LiNX Access iOS

Programming and diagnostic tool

dynamic™

LiNX Access iOS
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Welcome

1 Welcome

1.1 About the LiNX Access iOS tool

Welcome to the user manual for the LiNX Access iOS tool.

The LiNX Access iOS tool is an application for Apple's iPhone, iPad and iPod touch.

It is used to:

- configure Dynamic Controls' range of LiNX wheelchair controllers
- view real-time and historical diagnostic information.

1.2 Using this manual

This manual will help you to understand, install, and use the LiNX Access iOS tool.

This manual uses the following information boxes to convey important and useful information:

Warning

Warnings provide important information that must be followed in order to install, configure and use the product safely and efficiently. Not following the instructions given in a warning can potentially lead to equipment failure, damage to surrounding property, injury or death.

Note

Notes provide supporting information in order to install, configure, and use the product. Not following the instructions given in notes or precautions can lead to equipment failure.

See also

The "See also" box provides cross-references to help you navigate the installation manual more easily.

1.3 Important information

Due to a policy of continuous product improvement, Dynamic Controls reserves the right to update this product and manual without notice. This issue of the manual supersedes all previous issues. Previous issues must no longer be used.

The latest version of this manual can be downloaded from Dynamic Controls' website at *www.dynamiccontrols.com*

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1.5 Personal data you collect and process

The App permits you to download information to your mobile device, such as the serial number and technical product data (battery levels, usage patterns, error codes, seat angle patterns, motor characteristics, and run time for example) of a product connected to the App, and to save that data on your mobile device as a file (“Configuration File”). Although the App does not collect any information about the product end user’s health, the end users use of the product together with the Configuration File may reveal the fact, or be an indication, that the end user has a particular health condition, which may be considered sensitive information (“Sensitive Information”). The Configuration File and the Sensitive Information (individually and collectively the “End User Data”) may be the Personal data of the product end user. You are the controller (as defined under the General Data Protection Regulation (“GDPR”)) of the End User Data and it is your responsibility to provide required privacy notices and obtain any required consent of the end user prior to Processing the End User Data.

1. “Process” or “Processing” is any operation or set of operations which is performed upon personal data, whether or not by automatic means, such as collection, recording, organization, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, blocking, erasure or destruction.
2. “Personal data” means any information relating to an identified or identifiable natural person ('data subject'), directly or indirectly, in particular by reference to an identification number or some other factor specific to the person’s identity. Examples of personal data are your name or contact details or information about your usage of your product.
3. See Article 6(1)(b) (necessity for the performance of a contract) and Article 6(1)(c) (necessity for compliance with a legal obligation) of the GDPR. See also fn. 4.
4. See Article 6(1)(f) of the GDPR (necessity for purposes of legitimate interests).

1.6 Contents

1.6.1 Contents Overview

1.6.2 Contents Detailed

1.7 Glossary

A

Access Key
A Bluetooth adaptor that plugs into the XLR connector of the Remote module and connects the Remote module to the LiNX Access Tool on your iOS device.

B

Bluetooth
A commonly used, short-range, wireless technology. Bluetooth is used between the LiNX Access Key and an iOS device to transmit programs and diagnostic information with the LiNX Access Tool.

Bulk edit
A feature that writes all parameters to the LiNX system when the user selects Write to Chair. (Compare with Live edit.)

C

Connection - Bluetooth
The process of linking two Bluetooth devices together each time they are within range of each other and data is about to be exchanged between them. This process occurs after the devices have paired. (See Pairing - Bluetooth.)

I

iOS
Operating system used by portable Apple devices such as iPhone, iPad, and iPod touch.

L

Live edit
A feature that writes parameter changes to the LiNX system immediately as they are entered. (Compare with Bulk edit.)

O

OEM
Original Equipment Manufacturer.

P

Pairing - Bluetooth

Pairing is the process of establishing a connection between two Bluetooth devices (e.g. a LiNX Access Key and an iPhone or a PC) for the FIRST time. (Compare with Connection - Bluetooth).

R

Remote module

The physical device that controls the operation of the wheelchair.

X

XLR connector

A connector (industry standard) used with the LiNX system primarily for connecting to the battery charger. It is also used for attaching the LiNX Access Key, a Bluetooth device used to communicate with the LiNX Access tools.

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Overview

2 Overview

2.1 What it does

The LiNX Access iOS tool connects wirelessly to a LiNX wheelchair controller to read and write control configurations, and view diagnostic information.

Figure 1: The LiNX Access iOS tool

See also

Visit the Dynamic Controls website for more information on the LiNX product range and the LiNX Access Key: www.dynamiccontrols.com

2.2 Features

- Move easily between wheelchair and files
- Instant wireless configuration (live edit) and diagnostics
- Numeric, graphic and text parameter input
- Intuitive, user-friendly interface
- 10 m working range

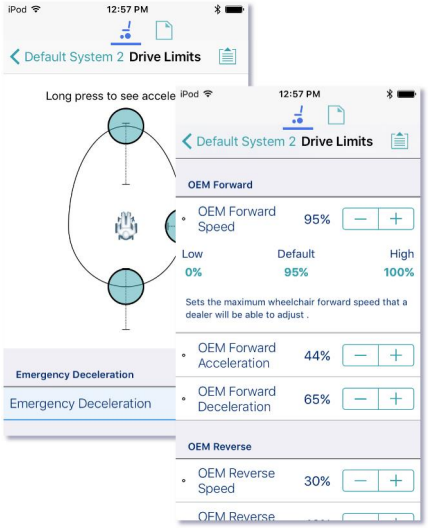

Figure 2: Numerical and graphical programming

2.3 Version information

2.3.1 The LiNX Access iOS tool

This manual has been written for the LiNX Access iOS tool, version 2024.1.0 and later. For information regarding previously released versions, please see the downloads section on the Dynamic Controls website: *www.dynamiccontrols.com*

2.3.2 The LiNX System

The LiNX Access iOS tool supports all versions of the LiNX family of wheelchair controllers.

Warning

Performance adjustments must only be made by healthcare professionals or by persons who completely understand the adjustment process and the capabilities of the wheelchair user.

Before upgrading the firmware of the system, or a module in the system, always ensure that the battery charge level is sufficient and the park brakes are not manually or electronically released.

Incorrect settings, or programming in a location that is not safe, can cause injury to the user and bystanders, or damage to the wheelchair and surrounding property.

After you have configured the wheelchair, check to make sure that it performs to the specifications entered in the programming procedure. If the wheelchair does not perform to specifications, reprogram it. Repeat this procedure until the wheelchair performs to specifications. If the wanted operation cannot be reached, contact your service agent.

Ensure that the deceleration parameters are always higher than the acceleration parameters for a safe response. It is the responsibility of the health care professional to make sure that the user is capable of both cognitively understanding and physically operating the programmed features and functions.

With inappropriate programming settings, certain features and options may not be accessible or perform as expected.

Where any inconsistencies about chair status occur between the LiNX System and that reported by a programming tool, the user should take the status as reported by the LiNX System as correct.

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3 Set-up

Set-up

3.1 System requirements

To use the LiNX Access iOS tool, you need:

- a LiNX wheelchair control system
- a LiNX Access Key
- an Apple iPhone, iPad or iPod touch (using iOS 15.0 or higher)
- the LiNX Access iOS application

Note

Two Live Diagnostic screens, Actuator Channels and Control Inputs (see 4.3.4 Diagnostic screens), can only be viewed with devices running iOS 16.0 or higher.

3.2 Install the application

The LiNX Access iOS tool is a free application available from the Apple App Store. Search for 'LiNX Access'.

If your iOS device does not have the application installed, you will be prompted to install it when you attempt to pair with a LiNX Access Key for the first time.

3.3 Connect the application to a wheelchair

To connect the LiNX Access iOS tool to a wheelchair, see *Connect and disconnect to the LiNX Access tool*.

