User manual
Assisted Docking
xxxx

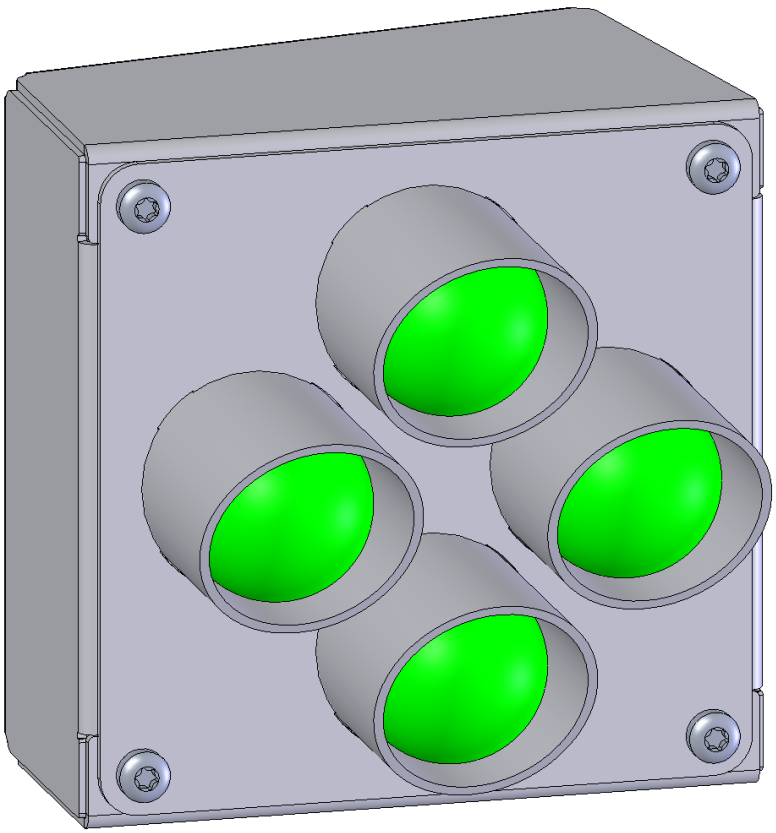


Table of Contents

Introduction

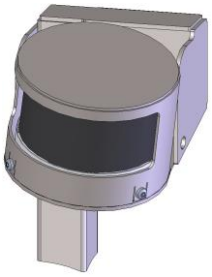
Product Overview

This section provides an overview of the various components that comprise the Assisted Docking system.

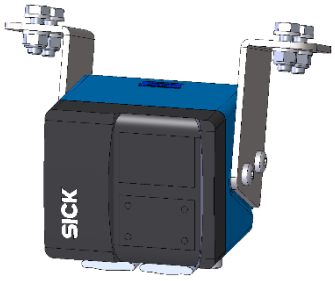
System Components:

1.LIDAR Sensors

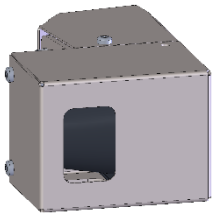
These sensors are essential for detecting obstacles and mapping the surrounding environment. They use laser technology to provide a detailed, three-dimensional view of the road ahead and the fuselage of the aircraft.



Main range sensor



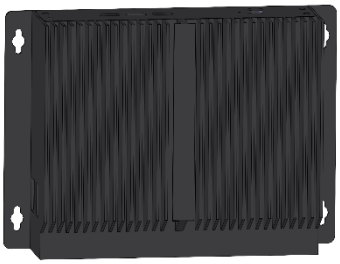
Docking sensor



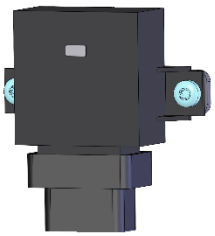
Overhead protection sensor

2.Control Units

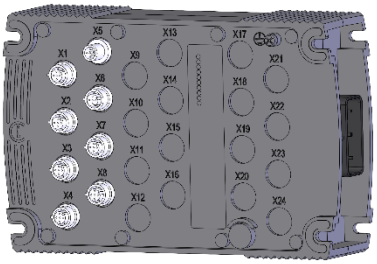
The system includes several control units that manage different aspects of the vehicle's operation. These units process data from the sensors and make real-time decisions to ensure safe and efficient driving.



