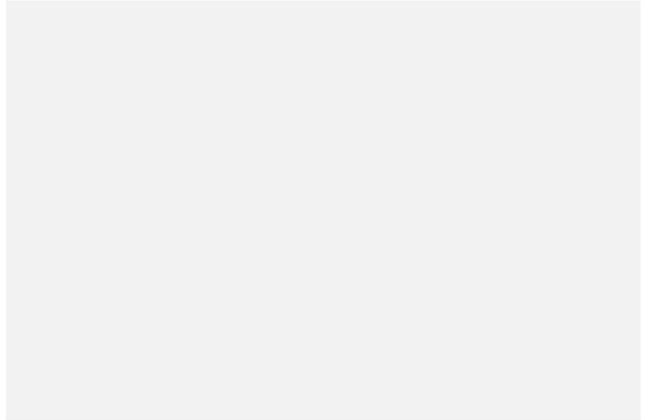
Our VFD quality is tops in the industry.

Our ICONICS SCADA software delivers near-instant visibility into automation systems.

56% of surveyed retailers expect shortfalls in warehouse jobs.

— THE GREAT RETAIL RESET, DELOITTE





54%

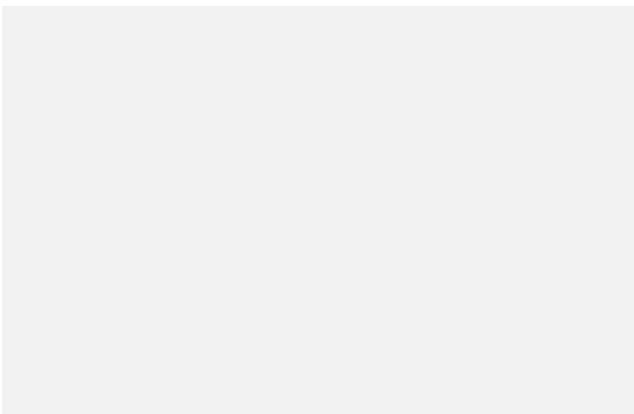
of surveyed consumers say they're likely to look at a product online and buy in-store and 53% are likely to look at a product in-store and buy online.

— YOUR ROADMAP TO THE FUTURE OF COMMERCE, SHOPIFY



By 2026,  $\frac{3}{4}$  of large enterprises will adopt smart intralogistics robots.

— GARTNER



# WHAT'S INSIDE MATTERS

Logistics is becoming a high-tech, highly automated industry...fast. Everything from picking to palletizing is being automated. The components driving and controlling advanced automation systems matter.

Today, Mitsubishi Electric Automation technologies can be found in:

## INTEGRATED CONVEYOR SYSTEMS

Keep pace with rapidly escalating distribution and fulfillment requirements with conveyors that integrate sensors, IoT, vision systems, robotics and other types of automation. With our automation technology, these integrated systems can be implemented faster and with fewer issues.

## SORTATION SYSTEMS

Each picking and same or next-day, single-item deliveries have forced retailers, grocers and 3PLs to rethink sorting to reduce labor requirements and costs while reducing damage and freight rates. Sortation systems built with our automation technology enable faster and more accurate onsite omnichannel sortation.

## AUTOMATED STORAGE AND RETRIEVAL SYSTEMS

Store more in less space. Replenish stores and fulfill online orders with fewer touches. Increase operational efficiency in omnichannel, eCommerce, and micro fulfillment centers. When ASRS systems are built with our automation technology, you can attain maximum performance with minimal downtime.

## PALLETIZERS & STACKERS

Getting the right pallet mix while mitigating load shifts without compromising height or speed can be a bit of a balancing act. Palletizers and stackers built with our automation technology are smaller, safer, faster and smarter.

## CRANES

Cranes come in all shapes and sizes. When your crane is built with our automation technology, count on smooth operation and easy customization as well as accuracy and safety.

## ROBOTIC PICK AND PLACE

Operate robotic systems with ease. Integration of robotic control with PLCs allows for more precise and accurate control of sorting, picking, and placing all on a single interface. With our automation technology, timing and accuracy is improved as controller-to-robot cycle times and communication speeds decrease.

