



Lift Link® Device Hardware User's Guide

Operating and Troubleshooting Guide for Lift Link® Device Hardware

Some features require firmware from system release 08.05.00 or later.



About this Guide

This guide provides detailed information on the proper use and maintenance of Mitsubishi Logisnext America's Lift Link® Telematics Solution.

Safety

The Lift Link solution is not intended for use as a primary safety device. Installation must NOT adversely affect any vehicle safety system or safety device. The installation, configuration and operational procedures provided in this Guide are intended for use ONLY by personnel certified on Lift Link's solution installation. It is the user's responsibility to ensure that the procedures in this Guide are completed by certified personnel ONLY, using the proper tools and following the proper safety protocols. The procedures and recommendations in this guide do not supersede any Federal, State, or Local regulations.

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Introduction

This guide provides the information needed to configure, use, and maintain the Lift Link hardware.

Lift Link Device

Lift Link device is the display unit attached to a lift truck, also known a Vehicle Asset Communicator (VAC)

In addition to this guide, Logisnext offers other ways to learn the system including but not limited to:

- Live Training Webinars
- Interactive Self-Paced Learning Modules
- How-To Videos
- Technician Certification Programs

Related Documents

This detailed guide is a supplement to the following Lift Link system documents:

- **Lift Link Getting Started Guide**
General system instructions for the site coordinator.
- **Lift Link Installation Guide**
Installation instructions for vehicle hardware.

NOTE: The Lift Link device is an interactive minicomputer designed for installation on material handling vehicles, whether Logisnext vehicles or competitive vehicles. Since vehicle designs vary widely, this Guide cannot provide precise instructions for each specific vehicle model. Instead, this Guide provides the basic knowledge needed for a certified installer with a typical installation.

NOTE: The installation, configuration and operational procedures provided in this document are intended for use by authorized, certified personnel only. It is the responsibility of the supervisor to ensure that the procedures in this publication are only completed by trained/certified personnel, using the proper equipment, and following the proper safety protocols.

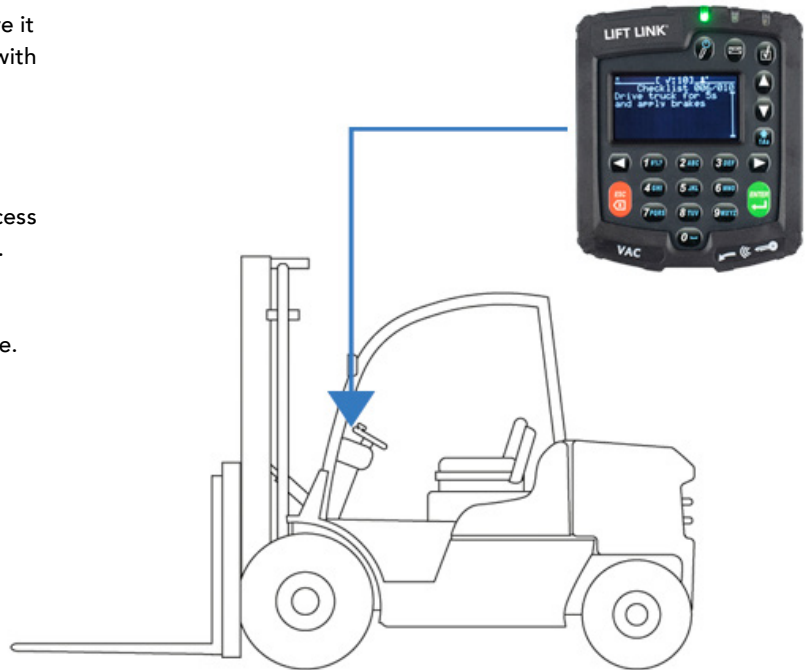
SECTION 1: SYSTEM OVERVIEW

1.1 Lift Link Diagram



Placement of a Lift Link device on a vehicle

- Lift Link device must be mounted on the vehicle where it can be accessed by the operator without interfering with any vehicle operation.
- Lift Link device interfaces with the vehicle for power, ignition/access control, and usage monitoring using a supplied cable harness.
- Lift Link device interfaces with operators through Access ID readers, LEDs, a keypad, and a backlit LCD display.
- Lift Link device communicates automatically with remotely hosted software via an Access Point, but operates seamlessly, even when not in coverage range.



1.2 Lift Link Device Interface: LCD, Keypad, ID Reader, and LEDs

The Lift Link device incorporates a 20-key keypad that is easy to read and operate. The graphical LCD screen remains backlit for 15 seconds after any key is pressed on the keypad. The Lift Link device integrates an electronic identification reader for vehicle access control. Operators use RFID proximity cards to access the vehicle.



LEDs

- Access
- Message Or Error
- Checklists

LCD Screen

- Status Header
- Alerts/Icons
- Text
- Lift Link Device Menu Screens
Displays: Menu Options

Keypad




- Numbers for Pin Entry and Menu Selection
- Letters for Configuration Inputs
- Arrow Keys for Scrolling
- Enter and Esc Key: Menu Navigation
- Function Key
- Shortcut Keys

Access ID Reader

- Touch ID to log on or log off and assign a temporary user

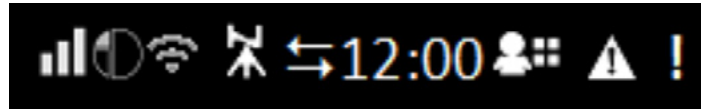
Status Indicators

When the Lift Link device is powered, the Lift Link device has three integrated LEDs for operator and supervisor status indication.

LED Color	Message	LED State	Indication
	Access	Off	No one logged in and the vehicle is in Registered ID or Any ID mode (operators must log in to operate the vehicle).
		Blinking Green	No one logged in and the vehicle is in ID Optional mode (anyone can use the vehicle without logging in).
		Solid Green	An operator is logged in (the vehicle should not be left unattended in this state).
		Blinking Green/Orange	The vehicle is locked or about to be locked for certain operator levels (as a result of a vehicle impact or other event).
	Message	Off	There are no incomplete tasks, no unread text messages, and no active errors.
		Blinking Red	The vehicle has an unread message, task, or an active diagnostic error.
	Checklist	Off	No one logged in and/or the vehicle is compliant for all configured checklists.
		Blinking Yellow	There is a checklist that needs to be completed.
















NOTE: When the **Access**, **Message**, and **Checklist** LEDs blink in sequence, the Lift Link device is in 'programming' mode and cannot be used by operators. Contact Lift Link Support if this condition persists for more than twenty-five minutes.

The Lift Link device screen displays the current time and status icons (top row). Status icons are:



Icon	Meaning	Indication
	Reception Bars	Reception bars provide an indication of signal strength the Lift Link device is currently experiencing for the wireless communication method which is affected by the proximity to nearby AP's (X without bars = no coverage, 1 bar = weakest, 3 bars = strongest).
	IRF Communication	Indicates the Lift Link device is ready to use or is using Intelligent RF (IRF) to communicate with the system.
	Wi-Fi Communication	Wi-Fi communication icon indicates that the Lift Link device is ready to use or is using Wi-Fi to communicate with the server. If inverted, the Lift Link device has data to send to the server but is unable to do so using Wi-Fi. Refer to the reception bars to determine the strength of the communication.
	GPS Triangulation	GPS triangulation icon indicates that the Lift Link device has triangulated its location with GPS satellites. Direction is found through this navigational aid.
	OEM CAN Communication	OEM CAN communication icon indicates that the Lift Link device is configured to communicate with a CAN equipped vehicle. If only the arrow pointed to the right is visible, the Lift Link device has not recently received data from the CAN (such as when the key is off). If only the arrow pointed to the left is visible, communication with the CAN is failing.
	Time Clock	The time clock (bracketed) indicates the current local time (24-hour clock format). The time is replaced by a countdown when a safety checklist is required. If the time is blank [---:--], the Lift Link device does not yet know the local time zone (i.e. first installed and yet to communicate to the system).
	Logged-in Operator Level	Indicators are inverted icons (black on white) when the operator is not recognized in the system software (i.e. new IDs in "Any ID" mode).
	Operator - 1 box	STANDARD: Standard Operator logged in.
	Operator - 2 boxes	MASTER: Master Operator logged in.
	Operator - 3 boxes	MAINTENANCE: Maintenance Operator logged in.
	Operator - 4 boxes	ADMINISTRATION: Administrator logged in (Logisnext use only).
	Operator - IT	IT: An IT operator logged in.
	Diagnostic Error	The Diagnostic Error icon is accompanied by a flashing red LED on top of the Lift Link device. At least one REFERENCE or FUNCTIONAL diagnostic error (i.e. Impact sensor error) is active on the vehicle. However, these errors Do Not lock the vehicle or prevent operator use of the Lift Link device.
	Diagnostic Error (Lockout)	Is accompanied by a flashing red LED on top of the Lift Link device. The vehicle is Locked Out for all operators except Maintenance users. At least one SAFETY/SHUTDOWN diagnostic error (i.e. Vehicle not correctly configured for motion) is active on the vehicle and there is a driver safety risk.

The Lift Link device indicates different vehicle and solution conditions in the main screen using text as well as iconography (some with animation). Common icons include the following:

Icon	Meaning	Indication
	Battery	(Hourglass Icon) A new battery request is being processed.
	Break	(Clock Icon) The vehicle is in break mode. This feature is used to keep the vehicle from being borrowed during short breaks. The break time is typically 15 minutes. The one operator sets the vehicle in Break mode and only a Master Operator or a Maintenance Operator can log in until the break time expires.
	Checklist	(Check Icon) The checklist icon is accompanied by a blinking yellow indicator LED. The checklist icon is also sometimes accompanied by a grace period timer indicating how long (in minutes) before a non-compliance event is created. The same countdown will also appear in the status header. The vehicle has an active checklist that requires a Standard Operator to complete.
	Diagnostics	(Diagnostic Icon) The blinking diagnostic icon is accompanied by a blinking red LED. The vehicle has active diagnostic errors. A Maintenance Operator must correct and clear the error, or, in some cases, the error will clear itself. See section 7, Lift Link device troubleshooting, for more details on diagnostic errors.
	GPS	(GPS Icon) When the GPS icon is displayed, the vehicle cannot determine location using the GPS sensor. Make sure the GPS sensor is connected and configured properly and that the GPS receiver has a clear line of site to a satellite symbol.
	Impact	(Impact Icon) The impact icon is accompanied by a blinking yellow indicator LED. The vehicle has an active impact event. When displayed on its own, the impact event did not result in a lockout and Standard Operator feedback is required by completing a checklist.
	Lockout	(Lockout Icon) The lockout icon is accompanied by an alternating, blinking Green/Orange LEDs. The vehicle is locked and can only be logged into using Master or Maintenance Operator credentials.
	Low Battery	(Battery Icon) The vehicle battery is low and requires a charge.
	Low Oil Pressure or High Engine Temperature	(Engine Icon) The oil pressure or engine temperature inputs (VIMs 10 and 11) are outside the normal range. Check the engine for low oil or coolant.
	Maintenance	(Wrench Icon) Accompanied by alternating, blinking green/orange LEDs. The vehicle is locked and can only be logged into using a Maintenance Operator credentials.
	Master	(Person Icon) The master icon is accompanied by a blinking yellow LED. The vehicle has an active checklist that requires a Master or Maintenance Operator to complete.
	New Message	(Envelope Icon) The new message icon is accompanied by a blinking red LED. A new message was received for the vehicle and/or operator. Once the message is read, the icon disappears.
	Shield	(Shield Icon) The vehicle is in emergency access mode, indicating that any operator can access and operate the vehicle without logging in through the Lift Link device.
	Speeding	(Speeding Sign Icon) The operator was driving over the configured speed limit. The icon will disappear once the vehicle decelerates to an acceptable speed level.
	Zone	(Do Not Enter Icon) The operator has driven the vehicle inside a restricted area. Drive the vehicle out of the restricted area to clear the icon.

1.3 Menu Screens

The Menu Screens allow the operator to read and scroll through multiple lines of text as well as rapidly scan through and select the menu item of choice.



Status Header

Text related to Lift Link device menu options.

Horizontal Line separating text and available responses (Each section auto-resizes based on the number of menu options).

Scroll Indicator vertical bar with handle.

Up and Down Arrow Keys

Scroll through available text rows (if handle displayed). Returns to the top row when advancing past the last row.

Current Selected Response is highlighted.

Left and Right Arrow Keys

Scroll through menu options, and additional pages when the left pointed arrow or right pointed arrow are displayed next to the first or last menu item. Menu options displayed wraps beginning-end and end-beginning.

Enter Key confirms the highlighted selection and advance to the next screen. Screen Display (first page).

- Quick Press: Highlights menu option corresponding to key pressed, then ENTER must be pressed to make the selection.
- Long press: Press and hold on the number keys that corresponds to the menu option advances to the next screen, without pressing ENTER.

ESC Key

- Quick Press: ESC key exits to the previous screen.
- Long Press: ESC key exits to the home screen.

The following is an example of the Quick Press or Long Press feature:

1. Press and HOLD the 2 button for more than 2 seconds to highlight the menu option. Select 2. OK to advance to the next screen.

~ OR ~

2. Press the right arrow button to move the highlighted selection from:

Select 1. UPDATE
Select 2. OK
Then press ENTER.

~ OR ~

3. Press the 2 button to highlight
Select 2. OK. Then press ENTER.

1.4 Data Input Screens

Data Input Screens allow the operator to enter data when prompted by the Lift Link device system.



Status Header

Data Prompt

- Character replaced by any text entry (blinking cursor).
- Text currently available for text entry (highlighted).

Scroll Indicator vertical bar.

Up and Down Arrow Keys

- Scroll through available rows.
- Returns to the top row when advancing past the last row.

Character Toggle Key - up arrow:

- 1: numeric characters
- A: upper case alpha/symbols*
- a: lower case alpha/symbols*

Left and Right Arrow Keys

- Move blinking cursor left or right.

Enter Key

- Quick Press: ENTER key confirm the entered text, proceed to the next text entry row (if applicable), or advance to the next screen if on the last row.
- Long Press: ENTER key advance to the next screen from any position.

Enter Alphanumeric Characters in the currently selected mode.

- Cursor auto-advances one character if no key is pressed for more than one second.
- Cursor auto-advances one character if a different key is pressed than the previous.

ESC Key

- Quick Press: ESC key exits to the previous screen.
- Long Press: ESC key exits to the home screen.

* Common symbols used during text entry are as follows:

0 = [space] when not in numeric entry mode.

1 = symbols when not in numeric entry mode.

Mode	Symbols
a (lower case) mode	= + - * / () { } [] % < >
A (upper case) mode	? , @ ! : . # _ \ & " ' ; ^ \$ ~

1.5 Multiple Choice Selection Screens

Multiple Choice Selection Screens allow the operator to pick one item from a list which is like a pick list.



Status Header

Ordinal Position of Item Currently Highlighted

- (1st of 13) followed by 12 additional menu screens with instructions.
- Highlighted item is currently selected.

Up and Down Arrow Keys

- Scroll through available rows.
- Returns to the top row when advancing past the last row.

Scroll Indicator vertical bar.

Enter Key

- Confirms the selected item, advance to the next screen.

ESC Key

- Quick Press: ESC key exits to the previous screen.
- Long Press: ESC key exits to the home screen.

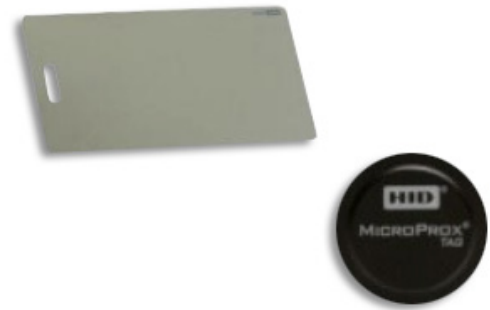
1.6 Login Method

Access IDs

NOTE: Access IDs are often provided by the end user.

When the system is in "Any ID" access mode (default configuration when the Lift Link device is shipped), an access ID creates a "Place Holder" operator profile in the Lift Link software when first presented to a Lift Link device and the operator is granted access to the vehicle as a Standard Operator. The place holder profiles are associated with the ID's embedded identification number and can be updated with actual operator information (name, password, authorization level, etc.) at the customer's discretion. Alternatively, operator profiles can be added directly to the software (in "Any ID" mode or "Registered ID" mode) by presenting the access IDs to the desktop Access ID Reader.

To access the vehicle as a Master or Maintenance Operator, the numeric operator ID and password using the Lift Link device keypad must be entered. The ID numbers can be found in the installation documentation. The software should be used to assign individuals' IDs as Master or Maintenance Operators.



SECTION 2: CONFIGURING THE HARDWARE

2.1 Lift Link Device Configuration

A Lift Link equipped vehicle cannot be used by the Standard or Master Operators until the Lift Link device has been successfully configured by a Maintenance Operator for the BASIC configuration wizard. The Lift Link device on-screen message and blinking red LED is displayed.

NOTE: instructions for testing the BLU wire connection prior to Lift Link device configuration are in Section 5.

Once the Lift Link device has been properly installed, the vehicle can only be accessed using a Maintenance level operator login. When a Maintenance Operator logs in, they will be required to follow a series of screen display instructions displayed to verify the installation and configuration. This process time is about 5-10 minutes and requires the operator to perform the following:

1. Enter or confirm the Facility ID. This number is unique to the facility where your system is operating. For Lift Link devices in your facility with the incorrect Facility ID, there will be no communication to the system infrastructure.

- Your facility ID was communicated to the system coordinator with your software access credentials.
- If you do not know the facility ID, contact Lift Link Support.

2. Enter or confirm your license key (based on features purchased).

- License key was communicated to the system coordinator with the assigned software access credentials.
- If you do not know the License key, contact Lift Link Support.

3. Select vehicle type:

FR	Forklift Rider	OP	Order Picker	SE	Sweeper	TR	Turret Truck
FS	Forklift Stand-up	PC	Preconditioned Air	SR	Stacker Rider	TT	Tow Tractor
GP	Ground Power Unit	PR	Pallet Jack Rider	SW	Stacker Walkie	TV	Truck/Van
JB	Jet Bridge	PW	Pallet Jack Walkie	TH	Other		
ML	Man Lift	RT	Reach Truck	TL	Towbarless Tow		

4. Enter the last 5 digits of the vehicle Serial Number. The numeric value is between 1 and 65534.

5. Select a vehicle Engine Type (VDI CAN interface Lift Link devices skip steps 5-7 and drive tests):

Electric	Electric Motor	Gas/IC	Internal Combustion	iPort	iPort Enabled Electric
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6. Select what the Green and Yellow wires are connected to for access control:

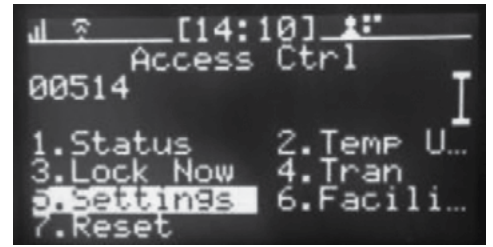
On/Off Relay	Relay Supplied with Kit	Vehicle PWM Circuit	Connected to Vehicle Circuit with PWM
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7. For Electric vehicles, select the BLU wire input type (where the BLU wire was connected to):

V (avg)	Voltage Average Mode	V (min/max)	Voltage Minimum/Maximum Mode
----------------	----------------------	--------------------	------------------------------

8. Follow the Lift Link device Configuration Wizard's prompts for performing vehicle actions (i.e., start vehicle, release brake, drive forward, drive in reverse, etc.)

Once the Lift Link device has been configured without errors, the Lift Link device is active in "Any ID" mode and any hardware-compatible ID can access the vehicle. In Any ID mode, the system will NOT lock out vehicles due to impacts, critical checklist responses, etc. If you are unsure which mode the system is in, check the operator icon in the header of the Lift Link device screen when logged in or Maintenance Operators can determine the current Lift Link device mode using the Access menu. Any ID mode has the icon color inverted (see 'ID Optional' in Section 5: Maintenance Operators for more details).



NOTE: If the configuration fails and an error message is displayed, refer to Section 7: Lift Link Device Troubleshooting. After the "BASIC" wizard is complete, continue to the "SENSOR" wizard. Refer to the Lift Link device installation guide for more details on sensor configuration.

2.2 Wi-Fi Configuration On The Lift Link Device

PRIOR TO CONFIGURING THE LIFT LINK DEVICE FOR YOUR WI-FI SYSTEM,
VALIDATE YOUR NETWORK CONFIGURATION WITH THE **LIFT LINK WI-FI TEST TOOL**.

THERE IS A PC-BASED VERSION AVAILABLE THROUGH THE LINK SUPPLIED IN APPENDIX C
(or email liftlink@logisnextamericas.com).

Lift Link devices can be configured with the desired Wi-Fi security credentials and server information any time the Lift Link device is powered.

There are three ways Wi-Fi credentials can be applied:

- Entering credentials on the Lift Link device using the keypad.
- Wirelessly receiving credentials from a nearby Wi-Fi-configured Lift Link device.
- Receiving credentials from a Lift Link jack.

Entering Credentials On The Lift Link Device Using The Keypad

1. Log into the Lift Link device as a Maintenance Operator or IT Operator.
2. From the Lift Link device main menu screen, Select Wi-Fi.
3. If the Lift Link device is in range of wireless networks, a list will appear on the Lift Link device screen. Otherwise, OFF is displayed.
4. The Lift Link device's default Wi-Fi configuration uses DHCP.

- To configure the Lift Link device using DHCP, skip to step 6.
- To configure the Lift Link device to use a Static IP address, complete step 5.

5. From the Lift Link device menu screen, select Lift Link Device IP. Select STATIC. When prompted, enter the requested IP, Subnet Mask, and Default Gateway values.

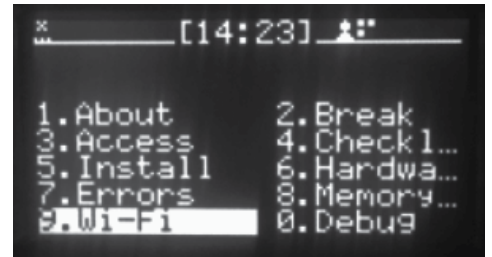
Use leading zeros as appropriate (For example, if the IP Address is "150.215.17.9" the value entered in the Lift Link device should be "150.215.017.009").

After providing the requested Static IP values, press ENTER to proceed to the next screen.

6. To identify the Server to connect with, Lift Link device menu screen, select SERVER IP. Select the Server IP 'type' (Static IP or Domain Name), then type in the prompted data using either the Server IP or Domain Name. In both cases, the Server Port must be entered, and a selection made for TLS encryption (TLS encryption or Proprietary as coincides with your software).

For Logisnext-hosted systems, this information is provided by Logisnext.

NOTE: If steps 4 through 6 are not performed in the proper order, the Lift Link device will not connect to the server access point.



7. From the Lift Link device menu screen, select CONNECT.

8. Connect to the facility's wireless network.

a. If the Lift Link device display lists the desired SSID, use the up and down scroll arrows keys to select the desired SSID from the list.

9. Enter the Key for Wi-Fi Credentials.

i. Press ENTER.

ii. Enter the credentials for the selected SSID in the locations provided. Use the navigation arrows to skip to different areas of the text entry boxes.

NOTE: For WEP credentials, 10 or 26 HEX (0-9;A-F) characters must be entered, ASCII entry not permitted.

iii. Press ENTER.

iv. The Lift Link device will automatically attempt to connect to the selected SSID using the credentials provided.

b. If the Lift Link device display does not list the desired SSID, select OTHER. Press ENTER.

i. Using the Lift Link device keypad, manually enter the SSID.

ii. Select the security method that corresponds with the SSID.

iii. Enter the credentials for the SSID.

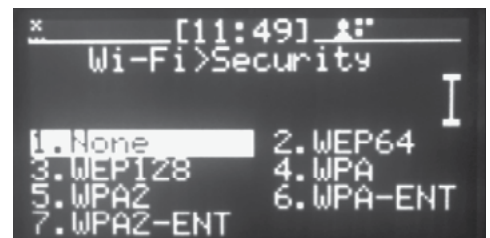
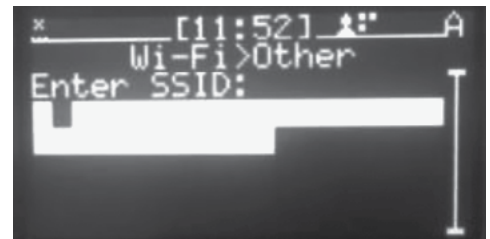
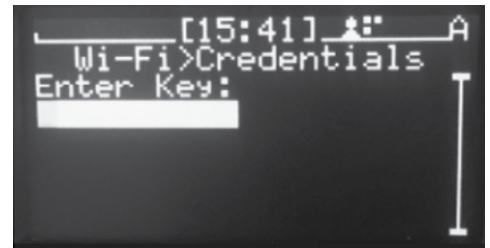
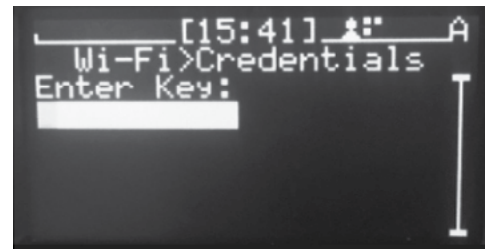
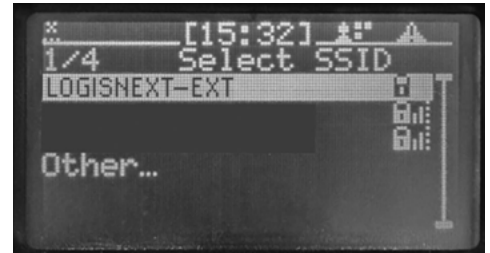
NOTE: For WEP credentials, 10 or 26 HEX (0-9; A-F) characters must be entered, ASCII entry not permitted.

iv. The Lift Link device will automatically attempt to connect to the SSID using the credentials provided.