Computer



I/O Module

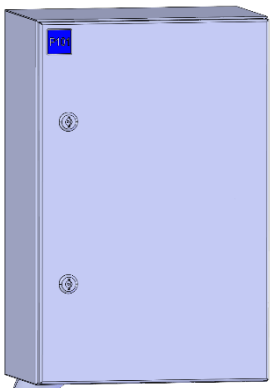


PLC

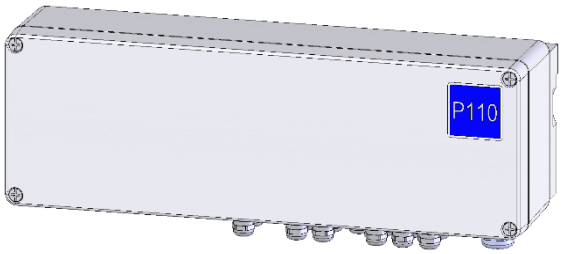
Product Overview

3.Cabinets

The system includes secure cabinets that house the various electronic and control units. These cabinets are designed to protect the components from external elements and ensure optimal functionality. The cabinets for Assisted Docking are in the 100 range (e.g. 101, 110 and 112 are all Assisted Docking related cabinets).



Main Cabinet P101

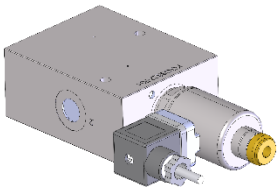


I/O Connection Box
P110

4.Hydraulic Components

To control the vehicle's speed and braking, the system uses advanced hydraulic components. These parts work seamlessly with the electronic controls to provide smooth and precise management of acceleration and deceleration.

Charge Valve &
Accumulator



Proportional
Valve

Brake Cylinder

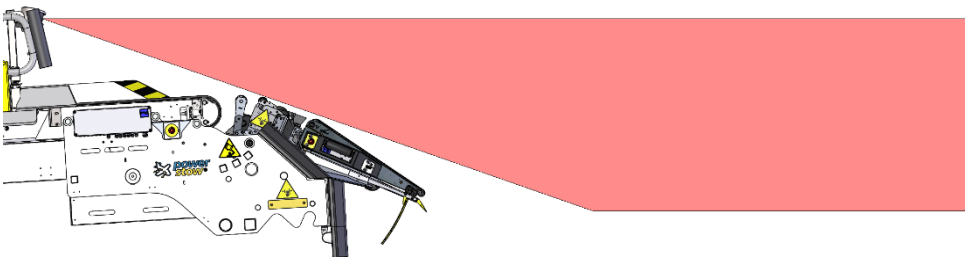
By integrating these advanced technologies, the Assisted Docking system ensures a safe, reliable, and efficient operation. The following sections will guide you through the setup, usage, and maintenance of the system.

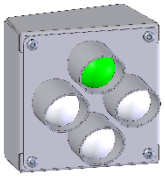
Key Features

The Assisted Docking system is equipped with a range of advanced features designed to enhance safety, efficiency, and reliability. Below are the key features of the system:

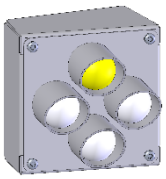
Autonomous Emergency Brake (AEB)

The AEB system is active during taxiing from the parking spot to the aircraft apron. It monitors for obstacles that come too close at high speeds. A green lamp indicates that the AEB is active. If the lamp turns yellow, the system is reducing the vehicle's speed. If the lamp turns red, the brakes are engaged, bringing the vehicle to a complete stop. The vehicle can resume movement once the obstacle is cleared or if the vehicle is put in reverse.

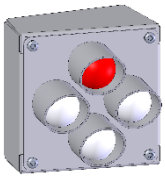




AEB is Active



Velocity is reduced



Full stop – obstacle too close

Introduction

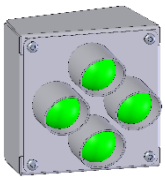
Key Features

Guidance System

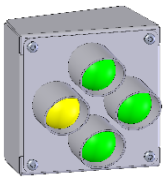
The Guidance subsystem is activated when the vehicle approaches an aircraft with the belt-boom raised. This system assists in precise docking to the aircraft. It uses four indicator lamps (upper, lower, left, and right), each of which can illuminate green, yellow, or red:

- **Green:** Path is clear.
- **Yellow:** An obstacle is detected in the corresponding direction.
- **Red:** The vehicle must stop due to an obstacle in the path.

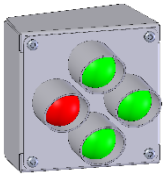
Once the vehicle reaches the correct docking point, the system automatically stops, and all four lamps will blink green to indicate that the handbrake can be engaged, confirming a successful docking.