3.4 Application update notifications

All updates to the application are automatically notified on your iOS device (if this feature has not been disabled). This feature requires an Internet connection.

3.5 The LiNX Access Key (LAK)

A LiNX Access Key (LAK) is required for the LiNX Access iOS tool to communicate via Bluetooth with a LiNX system.

The LAK is inserted into a remote module's XLR socket. (See *Figure 4*.)

Figure 3: LiNX Access Keys

3.5.1 LAK versions

Two versions of the LiNX Access Key are supplied. The version determines the access you have to programming functions.

The two versions are:

- **Distributors**: Providers, dealers, therapists and wheelchair service agents (DLX-HKEY01-A)
- **Manufacturers**: OEMs and certain service agents (DLX-HKEY02-A)

3.5.2 LAK firmware

The LiNX Access Key's firmware must be version 4.0 or higher to support the features of the LiNX Access iOS tool.

Information on how to upgrade the firmware is at *6.3.6 Upgrade the firmware*.

3.5.3 How to insert the LAK

Insert the LAK into a remote module's XLR socket — see *Figure 4*. The XLR socket's location depends on the remote module.

Figure 4: Inserting the LiNX Access Key

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Concepts and interface

4 Concepts and interface

The LiNX Access iOS tool allows you to program, diagnose and analyse LiNX systems.

This chapter gives an overview of the tool and how to use it.

- *For information on how to find your way around the tool, see section 5 Navigation.*
- *For information on how to perform particular tasks, see section 6 How to ....*

4.1 Programming contexts

The LiNX Access iOS tool has two programming contexts:

- **Connection context**: access and program a system directly while connected to the LiNX system on a wheelchair
- **File context**: access and edit a program stored as a file on your device

4.1.1 Viewing the contexts

You can view the contexts by toggling between them on the context switch on the navigation bar. (See *6.2 Select the context*.)

4.2 Editing modes

Programs can be modified in one of two modes, which define when parameters are written to the wheelchair:

- live edit
- bulk edit

4.2.1 Live edit

Live edit mode is available in the connection context only — that is, when connected to a wheelchair.

Live edit writes parameter changes immediately to the wheelchair as you enter them. This is useful for quickly setting up or testing.

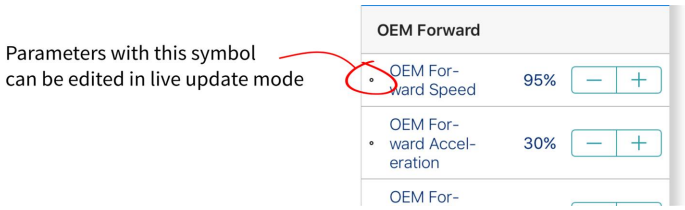

Figure 5: Live edit mode indicator

Not all parameters can be updated in live edit mode. Parameters that can be updated in live edit are identified by a circular icon to the left of the parameter name (see *Figure 5*).

Warning

When in live edit mode, changes to parameters take immediate effect, changing the performance of the wheelchair immediately.

Warning

There is no function to undo a change in live edit mode. Before editing, save a copy of the program to use to restore settings, if required.

4.2.2 Bulk edit

Bulk edit parameters are available in connection context and file context.

In bulk edit, all parameters are editable but none are written to the wheelchair immediately. They are written to the wheelchair when the Write function is selected.

In connection context, bulk edit parameters are identified by a blue background and must be unlocked to be editable. In file context, all parameters are bulk edit parameters.

4.2.2.1 Connection context

You can unlock bulk edit by opening any bulk edit parameter and tapping **Unlock** — *Figure 6*. Alternatively, you can tap on the Application Menu button (top-right hand corner) and select **Unlock And Enter Bulk Edit** — *Figure 7*. When unlocked, the editing mode switches from live edit to bulk edit, and all parameters are editable.

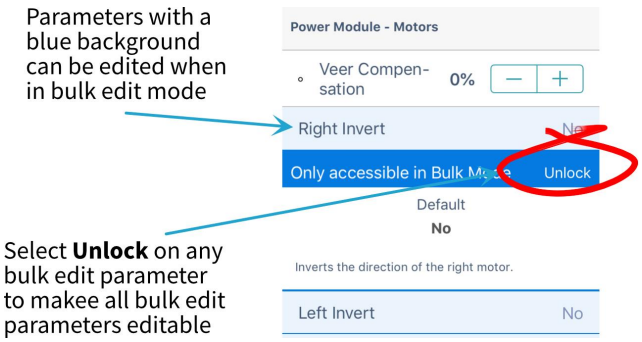

Figure 6: Bulk edit unlock from parameter

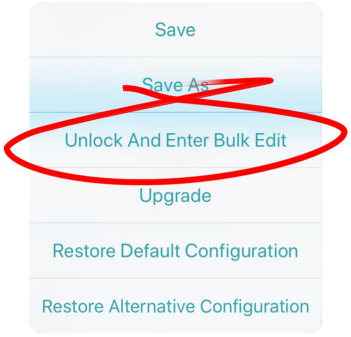

Figure 7: Bulk edit unlock from application menu

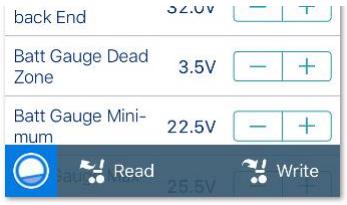

Figure 8: Bulk edit icon, and read and write options

After unlocking bulk edit, the bulk edit icon and read and write options appear at the bottom of the screen.

- **Read** power-cycles the system and returns you to live edit, if your program is in sync with the wheelchair. Any edits you have made will be lost.
- **Write** writes your edits to the wheelchair, power-cycles the system and returns you to live edit.

4.2.2.2 File context

In file context, the read and write functions are available only if a wheelchair is connected to the system. To connect a wheelchair, open a connection in connection context and return to file context to edit the file.

Note

By default, live edit mode is enabled every time the system is powered up, including after a power cycle. The application remains in live edit mode until bulk edit mode is unlocked. At that point, the application changes to bulk edit mode and live edit mode is disabled. The application then remains in bulk edit until the system is written to and power-cycled.

4.3 The interface

Find out here about the:

- *Home screen*
- *Parameter editing screens*
- *Diagnostic screens*
- *Utility screens*
- *Navigation bar*
- *Application menu*

4.3.1 Home screen

The Home screen is the default screen after connecting to a wheelchair or opening a configuration file. It provides general information about the system as well as access to the tool's programming and diagnostic screens.

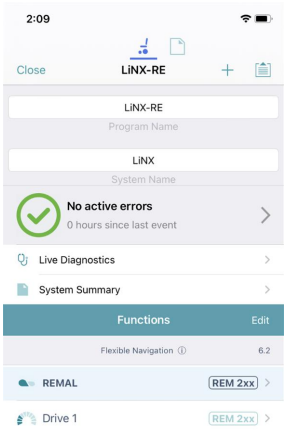

Figure 9: Home screen

Note

*The **Program Name** and **System Name** are located at the top of the **Home** screen. If they are not visible, you can reveal them by swiping down on the Home screen.*

Note

Further information about the home screen, and the screens accessed from it, is in the Navigation section.