NOTE: To successfully connect, the Lift Link device must be within wireless communication range of the SSID.

10. Once connected, the Lift Link device screen displays the Wi-Fi status indicator.

11. For instructions on how to broadcast the Lift Link device's Wi-Fi credentials to nearby Lift Link devices that have not been configured, refer to the next section: Wirelessly Receiving Credentials from a Nearby Wi-Fi-Configured Lift Link Device.



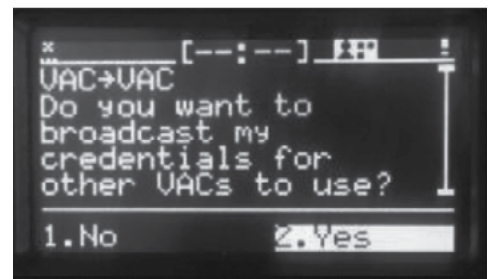
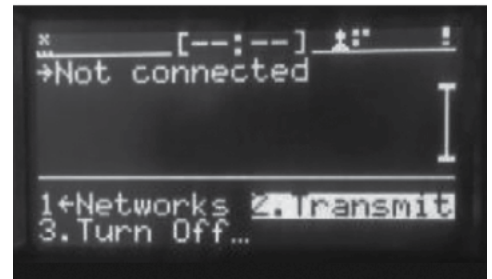
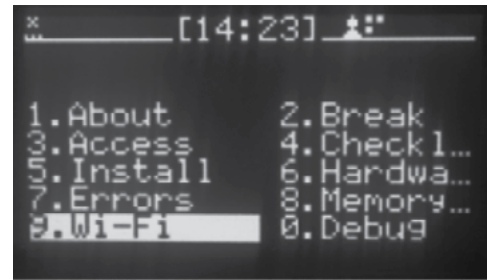
2.3 Wirelessly Receiving Credentials From A Nearby Wi-Fi-Configured Lift Link Device

1. Select a Lift Link device that has been configured with the desired Wi-Fi profile.
2. Log into the Lift Link device as a Maintenance Operator or IT Operator.
3. From the Lift Link device main menu screen, select Wi-Fi.
 - a. To broadcast the Lift Link device's Wi-Fi configuration to other Lift Link devices, select TRANSMIT.
 - b. To confirm broadcast of the Lift Link device's Wi-Fi configuration, select YES.

The Lift Link device will return to the main Wi-Fi screen.

A "Share" icon will appear to the right of the SSID name.

- For the next 24 hours, that Lift Link device will transmit its Wi-Fi profile to any Lift Link device that comes within wireless communication range.
- All Wi-Fi profile components (SSID, credentials, server IP/port, etc.) are transmitted.
- Lift Link devices must be configured with the same facility code and RF frequency to successfully send and receive a transmitted Wi-Fi profile.
- Recipient Lift Link devices must be within wireless range of the sending Lift Link device for approximately 1 minute to receive the transmitted Wi-Fi profile.
- Depending on obstructions and environment, the average wireless sharing range is 500 feet.
- The Lift Link device will automatically begin trying to connect with the newly received profile once a recipient Lift Link device receives the credentials.
- To force the Lift Link device to stop transmitting, from the main Wi-Fi menu option, select STOP TRANSMIT. Otherwise, the Lift Link device will stop transmitting on its own after 24 hours.
- The Lift Link device will only transmit credentials typed into it, or received from another Lift Link device. It will not transmit credentials synchronized from the software nor enterprise certificates.



2.4 Receiving Credentials From A Lift Link Jack

Wi-Fi Credentials and system configurations can be changed at any time using the Lift Link software System Settings page. For Lift Link devices with firmware QU80503 or greater, the credentials can be added to the Lift Link device using a USB and Lift Link jack.

2.5 Exporting Wi-Fi credentials from the Lift Link Software

1. Log into the Lift Link software.
2. Navigate to System Settings page and click the "Edit" button at the bottom of the page.
3. In the Wi-Fi section, select the profile rules you intend to use:
 - a. Same profile all Lift Link devices: for all devices to use the same credentials.
 - b. Unique profile per Lift Link device: for using a different credential for each Lift Link device (unique usernames or passkeys).
4. Enter Wi-Fi credentials in Lift Link software.
 - a. Same profile all Lift Link devices: select 'Add Security Profile' if the one you want to use is not already present and complete the required details.
 - b. Unique profile per Lift Link device:
 - i. If the profiles were already added, select 'Download USB file' and skip to Step 5.
 - ii. If profiles were not previously added
 1. Select 'Download csv Template' and enter the required credentials into the csv file. For criteria completing the csv file, see Appendix A.
 2. Select 'Import Security Profiles.'
 3. Choose the file you entered the credentials in and select 'Import.'
 4. Select 'Download USB file.'
5. A zip file is created with two files: a .irf file and a .txt file.
6. Extract the folders to a location on your computer but DO NOT CHANGE the file names.

2.6 Using The Lift Link Jack To Load Wi-Fi Credentials

- STEP 1** Load the 2 files on a single USB.
- STEP 2** Insert the USB into the Lift Link jack.
- STEP 3** Push the button on the Lift Link jack so it is in position "A."
- STEP 4** Plug the 12VDC power adapter into the Lift Link jack and plug the adapter into a power outlet. Do not power the Lift Link Jack with the vehicle cable for Lift Link device programming.
- STEP 5** Plug the Lift Link Jack into the Lift Link device's C101 port.
- STEP 6** The Lift Link jack button LED will illuminate while reading data from the USB and programming the Lift Link device. During this time, the Lift Link device will indicate programming status via LEDs and on-screen progress messages.
- STEP 7** When Lift Link device programming is complete the Lift Link jack LED will go off and Lift Link device screen will return to a normal state (takes a few seconds).
- STEP 8** Unplug the Lift Link jack from the Lift Link device's C101 port.
- STEP 9** Unplug the 12VDC power adapter from the Lift Link jack.
- STEP 10** Plug the vehicle cable back into the Lift Link device's C101 port.
- STEP 11** The Lift Link device will power up and display the main login screen.
- STEP 12** Log into the Lift Link device as a Maintenance Operator.
- STEP 13** Navigate to the Wi-Fi > Networks > Lift Link device enter screen.
- STEP 14** Validate that the visible network information matches that of the information of the .csv file.

To confirm the status of the synchronization for a specific Lift Link device, perform the following:

- a. Navigate to VEHICLES by selecting the ASSETS drop down window in the top frame.
- b. Select VEHICLES.
- c. Navigate to the TROUBLESHOOTING section and compare the current trans codes to the synced trans codes, if they are the same the item has been synchronized.

To view the synchronization status of all vehicles:

- a. Select REPORTING in the top right frame.
- b. Scroll down to the Reports List to select SYSTEM SETTINGS and DIAGNOSTICS.
- c. Select " Vehicle Synchronization Detail" to run the verification report.

The screenshot shows the Lift Link Reporting interface. The top navigation bar includes 'Home', 'Visibility', 'People', 'Groups', 'Assets', 'Messaging', and 'Reporting' (highlighted with a red circle). Below the navigation bar, there is a search bar and a 'Logout' button. The main content area is titled 'Reporting' and shows a 'Reports List (System Settings and Diagnostics)'. The list contains the following reports:

NAME	FOLDERS	LAST MODIFIED	REPORT SCHEDULE	ACTIONS
Access Point Inventory	System Settings and Diagnostics	Oct 3, 2016	🕒	⌵
Beacon Health Verification	System Settings and Diagnostics	Aug 16, 2017	🕒	⌵
Last Known Vehicle Status and Location	System Settings and Diagnostics	Mar 2, 2017	🕒	⌵
Reports Viewed Detail	System Settings and Diagnostics	Jul 25, 2023	🕒	⌵
Reports Viewed Summary	System Settings and Diagnostics	Jul 25, 2023	🕒	⌵
System Activity Log	System Settings and Diagnostics	Apr 26, 2018	🕒	⌵
VAC Firmware Status	System Settings and Diagnostics	Mar 5, 2017	🕒	⌵
VAC Verification	System Settings and Diagnostics	Oct 3, 2016	🕒	⌵
Vehicle Health Verification	System Settings and Diagnostics	Oct 9, 2018	🕒	⌵
Vehicle Synchronization Detail	System Settings and Diagnostics	Feb 23, 2017	🕒	⌵

The interface also includes a 'Recent Reports' section and a 'Folders' sidebar with options like 'All Folders', 'My Reports', 'Public Reports', 'Administration', 'Aviation', 'Battery and Charger', 'Impact', 'Maintenance Planning', 'Messaging', 'Operator Analysis', 'Safety Compliance', 'System Settings and Diagnostics', and 'Vehicle Analysis'.

2.7 Lift Link Device Synchronization

Wirelessly, Using Wi-Fi

When a successfully configured Lift Link device (including Wi-Fi profiles; see “Wi-Fi Configuration on the Lift Link device”) comes within wireless coverage range of a working and valid Access Point, the Lift Link device will automatically synchronize its configuration with the Lift Link software. The first synchronization may take 5-10 minutes, depending on the number of changes (added operators, groups, etc.) made in the Lift Link software. Subsequent synchronizations may take from a few seconds to a minute.

2.8 Impact Sensor Configuration

There are 3 steps to achieving a functional impact management system once the impact sensor is properly physically installed. Refer to the Lift Link Installation Guide. Each step is automatic and designed to work out-of-the-box.

The **first step** is calibrating the impact sensor, which relies on proper installation and mounting. The purpose of the calibration is similar to resetting an empty scale to zero pounds before weighing an object. A valid reference point is needed. The calibration process is automatically performed during the Lift Link device Configuration process above. Once that process is completed without errors, the impact sensor has its initial calibration. The system then automatically re-calibrates the sensor once per day during periods of inactivity to make sure the environment hasn't changed (i.e., the sensor came loose from the mounting surface).

If a subsequent calibration attempt fails, a diagnostic error is reported.

The **second step** is determining a valid Minimum Impact Level (MIL) Threshold. The MIL quantifies the point between “normal” and “abnormal” shock activity on each individual vehicle and forms the basis for defining the relative severity of abnormal impacts. The MIL is an automatically calculated point, based on continuous evaluation of real-time impact data, which adjusts automatically to reflect the actual range of “normal” shock activity on each vehicle as it changes over time (due to different drivers, environments, tasks, etc.).

The MIL is assigned a Severity Level of 1.0, no matter how its calculated value fluctuates. Below this level, shock activity is classified as Normal, Near-Normal, or simply Noise, and is not recorded in detail. Above the MIL, impacts are classified as Abnormal and recorded in five Severity Levels (Low, Moderate, Medium, High, and Severe). Each Severity Level is defined by its relative order of magnitude above the baseline MIL of 1.0.

The initial MIL is often determined within an hour of driving a vehicle. The continuous auto-adjustments to the MIL Threshold take place virtually instantaneously, so the system adapts very quickly to changes in a vehicle's operating environment and driver's behavior. No operator effort is required to configure the MIL and have the impact sensor begin functioning properly.

The **third step** is fine tuning the preconfigured severity levels based on your site's impact behavior goals.

The default impact severity levels are:

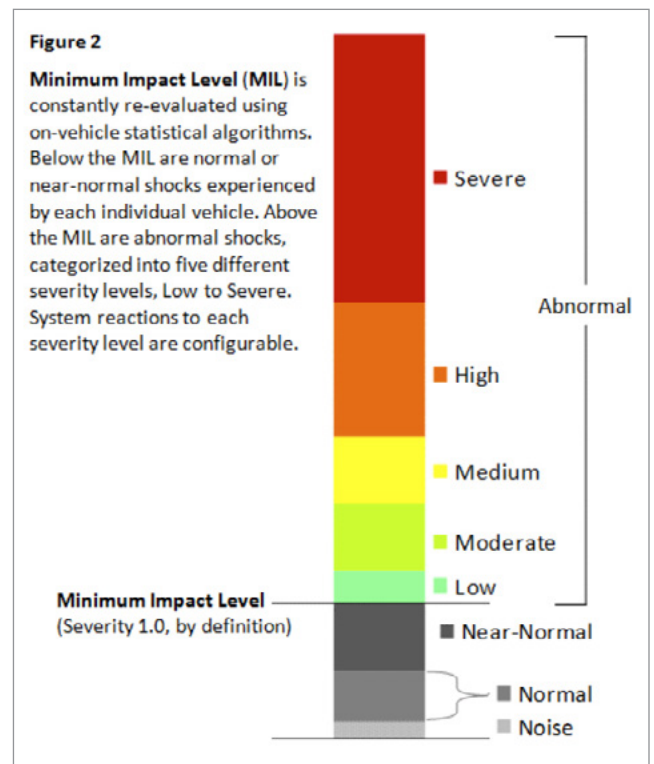
Low <1.6

Moderate 1.6 to 2.1 <

Medium 2.1 to 5.1 <

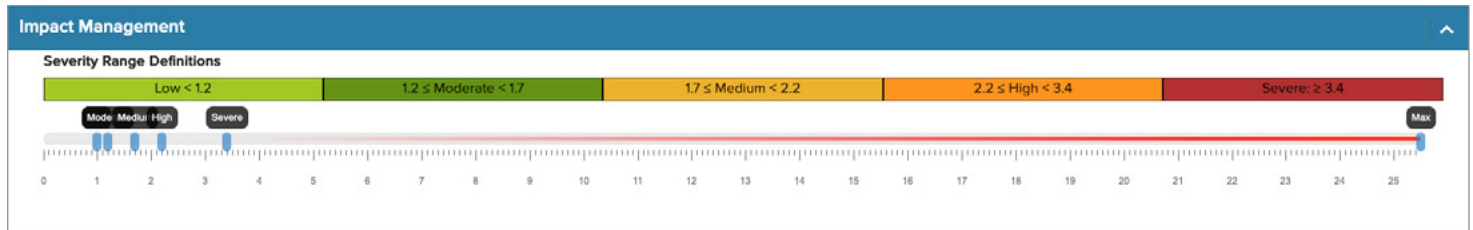
High 5.1 to 8.1 <

Severe ≥ 8.1



Certain software roles allow you to change the default. The default system reactions to impacts are:

Impact Level	Description
Low to Moderate Impacts	The Lift Link device will store and report event details about without taking any on-vehicle actions.
Medium Impact	The Lift Link device will flash an LED and prompt the operator to complete a self-inspection checklist to identify injuries or damage.
High to Severe Impact	The Lift Link device will lock out the vehicle (after a warning and grace period to bring the vehicle to a stop) and require a Master or Maintenance Operator to log in and complete a supervisor checklist to release the vehicle.

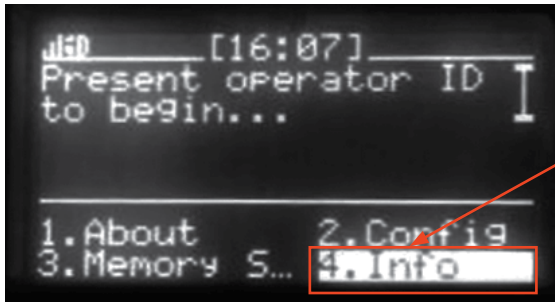


The system defaults to recommended settings for impact severities. However, to provide end users flexibility of use, each Impact Severity Level can be adjusted in the Lift Link software.

Select the Edit Icon (the Edit button at the bottom of the screen).

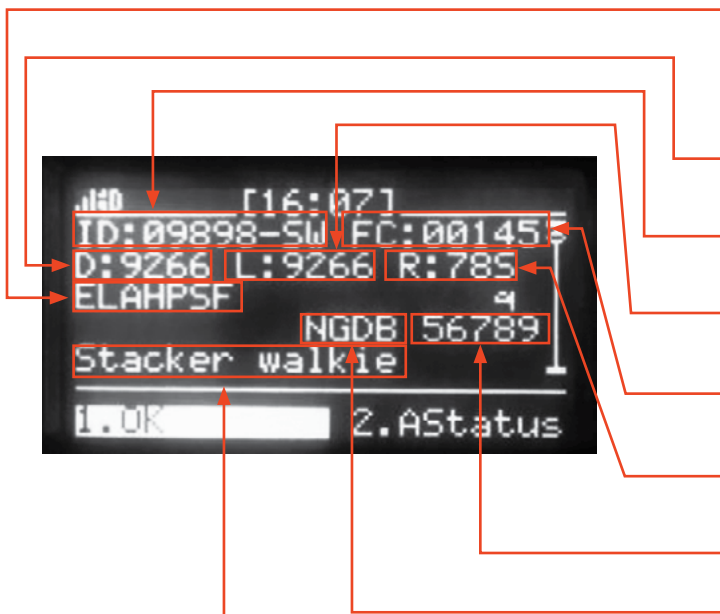
Impact Severity Levels may need to be manually adjusted if, for example, a vehicle is experiencing many Medium impacts, but operators are not reporting any damage on the self-inspection checklists triggered by those impacts. In this example, one might want to increase the Medium slider setting from 2.1 to 3.0 or 3.5. An impact would then have to be harsher to qualify as Medium. This would result in fewer Medium impacts, but a greater proportion of the Medium impacts would result in damage that would be reported on the Medium impact checklists.

2.9 Reading Lift Link Device "Info" Screens



Screen Display (first page)

Without logging in with an ID and password, Select INFO.



Sync Segment Quick Status (one letter per 'segment')

- Lowercase: received; not synchronized.
- Uppercase: synchronized (See Lift Link device Synchronization Status section).

D

- IRF frequency for VMS data.

ID

- Vehicle ID.

L

- IRF frequency for location data.

FC

- Facility ID (or facility name code once synchronized).

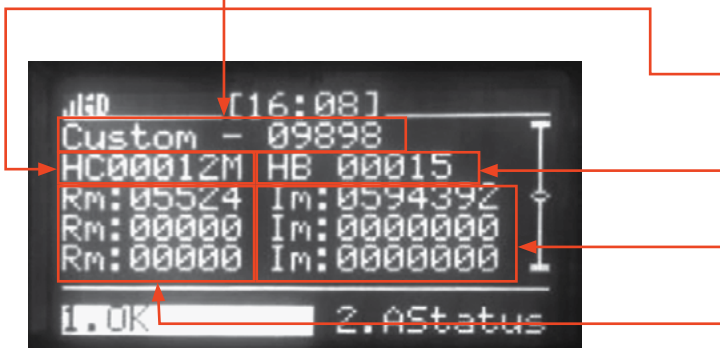
R

- IRF data rate.

Site Code

Customer Code

Configured Vehicle Type and ID



HC

- Automatic hibernate countdown (minutes remaining).

HB

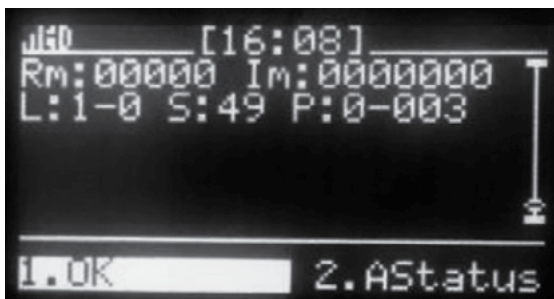
- Automatic hibernate setting (minutes).

Im

- Firmware upgrade image size in bytes (100 bytes per packet).

Rm

- Firmware packets remaining to download for upgrade.



Screen Display:

(Scroll down to the second page).

L	DB firmware upgrade status
0-0	No firmware to download or install
0-1	Firmware install pending
1-0	Firmware downloading
2-0	Firmware pending download
3-0	Fully downloaded, pending installation

S	Overall firmware upgrade state
A9, B9, E9, F9	Lift Link device can program available firmware
00, 02, 08, 10, 12, 18, 20, 22, 28, 30, 32, 38, 40, 42, 48, 50, 52, 58, 60, 62, 68, 70, 72, 78, 80, 82, 88, 90, 92, 98, 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A, 9A, 0A, A0, A2, A8, AA, B0, B2, B8, BA, C0, C2, C8, CA, D0, D2, D8, DA, E0, E2, E8, EA, F0, F2, F8, FA	Lift Link device can only program available firmware by a request from an authorized operator
09, 19, 29, 39, 49, 59, 69, 79, 89, 99, C9, D9	Lift Link device can only program available DB firmware
03, 13, 23, 33, 43, 53, 63, 73, 83, 93, 1B, 2B, 3B, 4B, 5B, 6B, 7B, 8B, 9B, A3, AB, B, B3, BB, C3, CB, D3, DB, E3, EB, F3, FB	Lift Link device cannot program any firmware because Lift Link device is in ID Optional mode

P	(1st 2 digits): PIB firmware upgrade status
0-0	No firmware to download or install
0-1	Firmware installs pending
1-0	Firmware downloading
2-0	Firmware pending download
3-1	Fully downloaded, pending installation

P	(2nd 2 digits): Firmware upgrade priority
00, 02, 10, 12	PIB is currently highest priority
01, 03	DB is currently highest priority
11	SH is currently highest priority

NOTE: Other combinations are possible, contact Lift Link Support for more details.

SECTION 3: Standard OperatorS

3.1 Logging Into the Lift Link Device (to start the vehicle)

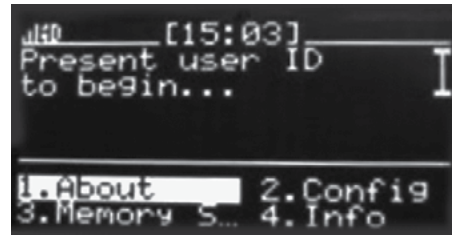
1. If the Lift Link device screen is blank, press the Lift Link device's POWER button (KEY BUTTON) and turn the vehicle ignition key to the on position.

NOTE: If the Lift Link device is on an internal combustion (IC) vehicle that has not been used for 35 minutes (configurable), the Lift Link device will go into Power Down Mode, and the Lift Link device screen will be blank. If this is the case, the Lift Link device's POWER button (KEY BUTTON) must be pressed, or the vehicle's ignition key must be turned on to power the Lift Link device back up.



2. When the initial Lift Link device login screen is displayed, touch an Access ID to the reader.

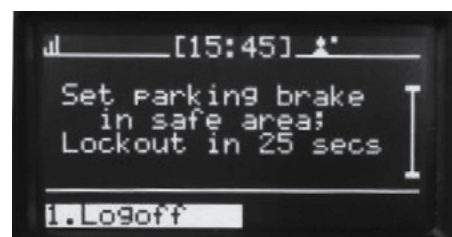
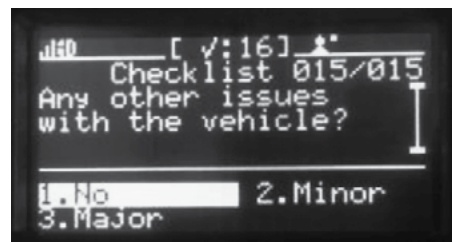
NOTE: If a PIN password is also required for login, the Lift Link device screen will prompt the operator to enter the PIN number. Press the numeric keys to enter the PIN (displayed as asterisk: **** for security). Press ENTER.



3. If the access ID is authorized for that vehicle, the vehicle will start, and the Lift Link device's green LED will turn on. If a safety checklist has not been completed for the vehicle within the compliance period (default is set to 14 hours), the checklist automatically begins when the operator logs in. The Lift Link device's yellow LED blinks and the operator has 20 minutes of login time to complete the checklist. (The time left to complete the checklist is displayed in the status header of the Lift Link device screen). If the operator exits the checklist without completing it, the operator is automatically logged off the vehicle. If the 20-minute grace period expires, the operator is prompted that a lockout will occur, and the Lift Link device displays a countdown to the lockout.

For safety reasons, when an operator is logged into the Lift Link device and the vehicle is in motion, the keypad will be inoperative. Once the vehicle comes to a complete stop, the Lift Link device keypad will again be operable, and the screen will illuminate.