Clearance OK



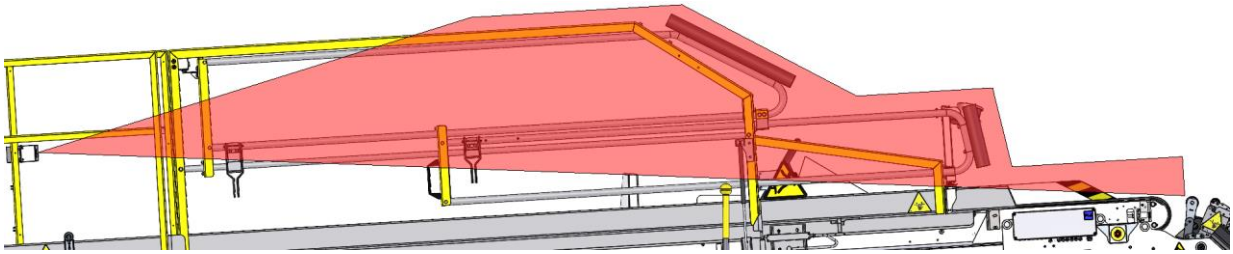
Obstacle on left side

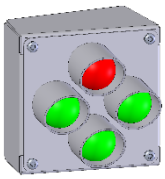


Too close to obstacle

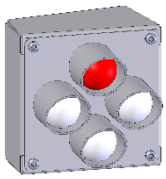
Overhead Obstacle Protection

This feature safeguards the vehicle from potential collisions with overhead obstacles, such as aircraft cargo doors. A 2D LiDAR sensor positioned behind the operator detects obstacles coming from above, preventing the vehicle from rising into unseen hazards.





Obstacle too close when boom is raised

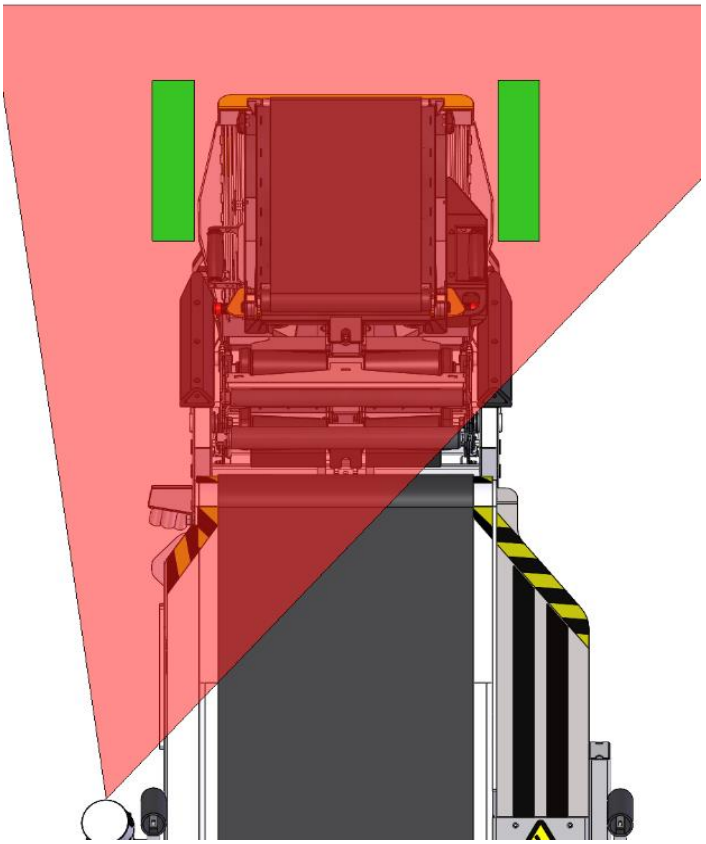


Obstacle too close when boom is down

Key Features

Wheels not Straight Obstacle Avoidance

This feature prevents damage to the vehicle's front-end components. It uses sensors to detect obstacles on the left and right side of the vehicle. If the wheels are turned toward a close obstacle, the system prevents the vehicle from moving in that direction (e.g., obstacle on the left, gear in reverse, and wheels turned right).



Front End Protection Zones

Automatic Brake Tests

Upon startup, the system performs an automatic brake test. This test ensures that sufficient brake pressure can be achieved in the brake lines. The test is conducted quickly, taking less than a second, and it does not occur while the vehicle is in motion.

Key Features

Collision Registration and Logging System

The Collision Registration subsystem is designed to detect and respond to collisions. It locks the vehicle completely if a collision is registered. Additionally, the system has a collision logging feature. After a collision, you can retrieve a detailed collision log by using a USB stick, providing valuable data for analysis and troubleshooting.

Automated Calibration Process

To ensure safe and accurate operation, the system includes an automated calibration process that runs in the background. This calibration process adjusts the sensors to their correct positions, ensuring optimal performance even if a sensor has been knocked out of alignment. The calibration process can only run when the conveyor is in its resting position. If the calibration result is not within the acceptable threshold, the system will trigger an error. Follow the instructions provided in the error message to resolve the issue or contact a qualified technician for assistance.

These features are designed to ensure that the Assisted Docking system operates safely and efficiently, providing a reliable solution for vehicle operation in complex environments.