4.3.2 Parameter editing screens

Edit a wheelchair's operational parameters from the parameter groups on the **Home** screen. Parameter groups include:

- Profiles / Functions
- Modules
- Motions
- Positions
- Angle sources
- Trigger angles
- User preferences
- Core features *
- Drive limits *
- Gyro limits *
- Lighting

* Manufacturer only

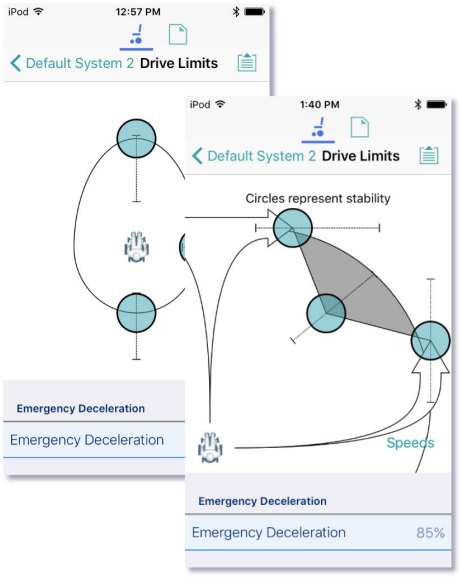

Figure 10: Drive limit speed and stability parameter editing screens

4.3.2.1 Editing a parameter

There are several ways to edit a parameter:

- Change numerical parameters with the +/- buttons, or the low, high or default buttons
- Change non-numerical parameters (yes/no, on/off, etc) with a slide control
- Change the text in the name of a parameter
- Edit some parameters with graphical input tools

For details on how to edit parameters, see *6.5 Modify parameters*.

For details on how to modify profiles and functions, see *6.6 Modify profiles and functions*.

Note: Function states

The colour of a function icon indicates the state of the function.

Function available

Function not available

Function inoperable

4.3.3 Utility screens

Utility screens display only when particular hardware or features are available.

There are four utility screens in LiNX:

- Adaptive load compensation calibration
- Gyro calibration
- Sip and puff calibration
- Joystick shaping calibration

4.3.3.1 Adaptive load compensation calibration

The Adaptive Load Compensation (ALC) calibration utility calculates the motor resistance values to help provide more consistent motor speed.

ALC must be enabled before this utility can be used.

See information about using the ALC calibration at *Tune Adaptive Load Compensation (ALC)*.

4.3.3.2 Gyro calibration

The Gyro calibration utility helps you set up a gyro module.

A gyro module must be fitted and connected to the system before this utility becomes available.

See information about setting up the gyro utility at *Tune the gyro*.

4.3.3.3 Sip and Puff calibration

Sip and puff calibration lets you set up sip and puff thresholds on your input module.

See information about calibrating sip and puff at *Sip and puff calibration*.

4.3.3.4 Joystick shaping calibration

Joystick shaping lets you reduce the extent the joystick has to be deflected to reach full demand in one or more quadrants.

See information about joystick shaping calibration at *Joystick shaping*.

4.3.4 Diagnostic screens

Diagnostic screens let you view information about system activity.

You can view:

- *live diagnostics*
- *the system summary*
- *the chair log – active and previous errors*
- *chair statistics*

4.3.4.1 Live Diagnostics — overview

Diagnostic screens are accessed by tapping on the **Live Diagnostics** button on the **Home** screen (*Figure 11*).

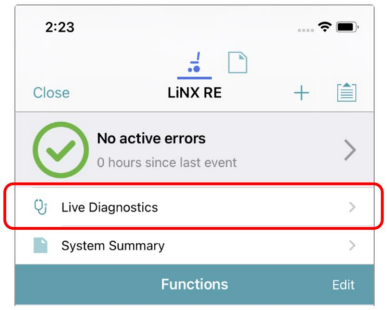

Figure 11: Accessing the diagnostic screens

There are five types of live diagnostic screens (*Figure 12*) available when the LiNX Access iOS tool is connected to a wheelchair — they are:

- *Live diagnostics — Drive*
- *Live diagnostics — Angle Sensor*
- *Live diagnostics — Angle Sources*
- *Live diagnostics — Actuator Channels*
- *Live diagnostics — Control Inputs*

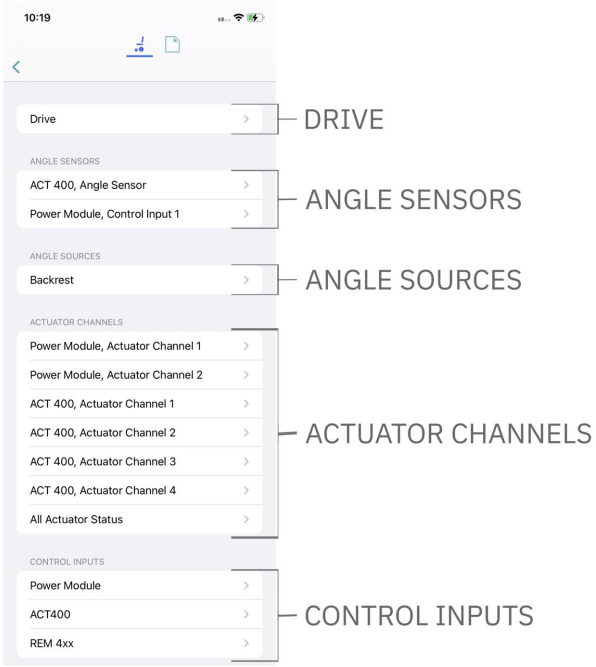

Figure 12: Live diagnostic screens

Note

The type of diagnostic screen available depends on your configuration. For example, if there are no angle sources in your configuration, then Angle Sources will not be displayed.

The Live Diagnostic screens, Actuator Channels, and Control Inputs can only be viewed with devices running iOS 16.0 or higher.

4.3.4.2 Live diagnostics — Drive

Tap **Live Diagnostics | Drive** to view real-time graphs and data for:

- Speed Demand (%)
- Turn Demand (%)
- Left Motor
  - Voltage (V)
  - Current (A)
  - Resistance (mΩ)
- Right Motor
  - Voltage (V)
  - Current (A)
  - Resistance (mΩ)
- Battery Voltage (V)
- Speed Dial (%)

Tap **Back** to exit Drive diagnostics.

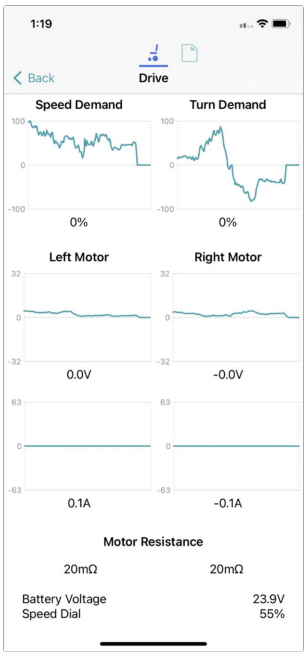

Figure 13: Drive screen

4.3.4.3 Live diagnostics — Angle Sensor

Tap **Live Diagnostics** and then select an angle sensor from the Angle Sensor section to view a real-time graph and numerical display of the selected angle sensor's current angle. Note: only available if one or more angle sensors are configured and enabled.

Tap **Back** to exit Angle Sensor diagnostics.

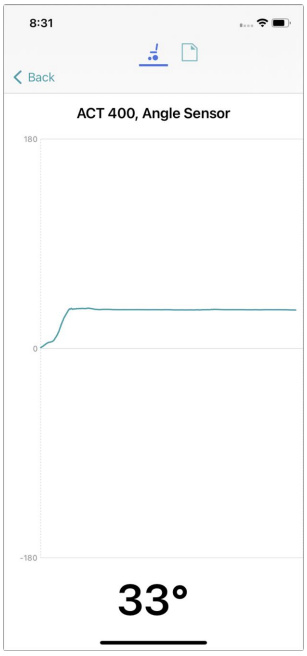

Figure 14: Angle sensor

4.3.4.4 Live diagnostics — Angle Sources

Tap **Live Diagnostics** and then select an angle source to view a real-time graph and numerical display of the selected angle source's angle. Note: only available if one or more angle sources are configured.

Tap **Back** to exit Angle Sources diagnostics.