***Automate with confidence, expedience, and intelligence.***



AUTOMATE WITH CONFIDENCE

# SAY “NO” TO THE STATUS QUO

If you're planning on automating a single task or an entire process, before you specify core automation components for the automation system, make sure to ask these questions:

## ARE YOU TIRED OF...

- **Ripping and replacing automation equipment** every time a new generation of controllers, drives or motors are introduced,
- **Waiting for new product releases** to be “market ready”,
- **Or feeling like you're second rate** when parts or maintenance are needed?

Mitsubishi Electric Automation is an intelligent alternative. In the midst of the fourth industrial revolution and an increasingly disruption-prone world, we're helping retailers, grocers and 3PLs of every size navigate the challenges of modern supply chains and maximize the opportunities of digital transformation.

Our goal is to drive maximum growth for our customers and create raving fans that can't imagine working with anyone else.

10X lower VFD repair rate than the industry leader.



# QUALITY. PERFORMANCE. COMPATIBILITY.

Highly-automated logistics environments represent a big investment. PLCs, VFDs, servos and software are the technologies that drive automation systems. To realize the best return on your investment, make sure your automation systems are built with Mitsubishi Electric technology.

Simply put, our quality, performance and compatibility can't be beat. We don't have to tell our customers how good our products are. They tell us. Our products have fewer out-of-the-box failures. One example? Our VFD failure rates are less than 100 ppm, which equates to 0.0001%.

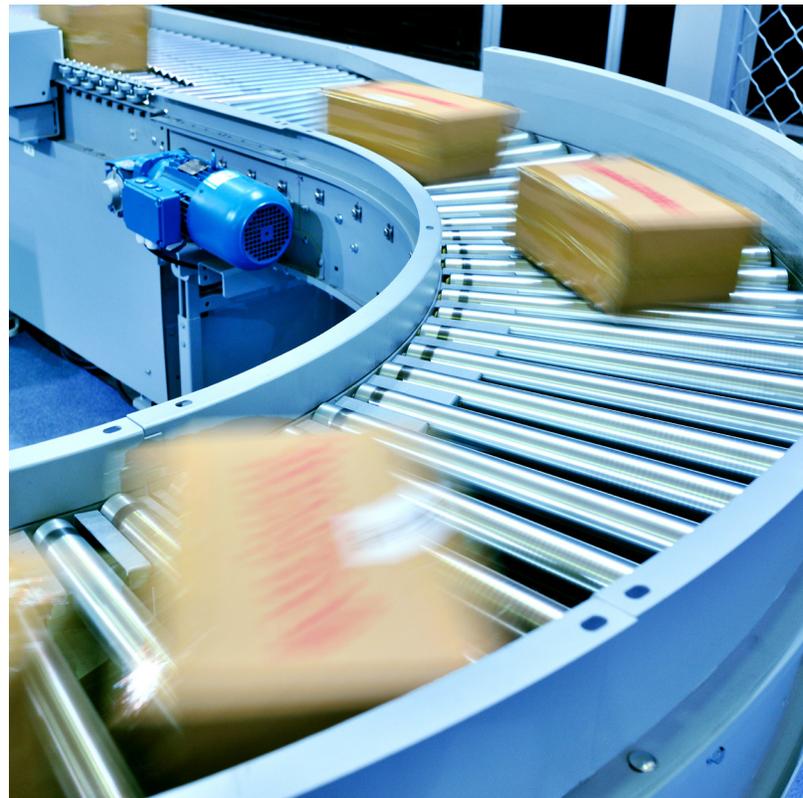
Mitsubishi Electric performance is backed by a century of innovation. We are always looking for a better way. A smarter solution. The next level of fulfillment for logistics and eCommerce. So you can achieve the throughput you need to lead.

With unparalleled backwards compatibility, you won't have to rip everything out when adding new functionality to legacy systems. We don't leave our customers behind when it's time for an upgrade. Our engineers ensure products are evolutionary and revolutionary.