Safety Precautions

Ensuring the safety of operators and maintaining the integrity of the vehicle and system are of utmost importance. The following safety precautions should be observed when using the Assisted Docking system:

General Safety Precautions

- Always follow all local laws and regulations related to GSE.
- Ensure the vehicle and system are regularly maintained according to the manufacturer's guidelines.

Pre-Operation Checks

- Verify that all sensors, including LIDAR and cameras, are clean and unobstructed before starting the vehicle.
- Ensure that the hydraulic components are free of leaks and functioning correctly.
- Check that the belt boom is cleared in the front half and free of any physical damage.

During Operation

- Pay attention to the indicator lamps on the control panel. A green lamp means the system is active, yellow indicates obstacles ahead, and red signifies that the brakes are engaged.
- Do not attempt to drive the vehicle if the red lamp is on until the obstacle is cleared, or the vehicle set to drive in the opposite direction.
- Maintain situational awareness.

Emergency Procedures

- In the event of an emergency, immediately bring the vehicle to a safe stop.
- If the system fails to respond as expected, use the emergency override button to operate the vehicle manually.
- Report any malfunction or unusual behavior to a technician for inspection before resuming operation.

Maintenance and Servicing

- Only qualified personnel should perform maintenance or repairs on the system.
- Disconnect power before performing any maintenance tasks to prevent accidental activation.
- Regularly check for software updates and apply them as recommended by the manufacturer.

Safety Precautions

Handling Hydraulic Components

- Handle hydraulic components with care to avoid damage or leaks.
- Ensure that all hydraulic connections are secure before operating the vehicle.
- Regularly inspect hydraulic lines for wear and tear and replace them as needed.

Environmental Considerations

- Operate the vehicle only in environments for which it is designed. Avoid areas with extreme weather conditions or hazardous materials.
- Ensure that the vehicle and system are not exposed to corrosive substances that could damage components.

By adhering to these safety precautions, you can help ensure the safe and effective operation of the self-driving add-on system. Always prioritize safety and report any concerns or irregularities to the appropriate personnel immediately.

Using the System

Basic Operations

Activation:
If the driver lifts the conveyer belt the system will automatically turn on. To activate the Assisted Docking system manually the user must press the green button in the dashboard.

Override:
If the orange button is pressed, it will bring the system into override mode. This will override errors and release the brakes.
OBS! If the system has registered a possible collision the override button cannot be used. Follow the instructions for collision registration.

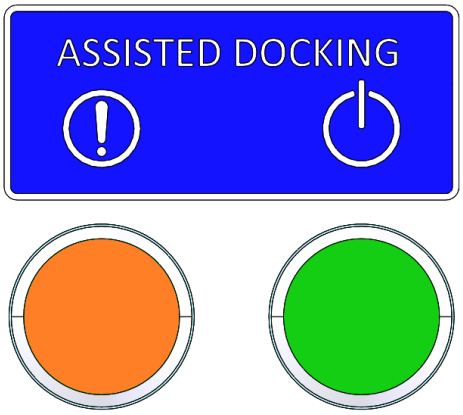


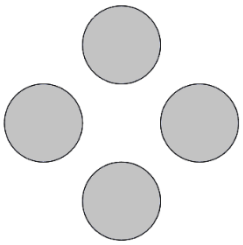
Figure 1: Buttons placed in dashboard

System indication lamp:
When the system is active the LED indication above the driver will turn green. This indicator has 4 functions.

- Off = Standby mode
- Green = Active mode
- Yellow = Override mode
- Red = Collision registered

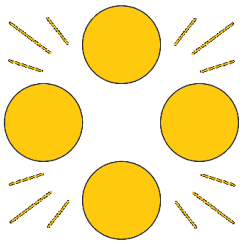
Figure 2: Indication lamp above the operator

Using the System



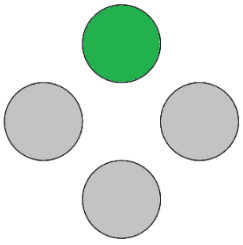
If the four LED lamps are turned off, the system is not active.

OBS! No automatic braking is enabled



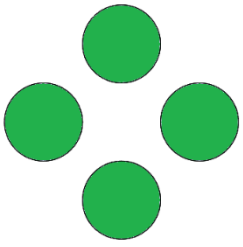
If the four LED lamps are blinking yellow, the system is starting up. Wait max. 30 seconds.

OBS! No automatic braking is enabled



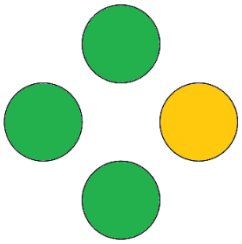
If only the top LED is turned on, the Automatic Emergency Brake (AEB) is activated.