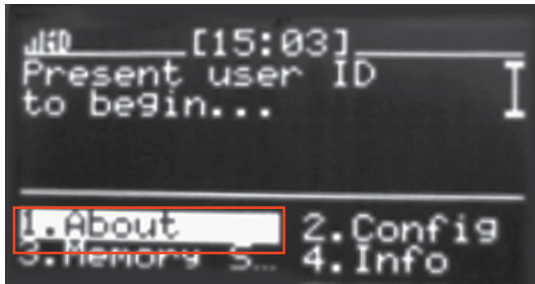
NOTE: In "Any ID" mode the vehicle will NOT lock after the checklist grace period if the checklist is not completed.



3.2 Login Error Code Table ["Error (AXX)" plus below text when login is attempted]

Code	Display Text	Possible Cause	Solution
A03	Not authorize for this vehicle	The operator is not authorized in the system software for that vehicle.	A Master or Maintenance Operator can add this operator using the "Temp Users" menu option (see Section 3).
A04	Invalid operator ID or password	PIN password does not match the operator ID in system software.	A System Administrator can reset or eliminate the PIN password in the system software.
A05	Invalid operator ID or password	Operator authorization is expired for that vehicle group, or the operator's medical, training, or certification date has expired.	A System Administrator can reset the authorization in the system software. However, a Master Operator cannot add this driver using the "Temp Users" menu option.
A06	Present electronic ID	Operator attempts Lift Link device login using the keypad instead of the integrated Access ID reader.	The operator must log in with an acceptable Access ID.
A07	Critical response lockout	The vehicle is disabled for Standard Operators due to a "Critical" safety checklist response.	A Maintenance Operator must log in to unlock the vehicle.
A08	Present electronic ID	Operator attempts Lift Link device login with a manual code reserved for certified installers. These codes are automatically disabled after installation.	The operator must log in with an acceptable login method Access ID.
A09	Vehicle not authorized for use	The vehicle is taken out of service via the system software, or the vehicle does not belong to any group with valid authorization expiration.	A System Administrator can put the vehicle back into service or reset the group authorization in the system software.
A11	Security shutdown	The vehicle is deactivated by a system administrator via the system software.	A System Administrator can reactivate the vehicle in the system software.
A13	Vehicle is in break mode, cannot login	The vehicle is locked by its previous operator.	The vehicle can be unlocked by (1) the previous operator logging out, (2) a Master or Maintenance Operator logging in, or (3) the break period expiring (15 minutes).
A14	Master lockout, cannot log in	The vehicle is locked by a Master Operator.	A Master or Maintenance Operator must log in to unlock the vehicle for Standard Operators.
A15	Vehicle locked due to lockout event	The vehicle is locked due to an impact or checklist non-compliance event.	A Master or Maintenance Operator must log in to unlock the vehicle for Standard Operators.
A16	Maintenance lockout, cannot log in	The vehicle is locked by a Maintenance Operator.	A Maintenance Operator must log in to unlock the vehicle for Standard Operators. Maintenance Operator must log in to unlock the vehicle for Standard Operators.
A17	Vehicle locked due to lockout event	The vehicle is locked due to a checklist critical response.	A Maintenance Operator must log in to unlock the vehicle for Standard Operators.
A18	Checklist timeout, cannot log in	The vehicle is locked due to a checklist non-compliance event.	A Maintenance Operator must log in to unlock the vehicle for Standard Operators.
A19	System error cannot log in	The vehicle is locked due to a system error that must be cleared.	A Maintenance Operator must log in to release the vehicle for Standard Operators.

3.3 Reading Lift Link device "About" Screens

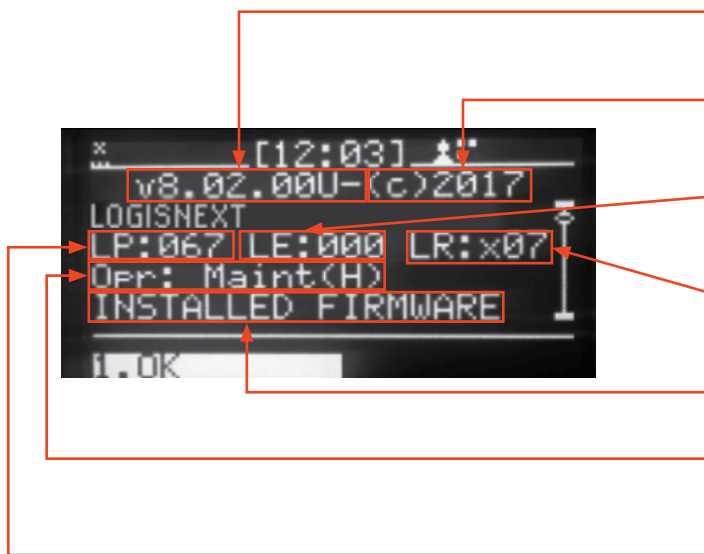


The Lift Link device's "About" screen displays identifying information about the Lift Link device's current operator, registered license key, and system release version.

To access the "About" screen from the Lift Link device's main login screen, select ABOUT.

Currently logged in operator type (and ID number for non-keypad operators).

The About Display Screen:



v

- Release Version

(c)

- Release Year

LE

- Troubleshooting Information

LR

- Troubleshooting Information

Installed Firmware Status

Opr

- Operator Type

LP

- Troubleshooting Information

DB

Daughterboard Firmware Version

- QU = Lift Link Device
- HU = Lift Link Device

PIB

PIB Firmware Version

- SU = Lift Link Device
- OU = Lift Link Device

B

- PBL Revision

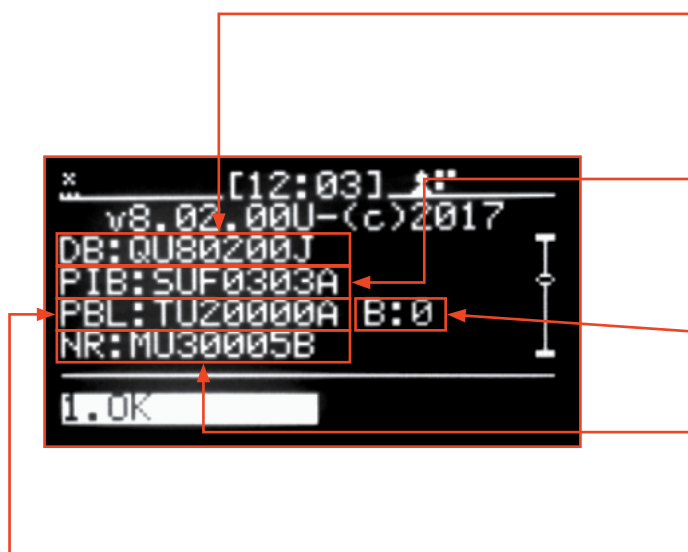
NR

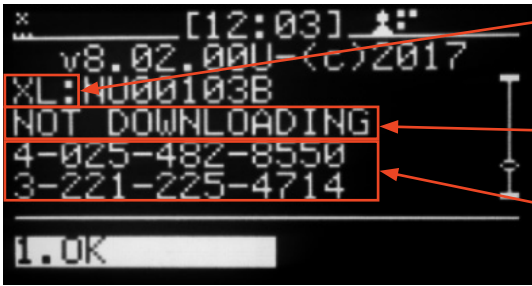
Neuron Firmware Version

- MU = Lift Link Device

PBL

- PIB Bootloader Version





XL

Xilinx Firmware Version

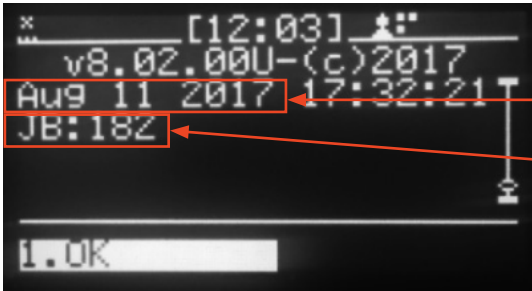
- N = Lift Link device

Pending Firmware Status

- If new firmware was available, this would list the versions.

License Key

- First and second row.
- Page 3 (scroll down to third page).



Firmware Release Date

JB

- DB revision.

3.4 Logging Off the Lift Link Device

1. To log off a vehicle, come to a complete stop with the vehicle (and turn off the engine, if applicable) .

While stopped, press the POWER button (KEY BUTTON).

NOTE: For safety reasons, the log off function is inoperable if the vehicle is in motion, or (for internal combustion vehicles) if the engine is on.



2. When an operator successfully logs off a vehicle, the vehicle will become deactivated, the Lift Link device's main login screen will reappear, and the Lift Link device's green LED will turn off.

NOTE: The operator is responsible for the vehicle until he/she logs off the Lift Link device. If the operator leaves his/her vehicle without logging off, anyone could use the vehicle under the operator's name. To prevent this circumstance and avoid being held responsible for illegitimate vehicle use, an operator must log off the Lift Link device whenever he/she leaves his/her vehicle for more than a few minutes.

The Lift Link device will automatically time out (self-log off) after a period of non-use (The default is set to 10 minutes).



3.5 Answering Safety Checklists

The Lift Link device automatically prompts operators to answer mandatory safety checklists when the following occurs:

1. Compliance with established checklist rules must be enforced,

- or -

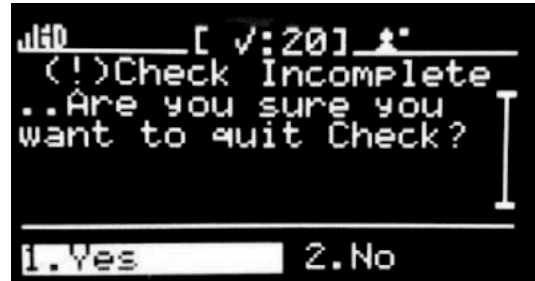
2. A defined event, such as an impact, has occurred.

Safety checklists can also be launched manually at any time while an operator is logged into a vehicle by pressing the CHECKLIST button.

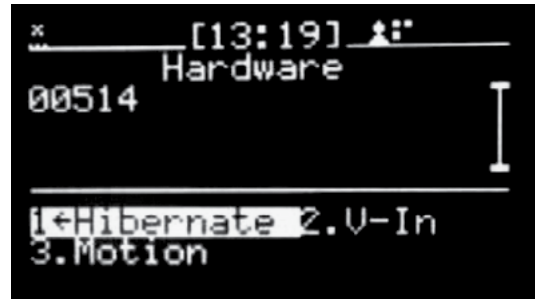


The diagram shows a Lift Link device with a screen displaying a safety checklist. The screen shows the time 15:18, the checklist ID 001/003, and the question "First Question". Below the question are three options: 1. Normal, 2. Warning, and 3. Critical. The "1. Normal" option is highlighted. The device has a numeric keypad, arrow keys, and function keys like ESC and ENTER. Red lines connect callout boxes to specific parts of the device.

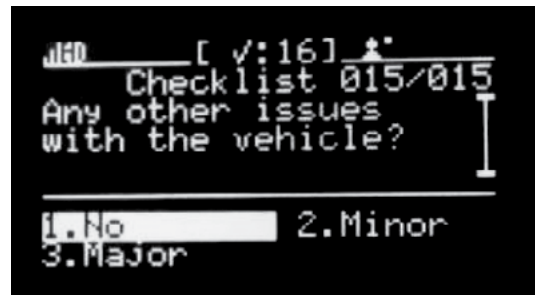
- Checklist Question**
- Current Position In Checklist**
 - e.g., Question 11 of 15.
- Launch CHECKLIST Button**
- Up and Down Arrow Keys**
 - Up and Down ARROW keys scroll through checklist questions, if applicable. Returns to top row when advancing past the last row.
- Scroll Indicator Vertical Bar**
- Line Separating Question and Answers**
 - Auto-resizes based on the number of menu options.
- Selected Checklist Current Response (highlighted).**
- Left and Right Arrow Keys**
 - Left and Right ARROW keys Highlight the previous or next answer. Additional pages of responses are available when the right arrow or left arrow is displayed next to the first or last item in the display. (Wraps beginning-end and end-beginning).
- Enter Key**
 - ENTER key submit the highlighted response and proceeds to the next checklist question.
- Number & Letter Key Pad**
 - Quick press: Highlights menu option corresponding to key pressed.
 - Long press: Selects menu option corresponding to key pressed and advances to the next screen.
- ESC Key**
 - Quick press: ESC key Return to the previous checklist question (exists checklist if pressed while on the first question).
 - Long press: ESC key Exits the checklist from any question.



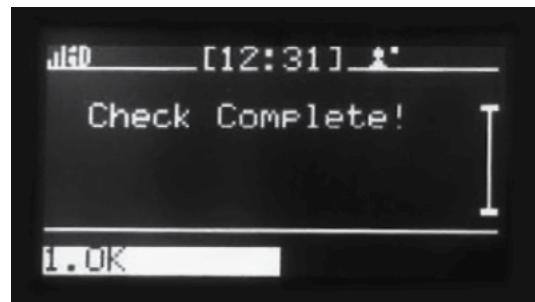
NOTE: If an operator tries to exit a checklist prior to completing all questions, the Lift Link device screen will ask if the operator wants to exit the checklist.



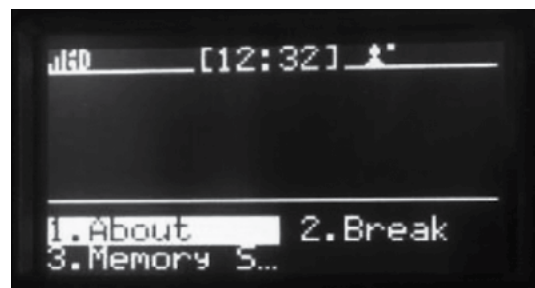
Exiting a checklist prior to completion will violate safety compliance requirements and result in the loss of all responses to that checklist!



Select OK to complete the Checklist.



The completed checklist returns to the main menu display.



3.6 Critical Shutdown

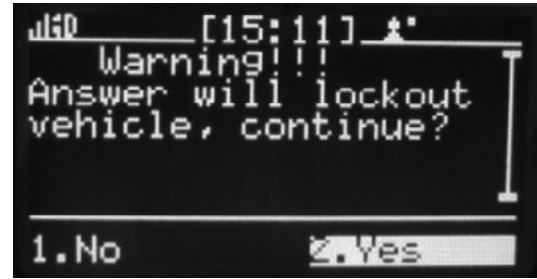
If an operator enters a checklist response that has been defined as “critical,” prior to completing the checklist, they will be prompted to confirm that they wish to complete the checklist with at least one critical response. If the operator confirms the critical response, the checklist is completed, the operator is automatically logged off, and the vehicle is locked out.

NOTE: The vehicle will NOT lock out operators while in “Any ID” mode.

The Lift Link device remains disabled for Standard and Master Operator(s) until a Maintenance Operator logs in and reactivates the vehicle.

Because of this safety function, note the following:

- An operator must complete the safety checklist while the vehicle is in a safe location, away from traffic flow, in case the vehicle is deactivated.
- Operators should only answer “Yes” to this question if they are sure the vehicle is unsafe.

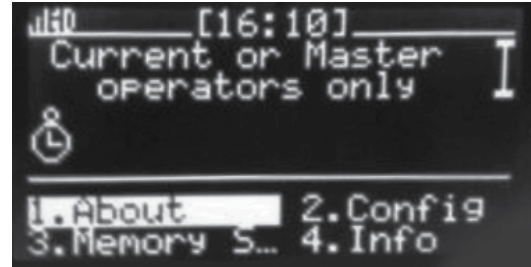
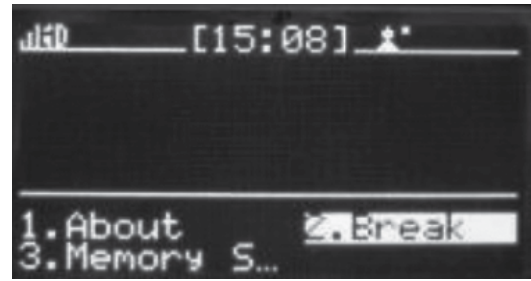


3.7 Operating the Vehicle

Break Mode

The Lift Link device's "Break" option is available to all operators. This function allows an operator to reserve his/her vehicle for short periods of time (The default time is 15 minutes). To enter Break mode, from the Lift Link device menu screen, select BREAK.

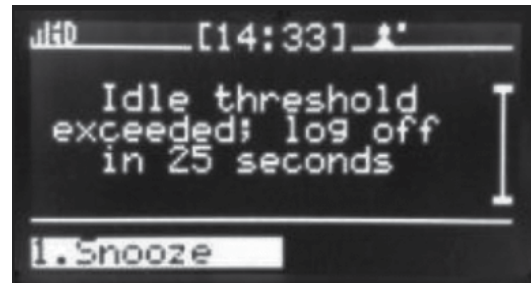
While in Break mode, the screen indicates that only the operator who put the vehicle into Break mode, a Master Operator or a Maintenance Operator can log into that vehicle. All other operators are prevented from logging into the Lift Link device on that vehicle. After the break time-period, the screen changes to the standard screen and any operator will once again be able to log into the Lift Link device on that vehicle.



Idle Timeout

If an operator does not log off the Lift Link device after using a vehicle, anyone could drive that vehicle under the operator's name, resulting in the loss of access control and accountability for vehicle use. To prevent this unsafe practice (and to save vehicle wear and wasted fuel), the Lift Link device will automatically time-out after a vehicle has been idle for a period of time (the default time is 10 minutes).

When the idle timeout occurs, a countdown appears on the Lift Link device screen and the left LED alternately blinks green and orange to alert the operator of the impending idle timeout. At the end of the countdown, the Lift Link device logs off the operator and shuts the vehicle down. To cancel the timeout, the operator can move the vehicle or from the Lift Link device menu screen, select SNOOZE. To use the vehicle after an idle timeout, an operator must log in again using their Access ID.

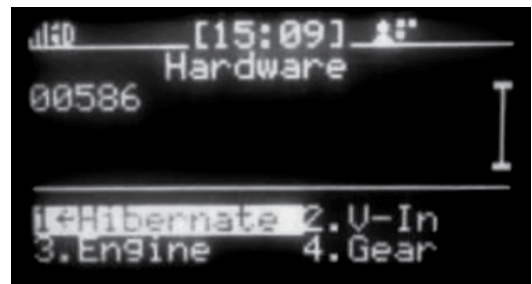
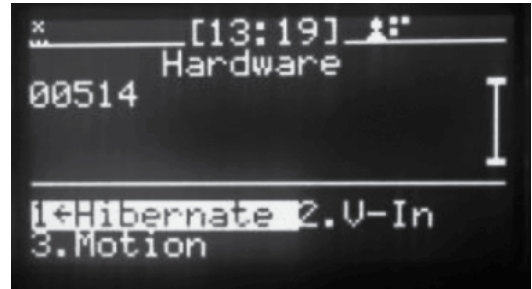
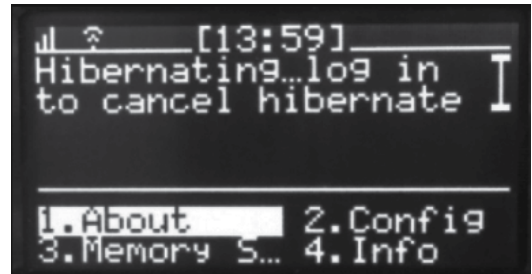


Automatic Hibernate

On internal combustion vehicles, the Lift Link device has an automatic power-down function to conserve vehicle battery power. The automatic hibernate feature puts the Lift Link device and any peripherals into a “hibernate” mode that uses much less power than the Lift Link device’s active mode. The Lift Link device will automatically enter hibernate mode after 35 minutes of vehicle inactivity post operator log off.

In Hibernate mode, the Lift Link device periodically samples for activity and sends check-in records to the software. If any activity (motion, login, etc.) is sensed during the check-ins, the Lift Link device will return to full power mode. Alternatively, you can restore the Lift Link device to its active state (“Wake up the Lift Link device”) by pressing the Lift Link device’s POWER button (see Section 2 “Logging onto the Lift Link device”).

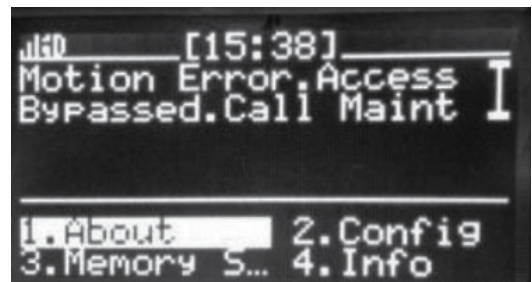
Another activity example is (engine, login, etc.)



Motion Safety Feature

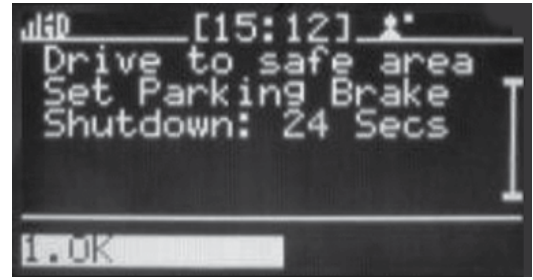
The Lift Link device’s display and keypad are inoperable and log-off is prevented for Standard and Master Operators when vehicle motion is detected. This safety feature prevents Standard and Master Operators from interacting with the Lift Link device while the vehicle is moving.

NOTE: Maintenance Operators can always see the Lift Link device’s display and use the Lift Link device’s keypad, even if the vehicle is in motion, to enable Standard and Master Operators to perform Lift Link device configuration or troubleshooting.



Event Shutdowns (impact, safety non-compliance, etc.)

For certain unsafe events, the Lift Link device will state the vehicle will shut down within 30 seconds (only if the vehicle is in Registered ID mode) and a countdown will begin. "High" and "Severe" impacts, safety checklist non-compliance, and checklist critical responses all result in vehicle lockouts and require Master or Maintenance Operators to 'unlock' the vehicle. These events are preconfigured in the Lift Link device and Lift Link software.

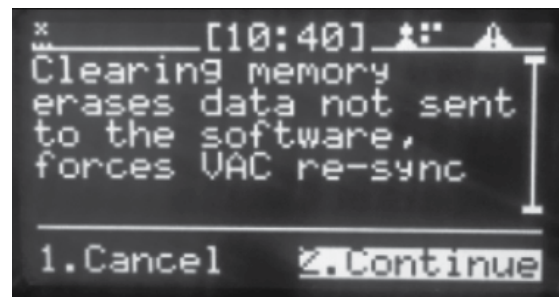


Memory Status

The Lift Link device has onboard memory that can retain different types of data for various durations. In cases where the Lift Link device remains outside of wireless coverage for extended periods of time, the Lift Link device will prompt to drive to an Access Point. To check the Lift Link device memory status at any time, from the Lift Link device menu screen, select MEMORY STATUS. The Lift Link device displays the memory consumed in a percentage.

The Lift Link device Memory Status can be cleared by certain operator authorization levels. Select CLEAR MEMORY.

Clearing memory erases any performance data (vehicle usage, checklists completed, events occurred, etc.) not yet sent to the software, and forces the Lift Link device to resynchronize before Standard Operators can login.



SECTION 4: MASTER OPERATORS (SUPERVISORS)

A Master Operator or a Maintenance Operator can log into any unlocked and certain locked vehicles at any time regardless of group assignments. In addition, a Master Operator or a Maintenance Operator can perform the following special functions:

4.1 Adding Temporary Users

A Master Operator can temporarily assign a vehicle to a Standard Operator who would not have access to that vehicle. For example, if a Standard Operator in the "Receiving" group needs to use a "Shipping" group vehicle, a Master Operator can temporarily authorize that operator on that vehicle.

The temporarily assigned operator does not have to be a valid driver in the system. If the ID is not known by the software, the ID will automatically be added as a driver (with no access privileges) to the system software.

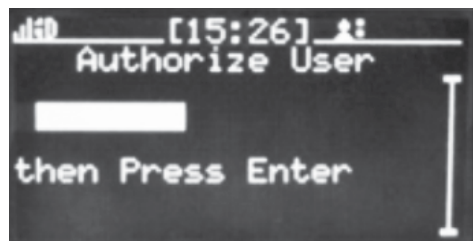
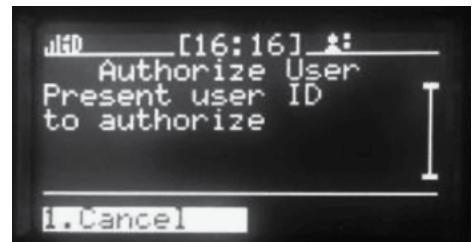
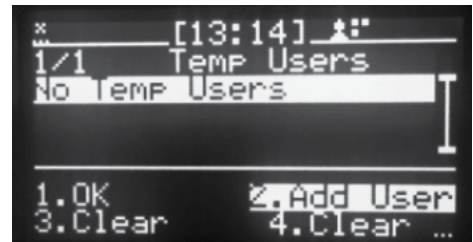
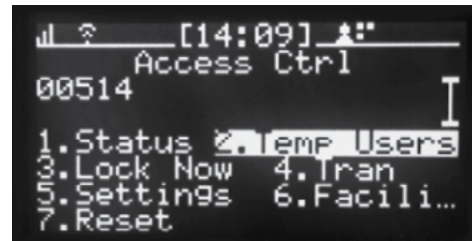
This valuable feature ensures that the operational data is correctly assigned to the appropriate operator rather than to no one (if access control is bypassed) or to the Master Operator if they let the operator use the vehicle under their ID.