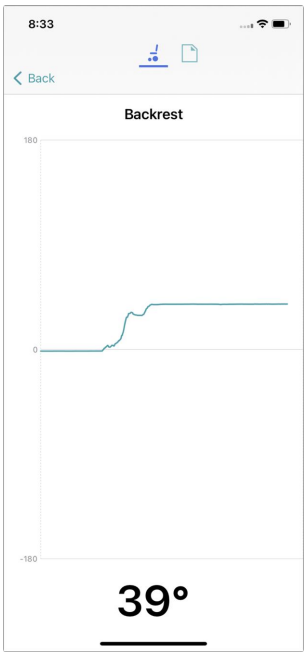

Figure 15: Angle sources

4.3.4.5 Live diagnostics — Actuator Channels

Tap **Live Diagnostics** and then select an actuator channel to view its:

- real-time current graph
- real-time direction and current (amps)
- minimum and maximum current (amps).

Tap **Back** to exit Actuator Channels diagnostics.

Note

This screen can only be viewed on a device running iOS 16.0 or higher.

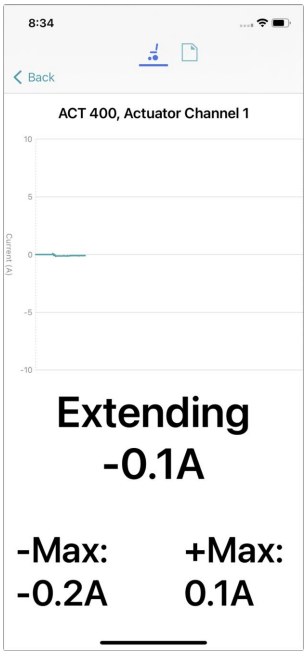

Figure 16: Actuator channels

4.3.4.6 Live diagnostics — Control Inputs

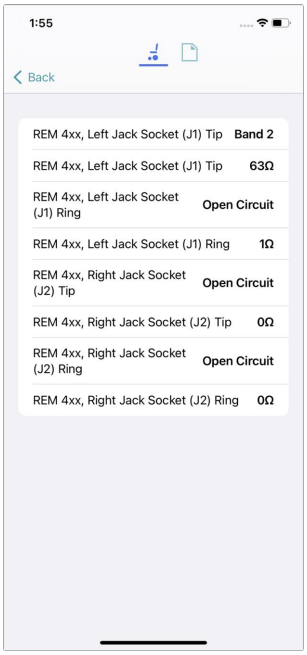

Figure 17: Control inputs

Tap **Live Diagnostics** and then select a control input to view its:

- status message
- measured resistance value (ohms)

Tap **Back** to exit Control Inputs diagnostics.

Note that each control input is displayed across two rows in the table (*Figure 17*): the first is its **status message**, the second is its **measured resistance value**(*Figure 18*).

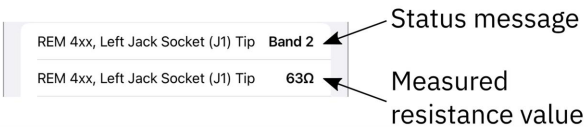

Figure 18: Each control input uses two rows in the table

Note

This screen can only be viewed on a device running iOS 16.0 or higher.

If any measured resistance does not correspond to a switched resistance band (band 0–16 in *Table 1*), that is, band 0–16 has not been detected, the status message row will display one of the following:

- **Invalid** — monitored: invalid band
- **Failsafe Open Circuit** — monitored: open circuit
- **Open Circuit** — monitored: invalid band
- **Unstable** — input is not stable
- **Error/Unknown** — displayed when an error occurs, or the input port is not configured for a control input

For any of the above status messages, the resistance displayed in the measured resistance value row will have no meaning and can be ignored (*Figure 19*).

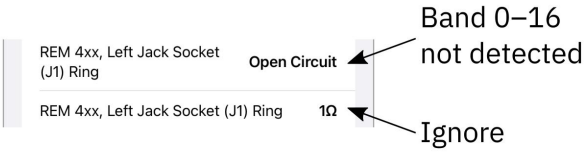

Figure 19: Ignore resistance value when no band is detected

If the measured resistance corresponds to one of the resistance bands (band 0–16 listed in *Table 1*), the status row displays the detected resistance band (Band 1, Band 2 etc), and the resistance value row displays the actual resistance at the input, corresponding to the band displayed in the first row. By way of example, this can be seen in *Figure 18* and the top rows of *Figure 17*, which show the status and resistance value of a 10-way switch connected to the left jack socket on a REM400. When button 2 of the 10-way switch is activated, the status displays "Band 2". This is because the measured resistance (63Ω, in

this example), falls between the range of resistance values that identifies band 2. The ranges for the different bands are shown in *Table 1*.

Table 1: Resistor band ranges

Band	Lower limit (including)	Nominal	Upper limit (excluding)
Band 0 (monitored: short circuit)	0	-	17
Band 1	17	34	51
Band 2	51	68	85
Band 3	85	102	119
Band 4	119	136	153
Band 5	153	170	187
Band 6	187	204	221
Band 7	221	238	255
Band 8	255	272	289
Band 9	289	306	323
Band 10	323	340	357
Band 11	357	374	391
Band 12	391	408	425
Band 13	425	442	459
Band 14	459	476	493
Band 15	493	510	527
Band 16	527	544	578

4.3.4.7 The system summary

Tap **System Summary** to view the System Summary screen.

The System Summary screen displays details of the system's connected modules and tools, such as:

- a connected module's identifier
- a module's software version
- a module's serial number
- the access level of the LiNX Access Key

A link to the Dynamic Controls website is at the bottom of the screen.

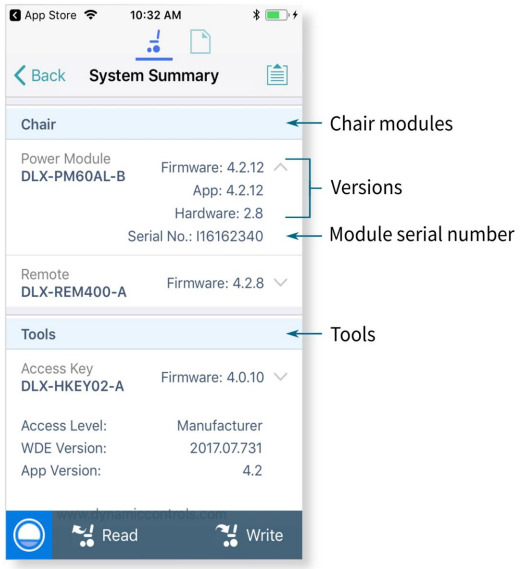

Figure 20: The system summary

4.3.4.8 Active errors

Tap Active Errors to access and view:

- *the chair log*
- *chair statistics*

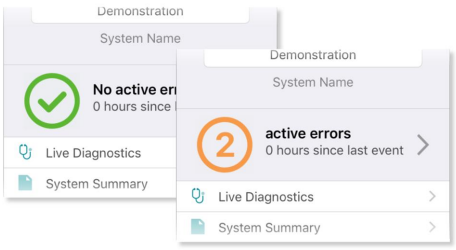

Figure 21: Active error button

View the chair log

Tap **Active Errors**, then tap **Chair Log** to display:

- a list of active errors
- a list of previous errors in the event log

Each entry in the log displays the error, its flash code (e.g. FC 3:7), and the component where the error occurred.

Tap an error entry to view further information on the error.

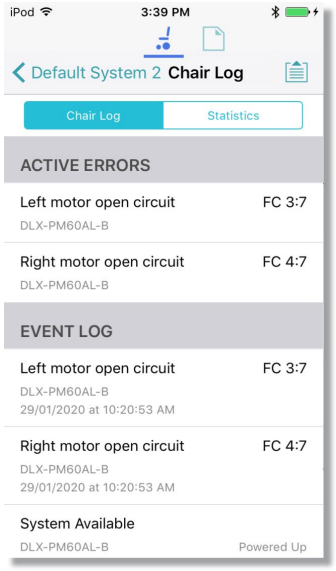

Figure 22: Viewing the event log

Clear the event log

Scroll to the bottom of the list and tap **Clear Event Log**.

