



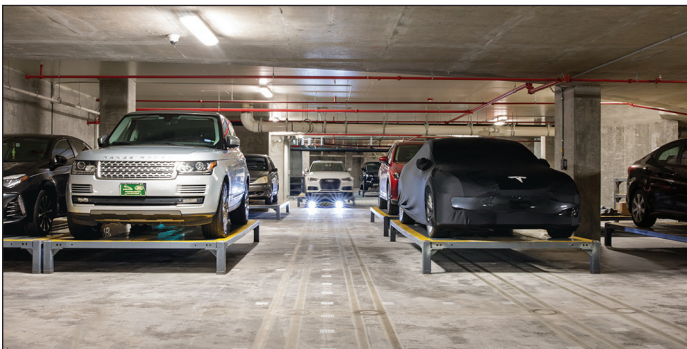
LUTZE Case Study

PARKPLUS Automated High-Density Parking Systems

LUTZE industrial automation cable assemblies and LOCC-Box circuit protection devices enable the control of Automated Guided Vehicles for PARKPLUS parking systems.

LUTZE Products Enable AGVs for PARKPLUS High-density Parking Systems

Rugged servo motor cable assemblies from LUTZE are used to provide motor control to direct the movement of PARKPLUS Automated Guided Vehicles (AGVs) in their Automated Parking Systems. In addition, LUTZE LOCC-Box electronic circuit protection devices are used to provide reliable and accurate control circuit protection and eliminate nuisance tripping with remote functionality.



PROBLEM:

Sourcing Reliable Servo Motor & Encoder Feedback Cable Assemblies

PARKPLUS needed flexible cable assemblies that are reliable enough to withstand the rigors of frequent movement and flexing in the Automated Guided Vehicles (AGVs) used to transport cars in their High-Density Automated Parking Systems. Servo motor cable assemblies were needed for the servo controller to direct the movement of the AGV – forward, reverse, sideways or at any angle. Encoder feedback cable assemblies were also required for the motor encoders to provide accurate closed loop feedback to the main control system for movements requiring high precision and accuracy. PARKPLUS initially made these assemblies in-house, but they soon realized they needed greater reliability and turned to specialized manufacturers to meet this need.

“With LUTZE, we know we’re getting quality assemblies that have been tested to meet the required specifications and standards.”

Lyle Smith
Director of Automation
PARKPLUS

SOLUTION:

LUTZE SUPERFLEX® Plus Servo Motor and Encoder Feedback Cable Assemblies

PARKPLUS chose to use LUTZE cable assemblies to meet these requirements.

LUTZE SUPERFLEX®
connected

LUTZE SUPERFLEX® Plus servo motor cable assemblies and LUTZE SUPERFLEX® Plus encoder feedback assemblies were a perfect fit for PARKPLUS.

The rugged cable jackets on these assemblies are abrasion resistant, flame retardant and are resistant to petroleum products, lubricants and solvents. They are also resistant to UV and ozone, weather, salt water, rot, microbes and hydrolysis. These features make LUTZE cable assemblies ideally suited for the rough operating conditions of PARKPLUS AGVs.

LUTZE provides quality products, which is key for continuous operation of PARKPLUS AGVs. The assemblies are tested to meet or exceed performance specifications and applicable industry standards.

PROBLEM:

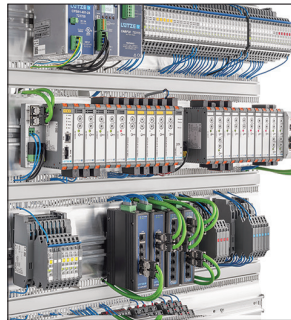
Circuit Protection and Trip Replacement Needs

PARKPLUS arranged 16 circuit protection devices on power distribution blocks inside each AGV. With space at a minimum, they wanted a small form circuit protection device. PARKPLUS also sought a circuit protection device that would give them some flexibility with adjustable current ranges and trip curves, along with avoiding downtime.

SOLUTION:

LUTZE LOCC-Box Control Circuit Protection

PARKPLUS chose the LOCC-Box circuit protection device from LUTZE to conduct R&D and testing for their latest 5th generation AGV design. The LOCC-Box surpassed expectations and is now the standard on all PARKPLUS AGVs.