1. Green = activated
2. Yellow = the AEB is restricting velocity
3. Red = AEB is stopping the vehicle

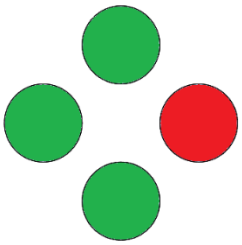


All four lamps being green means the system has been activated. Now the velocity is restricted to max. 6 km/h and will decrease as the vehicle approaches the aircraft.

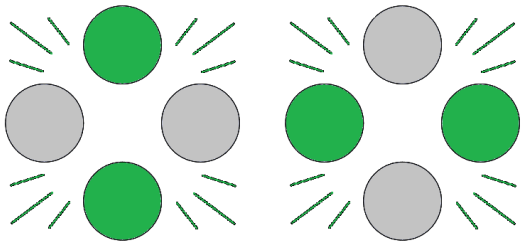
Using the System



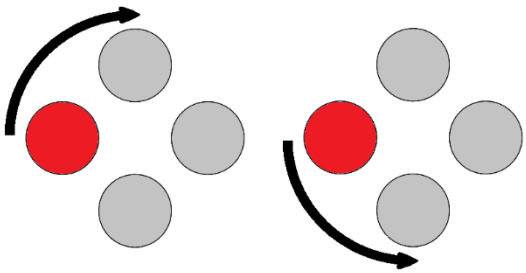
Yellow lamps on the guiding system indicates an obstacle ahead. If no corrections are made, it will eventually turn red and the vehicle will be brought to a complete stop. All lamps can be yellow, and they indicate the direction of the obstacle.



A red lamp indicates an obstacle being too close to the vehicle. The brakes are engaged, and the operator is forced to reverse away from the obstacle

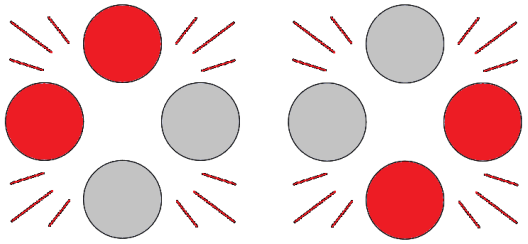


When doing a correct docking, the brakes will engage automatically when the vehicle is in the correct position. Blinking green lamps as shown here, will indicate, that the boom can now be safely lowered onto the cargo hold floor.



A spinning red lamp indicates that an obstacle is too close while the wheels are not perfectly straight. Correct the steering wheel, in the same rotation as the spinning red lamp (also shown in display).

Using the System



The blinking red lamps indicate either an error or the initializing phase. Look at the display for further information.

Detailed Functionality

The Assisted Docking system consists of several integrated subsystems that work together to provide a comprehensive driving experience. Each subsystem has specific functions designed to enhance safety and operational efficiency. The functionalities of the key subsystems are described in detail below:

Autonomous Emergency Brake (AEB)

The Autonomous Emergency Brake (AEB) subsystem is designed to prevent collisions during vehicle taxiing. It continuously monitors the area up to 20 meters ahead of the vehicle in a straight line, measuring the distance to any objects in real-time. By comparing this distance with the vehicle's current velocity, the AEB system determines whether to limit the speed or bring the vehicle to a complete stop, taking into account the stopping distance required at the current speed. The status of the AEB is indicated by a lamp:

- Green: AEB is active, and conditions are safe.
- Yellow: The system is reducing the vehicle's speed due to a detected obstacle.
- Red: The brakes are fully engaged, bringing the vehicle to a stop. The vehicle can only move again once the obstacle is cleared or if it is put in reverse.

Guidance System

The Guidance subsystem is activated when the vehicle approaches an aircraft with the belt-boom raised. This system assists in precise docking to the aircraft. It uses four indicator lamps (upper, lower, left, and right), each of which can illuminate green, yellow, or red:

- Green: Path is clear.
- Yellow: An obstacle is detected in the corresponding direction.
- Red: The vehicle must stop due to an obstacle in the path.

By following the guidance provided by the lamps, operators can ensure a smooth and accurate docking process. Once the vehicle reaches the correct docking point, the vehicle automatically stops, and all four lamps will blink green to indicate that the belt boom can be lowered onto the cargo hold floor, and the handbrake can be engaged, confirming a successful docking.

When approaching/reversing from an aircraft, the wheel indicator is active. If an obstacle is too close to either side, and the wheels are pointing in the obstacle’s direction, the brakes will engage, and the four lamps will indicate a wheel alignment (see section “Indication Lamps” for further explanation of the lamps).

When raising the boom from the floor after operation, it will be limited to not raise more than the angle it had when reaching the docking position.

OBS! When approaching, if there is a cargo-net this should be removed beforehand.

Detailed Functionality

Overhead Obstacle Protection

The Overhead Obstacle Protection, is active during both AEB and Guidance operations. It uses a 2D LIDAR sensor positioned behind the operator to detect obstacles above the vehicle, such as aircraft cargo doors. This feature prevents the vehicle from colliding with overhead obstacles by monitoring the vertical space around the vehicle.