For us, quality, performance, and compatibility is not just a tagline. It's a provable promise.

***We dare you to compare our quality, performance and compatibility with the market leader's.***

Count on it.  
New technology is  
market-ready when  
introduced.



## AUTOMATE WITH EXPEDIENCE

### ESCAPE PILOT PURGATORY

We've all seen them. The robot graveyards. Prototypes that never made it to the warehouse. Pilot projects focused on leveraging internet of things (IoT) technology moving at a snail's pace or stalled indefinitely.

Pilot purgatory is one of the biggest concerns when it comes to automating distribution and fulfillment — especially when IoT is involved. Digital transformation is an unstoppable force. Without it, you can't compete. For retailers, grocers and 3PLs, digitalization is no longer a nice-to-have. It's a need-to-have.

Mitsubishi Electric Automation can help you avoid pilot purgatory with a network of know-how that's hard to match.

### ACCELERATE TIME-TO-BENEFIT

The faster you move, the more you can benefit from automation. A holistic approach to logistics automation — one that extends intelligence throughout the organization — requires interoperable solutions that enable IoT and IT/OT convergence. We can help you accelerate time-to-benefits, because we bring three key layers of knowledge to automation projects.

**1** Our **Diamond Partners** bring industry-leading automation solutions to logistics. These trailblazers include distributors, system integrators, OEMs, and robot experts.

**2** Our **strategic partners** work with us to solve the big industry challenges. This collaboration brings better and smarter automation solutions to market faster.

**3** With a wide array of **standard-engineered, pre-configured and configurable software and hardware components**, we're an important part of your automation solution.



**Our Diamond Partners** perform engineering feats and industry firsts on a regular basis.

**IoT** is essential for supply chain visibility, reliability and productivity.

**Digital transformation is hard.** No one company can do it alone.

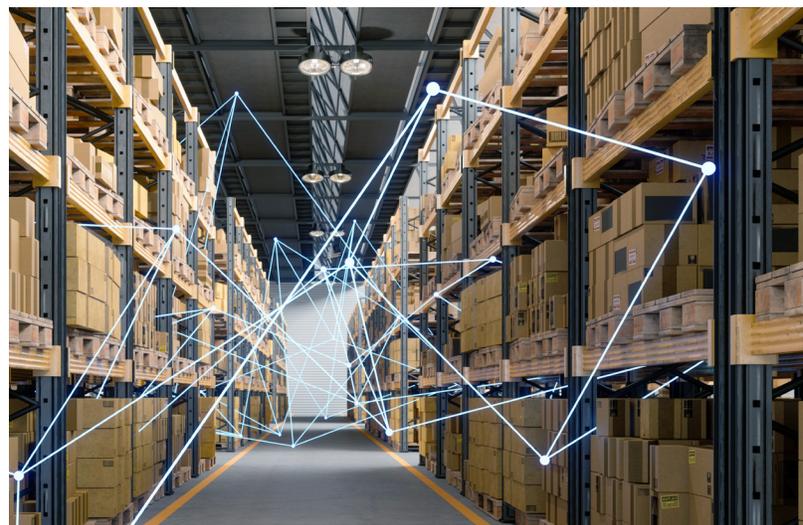
Working with our Diamond Partners and alliance partners, we create smart systems using advanced technologies such as IoT, analytics, artificial intelligence, machine learning, intelligent sensing and remote monitoring for logistics and eCommerce fulfillment applications.

Smart systems integrated end-to-end can collect and analyze data, providing visibility into machine performance, operator effectiveness, and operational accuracy and efficiency. This digital value chain delivers continuous improvements in productivity, safety, and energy efficiency.

When it comes to service and support of smart systems, our team has direct access to the engineers in Japan that design and manufacture our automation technology. This factory-direct connection means our support team's level of expertise is higher and their commitment stronger. So project outcomes are better.

***Develop better and smarter automation solutions faster with intelligent hardware, software and service solutions.***

Develop better and smarter automation solutions faster with intelligent hardware, software and service solutions.