NOTE: If a Master Operator is assigned to groups, they can only assign temporary operators to vehicle in groups they belong to.

To temporarily authorize an operator on a vehicle, a Master or Maintenance Operator must perform the following:

1. Log into the vehicle to be temporarily assigned.
2. On the first menu screen, select ACCESS.
3. On the "Access Ctrl" sub-menu, select TEMP USERS.
4. On the "Temp Users" sub-menu, select ADD USER.
5. Touch the Access ID card of the Standard Operator who needs to be temporarily authorized to the Lift Link device's Access ID card reader. Then log off.

That newly assigned operator is now temporarily authorized to use that vehicle, for a period of 14 hours.



4.2 Clearing Event Lockouts

High and severe impacts, failure to complete a safety checklist in the defined period (non-compliance), and checklist critical responses will shut down the vehicle and lock it out, to prevent Standard Operators from using that vehicle.

NOTE: Vehicles in "Any ID" mode, are NOT subject to lockouts.

To view the cause of a lockout, log in to the locked vehicle.

From the Lift Link device menu screen, perform the following steps:

1. Select ACCESS.
2. Select STATUS.

To clear a vehicle lock-out and return the vehicle to operation, a Master Operator or a Maintenance Operator must perform the following:

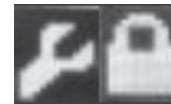
1. Log into the locked vehicle.

The screen displays the following:

The Lock and Operator Icon are for impact and non-compliance events. Wrench and Lock icon is for critical response events (Maintenance only).

2. Press the Lift Link device's CHECK button and answer the checklist questions. If the responses indicate that there are no critical safety issues, the lock-out will be cleared and the LED will turn off. If the responses indicate another critical issue, a new lockout will occur.

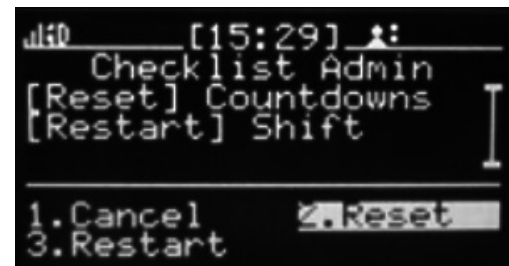
If there are no critical safety issues, simply log out. The vehicle will then be available to authorized Standard Operators.



4.3 Checklist Administration

Should the need arise, the Lift Link device provides the ability for a Master Operator or Maintenance Operator to adjust the current compliance parameters for a vehicle. As previously described, each operator is provided (a default of) 20 minutes of login time to complete a safety checklist, when the vehicle is non-compliant. To reset the 20-minute safety checklist countdown on a vehicle, when the operator has a next log in (perhaps in a case where maintenance inspected the vehicle ad hoc), perform the following:

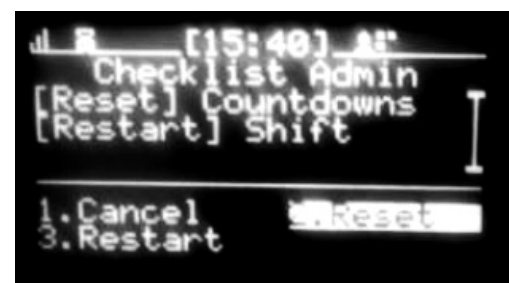
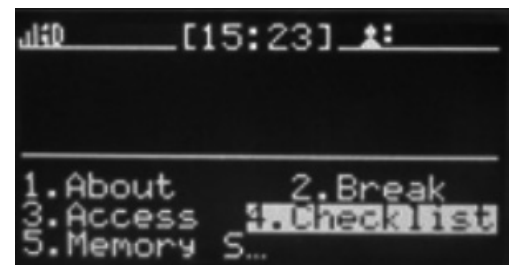
1. Log into the vehicle.
2. On the first menu screen, select CHECKLIST.
3. On the "Checklist Admin" sub-menu, select RESET.



To force operators to complete the Lift Link device safety checklist at the next login, perform the following:

For example, where a Maintenance Operator worked on a vehicle, and now you want operators to validate the changes through a safety inspection.

1. Log into the vehicle.
2. On the first menu screen, select CHECKLIST.
3. On the "Checklist Admin" sub-menu, select the RESET menu option.

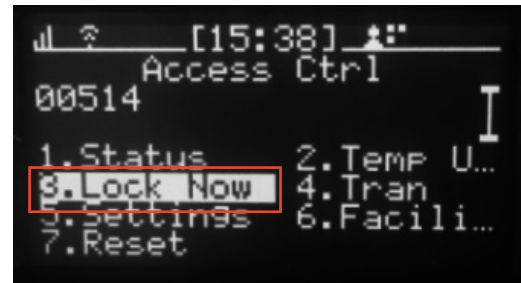


4.4 Manual Vehicle Lock

In certain instances, (e.g., when a vehicle requires maintenance) it may be desirable to prevent all Standard Operators from accessing a vehicle (typically called a lockout or tag-out). When a vehicle is locked, only a Master Operator or Maintenance Operator can access and use that vehicle.

To lock a vehicle, a Master or Maintenance Operator must perform the following:

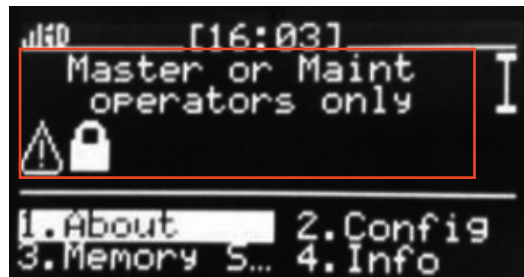
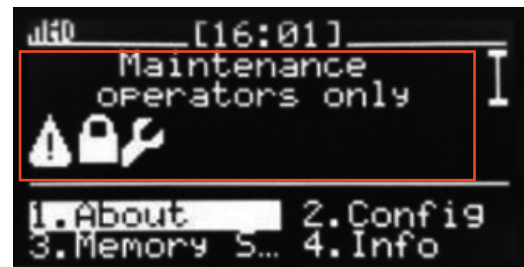
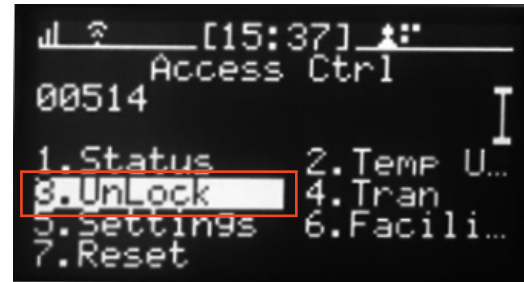
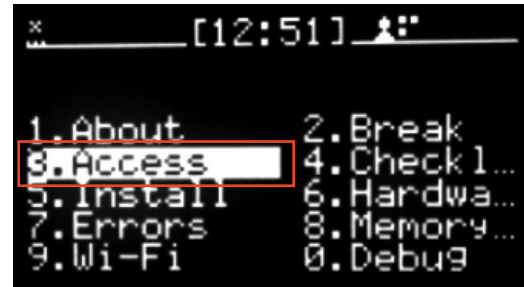
1. Log into the vehicle.
2. On the first menu screen, select ACCESS.
3. On the "Access Ctrl" sub-menu, select LOCK NOW.



4.5 Manual Vehicle Unlock

To unlock a vehicle, a Master or Maintenance Operator must perform the following:

1. Log into the vehicle.
2. On the first menu screen, select ACCESS.
3. On the "Access Ctrl" sub-menu, select UNLOCK.



SECTION 5: MAINTENANCE OPERATORS

Maintenance Operators can perform the same special functions as Master Operators. See “Temporary Users,” “Clearing Event Lockout,” “Checklist Administration,” and “Manual Vehicle Lock/Unlock” under Section 4: Master Operators (Supervisors).

A Maintenance Operator can also perform the following additional special functions:

5.1 Installation and Configuration

Maintenance Operators are required to install and configure the Lift Link device before the Lift Link system can operate. Installation and configuration must take place when the Lift Link device is powered up for the first time, and when a Lift Link device is replaced.

Maintenance Operators should not enter the Install menu unless they need to re-configure the Lift Link device. See Section 2: Configuring the Lift Link Device, for more details on Lift Link device configuration.



Lift Link Device Timer Reset After Completed PM

Preventative Maintenance (PM) due dates are established automatically through the Lift Link software, based on vehicle activity hours tracked by the Lift Link device. When a PM is complete, the Lift Link device’s activity timer must be reset, so the next PM due date can be automatically determined.

To reset the Lift Link device timer, a Maintenance Operator must perform the following:

1. Log into the vehicle.
2. Press the Lift Link device’s CHECK button.
3. Select YES, to the checklist question about PM performance.

NOTE: If the Maintenance Operator selects the NO response, the system will continue to accrue data with “PM Date” and “Hours Since Last PM” based on the last time the Lift Link device timer was reset.



Diagnostic Errors

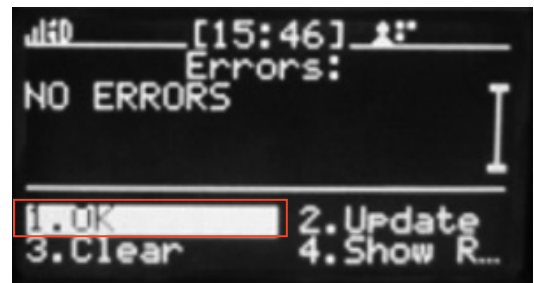
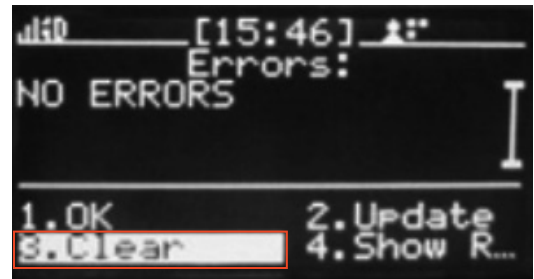
The Lift Link device has built-in intelligence to diagnose and report errors. In certain cases, these errors auto correct themselves; in other cases, the errors must be resolved and then 'cleared'. These diagnostic errors are based on operating parameters that may indicate the Lift Link device is not operating properly. When an error is active, the RED LED blinks and the screen displays a blinking error icon. See Section 7: Lift Link Device Troubleshooting, for details on the error definitions and troubleshooting steps.

Some errors clear themselves after the issue has been corrected (e.g., "Memory full"). For other errors, Maintenance Operators can clear the reported error on the Lift Link device once the issue has been resolved.



To clear an error report, perform the following:

1. Log into the vehicle.
2. On the first menu screen, select ERRORS.
3. On the "ERRORS" sub-menu, select CLEAR.
4. Select OK to exit the screen.



5.2 ID Optional ("Soft" Bypass)

A Maintenance Operator can bypass the access control feature of the Lift Link device via firmware, allowing anyone to operate a vehicle. This is called ID Optional mode ("soft bypass"). It is most typically used if there is a Lift Link device problem that prevents authorized operators from accessing a vehicle.

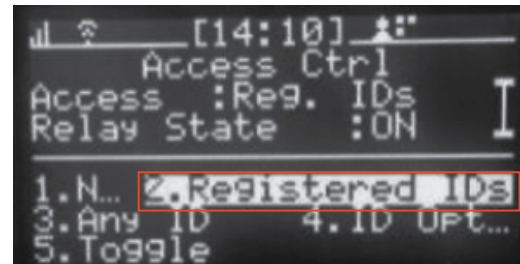
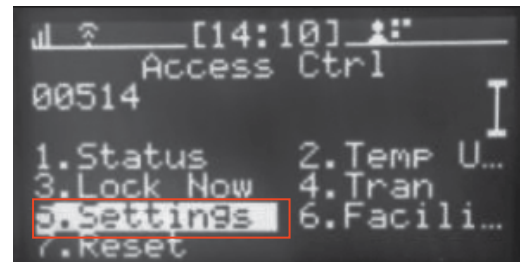
NOTE: The soft bypass option should only be used in emergencies!

To enable or disable the ID Optional mode, a Maintenance Operator must perform the following:

1. Log into the vehicle.
2. On the first menu screen, select ACCESS.
3. On the "Access Ctrl" sub-menu, select SETTINGS.
4. On the "Settings" sub-menu, one of the following three menu options:
 - Selecting **ID OPTIONAL** will put the vehicle into soft bypass - operators will NOT be required to log in to use the vehicle (though operators may log in if they choose).
 - Selecting **REGISTERED IDs** disables soft bypass, restoring vehicle access control - operators will again be required to log in to use the vehicle.
 - Selecting **ANY ID** requires operators to log in with any hardware-compatible ID (Any ID ignores software configuration). However, the Lift Link device will not act (i.e., lockouts, email, etc.) on events.

NOTE: The software setting for Any ID or Registered ID mode overrides the Lift Link device-based selection if the Lift Link device is in wireless coverage range.

The TOGGLE option is for troubleshooting the Lift Link device's access control relay. Toggle does not affect the access method, but it does alternately enable and disable the truck's drivability state by toggling the output (relay or PWM).



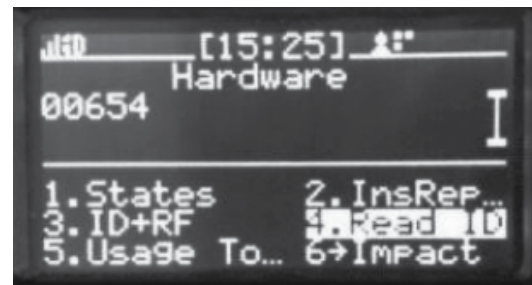
5.3 Read Operator Identification

The Lift Link device can be used to determine the access credentials programmed onto an operator's ID (this can also be performed using the desktop reader and the Lift Link software). Determining the credentials of an ID is most performed when an ID is found without an operator to claim ownership.

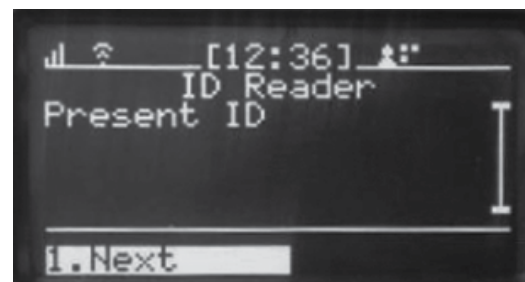
1. Log into the vehicle.
2. On the first menu screen, select HARDWARE.



3. On the "Hardware" sub-menu, select READ ID.



4. Present the ID to the Lift Link device reader.



The Lift Link device displays the ID credentials.



5. Write this number down and search for it in the Lift Link software to find the operator's name that the ID belongs to.

6. Select NEXT to exit the "Hardware" screen.



5.4 Replacing an Existing Lift Link Device

When a Lift Link device needs to be replaced, a Maintenance Operator can automatically configure the new Lift Link device with the previous Lift Link device's settings, using the "Clone Lift Link device" menu option. This eliminates the need to re-run the Install Wizard by wirelessly transferring all settings and meters from the previous Lift Link device to the replacement Lift Link device, based on the last reported data for the specified Lift Link device ID number.

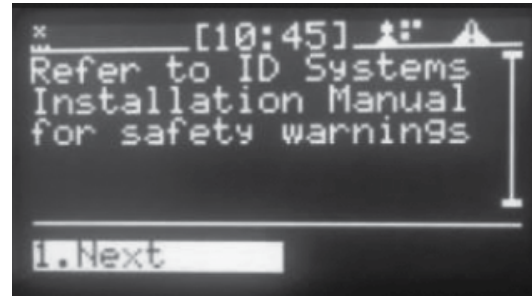
IMPORTANT: When replacing an existing Lift Link device, DO NOT use the Lift Link device's Install Wizard!

After connecting a replacement Lift Link device to an existing Lift Link device cable, the Lift Link device screen will display an error message when it powers up. Ignore this error.

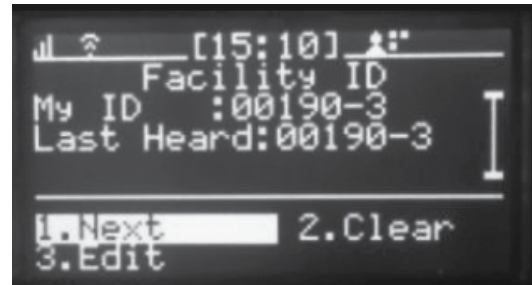
1. Log into the vehicle.
2. Park the vehicle safely at a location with a strong Wi-Fi signal.
3. Enter valid Wi-Fi credentials and facility ID and verify the Lift Link device connects.
4. Select INSTALL. Navigate to the "Choose Installation Type" screen.



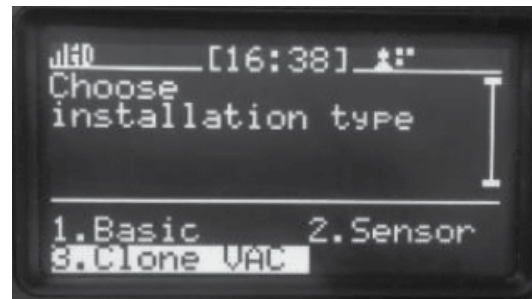
5. Select NEXT.



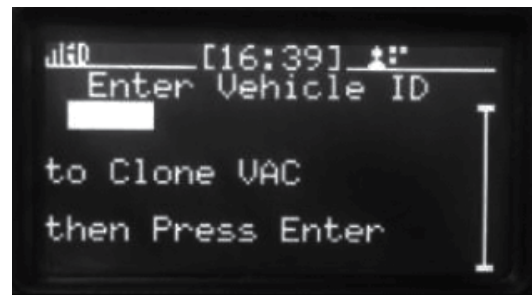
6. Select NEXT.



7. Select CLONE Lift Link device.



8. Enter the vehicle ID to clone the Lift Link device.



9. When prompted, enter the facility ID, vehicle type and vehicle ID number. Be sure to enter all leading zeros in the ID number.

The Lift Link device will automatically download the configuration data associated with that vehicle ID and display one of the following messages:

Lift Link Device Message	Meaning
Configured Success	The replacement Lift Link device is successfully configured.
Not All Configured	Some configuration data is missing or different than the previous Lift Link device (This is likely to occur if the replacement Lift Link device has a newer firmware version than the Lift Link device being replaced). In this case, a Maintenance Operator must manually configure the replacement Lift Link device as if it was a new vehicle installation, using the Lift Link device's Install Wizard. Refer to Lift Link Installation Guide.
Wrong Version!	The previous Lift Link device had a significantly older version of firmware than the replacement Lift Link device. In this case, contact the local System Administrator or Lift Link support team.
Lift Link Device NOT FOUND	The Lift Link device ID is not found in the system database. In this case, the vehicle ID should be double-checked with the local System Administrator, and the "Clone Lift Link device" process re-run. Then the correct vehicle type and vehicle ID can be entered.

NOTE: If a Lift Link device is moved from one vehicle to another vehicle, use the Lift Link device's Install Wizard, not the "Clone Lift Link device" function. (See Section 2: Configuring the Lift Link Device).

5.5 Checking Lift Link Device Synchronization Status

For communication efficiency purposes, there are many Lift Link device profile segments that can be updated and synchronized independently. The Lift Link software displays the synchronization status for all communicating vehicles. However, the following explains the content.



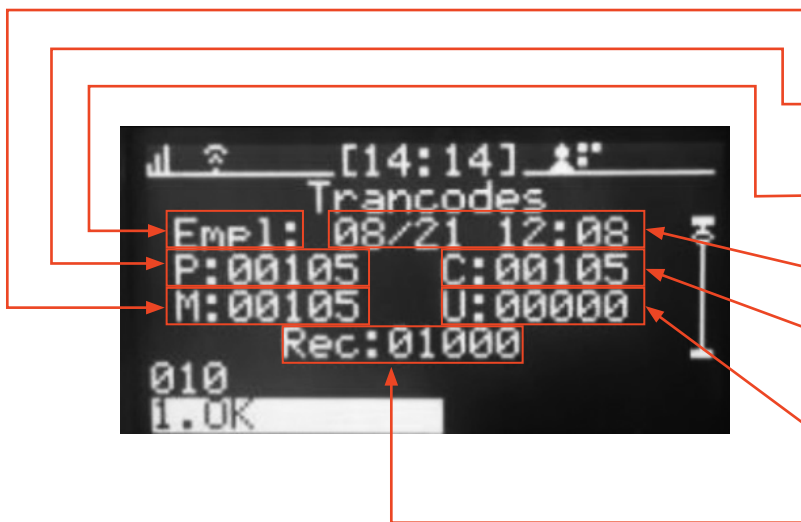
On the Lift Link device menu screen:

1. Select ACCESS.
2. Select TRAN, to check on a particular Lift Link device's synchronization status.

Incremental Count When In Range

Always increments in range.

NOTE: If the "M" number is less than the "C" number, then the Lift Link device's segment is not updated.



M

- Latest version required.

P

- Pending version.

Profile Segment Name

Date and Time of Last Completed Update

C

- Latest version on the Lift Link device.

U

- Version retained following a firmware upgrade.

Rec

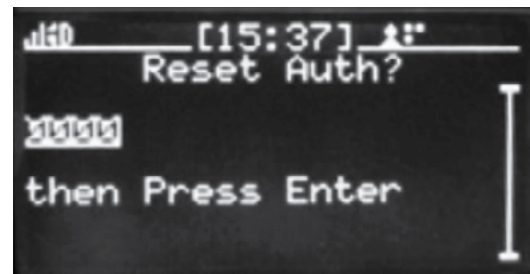
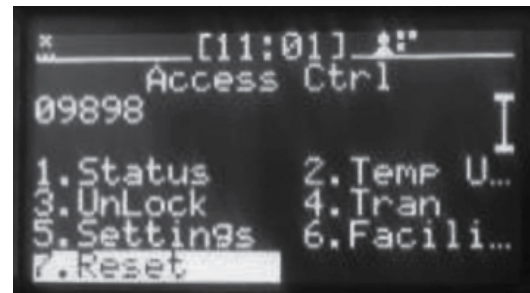
- Records received for synchronizing segments.

Profile Segment		Description	
Empl	E	Employees	This segment increments when any employees and groups are added, deleted, or updated in Lift Link software.
Elst	L	Employee bit list	This segment increments with any change in the "Empl" segment or when an employee group assignment is updated in Lift Link software.
Auth	A	Authorization schedule	This segment increments when a group authorization schedule (day of week, hour of day, etc.) is added, deleted, or updated in Lift Link software.
Quest	Q	Checklist questions	This segment increments when checklist questions or answers are added, deleted, or updated in Lift Link software.
Behaviors	H	Vehicle checklist profiles	This segment increments when hierarchical profiles (triggers, criteria, question sets, etc.) are added, deleted, or updated in Lift Link software.
Profile Segment	P	Profile	This segment increments when any of the vehicle's sensor configuration (idle, sleeper, power-down, GPS, etc.) is edited in Lift Link software or when vehicles are added or deleted.
SysP	S	System Profile	This segment increments when system level parameters (frequency, facility code, system-wide sensor configuration, etc.) are updated added, deleted or updated in Lift Link software.
SyP2	Y	System Profile 2	This segment increments when Wi-Fi, diagnostic or shift parameters are updated added, deleted or updated in Lift Link software.
GeoF	F	Geo-Fence	This segment updates when zones (Violation, Blockout, etc.) or the facility map are changed in the Maps module of Lift Link software.

5.6 Reset Lift Link Device Synchronization

In certain troubleshooting scenarios, the Lift Link device's downloaded profile (operators, groups, checklists, etc.) may need to be reset in order to force a re-synchronization. The reset Authorization function can only be performed with an access code provided by Lift Link Support.

- Select RESET.
- Enter ACCESS CODE.



5.7 Changing the Lift Link device Facility ID

The facility ID entered in the Lift Link device is the unique identifier that allows the Lift Link device to communicate with the correct Lift Link software database. The facility code is first entered during the Lift Link device configuration process but can be updated at any time. From the Lift Link device menu screen, perform the following steps:

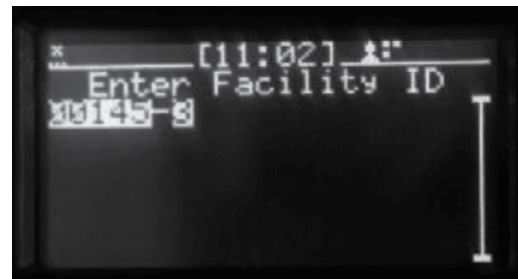
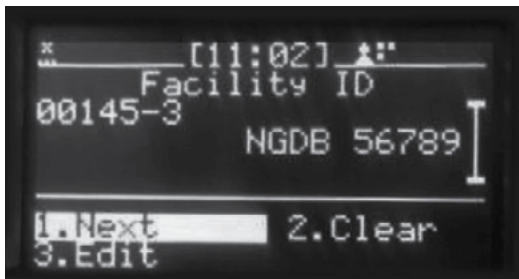
1. Select ACCESS.
2. Select FACILITY ID.

