

FORI AUTOMATION

Privately held, U.S. Owned
and Operated Since 1984

**FORI
AUTOMATION****Automated
Tunnel AGV**

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GLOBAL HEADQUARTERS

Automated Guided Vehicles

Tunnel AGV with 5,000 lbs. / 2,273 kg. Capacity

The Fori Tunnel AGV is a low profile, high capacity AGV capable of transporting up to 5,000 lbs. The vehicle design is centered on minimizing footprint of the vehicle in order to stay within the area of the transported cart. The transport cart is customizable and can be outfitted with integrated lifts and conveyors.

Fori's Tunnel AGV includes an automated pin assembly which secures to the cart and allows for bi-directional travel. The ability to provide the end user bi-directional travel and rotation on center point of the vehicle improves layout and process flexibility.

Tunnel AGV Specifications

ADAPTABLE

The cart transferred by the Tunnel AGV can be automated and powered. An example is a powered conveyor deck for pallet transfer.

- **Power supply:** 24 VDC Lead Acid or Lithium Ion
- **Wireless WLAN:** IEEE 802.11a/b/g
- **Guidance:** Fori Hall Effect Magnet Sensor & Inertial Guidance
- **Power-train:** Differential steer with (2) 24V AC servo motors
- **Drive Control:** Single channel DC brushless motor controller with incremental encoders
- **Charging method:** Automatic charging pad included and/or manual plug-in
- **System Control:** Safety PLC & Tethered HMI
- **Safety System:** Safety Scanner, pressure bumpers, status lights and alarm



The Tunnel AGV has been designed to accommodate cart loads up to 5,000 lbs. and travel at speeds up to 160 feet per minute. The chassis was designed to provide high capacity, while still minimizing the overall footprint.

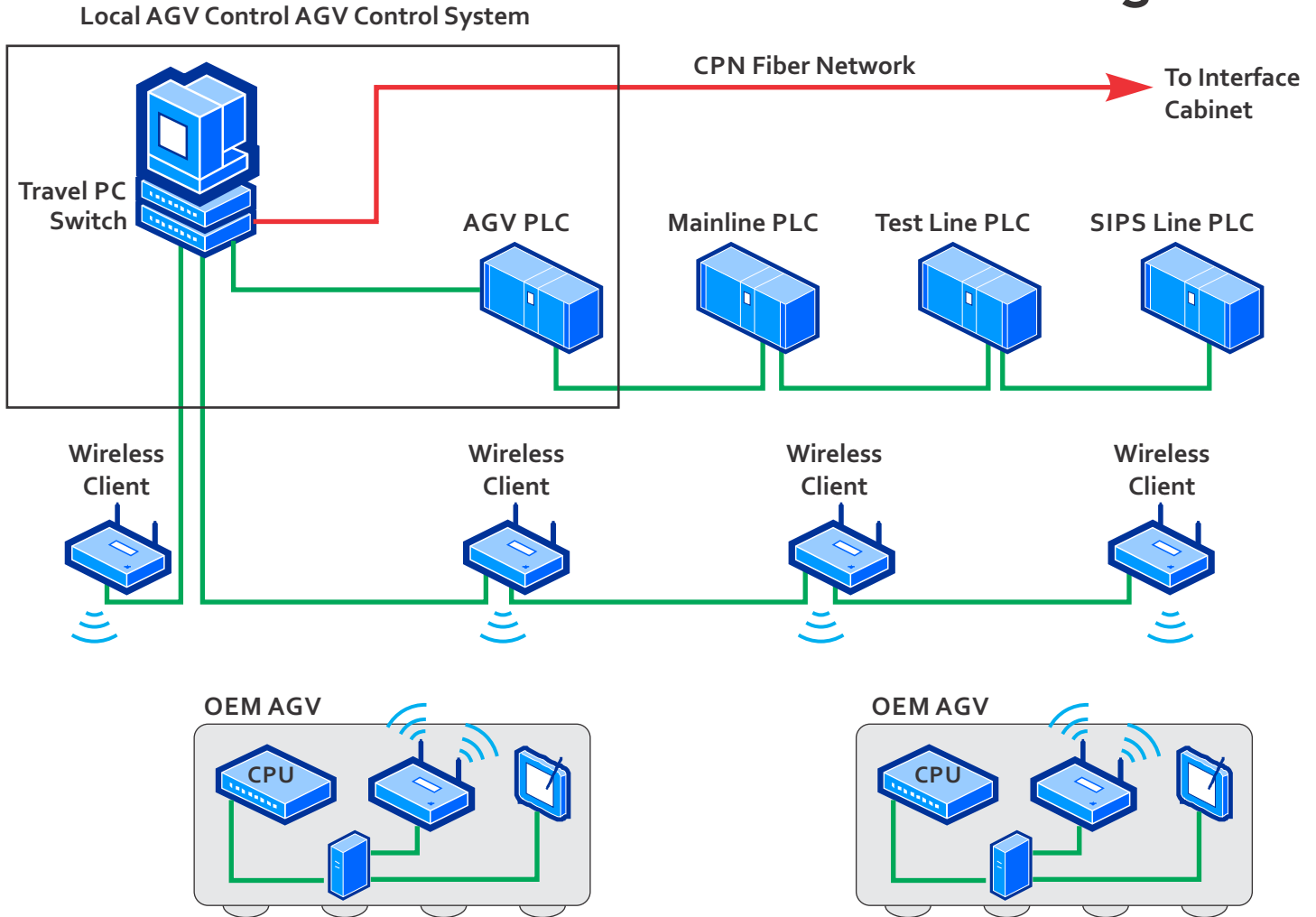
The control system is an open architecture, utilizing a Siemens PLC for vehicle control. The flexibility of the PLC based system enables the end user to add automation to the carts if needed. Examples include integrated lift tables, trunnions or conveyor decks.

The Tunnel AGV utilizes primarily off the shelf components. Utilization of these components reduces overall cost and lead time to the end user.

Lead acid batteries are used, specifically thin plate pure lead (TPPL). The TPPL batteries, partnered with smart charger technology provide a system that will optimize available charge time and improve overall battery life. The results are increased run time and reduction in reoccurring battery costs. The system can also accommodate Lithium batteries if the process requires the increased charge and discharge rates.

Each vehicle includes (2) drive wheels. The differential steer provided allows the vehicle to complete bi-directional travel and rotate on center. The flexibility provided improves vehicle routing and flow through the material handling and assembly process.

AGV Controls Configuration



Product:

- AGVs - Tunnel

Results:

- Increased safety
- Improved reliability
- Increased throughput

Controls:

- Vehicle management system
- Siemens open architecture
- Full-auto guidance

Keys to Success:

- Custom, low profile chassis
- Siemens open architecture that matched customer strategy

Safety:

- Safety scanners
- Safety bumpers
- Fail safe PLC

Guidance Technology:

- Magnetic bar
- Inertial with pencil magnets
- Capable of 0 degree turn