View chair statistics

Tap **Statistics** to view current system statistics.

Figure 23: View chair statistics

The statistics screen is divided into the following sections:

- *Battery usage*
- *Drive statistics*

Battery usage

The battery usage statistics are in the top section of the statistics screen.

- To view more information about a battery usage statistic, tap the statistic, and a description displays under it.
- To reset the statistics, tap **Reset Battery Usage** at the bottom of the battery usage section.

Available battery usage statistics are detailed in the table below:

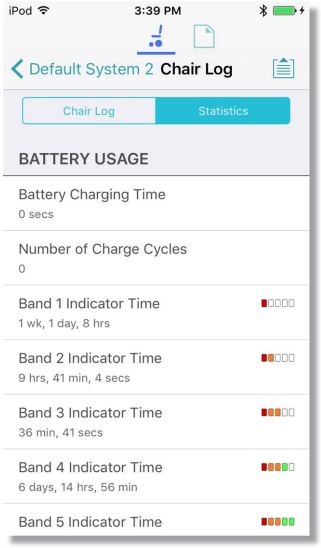

Figure 24: Reading battery usage

Battery usage statistics	Details
Battery Charging Time	The time that the batteries have been charged for
Number of Charge Cycles	The number of times the batteries have been charged
Band 1 Indicator Time	The total time the LiNX system is operated with the state of charge between 0 and 20%
Band 2 Indicator Time	The total time the LiNX system is operated with the state of charge between 20% and 40%
Band 3 Indicator Time	The total time the LiNX system is operated with the state of charge between 40% and 60%
Band 4 Indicator Time	The total time the LiNX system is operated with the state of charge between 60% and 80%
Band 5 Indicator Time	The total time the LiNX system is operated with the state of charge between 80% and 100%
Average Battery Voltage	The average battery voltage over the last 31 days
Last Charge Timestamp	The date and time when the batteries were last put on charge
Number of High Battery Events	The number of high battery warnings
Number of Low Battery Events	The number of low battery warnings
Number of Deep Discharge Warnings	The number of deep discharge warnings
Battery Usage Last Reset	Date when these statistics were last reset

Drive statistics

The drive statistics are in the bottom section of the statistics screen, below the battery statistics.

- To view more information about a drive statistic, tap a statistic, and a description displays below it.
- To reset the statistics, tap **Reset Drive Statistics** at the bottom of the drive statistics section.

Drive statistic	Details
Average Motor Current	The average current drawn across all motors while driving
Maximum Left Motor Current	The peak measured motor current
Maximum Left Motor Current Time	Time spent drawing the "Maximum Drive Current Draw"
Maximum Right Motor Current	The peak measured motor current
Maximum Right Motor Current Time	Time spent drawing the "Maximum Drive Current Draw"
Powered Up Time	The total time the wheelchair controller is powered up
Drive Time	The total time the wheelchair has been driven
Average Drive Time	Average drive time
Time Near Maximum Current	The duration the current was within 20% of maximum threshold
Trip Distance	The total distance travelled by this wheelchair in meters since being reset by the user.
Total Distance Travelled	The total distance travelled by this wheelchair since being reset by a service agent.
Drive Statistics Last Reset	Date when these statistics were last reset

4.3.5 Navigation bar

The navigation bar is at the top of each screen. Its contents change depending on the screen. A typical layout is shown in in *Figure 25*.

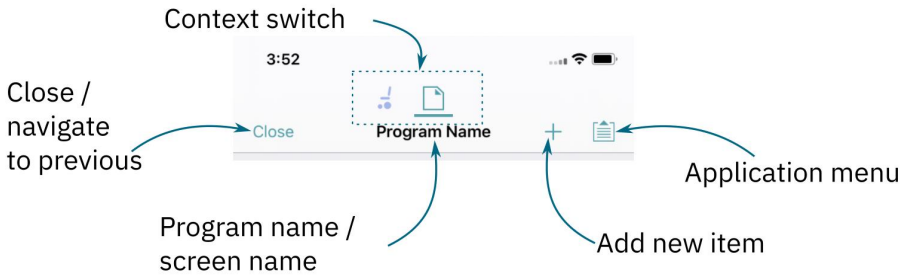

Figure 25: Navigation bar

4.3.6 Add new item

Tapping on the **Add new item** button (*Figure 25*) reveals a drop-down menu (*Figure 26*) where modules and other items that are not currently part of the configuration can be added. For example, tap on the **Add new item** button and then **Add Motions** to add a new motion to your configuration.

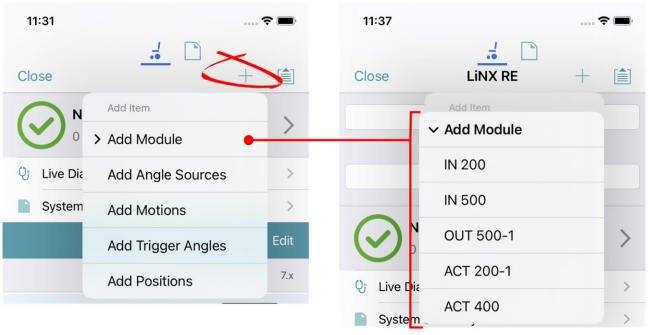

Figure 26: Add new item drop-down menu

If available, the menu will allow you to add:

- Modules (options available under sub-menu)
- Angle Sources[1]
- Motions[1]
- Trigger Angles[1]
- Positions

Tap on the **Add Module** menu item to reveal another drop-down menu that will allow you, if available, to add input, output, and actuator modules to your configuration (*Figure 26*, right-hand side).

Only items that are not in your configuration, or items whose number has not exceeded the maximum permitted for a configuration will be shown in the drop-down menu.

4.3.7 Application menu

The Application menu contents depend on the selected context:

- Connection context: live and bulk edit
- File context

In the **connection context**, and when connected to a system, the following options are available:

- **Save** — save the configuration as a file (.lci)
- **Save As** — save the configuration as a file (.lci) with a different name
- **Unlock And Enter Bulk Edit** — unlock all parameters for editing (only shown in live edit)
- **Read from Chair** — read the configuration from the connected LiNX system (only shown in bulk edit)
- **Write to Chair** — write the configuration to the connected LiNX system (only in shown bulk edit)
- **Convert Configuration** — convert to a valid configuration (only shown when conversion is possible)
- **Upgrade** — go to firmware upgrade mode
- **Store Authorisation** — store an Access Level Certificate (only shown if access level has not been stored)
- **Restore Default Configuration** — swap current configuration for the stored default configuration
- **Restore Alternative Configuration** — manage configurations (select, add, delete)

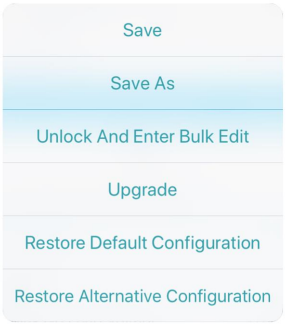

Figure 27: Application menu – connection context — live edit

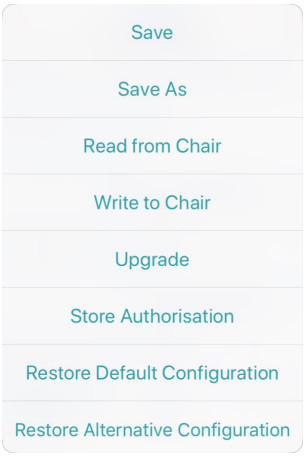

Figure 28: Application menu – connection context — bulk edit

[1]Manufacturer option only - not available for Distributors

In **file context**, the options are:

- **Save**
- **Save As**
- **Write to Chair** (if connected to a LiNX system).
- **Convert Configuration** — convert the file to a valid configuration

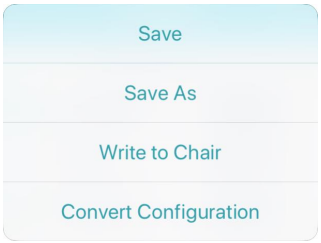

Figure 29: Application menu – file context

Warning

The Write to Chair option and the Write button (in Bulk Edit) overwrite the data on the connected LiNX system

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Navigation

5 Navigation

In this chapter, find out where to access specific parameters and diagnostic information in the LiNX Access iOS tool.