You can obtain your facility ID from Lift Link's Support. Alternatively, if you are using a customer-hosted Wi-Fi system perform the following:

3. Select CLEAR or enter zero in the facility ID field.

The Lift Link device will communicate with, and display the Facility ID of, the first system within wireless communication range.

NOTE: When the Lift Link device is within wireless communication range of a facility ID different than the one entered during configuration, diagnostic error #25 will appear on the Lift Link device display screen.



5.8 Forcing the Lift Link Device to Low Power Mode (Hibernate)

The Lift Link device's power consumption is extremely low. However, when installed on internal combustion vehicles, it is programmed to automatically enter a low-power mode otherwise known as 'hibernate' after a period of non-use. If you need to force the Lift Link device to hibernate mode (e.g., vehicle is in maintenance for a long period of time), from the Lift Link device menu screen, select HARDWARE, and then select HIBERNATE menu option.

NOTE: In Hibernate mode, the Lift Link device will occasionally automatically wake up and check for activity to determine if it should return to full power mode.

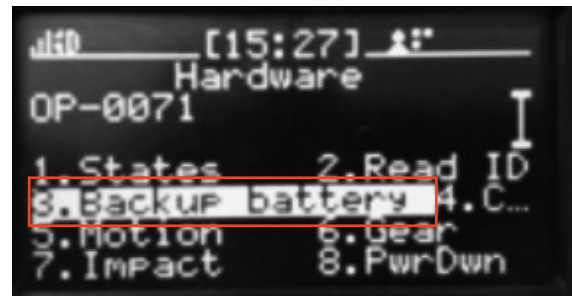
1. Log into the vehicle.
2. From the Lift Link device menu screen, select HARDWARE.
3. On the "HARDWARE" sub-menu, select HIBERNATE. As soon as Hibernate is selected, the Lift Link device will change to low power mode and log the operator out.

5.9 Checking Lift Link Device Internal Backup Battery (not applicable for all Lift Link device types)


A Lift Link device’s internal backup battery preserves configuration settings and recent activity data when a Lift Link device loses power (e.g., during vehicle battery charge/swap). If this backup battery discharges completely, the Lift Link device will lose some of its settings, including access control authorizations. The Lift Link device must be fully synchronized with the system database to resume normal operation. There is a diagnostic error code that displays when the backup battery has a low charge.

However, if you want to proactively check a battery to ensure it is charging, a Maintenance Operator must perform the following:

1. Log into the vehicle.
2. Select HARDWARE.
3. Scroll down to the second page of the menu screen.
4. On the “Hardware” sub-menu, select BACKUP BATTERY.



The Lift Link device screen provides the battery condition of Charged, Charging, or Not Charging:

Charged	Battery is fully charged.	
Charging	Battery is not fully charged, but it is charging correctly and should be fully charged within 30 minutes.	
Not Charging	Battery is not charging correctly. Contact Lift Link’s Support team.	

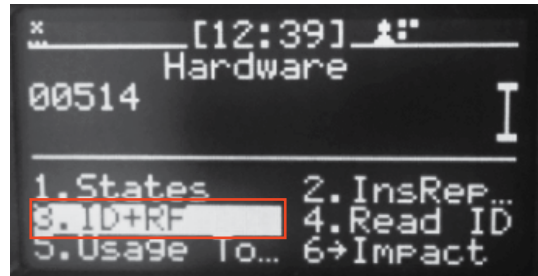
5.10 Changing the Lift Link Device Data Transmission Settings

Maintenance Operator must perform the following:

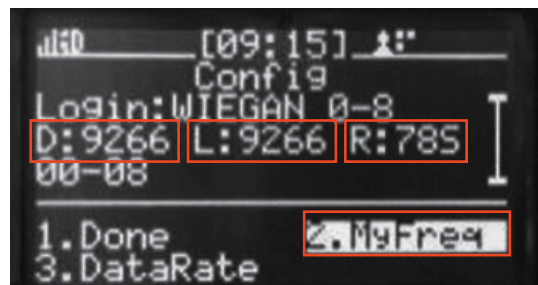
1. Log into the vehicle.
2. Select HARDWARE.



3. On the "Hardware" sub-menu, select ID+RF.



4. On the "ID+RF" sub-menu, to change the RF communication frequency, select MyFreq.



D

- Data Frequency, iRF Lift Link device data transmission.

L

- Location Frequency, iRF uses to determine Lift Link device location.

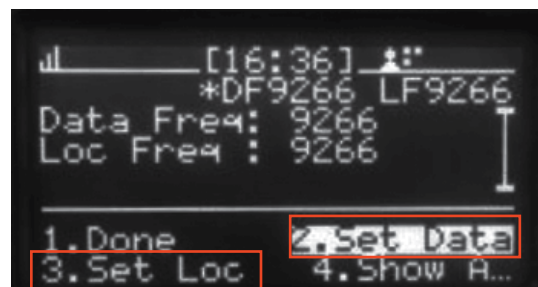
R

- Data Rate, iRF data speed setting.

Maintenance Operator must also perform the following:

1. Change Lift Link device location frequency by selecting SET LOC and picking the desired frequency.
2. On the "ID+RF" sub-menu, select DataRate to change the Lift Link device transmission data rate.

Change Lift Link device data frequency by selecting SET DATA and picking the desired frequency.



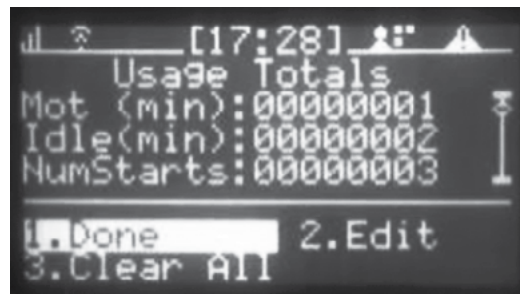
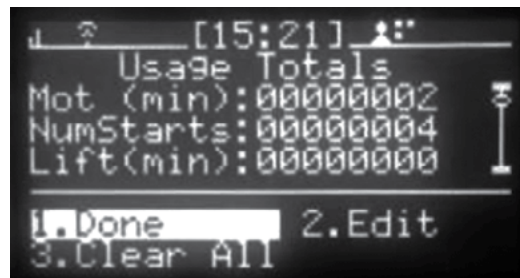
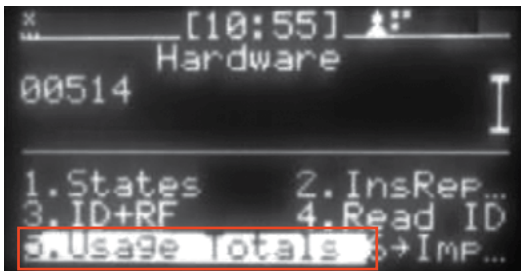
5.11 Checking and Changing The Lift Link Device Usage Totals

Maintenance Operator must perform the following:

1. Log into the vehicle.
2. Select HARDWARE.



3. On the "Hardware" sub-menu, select Usage Totals.



5.12 Testing The BLU Wire Connection Prior to Lift Link Device Configuration

(Not applicable for JPT, P-Plug, and VDI cable installations).

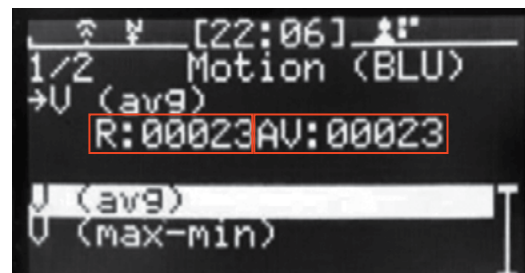
Per the installation instructions, installers need to measure voltage changes for connection points of the inputs required. The "BLU" wire is used for motion sense (drive motor on electric vehicles and in gear on internal combustion vehicles). There are 2 modes for motion configuration, "V (avg)" and "V (mix/max)".

- **V (avg)** uses the average voltage reading, typically used for DC voltage and AC square wave voltage signals.
- **V (min/max)** uses the peak-to-peak voltage reading, typically used for AC sine wave voltage signals.

To be sure the BLU wire connection will work for the Install Wizard, there is a MotionTest screen available to see the Lift Link device results in either of these modes.

Connect the BLU wire using clip-leads, or permanently and then:

1. Log into the vehicle.
2. On the first menu screen, select HARDWARE.
3. On the "Hardware" sub-menu, select MOTIONTEST.



R

- "Raw" value currently being measured by sensor.

AV

- Current Value evaluated versus idle ranges to determine vehicle state.

4. Select the desired mode (use the up and down arrows to switch between modes).
5. Note the idle (not driving) value of AV with the key off.
6. Note the idle (not driving) value of AV with the key on.
7. Drive and note the value of AV (needs to be more than 10 points different than the non-driving values).
8. If not, switch modes and repeat steps 5 through 7.
9. If neither mode provides the desired results, you need to find a different connection point.

5.13 Understand and Manually Set "Motion" for Electric Vehicles

Not applicable for JPT, P-Plug, and VDI cable installations.

The Lift Link device installation and configuration wizard is always used for establishing motion and idle thresholds on a vehicle. In some cases, motion and idle values may need to be adjusted during troubleshooting. One reason may be that the vehicle will not pass the initial configuration wizard. Another reason may be that motion diagnostic errors appear regularly.

The Lift Link device determines the state of the vehicle (idle or motion) by configuring two 'idle' ranges based on voltage sampling of the "BLU" wire connection. The sampling methods (the numbers displayed) are different depending on the Vehicle Type (e.g. Elec avg, Elec min/max). The two idle ranges will typically differ when the "BLU" connection voltage changes between key-on and key-off while the motor is disengaged. In other scenarios, the two idle ranges may be identical.

1. Log into the vehicle.
2. On the first menu screen, select HARDWARE.
3. Scroll down to the second page of the menu screen.
4. On the "Hardware" sub-menu, select MOTION.



Idle or Motion

- Current 'motion' state of the vehicle. MUST BE VALIDATED VIA TEST DRIVE AFTER CHANGING SETTINGS.

R

- "Raw" value currently being measured by sensor.

AV

- Current value evaluated versus idle ranges to determine vehicle state.

Th1

- The threshold above and below Id1 center point that equals the 'idle' range.

Id1

- Center point for first 'idle' setting range.

Id2

- Center point for second 'idle' setting range.

Th2

- Threshold above and below Id1 center point that equals the 'idle' range.

Select EDIT which opens a new screen where you can type in the required values between 0 and 1023 (center point) and between 0 and 255 (range). This method is a last resort and would be used in a trial-and-error scenario with assistance from Lift Link Support.

IDLE1

- Center point for 1st idle setting.

THR1

- Range around (+/-) the "IDLE1" setting that makes the idle threshold.

IDLE2

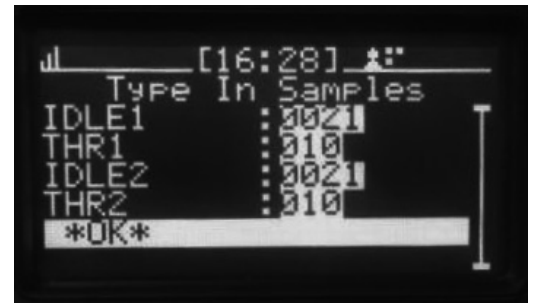
- Center point for 2nd idle setting.

THR2

- Range around (+/-) the "IDLE2" setting that makes the idle threshold.

Pictured Example

- Vehicle is idle when AV is between 0 and 510 (255 ± 255) or 510 and 1020 (765 ± 255).



5.14 Understand and Manually Set "Idling" for Internal Combustion Vehicles

Not applicable for JPT, P-Plug, and VDI cable installations.

The Lift Link device determines the state of the vehicle (engine off, idling or motion) by configuring two 'engine off' ranges based on voltage sampling of the "BRN" wire connection. The two Engine-off ranges will typically differ when the "BRN" connection voltage changes between key-on accessories and key-off while the engine is not running. In other scenarios the two idle ranges may be identical.

1. Log into the vehicle.
2. On the first menu screen, select HARDWARE.
3. Scroll down to the second page of the menu screen.
4. On the "Hardware" sub-menu, select ENGINE.



IG

- Current gear state (N = Neutral, G = In gear).

Idle or EngOn

- Must be validated via test drive after changing settings.
- Current engine state ('Idle' = Engine off, 'EngOn' = Idling).

AV

- Current value evaluated versus engine off ranges to determine engine state.

Th1

- Threshold above and below Id1 center point that equals the 'engine off' range.

Th2

- Threshold above and below Id2 center point that equals the 'engine off' range.

Id1

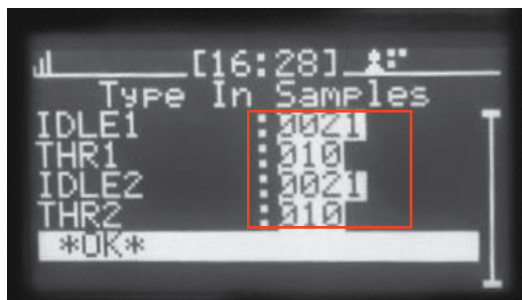
- Center point for first 'engine off' setting range.

Id2

- Center point for second 'engine off' setting range.

R

- "Raw" value currently being measured by sensor.



Type in Samples to Edit.

Select EDIT which opens a new screen where you can type in the required values between 0 and 1023 (center point) and between 0 and 255 (range). This method is a last resort and would be used in a trial-and-error scenario with assistance from Lift Link Support.

IDLE1

- Center point for 1st neutral setting.

THR1

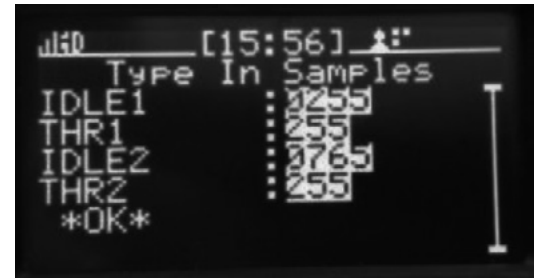
- Range around (+/-) the "IDLE1" setting that makes the engine off threshold.

IDLE2

- Center point for 2nd engine off setting.

THR2

- Range around (+/-) the "IDLE2" setting that makes the engine off threshold.



Pictured Example

- Vehicle engine is off when AV is between 0 and 510 (255 ± 255) or 510 and 1020 (765 ± 255).

5.15 Understand and Manually Set "Motion" for Internal Combustion Vehicles

Not applicable for JPT, P-Plug, and VDI cable installations.

The Lift Link device determines the state of the vehicle (idling or motion) by configuring two 'in neutral gear' ranges based on voltage sampling of the "BLU" wire connection while the engine is on (as determined by the "BRN" wire connection). The two neutral gear ranges may differ in some scenarios.

1. Log into the vehicle.
2. On the first menu screen, select the HARDWARE menu option.
3. Scroll down to the second page of the menu screen.
4. On the "Hardware" sub-menu, select GEAR.



Neutral or In Gear

- Current 'motion' state ('Neutral' = idling, 'In Gear' = motion).
- Must be validated via test drive after changing settings.

AV

- Current value evaluated versus engine off ranges to determine engine state.

Th1

- Threshold above and below Id1 center point that equals the 'engine off' range.

Th2

- Threshold above and below Id1 center point that equals the 'engine off' range.

Id1

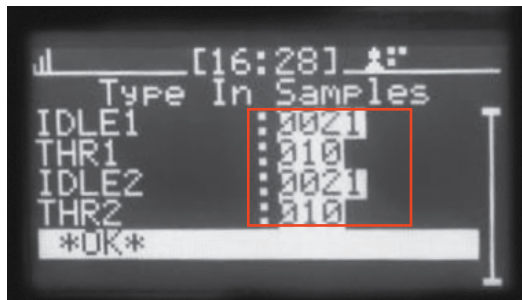
- Center point for first 'engine off' setting range.
- Type in Samples to Edit.

Id2

- Center point for second 'engine off' setting range.

R

- "Raw" value currently being measured by sensor.



Type in Samples to Edit.

Select EDIT which opens a new screen where you can type in the required values between 0 and 1023 (center point) and between 0 and 255 (range). This method is a last resort and would be used in a trial-and-error scenario with assistance from Lift Link Support.

IDLE1

- Center point for 1st neutral setting.

THR1

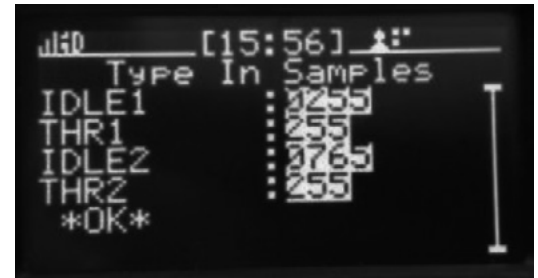
- Range around (+/-) the "IDLE1" setting that makes the engine off threshold.

IDLE2

- Center point for 2nd engine off setting.

THR2

- Range around (+/-) the "IDLE2" setting that makes the engine off threshold.



Pictured Example

- Vehicle engine is off when AV is between 0 and 510 (255 ± 255) or 510 and 1020 (765 ± 255).

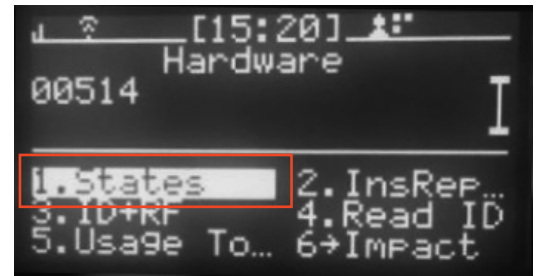
5.16 Current Lift Link Device Configuration ("States" Screen)

The Lift Link device has up to three read-only status screens of current Lift Link device configuration settings.

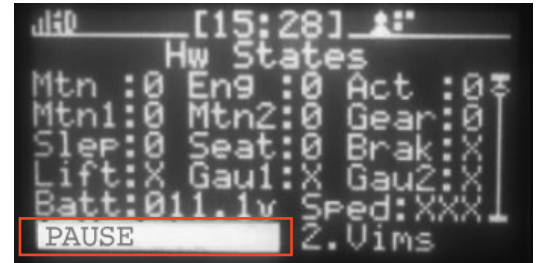
The screen content is dependent on the Lift Link device license key.

Therefore, every Lift Link device may not contain all of the following:

1. Log into the vehicle.
2. On the first menu screen, select HARDWARE.
3. On the "Hardware" sub-menu, select STATES.
4. Values auto-update to the most current reading.
5. Select PAUSE to freeze all entries to last read value.
6. The VIMS options display the current connection setting for each configurable parameter.
7. Select VIMS again and the Lift Link device will display the enabled options only. Pick any of the enabled options to see the detailed configuration interface.



Electric and IC Vehicles



Activity Definition

Item	Description	Values
Mtn	Motion meter; same as Mtn1 or a combination of Mtn1 and Mtn2.	0, 1, or X
Eng	Engine-on meter; used for internal combustion vehicles only (BRN wire).	0, 1, or X
Act	Activity meter as assigned during the Lift Link device install Sensor wizard.	0, 1, or X
Mtn1	Motion meter; BLU wire (electric), Eng+Gear (internal combustion).	0, 1, or X
Mtn2	Not currently available.	X
Gear	In gear; used for internal combustion vehicles only (BLU wire).	0, 1, or X
Slep	Sleeper mode; Seat = 1 but Mtn, Mtn1, Mtn2, Sped, Act, and Lift = 0 or X.	0, 1, or X
Seat	Seat or dead-man meter (PUR wire).	0, 1, or X
Brak	Parking brake interface; prevents operator logoff unless brake is applied.	0, 1, or X
Lift	Lift motor meter.	0, 1, or X
Gau1	Vehicle gauge (or indicator); typically, high engine temperature.	0, 1, or X
Gau2	Vehicle gauge (or indicator); typically, low oil pressure.	0, 1, or X
Batt	Vehicle battery voltage.	000.0V
Sped	Current vehicle speed (based on odometer or GPS).	0 – 99.9 mph
LftW	Load meter (motion with load, travel with load, etc.)	0, 1, or X
DlyT	Tow meter.	0, 1, or X
Batt	Current vehicle battery voltage (B+ wire).	0 – 99.9 volts
Im X, Y, P	Current impact sensor X-axis, Y-axis, and duration thresholds.	0 – 255
Creep	CAN/Serial mode that activates unsafe mode.	0, 1, or X
Speed	When unsafe mode is active, shows if drive speed is limited in unsafe mode.	0, 1, or X
Lift1	When unsafe mode is active, shows if lift speed is limited in unsafe mode.	0, 1, or X
TEMP	Last recorded, Average recorded readings for Lift Link device internal temperature (in C).	C
BLU	Active/Inactive - Last recorded - Avg values for Mtn1 (electric), Gear (IC).	0-00000-00000
PUR	Active/Inactive - Last recorded - Average recorded values for Seat.	0-00000-00000
BRN	Active/Inactive - Last recorded - Avg values for Mtn1 (electric), Eng (IC).	0-00000-00000
RED	Active/Inactive - Last recorded - Avg recorded values for Batt.	0-00000-00000
TMP	Active/Inactive - Last recorded - Avg recorded values for internal Lift Link device temperature (in C x 10; 315 = 31.5).	0-00000-00000
VBN	Active/Inactive - Last recorded - Avg recorded values for Mtn2 (electric, IC).	0-00000-00000
Activity	Determines activity, if wake is enabled and calculates activity wake modules.	00000-00-00

0 = **currently inactive**, 1 = **currently active**, X = **feature disabled**

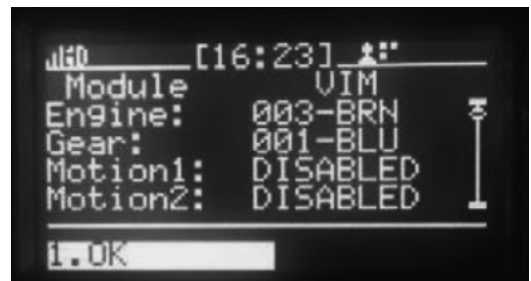
NOTE: See the following table for most common activity assignments. Additional combinations are possible, contact Lift Link's Support if the value displayed is not shown.

ACTIVITY ASSIGNMENT	NONE	MOTION	ENGINE	GEAR	LIFT	SEAT	LOAD	TOW	MOTION 2
0000	X								
0001			X						
0002				X					
0003			X	X					
0004		X							
0008									X
0009			X						X
0010					X				
0012				X	X				
0014		X			X				
0018					X				X
0082				X		X			
0084		X				X			
0092				X	X	X			
0094		X			X	X			
0202				X			X		
0204		X					X		
0402				X				X	
0404		X						X	
0000A				X					X
0000B			X	X					X
0000C		X							X
0001A				X	X				X
0001C		X			X				X
0008A				X		X			X
0008C		X				X			X
0009A				X	X	X			X
0009C		X			X	X			X
0200A				X			X		X
0200C		X					X		X
0400A				X				X	X
0400C		X						X	X

The current assignment status of each sensor is displayed.

From the Lift Link device menu screen, perform the following steps:

1. Select HARDWARE.
2. Select STATES.
3. Select Vims.



If "No Hub" accompanies the VIM assignment, then the Lift Link device is not currently sensing a valid Sensor Hub. Refer to the Vehicle Installation Guide for more details on VIM assignments.

5.17 Last Lift Link device Configuration (“InsReport” Screen)

Every time the BASIC or SENSOR wizard is completed, from the Lift Link device menu screen, select HARDWARE. Select InsReport. The InsReport on the Lift Link device screen display provides the detail of the last completed configuration parameter.

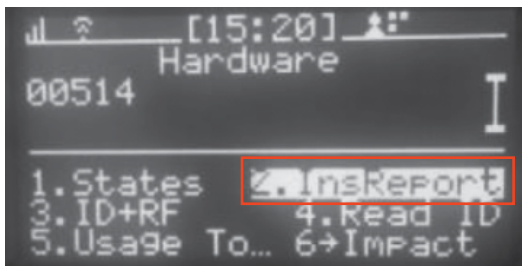
Select HARDWARE



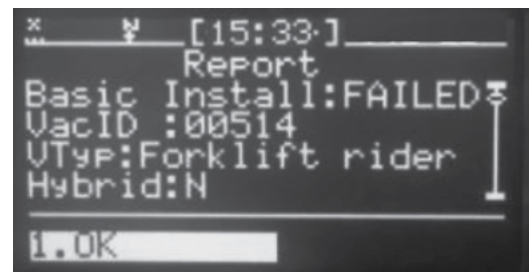
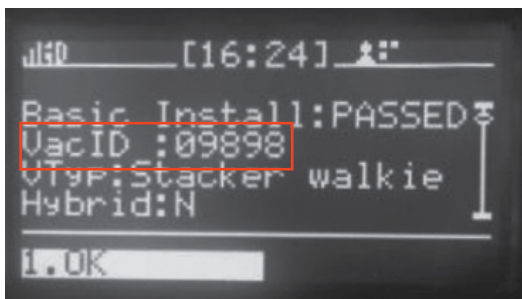
IC Vehicle

Electric Vehicle

Select InsReport.