Collision Registration System

The Collision Registration subsystem is designed to detect and respond to collisions. It is always active unless the Assisted Docking key is set to the “0”-position in the cabinet, which deactivates the entire system. This subsystem locks the vehicle completely if a collision is registered. A collision is detected if:

- An object enters a very close zone in front of the vehicle while it is moving, both in driving direction and up/down movement of the conveyor belt.

The system only activates collision registration when the vehicle is in motion, ensuring that minor contacts at a standstill do not trigger unnecessary stops.

Automated Calibration Process

To ensure safe and accurate operation, the system includes an automated calibration process that runs in the background. This calibration process adjusts the sensors to their correct positions, ensuring optimal performance even if a sensor has been knocked out of alignment. The calibration process will only run when the conveyor is in its resting position, preventing any interference with active operations.

If the calibration result is not within the acceptable threshold, the system will trigger an error. In such cases, follow the instructions provided in the error message to attempt to resolve the issue. If the problem persists, contact a qualified technician for assistance to ensure the system is recalibrated and functioning correctly.

Troubleshooting Common Issues

This section provides solutions to common issues that may arise while using the Assisted Docking system. Follow these troubleshooting steps to identify and resolve problems.

Issue: AEB System Engages Unexpectedly
Possible Causes:
- Sensor obstruction or misalignment
- False detection of obstacles

Solutions:
1.Check Sensors: Ensure that all sensors, including LiDAR, are clean and unobstructed.
2.Inspect Sensor Alignment: Verify that the sensors are properly aligned. If misaligned, perform a manual alignment or run the automated calibration process.
3.Review Obstacle Area: Inspect the 20-meter zone ahead of the vehicle for any small objects or debris that might be triggering the system.

Issue: Guidance Lamps Show Red Despite Clear Path
Possible Causes:
•Sensor misalignment
•System error
Solutions:
1.Check Sensors: Inspect the sensors for any dirt, debris, or physical damage.
2.Run Calibration: Perform the automated calibration process to ensure sensors are properly aligned.
3.Reset System: Turn the system off and then on again (using the main switch) to reset any potential software glitches.

Issue: Vehicle Fails to Dock Automatically
Possible Causes:
•Sensor misalignment
•System error
Solutions:
1.Check Guidance Lamps: Ensure all four guidance lamps are functioning correctly.
2.Inspect Sensors: Verify that the sensors are clean and properly aligned.
3.Check for Software Updates: Ensure the system software is up-to-date. Contact support if an update is needed.

Troubleshooting Common Issues

Issue: Collision Registration System Locks Vehicle Unnecessarily
Possible Causes:
•False collision detection
•Sensor malfunction
Solutions:
1.Check Sensors: Inspect the sensors for any obstructions or damage.
2.Review Collision Log: Use a USB stick to retrieve the collision log and analyze the data for false triggers.
3.Run Calibration: Perform the automated calibration process to ensure sensors are accurately aligned.
4.Contact Support: If the issue persists, contact a qualified technician for further diagnosis and repair.

Issue: Calibration Error Triggered
Possible Causes:
•Sensor misalignment
•System error
Solutions:
1.Follow Error Instructions: Refer to the error message for specific instructions on how to resolve the issue.
2.Run Calibration Again: Perform the automated calibration process again to see if the issue resolves.
3.Check Sensor Mounts: Ensure that sensor mounts are secure and undamaged.
4.Contact Support: If the calibration error persists, contact a qualified technician for assistance.

Issue: Automatic Brake Test fault
Possible Causes:
•Hydraulic component malfunction
•System error
Solutions:
1.Inspect Hydraulic Components: Check for any leaks or damage in the hydraulic and brake system.
2.Contact Support: If the problem persists, contact a qualified technician for further diagnosis and repair.

By following these troubleshooting steps, you can address common issues that may arise during the operation of the Assisted Docking system. If problems persist beyond these solutions, please contact our support team for further assistance.

Maintenance and Care

Routine Maintenance

Proper maintenance and care of the Assisted Docking system are essential to ensure its safe and efficient operation. This section outlines the recommended maintenance tasks and care procedures to keep the system in optimal condition.

Routine Maintenance

1.Daily Checks

1. **Inspect Sensors:** Ensure all sensors, including LiDAR and cameras, are clean and free of obstructions.
2. **Check Indicator Lamps:** Verify that all indicator lamps (AEB, guidance system) are functioning correctly.
3. **System Startup:** Perform a visual inspection of the system during startup to ensure all components initialize correctly.

2.Monthly Maintenance

1. **Inspect Electrical Connections:** Ensure all electrical connections are secure and free from corrosion or damage.
2. **Brake System Check:** Perform a manual check of the brake system to complement the automatic tests, ensuring there are no issues with brake pressure or response.
3. **Hydraulic System Inspection:** Check hydraulic lines for leaks or damage and ensure that connections are secure.