5.1 Overview map

Here are the parameters and diagnostic information accessible from the home screen:

Note

The parameter groups accessed and displayed by the LiNX Access iOS tool vary depending on your LAK's access level (manufacturer or distributor), the system's configuration and the connected modules.

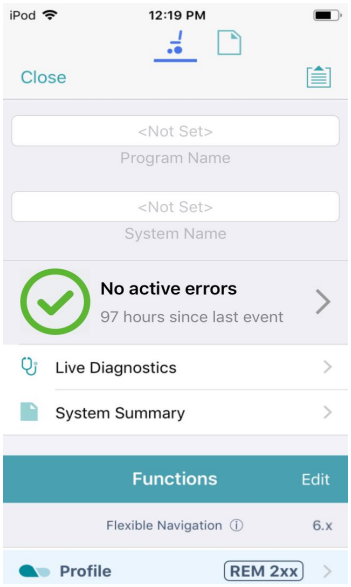


Figure 30: Home screen overview map

Program Name
System Name
Active Errors
Live Diagnostics
System Summary
Profiles (including Attendant profile, where relevant)
Modules
Motions
Positions
Angle Sources
Trigger Angles
User Preferences
Core Features *
Drive Limits *
Gyro Limits *
Lighting
* Manufacturer only

Drill down from these parameters to access further parameters (described below):

- *Detail map*
- *Detail map – profiles*
- *Detail map – modules*
- *Detail map – motions*
- *Detail map – positions*

5.2 Detail map

The parameters accessible from the home screen are:

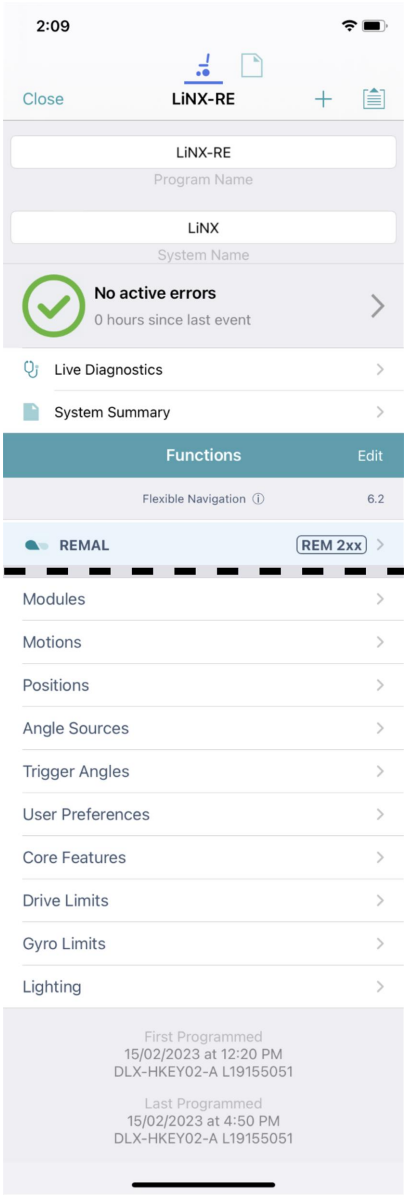


Figure 31: Home screen detail (image stitched between Functions and Modules)

Active errors	Chair Log	Active errors
		Event Log
	Statistics	Battery Usage
		Drive Statistics
Live Diagnostics	Drive	Speed Demand
		Turn Demand
		Left Motor
		Right Motor
		Motor Resistance
		Battery Voltage
		Speed Dial
	Angle Sensor	Angle
	Angle Sources	Angle
	Actuator Channels	Current (amps) Direction Min/max currents
	Control Inputs	Switched status Measured resistance (ohms)
System Summary	Chair	System Modules
	Tools	Access Key
		Firmware
		Access Level
		WDE Version
		OEM Version
		Application Version
		Link to Dynamic's website
		Privacy Policy
Profiles/functions	See *5.3 Detail map – profiles*	
Modules	See *5.4 Detail map – modules*	
Motions	See *5.5 Detail map – motions*	
Positions	See *5.6 Detail map – positions*	
Angle Sources	Configurations (Angle Sources 1–16)	
Trigger Angles	Configurations (Trigger Angle 1–7)	
User Preferences	Drive Settings	
	Switched Driving	
	Sleep and Rest Settings	
	Quadrant Actions in Rest	
	Lock Settings	
	User Function Navigation	
	User Function Change	
	Control Input/Output Settings	
	Display Settings	
	Energy Use Settings	
	Speedometer and Odometer	
	Audible Cues	

* Manufacturer only

Core Features *	Battery Management
	Anti-rollaway
	Actuators
	Firmware
	System Configuration
Drive Limits *	Emergency Deceleration
	Forward
	Reverse
	Turn
	Stability
	Configuration
Gyro Limits *	OEM Forward Gyro
	OEM Reverse Gyro
	OEM Turn Gyro
	OEM Stability Gyro
Lighting	Turn Indicators
	Position

5.3 Detail map – profiles

A profile is a container for user functions: drive, seating, mouse mover, utility and switch control. A profile can contain one or more functions. For profiles with multiple functions, the functions can be of the same type, or mixed. LiNX has two types of profile:

- Profile (many can be created)
- Attendant profile (one available, and only on an ACU module)

Wheelchair occupants can see all profiles except the attendant profile, while wheelchair attendants can only see the attendant profile.

5.3.1 Profile

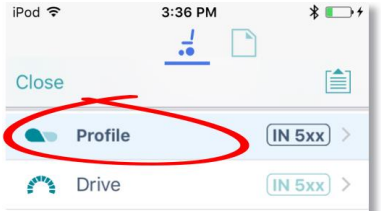


Figure 32: Profile detail

Drive	General
	Forward
	Reverse
	Turn
	Stability
	Latched Driving
	Performance
	Operation
Seating	General
	Axis
Mouse Mover	General
	Cursor Speeds
	Operation
Switch Control	General
Utility	General
	Forward Momentary/Short Press

	Forward Long Press
	Reverse Momentary/Short Press
	Reverse Long Press
	Left Momentary/Short Press
	Left Long Press
	Right Momentary/Short Press
	Right Long Press

5.3.2 Attendant profile

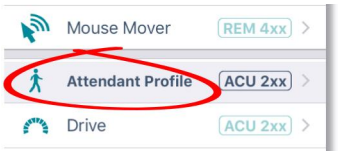


Figure 33: Attendant profile

Drive	General
	Forward
	Reverse
	Turn
	Stability
	Latched Driving
	Performance
	Operation
Seating	General
	Axis

5.4 Detail map – modules

The parameters accessible from the **Modules** screen are:

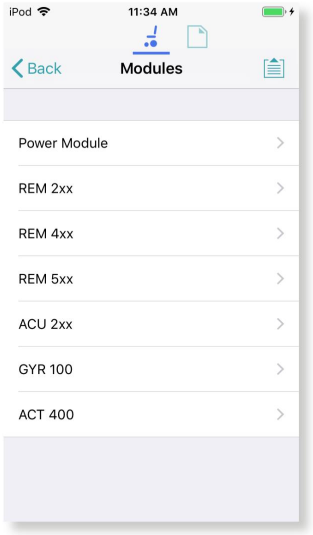


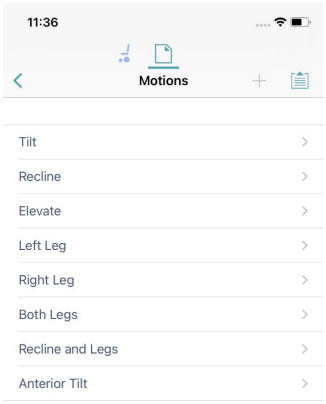
Figure 34: Modules

Modules	Power module	*Motors*
		Load compensation
		Custom load compensation
		Park brake
		Actuators - Electrical and Timing
		Control inputs - Port settings
		Control input/output port settings
	ACU / Compact Remote / Input Module / REM modules / TPI	Speaker - Audible Cues User input - configuration User input - joystick shaping
		Port settings (as relevant)
	GYR 100	Gyro performance
	ACT200-1 *	Actuators - Electrical and Timing
		Angle Sensor - Triggers
		Angle Sensor - Orientation
		Control inputs - Port settings
	ACT400-1 *	Actuators - Electrical and Timing
		Angle Sensor - Triggers
		Angle Sensor - Orientation
		Control inputs/outputs

* Manufacturer only

5.5 Detail map – motions

The parameters accessible from the **Motions** screen are:

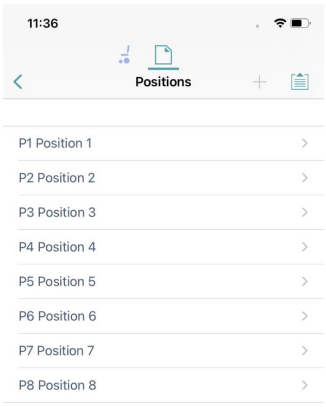


Motions	Tilt, Recline, Elevate, Left leg, Right leg, Both legs, Recline and legs, Anterior Tilt	Identification
		Behaviour
		Actuation channels

Figure 35: Motions

5.6 Detail map – positions

The parameters accessible from the **Positions** screen are:



Positions	Positions (1-8)	Identification
		Configuration
		Actuation channels

Figure 36: Positions

How to ...

6 How to ...

6.1 Open the LiNX Access iOS tool

1. Open the LiNX Access iOS tool using the LiNX icon on your device.
   The **Connect to Device** screen opens.
2. From the Navigation bar, select a context to work on either a connected wheelchair or a file stored on your device.
   See *6.2 Select the context* for details on how to select a context.

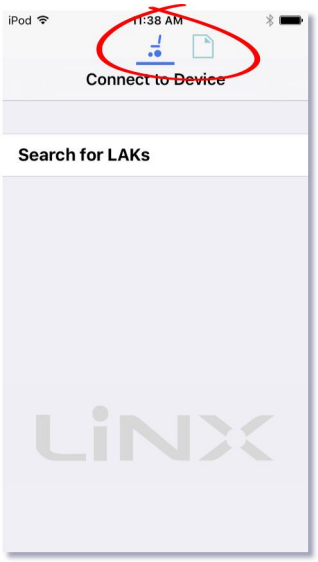


Figure 37: Select a context

6.2 Select the context

6.2.1 Wheelchair

To work on a connected wheelchair, select (the **connection context**) from the context switch on the *Navigation bar*.

When you select the connection context, and if you are connected to a LiNX system, the last screen you were working on displays.

Otherwise, the **Connect to Device** screen displays.

(See *6.3.1 Connect and disconnect to the LiNX Access tool* for how to connect to a LiNX system from the Connect to Device screen.)

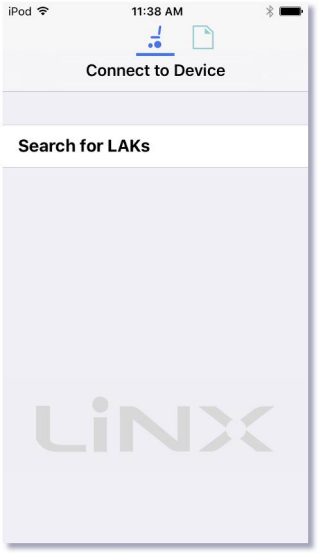


Figure 38: Connect to Device screen

6.2.2 File

To work on a saved file, select (the **file context**) from the context switch on the *Navigation bar*.

When you select the file context, and if you have a file open, the last screen you were working on displays.

Otherwise, the **Load from File** screen displays, showing program files (lci) at the top, and bundle files (lcb) underneath.

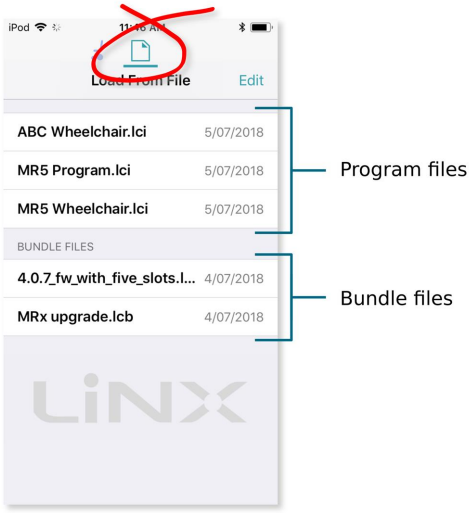


Figure 39: Load from File screen

Note

The following system details are displayed at the top of this screen: Access Key Level; WDE Version; Application Version; Link to Dynamic's website; Privacy Policy.

See also

See 6.4.1 for how to open a file.
See 6.4.7.1 for how to share a configuration (lci) or bundle (lcb) file.
See 6.4.7.2 for how to import a configuration (lci) or bundle (lcb) file.

6.2.3 Toggle between contexts

Tap the icons on the context switch (see *Figure 40*) at any time to toggle between **connection context** and **file context**.

The selected context displays a coloured bar beneath its icon.

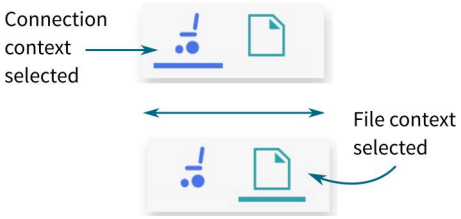


Figure 40: Context switch

6.3 Connection context actions

The following actions are only relevant when in **connection context**. (For actions related to the **file context**, see *6.4 File context actions*.)

Find out here how to:

- *Connect and disconnect to the LiNX Access tool*
- *Manage chair configurations*
- *Change the program name and system name*
- *Modify a program*
- *Save a program*
- *Upgrade the firmware*
- *Tune the gyro (manufacturer only)*
- *Tune Adaptive Load Compensation (ALC)*
- *Calibrate sip and puff*
- *Store the Access Level Certificate*

6.3.1 Connect and disconnect to the LiNX Access tool

6.3.1.1 Connect

To connect the LiNX Access iOS tool to the wheelchair:

1. Power up a LiNX wheelchair system.
2. Insert a LAK into the remote module's XLR port.
3. Open the LiNX Access iOS tool application.
4. Select the connection context button: (in the *Navigation bar*).
5. Tap the **Search for LAKs** button and select a LAK from the *Select an Accessory* list. A disclaimer screen displays.
6. Read the disclaimer message and tap **I Agree** to continue.