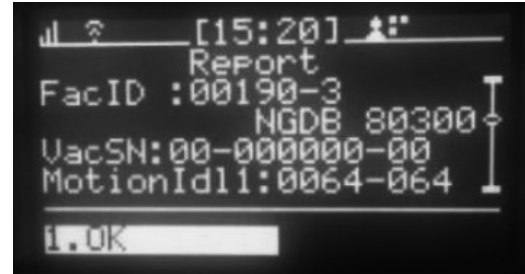
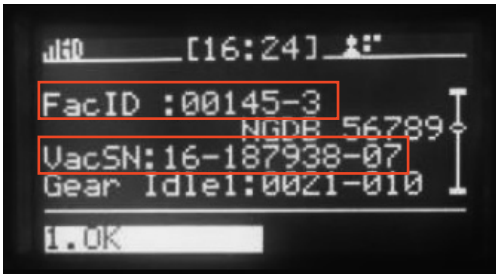


VacID: Vac Identification number.



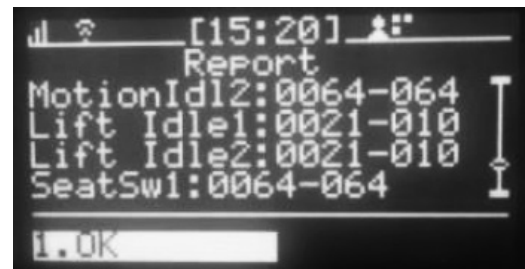
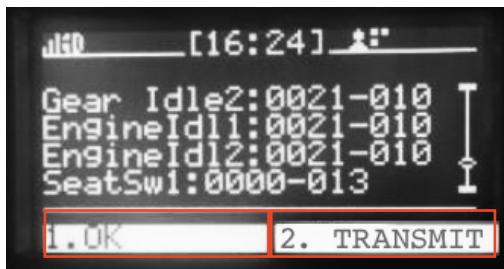
Scroll down to the second page of the menu screen.

FacID: Facility ID lists the facility number.



VacSN: Lift Link device Serial number.

Select OK to return to the main menu.



Select "Transmit" to send the configuration parameters to the software.

The items and description are as follows:

Item	Description	Values
Basic Install	Status of the BASIC configuration wizard	Passed, Failed
VacID	Vehicle ID entered during the BASIC wizard	1 - 65534
VTyp	Vehicle type selected during the BASIC wizard	Varies
Hybrid	The Lift Link device is configured for wired and OEM plug inputs (Y) or wired or OEM plug (N)	Y or N
FacID	Facility ID entered as well as facility code name (if sync'd with software)	Varies
VacSN	Lift Link device serial number (excluding manufacturing site and product type)	Varies
MotionId1	Motion (BLU wire; electric vehicles) "inactive" 1st set point and range	SSSS-RRR
MotionId2	Motion (BLU wire; electric vehicles) "inactive" 2nd set point and range	SSSS-RRR
EngineId1	Engine On (BRN wire; GAS/IC vehicles) "inactive" 1st set point and range	SSSS-RRR
EngineId2	Engine On (BRN wire; GAS/IC vehicles) "inactive" 2nd set point and range	SSSS-RRR
GearIdle	Motion (BLU wire; GAS/IC vehicles) "inactive" 1st set point and range	SSSS-RRR
GearIdle2	Motion (BLU wire; GAS/IC vehicles) "inactive" 2nd set point and range	SSSS-RRR
Lift Idle1	Lift motor (BRN wire; electric vehicles) "inactive" 1st set point and range	SSSS-RRR
Lift Idle2	Lift motor (BRN wire; electric vehicles) "inactive" 2nd set point and range	SSSS-RRR
SeatSw1	Seat or deadman switch (PUR wire) "inactive" 1st set point and range	SSSS-RRR
SeatSw2	Seat or deadman switch (PUR wire) "inactive" 2nd set point and range	SSSS-RRR
Gauge1Id1	Gauge 1 (VIM10) "inactive" 1st set point and range	SSSS-RRR
Gauge1Id2	Gauge 1 (VIM10) "inactive" 2nd set point and range	SSSS-RRR
Gauge2Id1	Gauge 2 (VIM11) "inactive" 1st set point and range	SSSS-RRR
Gauge2Id2	Gauge 2 (VIM11) "inactive" 2nd set point and range	SSSS-RRR
WarnAreald1	Warn Area (VIM10) "inactive" 1st set point and range	SSSS-RRR
WarnAreald2	Warn Area (VIM10) "inactive" 2nd set point and range	SSSS-RRR
AlertAreald1	Alert Area (VIM11) "inactive" 1st set point and range	SSSS-RRR
AlertAreald2	Alert Area (VIM11) "inactive" 2nd set point and range	SSSS-RRR
BatSwap	Battery change confirmation configuration	Enabled, Disabled
ExtIndictr	Output Alert (VIM7) "inactive" set point and range	Passed, Failed
Brakeldle	Parking Brake (VIM8) "inactive" set point and range	SSSS-RRR
ForkLoad	Fork load sensor configuration	Configured, Not Configured
Tow Thrsh	Tow sensor (VIM5) "inactive" set point and range	SSSS-RRR
Relay	State of access control relay	Enabled, Bypassed
Bytes	Information Lift Link Support may request to troubleshoot install issues	Varies
GPS	GPS sensor (C102 or VIM1) configuration	Varies
Impact	Impact sensor configuration	Varies

SSS = set point value

RRR = range value

Y = yes

N = no

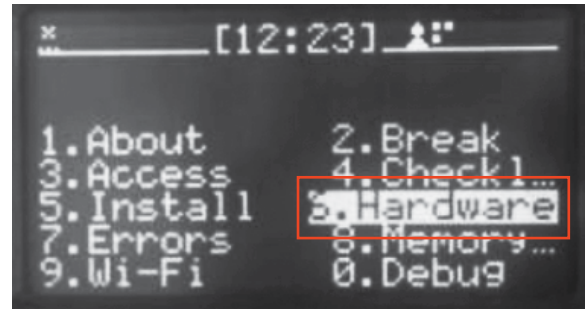
5.18 Impact Sensor Troubleshooting

Once the impact sensor has been properly installed, it is self-contained and self-maintained, and no operator configuration is required. During the installation process, the impact sensor self-calibrates to its environment (like setting the 'zero' level of a scale). This is NOT the process that determines the minimum impact level. The impact level is continuously evaluated and adjusted. The calibration is repeated daily during periods of inactivity to ensure that the device is maintaining acceptable impact parameters and identifying possible issues (e.g., the mounting becomes compromised and results in a "floating" sensor). If issues are identified, manual troubleshooting may be required.

NOTE: A properly mounted and secured impact sensor is the most important factor in ensuring a working impact management system.

Reading the Impact Screen:

1. Log into the vehicle.
2. On the first menu screen, select HARDWARE.
3. On the "Hardware" sub-menu, select IMPACT.



CR

- Current sensor reading (refreshes automatically) for X and Y axis.

P

- The Period a reading takes in milliseconds.

POS

- Current initial force (g) threshold for creating an impact event.

NEG

- Current initial force (g) threshold for creating an impact event.

X and Y

- Should both be $0.0g \pm 0.2g$ when the vehicle is parked in a flat location. (Also, normal values should be between 70 and 90 when flat).

NOTE: There are 4 additional impact Lift Link device screen displays with detailed readings and settings that can be accessed by scrolling down. Lift Link Support may request information about the detailed readings and settings from those screens for remote troubleshooting.

5.19 Manually Enabling Impact Calibration

If impact errors are reported and the impact sensor needs to be remounted and/or recalibrated to resolve the issue, the recalibration process may be manually enabled; (As opposed to waiting for the automatic daily self-calibration to occur, to ensure the issue has been fixed).

1. Log into the vehicle.
2. On the first menu screen, select HARDWARE.
3. On the "Hardware" sub-menu, select IMPACT.
4. On the "Impact" sub-menu, select RECALIBRATE.

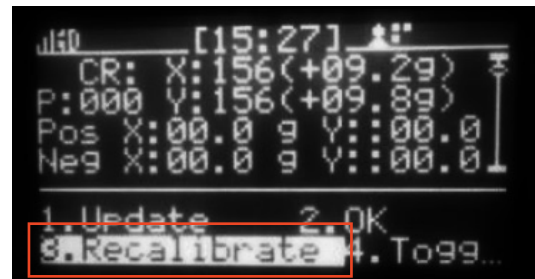
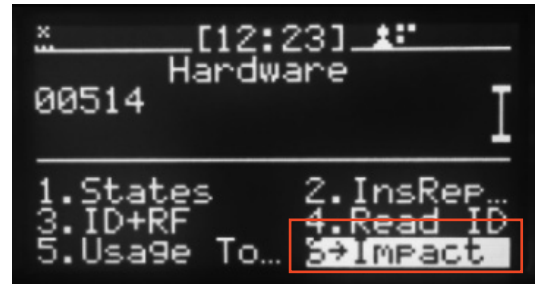
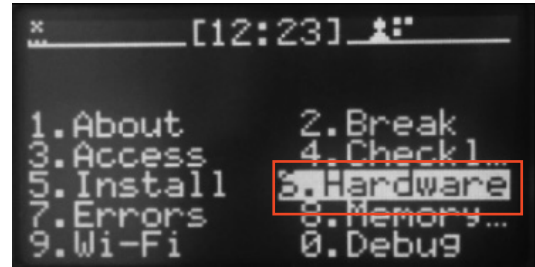
NOTE: The recalibration process is instantaneous and may be repeated as many times as needed.

The "CR:" X and Y reading should change to $\pm 00.0g$ or $\pm 00.1g$ to indicate a valid calibration.

NOTE: Selecting UPDATE will update the current reading display without recalibration.

5. Select OK when the calibration is acceptable.

NOTE: The ToggleLog option enables and disables (default) detailed impact sensor reading logs which will rapidly consume the Lift Link device memory. The ToggleLog option should only be selected at the request of Lift Link Support.



5.20 Check Vehicle Battery Voltage Monitoring

The vehicle battery charge state is monitored in terms of voltage using the vehicle cable's RED (B+) wire. The status of the monitoring can be checked at any time. From the Lift Link device menu screen: Select HARDWARE. From the second menu screen, Select V-In.

CRA

- Current Reading ADC

AV

- Average Mmeasure

CAV

- Current Average /Measure

Err

- Error Count Over All Readings

CRV

- Current Voltage Reading

Th

- Low Battery Warning Threshold

Log

0 = Not Enabled
1 = Enabled

R1

- Threshold

SECTION 6: LIFT LINK DEVICE TROUBLESHOOTING

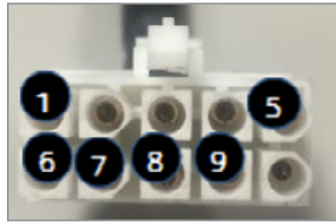
6.1 Recommended Maintenance Tool List

Socket sets (metric, fractional inch)	Wire stripper/cutter
Combination wrenches (metric, fractional inch)	Utility knife
Screwdrivers	Multimeter
Allen Wrenches	Flashlight
Pliers (channel lock, needle nose)	Electrical tape

6.2 Lift Link Device to Wired Vehicle Cable Pinout and Fuses

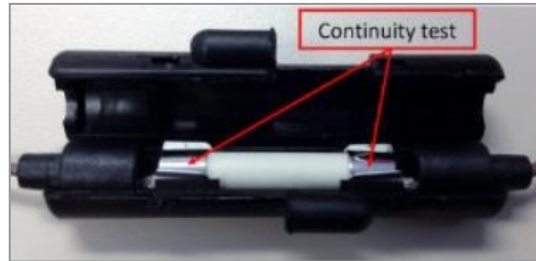
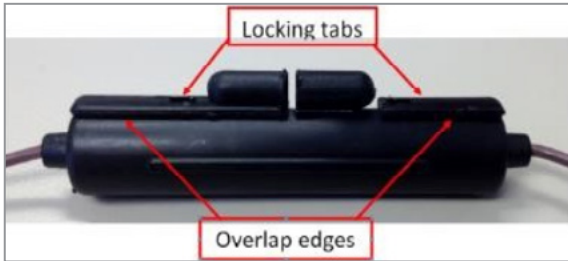
Cable PINS

- 1 B+ (red)
- 5 1 (yellow)
- 6 BLU (blue)
- 7 BRN (brown)
- 8 PUR (purple)
- 9 B- (black) -and- 0 (green)



Fuses

Open the fuse holders by placing a flat object under the overlap edges (on each side of the fuse holder) and lift until you clear the locking tabs.



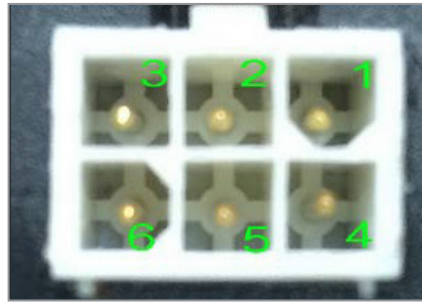
6.3 Lift Link Device Screen and LEDs Do Not Illuminate

Issue: Lift Link Device Screen and LEDs Do Not Illuminate

Possible Cause(s)	Action
Lift Link device is in Hibernate mode	<ul style="list-style-type: none"> • Press the Lift Link device's POWER button or turn the vehicle's ignition key to the ON position (see Section 2 "Logging Onto The Lift Link Device").
Vehicle battery NOT connected	<ul style="list-style-type: none"> • Check that the vehicle battery is connected. • Check the voltage level on the "1" (B+) and "9" (B-) pins of the Lift Link device to vehicle cable.
Inline fuse malfunction	<ul style="list-style-type: none"> • Open the fuse holders for the B+ and B- wires. • Check continuity between the ends of the fuse using a multi-meter if continuity fails: <ul style="list-style-type: none"> • Make sure a short with the vehicle chassis is not blowing the fuse by checking for proper isolation. • Replace fuse (with 3AB type 2A, 250V ceramic fuse).
Lift Link device to vehicle cable damaged	<ul style="list-style-type: none"> • Use an ohmmeter to check resistance to verify cable integrity. • NOTE: An "open" or zero reading indicates a damaged cable on the "B+" and "B-" wires. • Replace the cable as needed and retest.
Internal Lift Link device malfunction	<ul style="list-style-type: none"> • Contact your local dealer or Logisnext for warranty information on repair/replacement. • Only the Lift Link device should be returned for analysis /repair; Once the Lift Link device is removed, the system MUST be hard bypassed to use vehicle (see Appendix B for bypass instructions.)

SECTION 7: SENSOR HUB ERRORS

7.1 Pinout Diagram



7.2 Sensor Hub LED Indicators

LED State	Meaning
No LED	Sensor Hub is not powered.
Cycling RED-AMBER-GREEN	Sensor Hub is powered but not working properly with the Lift Link device.
Solid AMBER	Sensor Hub is working properly.

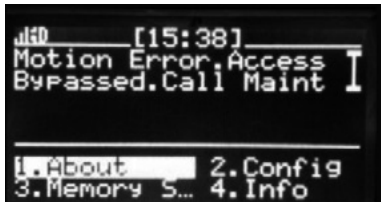
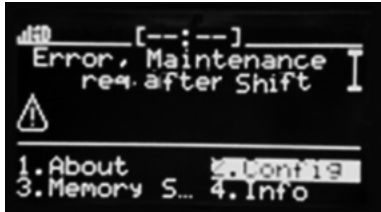
7.3 Troubleshooting

Issue: Lift Link Device Sensor Wizard says "No Hub"	
Possible Cause(s)	Correction
Sensor Hub is not connected to Lift Link device C102 port	Connect the Sensor Hub to Lift Link device C102 port.
Sensor Hub firmware bug	Verify Sensor Hub LED is blinking RED-AMBER-GREEN repeatedly. Replace the Sensor Hub.
Lift Link device is not properly powering the Sensor Hub	<p>If Sensor Hub LED is NOT lit:</p> <ul style="list-style-type: none"> Remove the Sensor Hub cable from Lift Link device C102 port. Test voltage at C102 port using a voltmeter. <ul style="list-style-type: none"> If voltage meets the following, replace the Sensor Hub: <ul style="list-style-type: none"> Pins 1 and 5: 5.3V Pins 2 and 5: 0V Pins 3 and 5: -5.8V If voltage is outside the above range, replace the Lift Link device. <p>If the Sensor Hub LED is lit:</p> <ul style="list-style-type: none"> Test voltage at Sensor Hub OUT port using a voltmeter. <ul style="list-style-type: none"> If voltage meets the following, replace the Sensor Hub: <ul style="list-style-type: none"> Pins 1 and 5: 5.3V Pins 2 and 5: 0V Pins 3 and 5: -5.8V If voltage is outside the above range, replace the Lift Link device.

Issue: Sensor Hub LED is blinking RED-AMBER-GREEN repeatedly	
Possible Cause(s)	Correction
Sensor Hub firmware bug	Replace the Sensor Hub

SECTION 8: SELF-DIAGNOSTIC ERROR CODES

The Lift Link system automatically diagnoses system errors. Errors can be monitored using reports in software (Refer to the Lift Link portal training video). In addition, existing errors are indicated on the Lift Link device screen display with a message and icon (see below) when no one is logged in. Icons are also displayed in the screen status header when a Standard or Master Operators are logged into a vehicle. The three error categories, based on risk to system functionality are: SHUTDOWN, FUNCTIONAL, and REFERENCE.

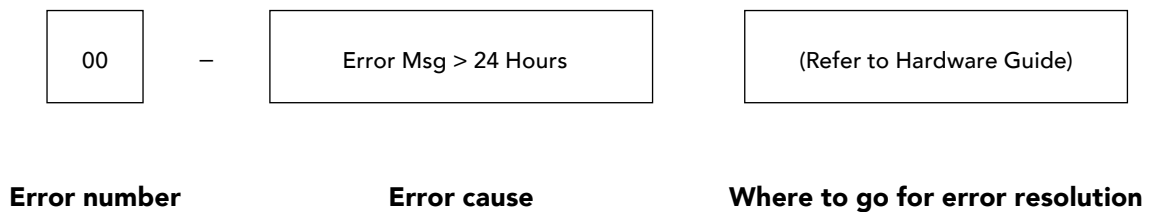
Error Category Description	Lift Link device SCREEN DISPLAY (STANDARD and Master Operators)
<p>SHUTDOWN errors lock out vehicles from use by Standard and Master Operators, due to potential safety concerns.</p> <p>If a Lift Link device is NOT configured properly, an "Unconfigured" error message is displayed. For other types of Shutdown errors, the Lift Link device screen will display "Error." For all Shutdown errors, the Lift Link device screen will also display: "Call Maintenance."</p> <p>Only Maintenance Operators can log into a Lift Link device when a Shutdown error occurs.</p>	 <p>The first screenshot shows the message "Unconfigured, call Maintenance" with a warning icon (triangle) and a menu with options: 1. About, 2. Config, 3. Memory S..., 4. Info.</p> <p>The second screenshot shows the message "Error call Maintenance" with the same warning icon and menu.</p>
<p>FUNCTIONAL errors can limit system effectiveness and skew data. Such errors require immediate evaluation by a Maintenance Operator.</p> <p>The Lift Link device screen will display "Error, Maintenance required now" when a Function error occurs.</p>	 <p>The screenshot shows the message "Error, Maintenance required now" with a warning icon (triangle) and a menu with options: 1. About, 2. Config, 3. Memory S..., 4. Info.</p>
<p>OPERATIONAL error can occur if the vehicle sensors indicate the vehicle is in motion at the time of a login.</p> <p>Then, the Lift Link device:</p> <ol style="list-style-type: none"> (1) Allows operators to logoff while the vehicle sensor is recording motion, (2) Allows unauthorized operators to log in and use the vehicle, (3) Allows any operator to use the vehicle without logging in. (4) Prevent the Lift Link device from locking out the vehicle for any reason. <p>The Operational error clears itself once a subsequent login event occurs where the vehicle sensors indicate that the vehicle is idle at the time of login.</p>	 <p>The screenshot shows the message "Motion Error, Access Bypassed, Call Maint" with a warning icon (triangle) and a menu with options: 1. About, 2. Config, 3. Memory S..., 4. Info.</p>
<p>REFERENCE errors have little immediate effect on the system and do not require immediate attention. However, a Maintenance Operator should evaluate all Reference errors at the end of the shift or workday.</p> <p>For Reference errors, the Lift Link device screen will display: "Error, Maintenance required after Shift."</p>	 <p>The screenshot shows the message "Error, Maintenance req. after Shift" with a warning icon (triangle) and a menu with options: 1. About, 2. Config, 3. Memory S..., 4. Info.</p>

NOTE: Vehicles in "Any ID" mode will not be subject to lockouts.

Interpreting Error Codes

The example below illustrates how to interpret a Lift Link device error message on the screen when logged in as a Maintenance Operator.

The Lift Link device screen message is displayed as follows: 00-Error Msg > 24 Hours (Refer to Hardware Guide).



Error Codes

00 – Error Msg > 24Hrs (Refer to Hardware Guide)

[FUNCTIONAL] Appears after a reference error has been present on a vehicle for greater than 24 hours.

Possible Cause(s)	Correction
Reference error was not cleared by a Maintenance Operator within 24 hours of the error creation	<p>Log in to the Lift Link device as a Maintenance Operator and review/address each error message that is displayed.</p> <p>To view the errors, select the "ERRORS" menu option and scroll up/down.</p>

08 – 100% Motion Error (Refer to Hardware Guide)

[FUNCTIONAL] The Lift Link device is sensing 100% motion while no one is logged in (the vehicle is unassigned) and the vehicle is not in ID Optional mode.

Possible Cause(s)	Correction
Insufficient "BLU" (motion sensing) connection point	<p>Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit. Refer to the Lift Link Installation Guide.</p> <p>Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).</p>
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none"> • Verify that the fuse for the "BLU" wire is not blown or missing. • Repair as needed. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect motion values	<ul style="list-style-type: none"> • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). • Log in to the Lift Link device and review the motion values (see "Defining 'Motion' Manually"). • Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none"> • Use an ohmmeter to check resistance to verify cable integrity on the "BLU" wire. <p>NOTE: An "open" or zero reading indicates a damaged cable.</p> <ul style="list-style-type: none"> • Replace the cable as needed and retest.

09 – Motion w/o Login (Refer to Hardware Guide)

[FUNCTIONAL] The Lift Link device sensed motion while no one was logged in (unassigned) and the vehicle is not in ID Optional mode.

Possible Cause(s)	Action
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none"> • Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit. • Refer to the Lift Link Installation Guide. • Wiring to the motor directly is a common cause for this issue on some vehicles; preferred locations include the throttle or pedal. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none"> • Verify that the fuse for the "BLU" wire is not blown or missing. • Repair as needed. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect motion values	<ul style="list-style-type: none"> • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). • Log in to the Lift Link device and review the motion values (see: "Defining 'Motion' Manually"). • Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none"> • Use an ohmmeter to check resistance check to verify cable integrity (an "open" or zero reading indicates a damaged cable) on the "BLU" wire. • Replace the cable as needed and retest.

10 – 0% Motion (Refer to Hardware Guide)

[SHUTDOWN] The Lift Link device is hard bypassed or external relay is not wired to prevent access when logged off.

Possible Cause(s)	Action
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none"> • Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit. • Refer to the Lift Link Installation Guide. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none"> • Verify that the fuse for the "BLU" wire is not blown or missing. • Repair as needed. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
"BRN" wire connection point (Internal combustion vehicles only)	<ul style="list-style-type: none"> • Verify that the "BRN" wire is connected to the proper engine on sensing circuit. • Refer to the Lift Link Installation Guide. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect motion values	<ul style="list-style-type: none"> • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). • Log in to the Lift Link device and review the motion values (see: "Defining 'Motion' Manually"). • Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none"> • Use an ohmmeter to check resistance check to verify cable integrity on the "BLU" wire. NOTE: An "open" or zero reading indicates a damaged cable. • Replace the cable as needed and retest.

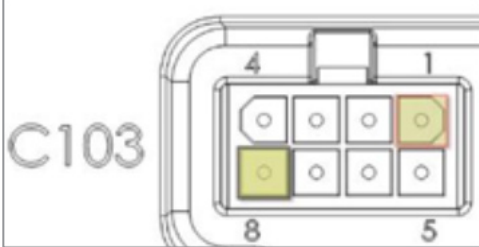
11 – Motion Configuration (Refer to Hardware Guide)

[SHUTDOWN] The motion threshold values are not configured correctly (too close).

Possible Cause(s)	Action
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none">• Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit.• Refer to the Lift Link Installation Guide.• Wiring to the motor directly is a common cause for this issue on some vehicles; preferred locations include the throttle or pedal.• Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none">• Verify that the fuse for the "BLU" wire is not blown or missing.• Repair as needed.• Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect motion values	<ul style="list-style-type: none">• Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).• Log in to the Lift Link device and review the motion values (see: "Defining 'Motion' Manually").• Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none">• Use an ohmmeter to check resistance check to verify cable integrity on the "BLU" wire. NOTE: An "open" or zero reading indicates a damaged cable.• Replace the cable as needed and retest.