LOCC-Box provides an adjustable current range (1 to 10 Amps), which is an important feature for PARKPLUS. Thanks to this benefit, PARKPLUS does not have to carry inventory for various types of circuit breakers to cover the range of potential current needs. LOCC-Box reduced the part inventory required by 80%.

PARKPLUS has incorporated an additional LOCC-Box accessory into their AGV application. The LOCC-Box power distribution input terminal set, combined with a copper bus bar, allows them to power a set of sixteen LOCC-Boxes with a single wire termination. This solution has both simplified and decreased AGV manufacturing time.

Each LOCC-Box includes a trip output that is connected to a PARKPLUS PLC. The PLC inside the AGV receives the trip signal and sends a notification over Wi-Fi to the PARKPLUS Maestro control software. This software then notifies the technicians of the tripped control circuit. The technician can simply reset the device remotely via the PLC.

Another benefit PARKPLUS realized with the LOCC-Box device is its lack of temperature dependency, thanks to solid state technology. Traditional mechanical circuit breakers are prone to nuisance tripping when operating under certain temperatures. The performance of the LOCC-Box is independent of ambient temperature, unlike circuit breakers.



“The LOCC-Box from LUTZE gave us more flexibility, reduced our inventory costs, and provided an automated trip notification feature. This trip alarm alone is a huge benefit, but the LOCC-Box can also be reset remotely! No one needs to open up the AGV to reset the device. There is no other product on the market today that can do all of this!”

*Lyle Smith
Director of Automation
PARKPLUS*

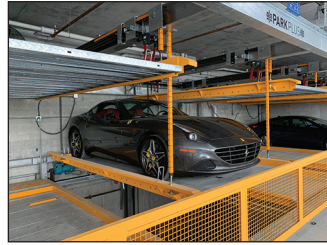
About PARKPLUS



**MECHANICAL STACKER
CAR LIFTS**



AUTOMATED PARKING SYSTEMS



**SEMI-AUTOMATED
PARKING SYSTEMS**



VEHICLE DISPLAY UNITS

PARKPLUS is a 52-year-old family-owned business and the industry leader in high-density parking systems, including automated parking systems using AGVs. PARKPLUS systems are all made in the USA, manufactured at the company's New Jersey facilities. The company has been designing and manufacturing AGVs since 2008 and is currently selling its 5th generation AGV. The company designs and manufactures its own systems and installs them nationwide.

Visit the [PARKPLUS Website](#).

See Videos of the PARKPLUS AGVs in action at:

- > [Paramount Condominiums, Ft. Lauderdale, FL](#)
- > [13th Street, Manhattan, NY](#)
- > [Havona House, London](#)

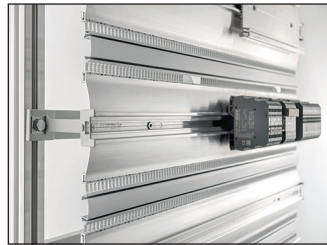
About LUTZE Inc.



CABLE



CONNECTIVITY



CABINET



CONTROL

As an experienced specialist in automation technology, LUTZE designs and manufactures control products for industrial automation. The company specializes in flexible industrial control, power and network cables such as LUTZE SILFLEX®, LUTZE SUPERFLEX®, MOTIONFLEX® and DRIVEFLEX® VFD cables. LUTZE also offers grounding and wire management products such as CABLEFIX® cable entry systems, compact power supplies, LOCC-Box intelligent DC circuit protection devices, AirSTREAM wiring systems for control cabinets, and LCIS relays for industrial applications.

LUTZE partners with experienced Manufacturers' Representative organizations and brings its products to market through a network of authorized distribution partners. Larry Flach with LUTZE's

manufacturers' representative organization GSA was instrumental in introducing LUTZE products to PARKPLUS and facilitating the business relationship. GSA serves OEMs and end users from Maine to Virginia. Visit the [GSA Website](#) for more information.

LUTZE Inc., located in Charlotte, NC, is part of the LUTZE INTERNATIONAL Group. Founded in 1958, LUTZE INTERNATIONAL Group has manufacturing and distribution operations in Germany, Austria, France, Switzerland, Spain, Great Britain, the Czech Republic, China and the USA. LUTZE solutions mean improvement and innovation.

Visit the [LUTZE Website](#).