3.Annual Maintenance

1. **Inspect Hydraulic Components:** Perform a detailed inspection of all hydraulic components, replacing any worn or damaged parts as necessary.
2. **Clean and Lubricate Moving Parts:** Ensure that all moving parts are clean and properly lubricated to reduce wear and tear.
3. **Software Updates:** Check for and install any available software updates to maintain system performance and security.
4. **System Overhaul:** Conduct a thorough system overhaul, including a complete check of all sensors, hydraulic systems, and electronic components.
5. **Training Update:** Ensure all operators and maintenance personnel receive updated training on the latest system features and maintenance procedures.

Maintenance and Care

Routine Maintenance

Care and Handling

1. Sensor Care

1. **Cleaning:** Regularly clean sensors with a soft, dry cloth to prevent dust and debris buildup. Avoid using harsh chemicals or abrasive materials that could damage the sensors.
2. **Protection:** Protect sensors from physical damage by ensuring they are properly mounted and shielded from impact.

2. Hydraulic System Care

1. **Leak Prevention:** Regularly inspect hydraulic lines and connections for leaks. Address any leaks immediately to prevent system failures.
2. **Fluid Levels:** Check hydraulic fluid levels regularly and top up as necessary with the manufacturer-recommended fluid type.

3. Electronic Component Care

1. **Moisture Protection:** Ensure that all electronic components, including the PLC and PC units, are protected from moisture. Keep cabinets closed and sealed when not in use.

4. General Care

1. **Operator Training:** Ensure all operators are trained in the correct use and care of the system. Regularly review and update training materials.
2. **Emergency Procedures:** Familiarize all personnel with emergency procedures, including manual override and emergency stop protocols.

Troubleshooting Common Issues

Refer to the "Troubleshooting Common Issues" section for guidance on addressing specific problems that may arise during operation.

By following these maintenance and care guidelines, you can ensure the longevity and reliability of the Assisted Docking system. Regular maintenance not only prevents unexpected failures but also enhances the overall safety and performance of the system. For any additional support or professional maintenance services, please contact our technical support team.

FAQs

Common Questions and Answers

This section provides answers to frequently asked questions about the Assisted Docking system. If you have additional questions not covered here, please contact our support team for further assistance.

Q: How do I know if the AEB (Autonomous Emergency Brake) is active?
A: The status of the AEB system is indicated by the top lamp in the lamp housing on the front of the conveyor:

- **Green:** AEB is active and monitoring for obstacles.
- **Yellow:** The system is reducing the vehicle's speed due to a detected obstacle.
- **Red:** The brakes are fully engaged, bringing the vehicle to a stop.

Q: What should I do if the system triggers an error during calibration?
A: If the calibration process triggers an error:
1.Follow the Error Instructions: Refer to the error message for specific instructions on how to resolve the issue.
2.Run Calibration Again: Perform the automated calibration process again.
3.Check Sensor Mounts: Ensure that sensor mounts are secure and undamaged.
4.Contact Support: If the calibration error persists, contact a qualified technician for assistance.

Q: How do I retrieve a collision log after an incident?
A: To retrieve a collision log:
1.Insert a USB Stick: Insert a USB stick into one of the designated ports on the system's control unit (PC in P101).
2.Access the Menu: Wait for the beeping and move to the next step once the jolly melody is done.
3.Review Log: Remove the USB stick and review the log on a computer.

Q: What does it mean if the guidance lamps show red despite a clear path?
A: If the guidance lamps show red despite a clear path, it could indicate:

- **Sensor Misalignment:** Check and realign the sensors.
- **System Error:** Reset the system by toggling the main switch.
- **Calibration:** Run a manual calibration and verify the result.

FAQs

Common Questions and Answers

Q: What steps should I take if the vehicle fails to dock automatically?
A: If the vehicle fails to dock automatically:
1.Check Guidance Lamps: Ensure all four guidance lamps (upper, lower, left, and right) are functioning correctly.
2.Inspect Sensors: Verify that the sensors are clean and properly aligned.
3.Run Calibration: Perform the automated calibration process.
4.Check for Software Updates: Ensure the system software is up-to-date.

Q: What is the proper procedure for cleaning the sensors?
A: To clean the sensors:
1.Power Down the System: Ensure the system is turned off to avoid any accidental movements.
2.Use a Soft Cloth: Clean the sensor surfaces with a soft, dry cloth. Avoid using harsh chemicals or abrasive materials.
3.Inspect for Damage: Check for any signs of physical damage or misalignment.