13 – Impact Sensor Er (Refer to Hardware Guide)

[FUNCTIONAL] System reports no impact sensor is installed.

Possible Cause(s)	Action
Impact sensor connection	<ul style="list-style-type: none"> Verify that the impact sensor is properly connected to the Lift Link device (connector C103).
Impact sensor cable damage	<ul style="list-style-type: none"> Verify that the impact sensor cable is not damaged. Replace sensor as needed and retest.
Impact sensor is not getting power from the Lift Link device	<ul style="list-style-type: none"> Verify that the Lift Link device is supplying adequate voltage by unplugging the impact sensor connector and connecting a voltmeter to pin 1 (positive) and pin 8 (negative) on C103 of the Lift Link device. The image at right shows how to read the pin layout and direction.  <ul style="list-style-type: none"> You must have 5.5 ± 0.5 volts DC. If the Lift Link device is not supplying 5.5 ± 0.5 VDC: <ul style="list-style-type: none"> Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle. Follow instructions on how to hard-bypass the system (see Appendix B).
Faulty impact sensor	<ul style="list-style-type: none"> Please contact your local dealer or Logisnext for warranty information to return only the Impact sensor for analysis/repair.

14 – SPI Error Low (Refer to Hardware Guide)

[FUNCTIONAL] The Lift Link device cable is picking up electrical noise causing SPI errors greater than 1% of the time.

Possible Cause(s)	Action
Lift Link device cable	<ul style="list-style-type: none"> Visually inspect the Lift Link device cable to verify that the Lift Link device cable is not damaged. Replace the cable as needed.
Electrical noise	<ul style="list-style-type: none"> Verify that the Lift Link device cable is routed away from high electrical noise devices such as traction motors and contactors. If chassis noise is present, reroute the cable, and retest.

15 – Run Configuration Wizard

[SHUTDOWN] The configuration wizard was never run for the Lift Link device that is currently installed on the vehicle.

Possible Cause(s)	Action
Lift Link device configuration	Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).

17 – ID Reader Error (Refer to Hardware Guide)

[FUNCTIONAL] The communication between the integrated Lift Link device Access ID Card reader and the Access ID Card is not working correctly.

Possible Cause(s)	Action
Access ID Card	<ul style="list-style-type: none">• Test the subject Access ID Card on another vehicle's ID reader.• If the Access ID Card can be read, skip to the next troubleshooting step.• If Access ID Card cannot be read, issue operator a new Access ID Card and wait for the vehicle to synchronize. Remember to update the operator's access control profile in the software.
Dirty Access ID Card reader and/or Access ID Card	<ul style="list-style-type: none">• Clean the metal surfaces of the iButton/iButton reader and Access ID Card and retest.
Access ID Card reader error	<ul style="list-style-type: none">• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle.• Follow instructions on how to hard-bypass the system (see Appendix B).• Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).

18 – Low Internal Batt Power Lift Link device for 1 Hr

[FUNCTIONAL] The Lift Link device's backup battery voltage has fallen below 2.5 volts DC. If the Lift Link device loses power during this error (if the vehicle battery is unplugged), operator authorizations will be lost, and a full synchronization will be required for operators to access the vehicle again.

Possible Cause(s)	Action
Lift Link device battery not fully charged after initial install	<ul style="list-style-type: none">• Allow the Lift Link device to charge the internal battery by powering up the Lift Link device (keeping the vehicle battery connected) for at least 1 hour.
Lift Link device was powered off for extended period	<ul style="list-style-type: none">• Allow the Lift Link device to charge the internal battery by powering up the Lift Link device (keeping the vehicle battery connected) for at least one (1) hour.
Internal battery error	<ul style="list-style-type: none">• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle.• Follow instructions on how to hard-bypass the system (see Appendix B).• Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).

19 – Impact Cal Error (Refer to Hardware Guide)

[FUNCTIONAL] Lift Link device detects an impact sensor algorithm error.

Possible Cause(s)	Action
Impact sensor installation	<ul style="list-style-type: none">• Verify that the impact sensor is mounted.• (Refer to the Lift Link Installation Guide retest).• If Error 19 persists: Please contact your local dealer or Logisnext for warranty information to return only the Impact sensor for analysis/repair.

20 – Keypad PIC Err

[FUNCTIONAL] The Lift Link device has detected an internal error.

Possible Cause(s)	Action
Internal Lift Link device Error	<ul style="list-style-type: none">• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle.• Follow instructions on how to hard-bypass the system (see Appendix B).• Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).

21 – UI PIC Err

[FUNCTIONAL] The Lift Link device has detected an internal error .

Possible Cause(s)	Action
Internal Lift Link device Error	<ul style="list-style-type: none">• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle.• Follow instructions on how to hard-bypass the system (see Appendix B).• Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).

22 – PIB PIC Error

[FUNCTIONAL] The Lift Link device has detected an internal error.

Possible Cause(s)	Action
Internal Lift Link device Error	<ul style="list-style-type: none">• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle.• Follow instructions on how to hard-bypass the system (see Appendix B).• Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).

23 – OUTPUT PIC Err

[FUNCTIONAL] The Lift Link device has detected an internal error

Possible Cause(s)	Action
Internal Lift Link device Error	<ul style="list-style-type: none">• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle.• Follow instructions on how to hard-bypass the system (see Appendix B).• Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).

24 – Lift Link Device Memory Full (Refer to Hardware Guide)

[FUNCTIONAL] The internal Lift Link device memory is full.

Possible Cause(s)	Action
Lift Link device communication	Drive the vehicle near a Wi-Fi Access Point and wait 1-30 minutes.
Lift Link device error	<ul style="list-style-type: none">• Verify that other Lift Link devices synchronize with the system correctly by driving another vehicle near the Wi-Fi Access Point, waiting two minutes, then checking the "Vehicle Configuration Status" report in Lift Link software to verify Last Detected Date is the current date.• If other Lift Link devices are synchronizing:• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle.• Follow instructions on how to hard-bypass the system (see Appendix B).• Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).
Wi-Fi communication	<ul style="list-style-type: none">• Verify the Lift Link device is connected to the server.• Update the Wi-Fi connection profile (SSID, Security method, credentials, etc.)• Turn the Wi-Fi off.• Turn the Wi-Fi on.• If the Lift Link device still does not communicate and the Wi-Fi status indicator displays no bars:• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.

26 – Comm Error (Refer to Hardware Guide)

[FUNCTIONAL] The server has not heard from the Lift Link device for at least 5 days

Possible Cause(s)	Action
Lift Link device communication	Drive the vehicle near a Wi-Fi Access Point and wait 1-30 minutes.
Lift Link device error	<ul style="list-style-type: none"> • Verify that other Lift Link devices synchronize with the system correctly by driving another vehicle near the Wi-Fi Access Point, waiting two minutes, then checking the "Vehicle Configuration Status" report in Lift Link software to verify Last Detected Date is the current date. • If other Lift Link devices are synchronizing <ul style="list-style-type: none"> • Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. • Only the Lift Link device should be returned for analysis/repair. • Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle. • Follow instructions on how to hard-bypass the system (see Appendix B). • Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).
Wi-Fi communication	<ul style="list-style-type: none"> • Verify the Lift Link device is connected to the server. • Update the Wi-Fi connection profile (SSID, Security method, credentials, etc.) • Turn the Wi-Fi off. • Turn the Wi-Fi on. • If the Lift Link device still does not communicate and the Wi-Fi status indicator displays no bars: <ul style="list-style-type: none"> • Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. • Only the Lift Link device should be returned for analysis/repair.

27 – Impact Cal Error (Refer to Hardware Guide)

[SHUTDOWN] Impact sensor test failed during sensor calibration.

Possible Cause(s)	Action
Impact sensor connection	<ul style="list-style-type: none"> Verify that the impact sensor is properly connected to the Lift Link device (connector C103).
Impact sensor cable damage	<ul style="list-style-type: none"> Verify that the impact sensor cable is not damaged. Replace sensor as needed and retest.
Impact sensor is not getting power from the Lift Link device	<ul style="list-style-type: none"> Verify that the Lift Link device is supplying adequate voltage by unplugging the impact sensor connector and connecting a voltmeter to pin 1 (positive) and pin 8 (negative) on C103 of the Lift Link device. The image at right shows how to read the pin layout and direction. <div data-bbox="938 562 1414 814" data-label="Image"> <p>The diagram shows a 2x4 pin connector labeled C103. The pins are numbered 1, 4, 5, and 8. Pin 1 is highlighted in green and labeled '1'. Pin 8 is highlighted in yellow and labeled '8'. Pins 4 and 5 are also labeled. The connector is shown from a top-down perspective.</p> </div> <ul style="list-style-type: none"> You must have 5.5 ± 0.5 volts DC. If the Lift Link device is not supplying 5.5 ± 0.5 VDC: <ul style="list-style-type: none"> Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle. Follow instructions on how to hard-bypass the system (see Appendix B).
Faulty impact sensor	<ul style="list-style-type: none"> Please contact your local dealer or Logisnext for warranty information to return only the Impact sensor for analysis/repair.

28 – FWD Motion Error (Refer to Hardware Guide)

[SHUTDOWN] The Lift Link device did not correctly detect forward motion during the configuration wizard phase when asked to move the vehicle forward for three second.

Possible Cause(s)	Action
Speeding during drive forward test	<ul style="list-style-type: none"> Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). Drive slowly where directed.
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none"> Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit. Refer to the Lift Link Installation Guide. Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none"> Verify that the fuse for the "BLU" wire is not blown or missing. Repair as needed. Log in to Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
"BRN" wire connection point (Internal combustion vehicles only)	<ul style="list-style-type: none"> Verify that the "BRN" wire is connected to the proper traction (motion) sensing circuit. Refer to the Lift Link Installation Guide. Log in to Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2) .
Incorrect forward motion values	<ul style="list-style-type: none"> Log in to Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). Log in to the Lift Link device and review the motion values (see "Defining 'Motion' Manually"). Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none"> Use an ohmmeter to check resistance to verify cable integrity (an "open" or zero reading indicates a damaged cable) on the "BLU" wire. Replace the cables as needed and retest.

29 – RVS Motion Error (Refer to Hardware Guide)

[SHUTDOWN] The Lift Link device did not correctly detect reverse motion during the configuration wizard phase when asked to move the vehicle in reverse for three second.

Possible Cause(s)	Action
Speeding during drive forward test	<ul style="list-style-type: none"> Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). Drive slowly where directed.
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none"> Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit. Refer to the Lift Link Installation Guide. Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none"> Verify that the fuse for the "BLU" wire is not blown or missing. Repair as needed. Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
"BRN" wire connection point (Internal combustion vehicles only)	<ul style="list-style-type: none"> Verify that the "BRN" wire is connected to the proper Engine-On Signal. Refer to the Lift Link Installation Guide. Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect reverse motion values	<ul style="list-style-type: none"> Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). Log in to the Lift Link device and review the motion values (see "Defining 'Motion' Manually"). Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none"> Use an ohmmeter to check resistance to verify cable integrity (an "open" or zero reading indicates a damaged cable) on the "BLU" wire. Replace the cable as needed and retest.
Vehicle has separate forward and reverse motors	<ul style="list-style-type: none"> Use a dual-diode solution to split the "BLU" wire into 2 wires to sense when either of the separate drive motors are active.

30 – FWD Motion Error (Refer to Hardware Guide)

[SHUTDOWN] Lift Link device does not sense consistent forward motion.

Possible Cause(s)	Action
Speeding during drive forward test	<ul style="list-style-type: none"> Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). Drive slowly where directed.
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none"> Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit. Refer to the Lift Link Installation Guide. Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none"> Verify that the fuse for the "BLU" wire is not blown or missing. Repair as needed. Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect forward motion values	<ul style="list-style-type: none"> Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). Log in to the Lift Link device and review the motion values (see "Defining 'Motion' Manually"). Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none"> Use an ohmmeter to check resistance to verify cable integrity (an "open" or zero reading indicates a damaged cable) on the "BLU" wire. Replace the cable as needed and retest.

31 – RVS Motion Error (Refer to Hardware Guide)

[SHUTDOWN] Lift Link device does not sense consistent reverse motion.

Possible Cause(s)	Action
Speeding during drive forward test	<ul style="list-style-type: none"> Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). Drive slowly where directed.
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none"> Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit. Refer to the Lift Link Installation Guide. Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none"> Verify that the fuse for the "BLU" wire is not blown or missing. Repair as needed. Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect reverse motion values	<ul style="list-style-type: none"> Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). Log in to the Lift Link device and review the motion values (see "Defining 'Motion' Manually"). Adjust values as needed.

32 – Seat Switch Error (Refer to Hardware Guide)

[SHUTDOWN] Seat/deadman switch error occurred in Lift Link device config.

Possible Cause(s)	Action
Accidental operator error during configuration	<ul style="list-style-type: none">• Run the installation wizard again. Ensure that you are not on the seat switch or dead man switch when instructed while selecting "NEXT" during the configuration wizard.
"2" and "4" wire connection points (and "6" and "8" for internal combustion vehicles)	<ul style="list-style-type: none">• Verify that the "2" and "4" connection points (and "6" and "8" for internal combustion vehicles) are connected to a circuit that will inhibit the vehicle from moving (or shut the vehicle down for internal combustion vehicles) when you are not logged into the Lift Link device.• Refer to the Lift Link Installation Guide for recommended connection points.• Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).

33 – Access Relay Err (Refer to Hardware Guide)

[SHUTDOWN] During the "disable access control" test, the Lift Link device did not disable the engine as designed.

Possible Cause(s)	Action
Verify the relay is working	<ul style="list-style-type: none">• User your multimeter to verify you see 12 volts when the relay is toggled and 0 volts when not toggled.• If not, please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.
Verify your connection point	<ul style="list-style-type: none">• Verify your access control point connection.

34 – Idle Motion Error (Refer to Hardware Guide)

[SHUTDOWN] Lift Link device detects motion when vehicle is idle.

Possible Cause(s)	Action
Accidental operator error during configuration	<ul style="list-style-type: none">• Run installation wizard again. Ensure that you are not on the seat switch or deadman switch when instructed while selecting "NEXT" during the configuration wizard.
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none">• Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit.• Refer to the Lift Link Installation Guide.• Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none">• Verify that the fuse for the "BLU" wire is not blown or missing.• Repair as needed.• Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect idle motion values	<ul style="list-style-type: none">• Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).• Log in to the Lift Link device and review the motion values (see "Defining 'Motion' Manually").• Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none">• Use an ohmmeter to check resistance to verify cable integrity (an "open" or zero reading indicates a damaged cable) on the "BLU" wire.• Replace the cable as needed and retest.

35 – Idle Motion Error (Refer to Hardware Guide)

[SHUTDOWN] The Lift Link device has detected an idle threshold that is not within the specified range of 20.

Possible Cause(s)	Action
Insufficient "BLU" (motion sensing) connection point	<ul style="list-style-type: none"> • Verify that the "BLU" wire is connected to the proper traction (motion) sensing circuit. • Refer to the Lift Link Installation Guide. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Failed fuse on "BLU" (motion sensing) wire	<ul style="list-style-type: none"> • Verify that the fuse for the "BLU" wire is not blown or missing. • Repair as needed. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
"BRN" wire connection point (Internal combustion vehicles only)	<ul style="list-style-type: none"> • Verify that the "BRN" wire is connected to the proper Engine-On connection. • Refer to the Lift Link Installation Guide. • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Incorrect idle motion values	<ul style="list-style-type: none"> • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2). • Log in to the Lift Link device and review the motion values (see "Defining 'Motion' Manually"). • Adjust values as needed.
Vehicle cable	<ul style="list-style-type: none"> • Use an ohmmeter to check resistance to verify cable integrity (an "open" or zero reading indicates a damaged cable) on the "BLU" and "BRN" wires. • Replace the cable as needed and retest.

36 – Impact sensor Er (Refer to Hardware Guide)

[FUNCTIONAL] The impact sensor has experienced unrecoverable errors.

Possible Cause(s)	Action
Disconnected impact sensor	<ul style="list-style-type: none"> • Verify that impact sensor is installed on the specified vehicle. If not, and it is uninstalled intentionally, then you must either re-run Install Wizard (to disable sensing at the Lift Link device) or disable Impact Sensing for that vehicle using the Lift Link software. • If the sensor is present but unplugged, then plug sensor back in. Identify how it was disconnected and address the root cause (e.g., no service loop/pulled too tight; cable connector cover missing on Lift Link device Bracket, etc.) • Verify that sensor is working using the Hardware->Impact screen. X/Y readings should be 0.0 +/- 0.2G with R readings between 70 and 90 on both axes. If not, sensor may be malfunctioning.
Malfunctioning impact sensor	<ul style="list-style-type: none"> • Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. • Mounting using screws or non-Logisnext-provided tape; Re-mount using provided tape. • Make sure that no other object is 'bouncing' on top of sensor during normal driving. • Make sure that mounting location avoids positioning right near vehicle wheels or other surfaces prone to repetitive vibration while driving. • Please contact your local dealer or Logisnext for warranty information to return only the Impact sensor for analysis/repair. • Once the impact sensor is removed, the system will display error #13. This error can be ignored until the impact sensor is replaced.

37 – Memory Error (Refer to Hardware Guide)

[FUNCTIONAL] The Lift Link device's internal memory has been lost.

Possible Cause(s)	Action
Backup battery is/was too low (Error #18)	<ul style="list-style-type: none">Follow troubleshooting steps for error #18
Internal memory corruption	<ul style="list-style-type: none">Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.Once the Lift Link device is removed, the system MUST be hard bypassed to use vehicle.Follow instructions on how to hard-bypass the system (see Appendix B).Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).

38 – Access Relay Err (Refer to Hardware Guide)

[SHUTDOWN] During the "disable access control" test, the Lift Link device did not disable the engine as designed.

Possible Cause(s)	Action
Verify the relay is working	<ul style="list-style-type: none">User your multimeter to verify you see 12 volts when the relay is toggled and 0 volts when not toggled.If not, please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.
Verify your connection point	<ul style="list-style-type: none">Verify your access control point connection.

39 – Forkload Config Er (Refer to Hardware Guide)

[FUNCTIONAL] The forkload sensor has not been calibrated successfully.

Possible Cause(s)	Action
Forkload sensor not calibrated	<ul style="list-style-type: none">Log in to the Lift Link device as a Maintenance Operator and re-run the sensors wizard from the install menu.Follow the load configuration instructions.

40 – Forkload Config Er (Refer to Hardware Guide)

[FUNCTIONAL] The forkload sensor has not been calibrated successfully.

Possible Cause(s)	Action
Forkload sensor has a bad installation or calibration	<ul style="list-style-type: none">Check the load sensor installation and wiring to the sensor hub.Log in to the Lift Link device as a Maintenance Operator and re-run the sensors wizard from the install menu.Follow the load configuration instructions.

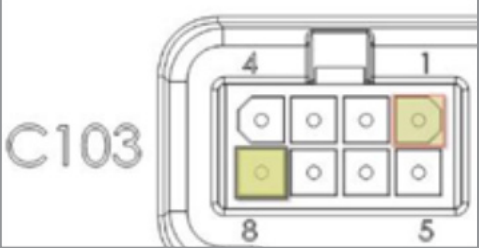
41 – Travel Zero Error (Refer to Hardware Guide)

[REFERENCE] The travel sensor is reporting zero when the motion motor sensor indicates motion.

Possible Cause(s)	Action
Impact sensor connection	<ul style="list-style-type: none"> • Verify that the impact sensor is properly connected to the Lift Link device (connector C103). • Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Impact sensor cable damage	<ul style="list-style-type: none"> • Verify that the impact sensor cable is not damaged. • Replace sensor as needed and retest.
Impact sensor is not getting power from the Lift Link device	<ul style="list-style-type: none"> • Verify that the Lift Link device is supplying adequate voltage by unplugging the impact sensor connector and connecting a voltmeter to pin 1 (positive) and pin 8 (negative) on C103 of the Lift Link device. The image at right shows how to read the pin layout and direction. <div data-bbox="938 621 1414 869" data-label="Image"> </div> <ul style="list-style-type: none"> • You must have 5.5 ± 0.5 volts DC. • If the Lift Link device is not supplying 5.5 ± 0.5 VDC. • Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. • Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle. • Follow instructions on how to hard-bypass the system (see Appendix B).
Impact sensor mounting compromised	<ul style="list-style-type: none"> • Verify that the impact sensor is securely mounted to the vehicle chassis near the vehicle's center of gravity.
Faulty impact sensor	<ul style="list-style-type: none"> • Please contact your local dealer or Logisnext for warranty information to return only the Impact sensor for analysis/repair.
Motion sensor reporting motion incorrectly	<ul style="list-style-type: none"> • See error code 11.

42 – Travel Sensor Err (Refer to Hardware Guide)

[REFERENCE] The travel sensor is reporting significantly more or significantly less than the motion motor sensor indicates motion.

Possible Cause(s)	Action
Impact sensor connection	<ul style="list-style-type: none"> Verify that the impact sensor is properly connected to the Lift Link device (connector C103). Log in to the Lift Link device as a Maintenance Operator and re-run the configuration wizard (see Section 2).
Impact sensor cable damage	<ul style="list-style-type: none"> Verify that the impact sensor cable is not damaged. Replace sensor as needed and retest.
Impact sensor is not getting power from the Lift Link device	<ul style="list-style-type: none"> Verify that the Lift Link device is supplying adequate voltage by unplugging the impact sensor connector and connecting a voltmeter to pin 1 (positive) and pin 8 (negative) on C103 of the Lift Link device. The image at right shows how to read the pin layout and direction.  <ul style="list-style-type: none"> You must have 5.5 ± 0.5 volts DC. If the Lift Link device is not supplying 5.5 ± 0.5 VDC Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle. Follow instructions on how to hard-bypass the system (see Appendix B).
Impact sensor mounting compromised	<ul style="list-style-type: none"> Verify that the impact sensor is securely mounted to the vehicle chassis near the vehicle's center of gravity.
Faulty impact sensor	<ul style="list-style-type: none"> Please contact your local dealer or Logisnext for warranty information to return only the Impact sensor for analysis/repair.
Motion sensor reporting motion incorrectly	<ul style="list-style-type: none"> See error code 11.

43 – Lift Link Device Too Hot Move to Cooler Area

[FUNCTIONAL] The Lift Link device temperature has increased to levels that can damage the internal components.

Possible Cause(s)	Action
Ambient temperature is over 150°F	<ul style="list-style-type: none"> Move the vehicle to a location with a lower ambient temperature until the Lift Link device cools down.

44 – Lift Link Device Too Cold, Move to Warmer Area

[FUNCTIONAL] The Lift Link device temperature has decreased to levels that can damage the internal components.

Possible Cause(s)	Action
Ambient temperature is below -10°F	<ul style="list-style-type: none"> Move the vehicle to a location with a higher ambient temperature until the Lift Link device warms up.

45 – Serial Data Error (Refer to Hardware Guide)

[FUNCTIONAL] The serial data communication (OEM CAN, etc.) has too many invalid packets.

Possible Cause(s)	Action
Serial/CAN cable connection compromised	<ul style="list-style-type: none">• Verify that the Serial/CAN cable is properly connected to both the Serial/CAN connection in the vehicle and the C102 connection on the Lift Link device.• Verify that the Serial/CAN cable is not damaged.
Serial/CAN not communicating from vehicle	<ul style="list-style-type: none">• See vehicle manufacturer's troubleshooting guide.

46 – Lift Link Device Button Error (Refer to Hardware Guide)

[FUNCTIONAL] One of the Lift Link device keypad buttons is stuck in the 'pressed' position.

Possible Cause(s)	Action
Keypad malfunction	<ul style="list-style-type: none">• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle.• Follow instructions on how to hard-bypass the system. (See Appendix B).• Run "CloneLift Link device" on the new Lift Link device (see Section 4 for instructions).

47 – Facility Code Error (Refer to Hardware Guide)

[FUNCTIONAL] The facility ID entered in the Lift Link device does not match the facility ID being transmitted by the currently in-range system.

Possible Cause(s)	Action
Incorrect facility ID	<ul style="list-style-type: none">• Update the Lift Link device's facility ID:<ul style="list-style-type: none">• Log into the Lift Link device as a Maintenance Operator.• Navigate to the Access > FacilityID screen.• Enter the facility ID provided by Lift Link Support.
Multiple facilities have overlapping wireless coverage	<ul style="list-style-type: none">• Verify the Server IP and Port are correct.• Contact Lift Link support.

48 – Wi-Fi FC IP Port Err (Refer to Hardware Guide)

[FUNCTIONAL] The facility ID is zero or the facility ID entered in the Lift Link device does not match the facility ID being transmitted by the currently in-range system.