AUTOMATE WITH INTELLIGENCE

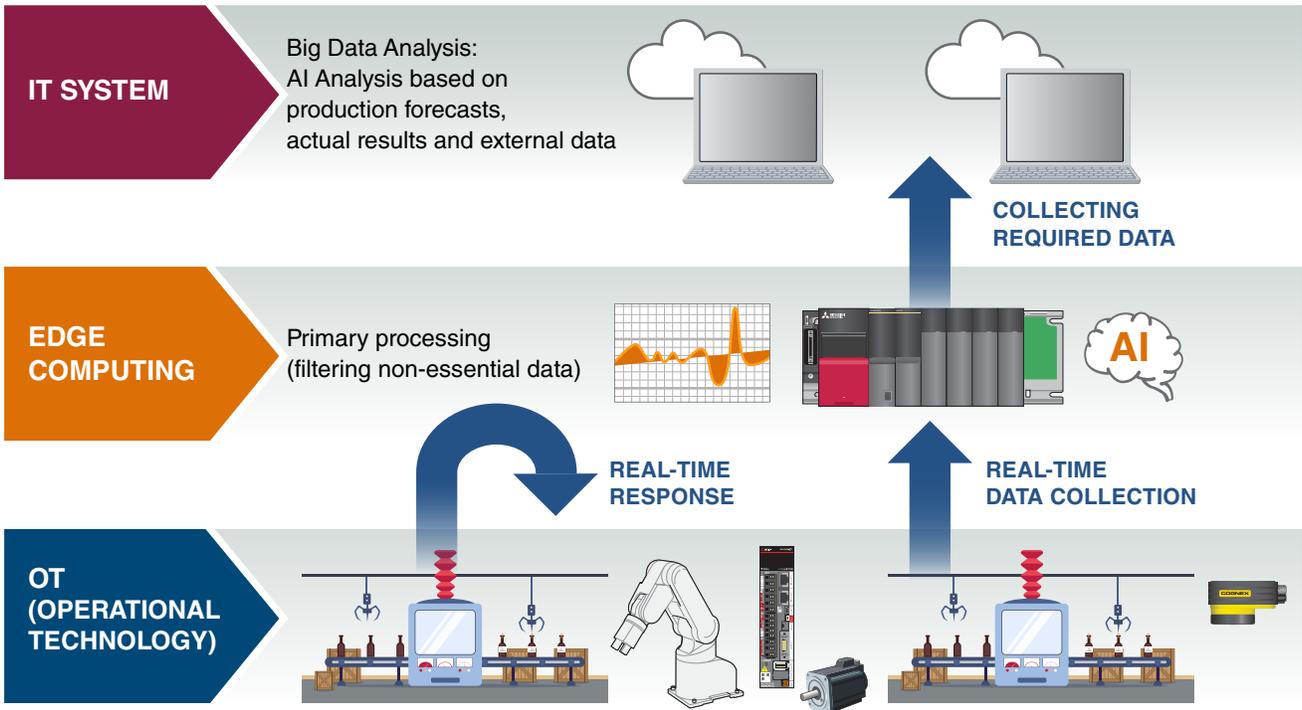
# REALIZE THE BENEFITS OF SMART LOGISTICS

In logistics, you're not just moving SKUs, you're moving data. Lots and lots of data. Control data. Motion data. Safety data. And more. Leveraging all this data requires powerful edge and cloud computing as well as seamless, top-to-bottom connectivity from the warehouse to the enterprise. All are essential for smart, data-driven logistics.

However, the promise of smart logistics can only be realized with an interoperable, high-bandwidth, and time-sensitive network; one that allows for deterministic data collection, communication, and analysis. Determinism or time-aware networking is essential because in logistics, there are certain applications that require motion control, which cannot tolerate even the smallest amount of latency. This data must be prioritized over other, less time-sensitive data streams.

CC-Link IE TSN is the first and only open industrial network that combines openness and gigabit bandwidth with time-sensitive networking. It makes a converged — top-to-bottom — logistics network possible because it was designed for automation.

