Q-CAN™ AGV Systems
Fast, Easy-to-Use
System Design PC Program

savant
automation
The Advantages of Q-CAN AGV Systems
How it Works and What Makes it Different

Q-CAN – short for Quick Configurable Automation, is the culmination of our customer collaboration on hundreds of AGV systems. It takes the complexity and expense out of AGV systems and makes them nearly as easy to implement as specing and buying a fork truck.

While most AGV systems are custom-engineered using vendor engineers to write site specific software for each installation, Q-CAN systems utilize a standard software program that permits quick, easy system design and configuration. It also allows users to re-configure their own AGV system* without writing special software code or additional vendor support. As a result, initial system cost is lower, and implementation is faster. As system requirements change, customers can modify their system layout quickly, without additional engineering charges. When the layout is complete, the program can graphically emulate system logic and performance, highlighting any layout or control areas that need to be changed.

Q-CAN AGV systems utilize "smart" AGVs that communicate with each other or an optional Vehicle Manager PC (a module of AGVDIRECTOR*). On-board controls allow each vehicle to perform their own traffic control, routing, remote dispatching and station functions without the need for a costly RF Base Station or overhead antenna system. Q-CAN vehicles use an inertial navigation system that does not require floor wires or laser targets. Magnetic markers are imbedded in the floor at key locations to guide the vehicles through the system layout. Markers can be easily added to accommodate system change or expansion.

The Origins of Q-CAN Technology
Over the years, customers have requested certain features and special functionality that would make their AGV Systems less expensive, easier to plan and layout, faster to implement and simpler to operate. Specifically, our customers have asked for:

- Reduced complexity
- Fast, easy implementation, with minimal impact on current operations
- A system that is more user-friendly and easier to operate
- Less maintenance
- A system with low risk, that is easy to justify
- The ability to modify their system without additional vendor involvement or software knowledge

*with the optional purchase of the Q-CAN Designer PC Program
Typical Q-CAN Systems

AGV Fork Vehicles — Manufacturing System

Vehicles: 3 AGV fork trucks
System Function: Transport finished goods from production lines to buffer storage/stretchwrapping equipment
System Size: 1,900 feet, 17 stations
Payback: 24 months
Special Features: • AGVs automatically recharge their batteries when idle
• Pick and drop stations are at various elevations

AGV Tow Train — Warehouse System

Vehicles: 6 AGV tow vehicles
System Function: Transport finished goods to and from warehouse
System Size: 10,000 feet in length, 22 stations
Payback: 18 months
Special Features: • Can move up to 12 unit loads per tow vehicle

AGV Unit Load Carrier — Distribution System

Vehicles: 4 AGV unit load carriers
System Function: Transport product between buffer area, production and shipping
System Size: 1,200 feet in length, 12 stations
Payback: 24 months
Special Features: • System controls are interfaced with customer’s host computer for automatic AGV task assignment
• Bi-directional AGVs with lift/lower decks

Q-CAN Advantages

Feature: Quick System Configurability
Benefit: • Project costs are lower and system is up and running quicker

Feature: Application Configured Standard Program
Benefit: • Less costly than custom software, no de-bugging and users can change the system layout and operation without vendor support*

Feature: No Floor Wires or Above Floor Targets
Benefit: • Less costly, easier to change or expand and not subject to damage or line of sight blockage problems

Feature: No Central System Controller, RF Base Station or Antenna System
Benefit: • Simpler to operate, less maintenance, more uptime, lower cost and no potential for system shutdown due to central system hardware problem

Feature: No Custom Software
Benefit: • Lower cost, less complexity, more reliable, no “bugs”

Feature: Simple, but Versatile Control System
Benefit: • Easier to maintain, operate and modify, if needed

Feature: Distributed Operation Avoids Crippling System Failure
Benefit: • Each AGV is “smart” and operates independently of other AGVs to perform destination routing and coordinated traffic control

*with the optional purchase of the Q-CAN Designer PC Program
How the Q-CAN Program Works
A Step-by-Step Demo

The Q-CAN Designer program features a Windows® like graphical user interface (GUI), so it's easy to operate and is designed to run on a standard PC. The software is simple to run and easy to use. Follow this step-by-step demo to see how easy it is to design and layout a Q-CAN AGV system.

* Windows is a registered trademark of Microsoft, Inc.

Build a model of an AGV system for your facility and view its operation in subsequent steps.

Begin creating an AGV system path by importing a facility CAD drawing.

Enter "simulation" mode to test system design.

Set AGV parameters such as speed, traffic separation and individual vehicle destinations.

Planning the path layout of your AGV system is quick and easy with the new Q-CAN program. It's simple to use and designed to run on a standard PC, with a Pentium® III® or faster processor and a minimum of 64MB of RAM.

** Pentium is a trademark of Intel.
The Q-CAN program allows you to go from a computer generated system layout to an operational AGV system, as easy as 1–2–3.

1. Use the Q-CAN program to create a path layout and mark stations, intersections, actions, etc.
2. The program automatically converts the path layout and operation into AGV software, which is downloaded into the vehicles.
3. Install magnetic navigation markers in the floor and the system is operational.

Drawing navigation tools make it easy to zoom, pan, undo and change drawing parameters.

AGV wireless path toolbar and menus provide multiple ways to draw AGV paths and configure system operation on the facility layout.

Drag and drop symbols for station location, path branches, intersections and AGV action commands.

Observe AGV movement to verify proper path layout, traffic flow and routing operation. If simulated operation is not as desired, alter path or operational parameters as necessary.
Q-CAN Vehicles Matched to Your Application

“Smart” Vehicles Feature Onboard Navigation and Traffic Control Capabilities

We manufacture a complete line of smart AGVs designed to meet your system’s specific requirements and take advantage of the Q-CAN program’s unique capabilities. Key to the Q-CAN system’s simplicity and flexibility is the control architecture built into each Q-CAN vehicle. Once your system’s path layout and operation has been created on screen and the magnetic navigation markers placed in the floor, the system file is downloaded to each AGV vehicle in the system. Onboard AGV intelligence enables each vehicle to independently provide traffic control, routing, dispatching and station functions, without the need for a central base station or custom software. Vehicles “talk” to each other to control traffic at intersections and avoid collisions, as they move through the facility – all without a RF base station or overhead antenna system.

Q-CAN AGVs are available in tow, unit load and fork vehicle configurations. We offer four different tow vehicles, with a variety of wheel and drive configurations and a maximum towing capacity of up to 60,000 lbs. Our unit load carrier vehicles come in numerous standard models, with capacities ranging from 2,000 to 6,000 lbs. We also offer a modular fork vehicle, with capacities of 2,000 to 4,000 lbs. In addition to standard vehicles, we provide custom-designed and heavy transporter AGVs for specific applications. All vehicle types are available with Q-CAN technology. Detailed AGV specifications are available from your Siemens Dematic representative.

An onboard control panel enables operators to dispatch AGVs remotely, without a central control station. Vehicles can be programmed for a one time trip, or re-circulate on the route until re-directed.