Possible Cause(s)	Action
Incorrect facility ID	<ul style="list-style-type: none">• Update the Lift Link device's Facility ID:<ul style="list-style-type: none">• Log into the Lift Link device as a Maintenance Operator.• Navigate to the Access > FacilityID screen.• Enter the facility ID provided by Lift Link support.• Could also be an incorrect Server IP or Port; verify this also.
Multiple facilities have overlapping wireless coverage	<ul style="list-style-type: none">• Contact Lift Link support.

49 – Output Alert Err (Refer to Hardware Guide)

[REFERENCE] A Maintenance Operator indicated during the Sensor Install Wizard that the output alert (horn, alarm, strobe light, etc.) was not working.

Possible Cause(s)	Action
Wizard selection mistake	<ul style="list-style-type: none"> Log in to the Lift Link device as a Maintenance Operator and re-run the Sensor Install wizard. Refer to System Installation Guide. Verify that the "Output Alert" feature in the Sensor Install Wizard is assigned to VIM "107." Select "Yes" after you witness the output alert working on the 'External Indicator' screen.
Sensor connection	<ul style="list-style-type: none"> Verify that the Sensor Hub is properly connected to the Lift Link device (connector C102). Verify that the sensor cable is connected to the VIM6/7 port on the Sensor Hub. Verify that the RED and BLACK wires of the sensor cable are connected the sensor or relay (refer to system installation guide).
Sensor Hub damaged	<ul style="list-style-type: none"> Verify the Sensor Hub LED color (orange or green indicates it is working). Verify that other sensors are failing as well. Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle. Follow instructions on how to hard-bypass the system (see Appendix B).
Output alert sensor is not working	<ul style="list-style-type: none"> Repair or replace sensor or sensor components.

50 – Internal Memory Corruption/Err

[FUNCTIONAL] Lift Link device memory error.

Possible Cause(s)	Action
Lift Link device malfunction	<ul style="list-style-type: none"> If this occurs, try clearing it once. If the error returns on the same Lift Link device, please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. Please be sure to indicate that it is being returned for this error. Log in to the Lift Link device as a Maintenance Operator and navigate to the Error menu. Clear the error and if the error reappears please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. <ul style="list-style-type: none"> Once the Lift Link device is removed, the system MUST be hard bypassed to use the vehicle. Follow instructions on how to hard-bypass the system. (See Appendix B) and check to see if it reappears.

51 – Wrong Lift Link Device FW

[FUNCTIONAL] Lift Link device was configured for PWM access, and the firmware does not support this feature

Action

- If this occurs, the Lift Link device needs to be upgraded to the latest version of firmware.

52 – Wi-Fi Config Err

[FUNCTIONAL] Lift Link device was configured for Proprietary or TLS data encryption, but the site is programmed to connect to does not support that data encryption.

Action

- If this occurs, the Wi-Fi data encryption method needs to be changed in the Lift Link device (if this appears on only a couple Lift Link devices) or in the software license (if this occurs on all Lift Link devices).

53 – Invalid Region

[FUNCTIONAL] Lift Link device hardware is for a different region (North America, EMEA, APAC).

Action

- If this occurs, the Lift Link device must be replaced with a region appropriate Lift Link device.

“Error: 00” through “Error: 37” [displayed at any time without warning to any operator type]

These errors may allow vehicle use during the error and may self-correct. Intermittent display of the same error, or recurring errors should be considered an issue.

Possible Cause(s)	Action
One-time Lift Link device issue	None for Operators. The Lift Link device self-re-boots until the error is cleared.
Intermittent or continuous Lift Link device issue	<ul style="list-style-type: none">• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Once the Lift Link device is removed, the system MUST be hard bypassed to use the vehicle.• Follow instructions on how to hard-bypass the system (see Appendix B).

80 – Vehicle Soft Bypassed (Refer to Hardware Guide)

[REFERENCE] The vehicle system has been placed in “ID Optional” mode. This error will not display on the vehicle, only in the error reports from the software.

Possible Cause(s)	Action
A Maintenance Operator placed the vehicle in “ID Optional” mode	<ul style="list-style-type: none">• Log into the vehicle as a Maintenance Operator.• Select the Access menu option, and then press ENTER.• On the “Access” sub-menu, select the Settings menu option, and press ENTER.• On the “Settings” sub-menu, select “Registered IDs” to disable soft bypass and restore vehicle access control. Operators will again be required to log in to use the vehicle.

81 – Vehicle Not Detected in N Days (Refer to Hardware Guide)

[REFERENCE] The vehicle has not communicated with the software in N days, where N is calculated based on the last communication date. This error will not display on the vehicle, only in the error reports from the software.

Possible Cause(s)	Action
Lift Link device communication	<ul style="list-style-type: none"> • Drive the vehicle near a Wi-Fi Access Point and wait 1-30 minutes.
Lift Link device error	<ul style="list-style-type: none"> • Verify that other Lift Link devices synchronize with the system correctly by driving another vehicle near the Wireless Asset Manager (WAM) or Wi-Fi Access Point, waiting 2 minutes, then checking the "Vehicle Configuration Status" report in Lift Link software to verify Last Detected Date is the current date. • If other Lift Link devices are synchronizing: please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. <ul style="list-style-type: none"> • Once Lift Link device is removed, the system MUST be hard bypassed to use vehicle. • Follow instructions on how to hard-bypass the system. (See Appendix B). • Run "Clone Lift Link device" on the new Lift Link device (see Section 4 for instructions).
Wi-Fi communication	<ul style="list-style-type: none"> • Verify the Lift Link device is connected to the server. • Update the Wi-Fi connection profile (SSID, Security method, credentials, etc.) • Turn the Wi-Fi off. • Turn the Wi-Fi on. • If the Lift Link device still does not communicate and the Wi-Fi status indicator displays no bars: please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.

82 – Vehicle Delayed Sync (Refer to Hardware Guide)

[REFERENCE] Certain data on the Lift Link device is not up to date. This error will not display on the vehicle, only in the error reports from the software.

Possible Cause(s)	Action
Lift Link device communication	<ul style="list-style-type: none"> • Drive the vehicle near the Wireless Asset Manager (WAM), or Access Point for Wi-Fi systems, and wait 1-30 minutes.
Lift Link device error	<ul style="list-style-type: none"> • Verify that other Lift Link devices synchronize with the system correctly by driving another vehicle near a Wi-Fi Access Point, waiting 2 minutes, then checking the "Vehicle Configuration Status" report in Lift Link software to verify Last Detected Date is the current date. • If other Lift Link devices are synchronizing: please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair. • Once the Lift Link device is removed, the system MUST be hard bypassed to use vehicle. • Follow instructions on how to hard-bypass the system (see Appendix B) . • Run "Clone Lift Link device" on the new Lift Link device (see Section 4 for instructions).
Wi-Fi communication	<ul style="list-style-type: none"> • Verify the Lift Link device is connected to the server. • Update the Wi-Fi connection profile (SSID, Security method, credentials, etc.) • Turn the Wi-Fi off. • Turn the Wi-Fi on. • If the Lift Link device still does not communicate and the Wi-Fi status indicator displays no bars: please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.

83 – Impact Sensor Er (Refer to Hardware Guide) [last X, Y reading]

[FUNCTIONAL] The impact sensor has experienced a hardware/connection error.

Possible Cause(s)	Action
Disconnected impact sensor	<ul style="list-style-type: none">• Verify that impact sensor is installed on the specified vehicle. If not, and it is uninstalled intentionally, then you must either re-run Install Wizard (to disable sensing at the Lift Link device) or disable Impact Sensing for that vehicle using the Lift Link software.• If the sensor is present but unplugged, then plug sensor back in. Identify how it was disconnected and address the root cause (e.g., no service loop/pulled too tight; cable connector cover missing on Lift Link device Bracket, etc.)• Verify that sensor is working using the Hardware->Impact screen. X/Y readings should be 0.0 +/- 0.2G with R readings between 70 and 90 on both axes. If not, sensor may be malfunctioning.
Malfunctioning impact sensor	<ul style="list-style-type: none">• If X or Y reading is non-zero, but also not between 70 and 90, the sensor may be malfunctioning; also, if X or Y is normal (70-90), but the other axis is 0, then sensor is malfunctioning.• Please contact your local dealer or Logisnext for warranty information to return only the Lift Link device for analysis/repair.• Mounting using screws or non-Logisnext-provided tape; Re-mount using provided tape.• Make sure that no other object is 'bouncing' on top of sensor during normal driving.• Make sure that mounting location avoids positioning right near vehicle wheels or other surfaces prone to repetitive vibration while driving.• Please contact your local dealer or Logisnext for warranty information to return only the Impact sensor for analysis/repair.• Once the impact sensor is removed, the system will display error #13. This error can be ignored until the impact sensor is replaced.

SECTION 9: SYSTEM SUPPORT INFORMATION

9.1 Technical Specifications – Lift Link Device

Electrical Specifications

Power Interface	Min	Nominal	Max
Rated, operating supply voltage (VDC) – I/C or Electric	9	-	99
Internal Fuse (A) [non-serviceable]	-	3	-
External In-Line Fuse (A)**	-	2	-

**Pre-installed in wiring harness; spare available in Site Kit

Vehicle Current Draw	Lift Link Device4S			Lift Link Device4		
	Hibernate	Nominal	Max	Hibernate	Nominal	Max
12 Volt Source (mA)	18	250	280	50	350	550
24 Volt Source (mA)	15	110	130	30	200	300
36 Volt Source (mA)	12	80	100	25	140	200
48-, 60-, or 72-Volt Source (mA)	10	55	80	20	100	140

Access Control Interface	Lift Link Device4S			Lift Link Device4		
	Min	Nominal	Max	Min	Nominal	Max
Output Voltage (VDC) [coil connection]	9	12	12	11.5	12	12
Duty Cycle for PWM P-Plug connection 25% = Novice skill level 50% = Intermediate skill level 75% = Expert skill level 100% = Unsafe Event active	9	12	12	-	-	-

Processor/Memory/Other Specifications

Item	Lift Link Device4S	Lift Link Device4
Processor	32-bit Microprocessor @ 180 MHz	32-bit Microprocessor @ 60 MHz
RAM	2 MB x 16 + 256K on chip	4 MB x 16
RAM type	Battery-backed SRAM	Battery-backed SRAM
External Flash	64 MB	-
On chip Flash	2 MB	2 MB x 16
Real-time clock	Onboard, 1 sec/day accuracy, updated automatically via RF	
Utilization history storage (RAM)	Approx. 1 month	
Location history storage (RAM)	Approx. 10 days	

Communication Specifications

Intelligent RF Protocol	Min	Nominal	Max
Frequency (MHz) - US	902.6	915	927.4
Frequency (MHz) - EU	868.3	868.3	869.85
Output power (mW)	0.1	25	250*** (US) 500*** (EU)
Modulation	-	FSK, DTS, Narrow band	-
Frequency Agility	-	26 Adjustable channels (US) 868.3, 868.95, 869.525, or 869.85 MHz (EU)	-
Communication Data Rate (Kbps) - US	78	156	156***
Communication Data Rate (Kbps) - EU	19	156	156***
Communication Scheme	-	CSMA/CD (US); CSMA/CD/LBT (EU)	-
Antenna	-	Internal PCB antenna, omni-directional	-

*** Depends on channel utilized

Wi-Fi	
Protocols supported	802.11 a, b, g, n
Frequency (GHz)	2.412-2.484 GHz; 5.18-5.32 GHz; 5.5-5.825 GHz
Channels	US: 1-11; EU: 1-13; JPN: 1-14; US/EU: 36-64; 100-165
Modulation	DSSS
Bandwidth	20/40 MHz
Transceiver Power	+18 dBm
Receiver Sensitivity	-97 dBm
Antenna	Internal antenna, omni-directional
WLAN security setting options	Open, WEP-64, WEP-128, WPA- PSK (TKIP), WPA2-PSK (AES), WPA-EM (PEAP-MSCHAPv2), WPA2-EM (PEAP-MSCHAPv2)
Data Encryption	TLS1.2 in transit

Bluetooth	
Protocols supported	Bluetooth 4.0 (2.1+EDR, LE)
Frequency	2402 MHz - 2480 MHz
Channel Spacing	BR, EDR – 1 MHz; LE – 2 MHz
Modulation	GFSK, DQPSK, 8DPSK
Transceiver Power	15 dBm (Class-1)
Receiver Sensitivity	-94 dBm

User Interface Specifications

User Interface - Lift Link Device	Specification
Keypad – type	Membrane/polyester; 20 keys
LCD – display type	DFSTN, black/white; 132 x 64 pixels
Backlight	White LED
Status LEDs – See below	4, integrated, 270° viewable from 50'
Environmental Spec	IP67

Proximity Card	Specification
Proximity Card Type	Multi-Prox (50+ protocols; 125 KHZ or 13.65 MHz)
Proximity Reader Location	Internal /tamperproof

Mounting Specifications

Lift Link Device	Specification
Electrical considerations	Isolation from chassis required (and provided)
Mounting method	2 x M6 screws or bolts (supplied)

Sensor Specifications

Motion Sensing (wired)	Specification
Electric vehicle connection	Avg: average DC or 'AC' square-wave duty-cycle monitoring (BLU Wire) Min/Max: peak-to-peak (BLU Wire)
Internal Combustion vehicle connection	Engine on and in-gear (BRN and BLU wires)

Motion, Lift motor, Seat/Deadman Sense Criteria	Min	Nominal	Max
Voltage Range (Electric vehicle)	0	B+ (battery positive)	100
Voltage Differential – Idle/Motion (Electric vehicle; BLU wire)	1.0†	20	100
Voltage Range (Internal combustion vehicle)	0	B+	100
Voltage Differential Idle/Motion (IC vehicle; BRN and BLU wires)	1.0†	B+	20

†Voltage differential between motion state and idle state must be at least 1.0 volt

Impact Sensor	Min	Nominal	Max
Impact Range (G)	1	11	11
Axes	-	X, Y only	-
Threshold configuration	Auto-configuring; manual threshold settings not required		

GPS Receiver	Specification
Manufacturer Details	US Global Sat model BR-355-S4
Chipset /Protocol	SiRF Star IV /NMEA 0183 (default) or siRF binary (alternate)
Accuracy	Less than 2.5 m (< 8.2 ft) 2D RMS SBAS Enabled
Acquisition rate (averages)	Hot start = 1 sec; warm or cold start = 35 sec
Mounting	Integrated bracket via tape, or screws
Location Update Rate	1 Hz

Output Alert	Specification
2-wire Voltage Control Output	0 or 12 VDC output (typically for strobe light, sounder, or vehicle horn)

Fork Load Sensor	Min	Nominal	Max
Hydraulic pressure range (PSI)	0	1000	5000
Installation	Common range of JIC 37° Flare and ORFS fittings		

Tow/Dolly Sensor	Min	Nominal	Max
Proximity/Distance Range	6"	24"	39"
Mounting	Rear of tow vehicle, near tow-load hitch		

Regulatory and Product Certifications

Certification	Specification
UL /cUL	UL 60950-1 /CSA C22.2 NO. 60950-1, UL583, UL558
CE	EN12895:2015+A1:2019, EN301489-1:v2.2.3(2019), EN301489-3:v2.3.2(2023), EN301489-17:v3.2.6(2023), EN300220-1/-2:v3.2.1(2018), EN300328:v2.2.2(2019), EN300330:v2.1.1(2017), EN301893:v2.1.1(2017), EN303413:v1.2.1(2018), EN55032:2015+A11:2020, EN55035:2017+A11:2020, EN62368-1+A11(2020), IEC62311:2020, IEC62368-1:2018(3 rd version)
ETSI	EN 300 489-1/3, EN 300 220-1, EN 300 328
EMC	2014/30/EU
RED	2014/53/EU
LVD	2014/35/EU
FCC	<p>US FCC: 47 CFR Part 15, Industry of Canada RSS-247</p> <p>These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with FCC instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.</p> <p>If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correcting the interference by one or more of the following measures:</p> <ol style="list-style-type: none"> 1.1. Reorient or relocate the receiving antenna, 1.2. Increase the separation between the equipment and receiver. 1.3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. 1.4. Consult the dealer or experienced radio/TV technician for help.

Environmental Specifications

Lift Link Device	Specification
Operating Temperature*	-40°C to +85°C (screen not visible below -32°C)
Storage Temperature*	-40°C to +85°C
Humidity	MIL-STD-810F, Method 507.4, 95% RH (non-condensing)
Environmental Sealing	Exceeds NEMA 3R, Mil-Std-810E Method 506.3 Procedure III; IP67
Vibration	MIL-STD-810F, Method 514.5 (12.35Grms random vibration), heavy duty truck chassis mount
Shock	MIL-STD-810F, Method 516.5, Procedure I (20 G Functional), V (40 G Crash Hazard)
Drop (product)	3 ft onto Concrete; 1 per side
Altitude	MIL-STD-810F, Method 500.4, Section II (Operations/Air Carriage) – 15,000 ft
Solar	MIL-STD-810F, Method 505.4, Procedure II (Cyclic)
Thermal Shock	MIL-STD-810F, Method 503.4, Procedure II (Cyclic), -40°C to +70°C
Salt Fog	MIL-STD-810F, Method 509.4
ESD	+/- 8kV contact; +/- 15kV non-contact

* Prolonged exposure to temperatures above 70°C may affect keypad tactile response.

APPENDIX A: CUSTOMER SUPPORT

Customer Support

Technical Support: liftlink@logisnextamericas.com

Support Hours: 8:00am - 5:00pm, Monday - Friday (Eastern)

Additional Terms

Please provide a relevant subject header when emailing support and include the following information:

- The customer site name where the issue is occurring.
- The specific Vehicle ID or groups of Vehicle ID's the issue is occurring on.
- A brief description of the persistent issue.
- Any troubleshooting steps you took.

APPENDIX B (HARD BYPASS LIFT LINK ACCESS CONTROL)

Refer to the Lift Link Installation Guide for detailed wiring diagrams.

Hard-Bypassing Access Control

You must open the vehicle and have access to the Lift Link relay circuit to complete this procedure.

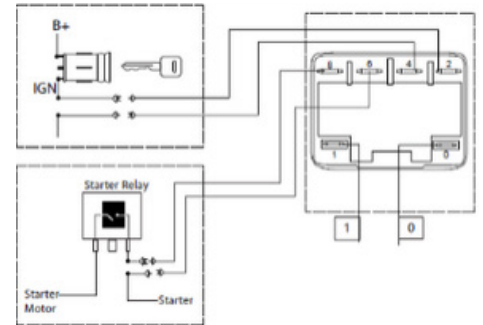
Depending on the access control relay you are using, the connection points may differ:

For relays with embedded spade terminals:

- Remove any wires connected to the #2 and #4 positions on the access control relay and connect those wires (#2 and #4) to each other.
- Remove any wires connected to the #6 and #8 positions on the access control relay and connect those wires (#6 and #8) to each other.

For relays with orange and gray wire connections:

- Remove any wires connected to the orange wires of the access control relay and connect those wires to each other.
- Remove any wires connected to the gray wires of the access control relay and connect those wires to each other.



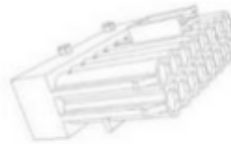
OEM custom vehicle harnesses only, perform the following:

JPT Connector

- Disconnect the JPT cable harness from the vehicle connector.
- Connect the VMS bypass bridge to the JPT connector.



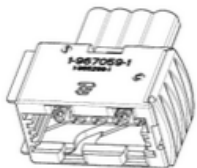
JPT Connector



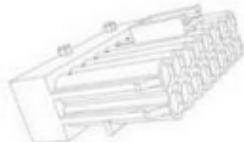
VMS Bypass Bridge

VDI and P-Plug Connectors

Disconnect the VDI cable harness from the vehicle connector and disable the VDI feature on the Vehicle Manager (for more information, contact Logisnext).



VDI Connector



P-Plug Connector

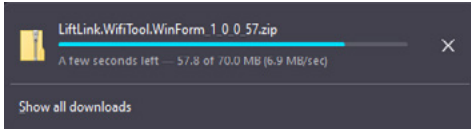
APPENDIX C (USING THE LIFT LINK WI-FI TEST TOOL)

PC/Laptop-BASED TEST TOOL

1. Download the **Lift-Link-Wi-Fi-Test-Tool.zip** file [Wi-Fi Test Tool Download](#) to a Wi-Fi capable PC (or Laptop). Save the zip file to your desktop.

NOTE: You may receive a notice stating the content is read only. Regardless of the notice, proceed by clicking the **DOWNLOAD** link.

2. Unzip the executable to a location on a Wi-Fi capable PC/Laptop.



3. Connect the PC to the same wireless network the Lift Link® devices connect to. Double-check the PC is not also connected to the network via Ethernet.

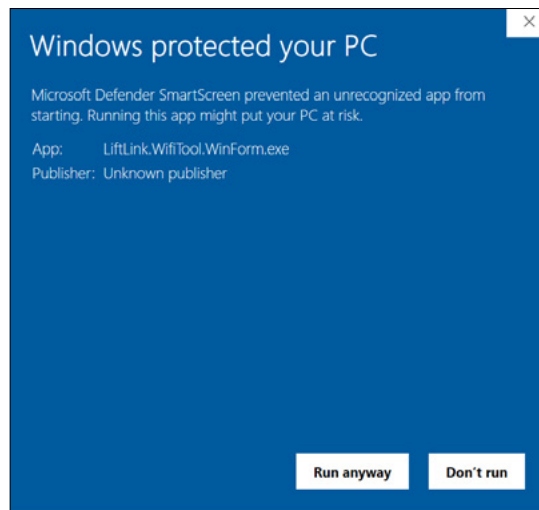
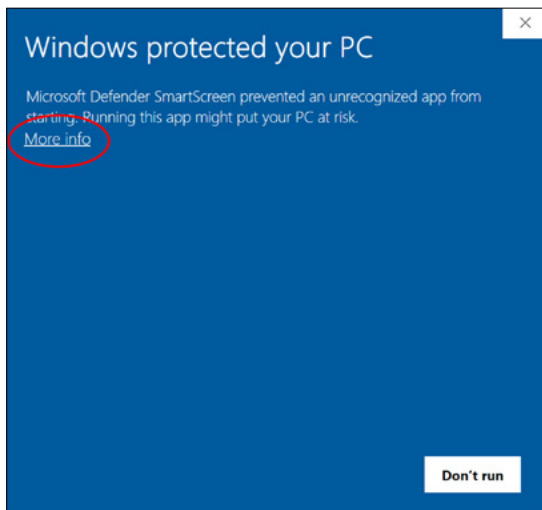
4. Confirm the connected device obtains an IP address that falls into the same range that the Lift Link devices are using, if planning to use Static IPs.

- a. If the device's IP address does not fall into the same range that the Lift Link devices use, the rest of the test steps will be invalid. Your IT department should ensure the device IP address is in the range assigned to the Lift Link devices.

5. Once unzipped, click the publish folder. Open and run the **LiftLink.WifiTool.WinForm.exe** file. Do not remove, move, or edit any other folders/files, or the test tool may not open.

Launcher	Application	8 KB
LiftLink.Messaging.Library.pdb	PDB File	21 KB
<input checked="" type="checkbox"/> LiftLink.WifiTool.WinForm	Application	71,691 KB
LiftLink.WifiTool.WinForm.dll.manifest	MANIFEST File	2 KB

6. You may be prompted with a warning: "The publisher could not be verified. Are you sure you want to run this software?" Click **RUN** (or then **RUN ANYWAY** for Windows 10).



7. Enter the following information in the Wi-Fi Test Configuration tab:

Destination Server		VAC Message Profile	
IP Address:	Change to: 216.250.138.155	Count of simple messages/minutes :	10
Port:	Enter the number provided by Lift Link Support. Contact support if needed. Do not use punctuation.	Advanced messages per minutes:	0
Facility ID:	Enter the number provided by Lift Link Support. Contact support if needed. Do not use punctuation.	Test Duration (minutes):	1
Encryption		Source Address	
Enable Encryption:	Always Check	IP Address:	Use the default – if your default number is different than what is in the screenshot above, do not change it.
		Port:	Leave Blank

8. Go to the **Output** tab.

9. Check the **Enable** output checkbox.

10. Click the **Start Wi-Fi Test** button.

- a. The test is complete when the log reads: "Sending finished: XXX.XXX"
- b. The screen shot indicates communication between the site's Wi-Fi network and the server software is working properly.

If you do not receive a (70% Success) result, the test was unsuccessful. Click the Save button to save the log file. Then click the Clear Log button, return to the Wi-Fi Configuration tab, and set the Test Duration up to five minutes. If you continue to get failed-test results, there may be an issue with the integrity of the connection to the server. The site's IT should verify the AP logs, firewalls, etc. to confirm why the connection cannot be reached. NOTE: You can receive a SUCCESS with a percentage less than 100%.

- **For passing tests, send a test screen capture to liftlink@logisnextamericas.com.**
- **For failing tests, send a test screen capture and a full Word/Notepad copy of the log to liftlink@logisnextamericas.com.**

The test log can also be saved and emailed. Please set the email's subject to "Wi-Fi test tool results."



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