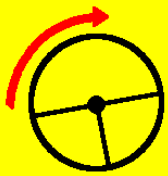
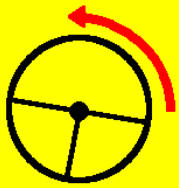
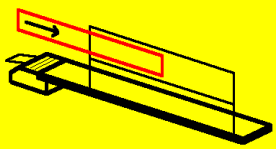
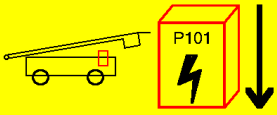
Q: Can the system be used in extreme weather conditions?
A: While the system is designed to operate in various weather conditions, it is important to:
•**Inspect Sensors Regularly:** Ensure sensors are free from snow, ice, or heavy rain buildup.
•**Monitor Hydraulic Systems:** Check hydraulic components for any issues caused by extreme temperatures.

These common questions and answers provide guidance on the typical issues and concerns users may encounter. For further assistance, please contact our support team.

Display Texts and Reaction Scheme

Error #	Message	Description	Action
#2009	COLLISION OCCURRED ACCEPT / REJECT	When a collision is registered, the option of ”Accept” and ”Reject” will be available. Press the appropriate one, to release the belt-loader again.	Both options will release the belt-loader. The chosen option will be stored in the corresponding collision log. OBS! Engage parking brake to release.
#2012	DISK USAGE TOO HIGH	The storage device on the computer is full. The unit is still operable.	Contact the responsible workshop.
#2021	UNAVAILABLE RAIL LIDAR	Component B2169 (LiDAR) is not sending correct data.	Make sure the sensor is not being blocked. In case of ice or dirt please clean it off.
#2022	UNAVAILABLE FLEX RAMP LIDAR	Component B2163 (LiDAR) is not sending correct data.	Make sure the sensor is not being blocked. In case of ice or dirt please clean it off.
#2038	HARDWARE POWER REGULATION	The power supply for the system is unstable.	Contact the responsible workshop.
#2044	ERROR PC-PLC COMMUNICATION	The CANbus communication between the components in the P101 cabinet is not communicating correctly.	Contact the responsible workshop.
#2048	FLEX RAMP LIDAR NO LIP DETECTION	The 3D sensor underneath the flex ramp has been moved or is not seeing correctly.	Make sure the sensor is not being blocked. In case of ice or dirt please clean it off.
#2051	CAN ERROR CH.2	The CANbus connection is unstable.	Contact the responsible workshop.
#2052	CAN ERROR I/O BOX CONSOLE	The CANbus connection is unstable to the module in P110.	Contact the responsible workshop.
#2053	CAN ERROR I/O BOX DASHBOARD	The CANbus connection is unstable to the module in P112.	Contact the responsible workshop.
#2102	LOW BRAKE PRESSURE	The routine brake pressure test has failed. CAUTION! It might drive without brakes.	Pressing “DISCARD” will allow the vehicle to drive. CAUTION! Brakes might malfunction.

Display Texts and Reaction Scheme

Error #	Message	Description	Action
#2103	ERROR ON INCLINATION SENSOR BOOM	The boom inclination sensor is in error.	Contact the responsible workshop.
#2104	ERROR ON INCLINATION SENSOR FLEXRAMP	The flex ramp inclination sensor is in error.	Contact the responsible workshop.
#2200		The wheels are not straight when approaching/reversing from the aircraft, and an obstacle is present.	Straighten the wheels in the same direction as shown in the illustration or shown in the 4 guidance lamps.
#2201		The wheels are not straight when approaching/reversing from the aircraft, and an obstacle is present.	Straighten the wheels in the same direction as shown in the illustration or shown in the 4 guidance lamps.
#2202		The guard rail is not fully retracted.	Driving is prohibited and the rails must be fully retracted.
#2203	WAITING FOR BRAKE TEST	The system is initialized correctly and is waiting for an automatic brake test to be performed.	As soon as the hydraulic pump is running, the system will register a valid hydraulic pressure and the test will be performed while the vehicle is in standstill.
#2204		The P101 cabinet is not in its home position. Moving the boom down is prohibited.	Make sure to put the P101 in its home position.
#2220		The system is initializing.	Wait approximately 30 seconds.

Display Texts and Reaction Scheme

Error #	Message	Description	Action
#2400	ASSISTED DOCKING ON	The Assisted Docking key is in position 1 = System is active.	The Assisted Docking system is active, with all of its functions.
#2401	ASSISTED DOCKING OFF	The Assisted Docking key is in position 0 = System is deactivated.	The Assisted Docking system is deactivated, and none of its functions are enabled, except rail survaillance.
#2405	ACKNOWLEDGE BRAKE ERROR?	Two approvals are necessary to accept a brake pressure error.	Acknowledge the brake error on the display two times. CAUTION! Brakes might malfunction.

Customer Support

Contact Information

If you need further assistance, have questions not covered in this manual, or require technical support, please contact us using the information below.

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