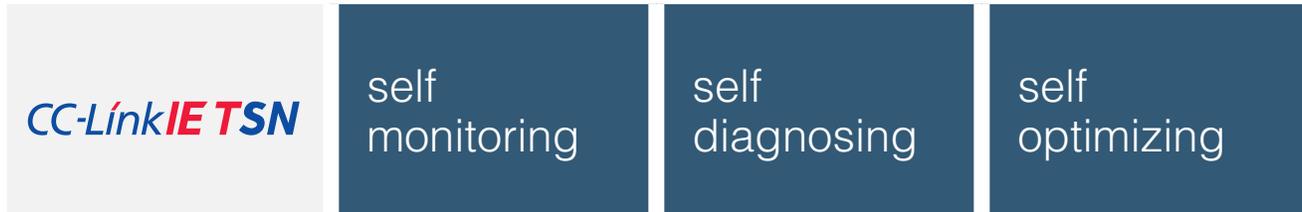
Take automation to the next level with Mitsubishi Electric Automation. There's no better company to work with.



# THE NETWORK MATTERS

Mitsubishi Electric is the first automation technology company to offer CC-Link IE TSN-compatible products, which now include:

- **Programmable Logic Controllers (PLCs)** with onboard analytics that track/sort in real-time
- **Servo motors** that have the unique ability to auto-tune and auto-compensate for vibration anomalies while providing alarms when maintenance is required
- **Robots** that are AI-enabled and can be remotely monitored through the cloud
- **Human Machine Interfaces (HMIs)** that display deep machine learning diagnostics and aggregated learnings from individual sensors and components
- **Variable Frequency Drives (VFDs)** with energy-saving, regenerative power capabilities and built-in diagnostics that minimize or eliminate unplanned downtime



Mitsubishi Electric offers a systemwide approach to communications that covers not just controls, but motion and safety as well. No additional cables, interfaces, or hardware are needed. The fewer the interfaces, the faster and more reliable the communications.

When all of our TSN-ready automation technology resides on one high-synchronized network that delivers gigabit performance down to the component level, smart logistics is more than just a vision. It can become your reality, because you can realize:

- **IT/OT convergence** for advanced data sharing between operational and informational technology systems
- **Real-time intelligence** through automated data collection, communication, and analysis
- **Easier deployment and maintenance** through auto-configuration and self-optimization of automation systems

# MAKING AUTOMATION WORK IN MODERN SUPPLY CHAINS

In an era where supply chains are now business-critical, Mitsubishi Electric is laser-focused on helping our customers automate and connect every aspect of their supply chain to increase flexibility, reliability, sustainability, and profitability.



## RAW MATERIALS

- Metals & Mining
- Oil & Gas



## SUPPLIER

- Bulk Material Handling
- Water Supply & Treatment



## MANUFACTURING

- Machine Tool Automotive
- Semiconductor
- Food & Beverage
- Consumer Packaged Goods (packaging)



## DISTRIBUTION

- Retail Logistics & eCommerce (Omnichannel Fulfillment)
- Retail Pure Play eCommerce (B2C)
- Grocery Logistics & eCommerce (Omnichannel Fulfillment)
- Third-party Logistics (3PLs)

## Americas Offices

<p>US Mitsubishi Electric Automation, Inc. 500 Corporate Woods Parkway Vernon Hills, Illinois 60061 847-478-2100</p>	<p>Canada Mitsubishi Electric Automation, Inc. 4299 14th Avenue Markham, Ontario L3R 0J2 905-754-3805</p>	<p>Mexico Blvd. Miguel de Cervantes Saavedra 301 Col. Ampliación Granada, Miguel Hidalgo CDMX, 11520, México</p>
--	---	--



**eFactory**



Mitsubishi Electric's e-F@ctory concept utilizes both FA and IT technologies, through collaboration with e-F@ctory Alliance Partners, to reduce the total cost of development, production, and maintenance, with the aim of achieving manufacturing that is a "step ahead of the times".