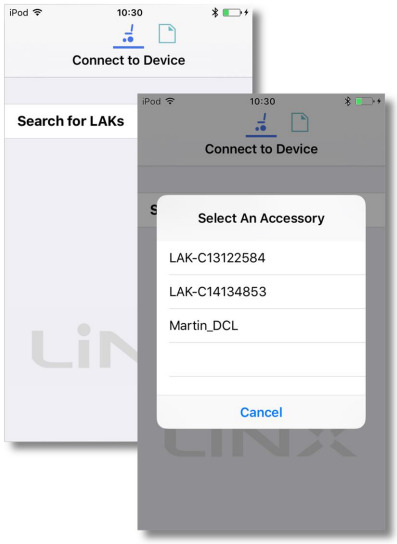


Figure 41: Selecting a LAK

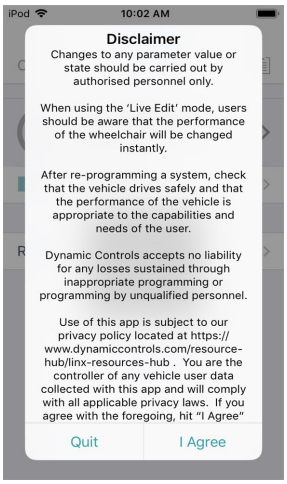


Figure 42: Agree to terms in disclaimer message

Warning

When using the LiNX Access iOS tool, the user of the LiNX Access iOS tool must:

- *ensure that programming has completed correctly, and verify that the program has written as requested;*
- *test vehicle safety after programming;*
- *ensure that the user is capable of understanding and driving the vehicle.*

By tapping on "I Agree" in the disclaimer (see Figure 42), the user of the LiNX Access tool understands that these responsibilities and risks are accepted by them.

Note

*If the list of available devices takes a long time to populate when you tap on **Search for LAKs**, you may be able to speed the process up by removing the number of previously used devices that appear in your iOS device's Bluetooth list **My Devices**.*

To remove devices from My Devices:

1. *from your iOS device's home screen, go to **Settings** → **Bluetooth**;*
2. *tap on a device under **My Devices***
3. *tap on **Forget This Device***
4. *repeat 1) to 3) for each device under the My Devices heading.*

6.3.1.2 Disconnect

To disconnect the LiNX Access iOS tool from the wheelchair, tap **Close** (at the top of the screen).

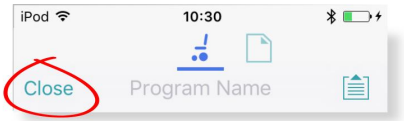


Figure 43: Disconnecting from a connected wheelchair

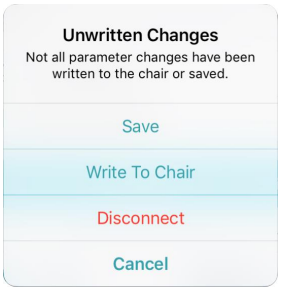


Figure 44: Unwritten changes in the connection context

If all data is saved, the tool returns to the *Connect to Device* screen. If any data is unsaved, the following options display:
Save — saves the configuration to a file,
Write to Chair — writes the configuration to the chair,
Disconnect — disconnects without saving or writing,
Cancel — return to the configuration.

Warning

*If you tap **Disconnect**, any unsaved data is lost.*

6.3.2 Manage chair configurations

This section explains how to:

- *select a chair configuration*
- *add a chair configuration*
- *delete a chair configuration*

6.3.2.1 Select a chair configuration

Note

When a new configuration is selected, the system automatically power-cycles before the configuration becomes active.

To select a chair configuration (and make it the active configuration for the wheelchair):

1. Tap on the **Application Menu** button and select **Restore Alternative Configuration** from the menu. The **Chair configs screen** displays.
2. Tap a named configuration.
   A warning message displays.
3. On the warning message, tap **Yes** to proceed with your selection.
   The system returns you to the home screen.

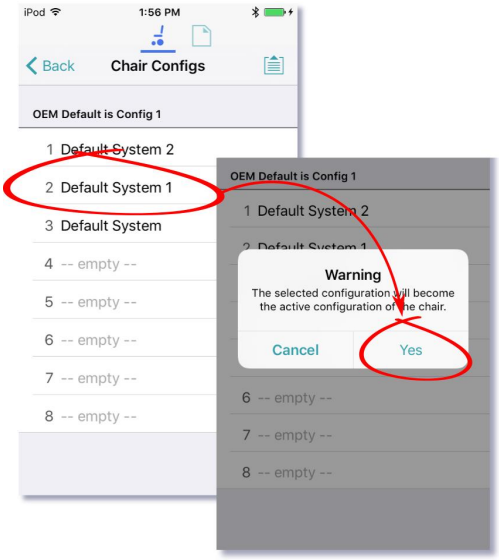


Figure 45: Select a chair configuration

6.3.2.2 Add a chair configuration (manufacturer only)

Note

*If in bulk edit mode: before you add the active configuration to the store, ensure it has been written to the chair. To do this, tap **Write** in the blue bar at the bottom of the screen. Wait for the success message before proceeding.*

To add the active chair configuration to the chair configuration store:

1. Tap on the **Application Menu** button and select **Restore Alternative Configuration** from the menu. The chair config screen displays.
2. Tap an **--empty--** configuration slot.
   A **Working** dialogue displays while the configuration is saved to the empty slot, and the empty slot is renamed with the program name.
3. Tap **Back** to return to the Home screen.

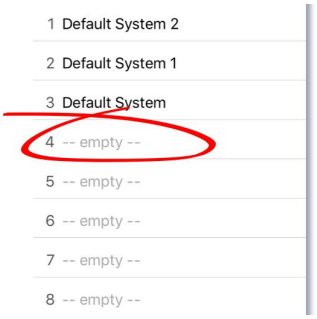


Figure 46: Adding a chair configuration

6.3.2.3 Delete a chair configuration (manufacturer only)

To delete a configuration from the configuration store:

1. Tap on the **Application Menu** button and select **Restore Alternative Configuration** from the menu. The Chair Configs screen displays.
2. Tap and hold a named configuration until its background turns grey, and then swipe to the left.
   A red **Delete** button displays.
3. Tap **Delete**. The configuration is removed and replaced with an **--empty--** slot.

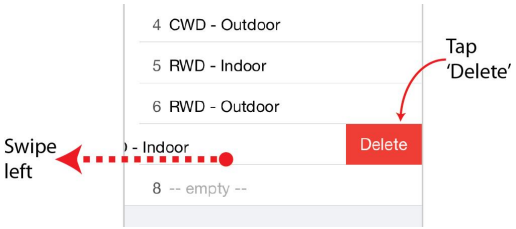


Figure 47: Deleting a chair configuration

6.3.3 Change the program name and system name

The program and system names can be changed depending on your LiNX Access Key version:

- **Distributors** (DLX-HKEY01-A): can edit the Program Name
- **Manufacturers** (DLX-HKEY02-A): can edit the Program Name and System Name

The names are located near the top of the home screen.

1. Type in the name(s) you require.
2. Tap **Return** (on the keyboard).
3. Save the name(s) as required.

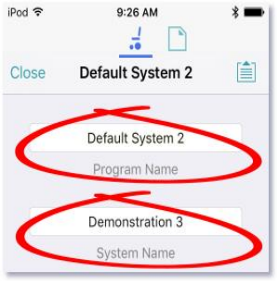


Figure 48: Change program name or system name

Note

- *In **Connection context, live edit**, the new names are saved automatically to the wheelchair.*
- *In **Connection context, bulk edit**, tap **Write** to write the names to the wheelchair.*
- *In **File context**, save or write the file from the Application menu.*

6.3.4 Modify a program

Program parameters can be modified numerically, textually and graphically. (See *6.5 Modify parameters*.) There are two edit modes in which to modify a program:

- *Live edit*
- *Bulk edit*

Note

When a parameter is modified, its background colour changes to yellow to indicate it has been modified. The yellow background reverts to white when the modified parameter value is written to the controller or saved to a file.

In live edit, it may be difficult to see the background colour changing as the live edit operation can occur rapidly.

6.3.5 Save a program

Save a program using:

- *Save*
- *Save As*

6.3.5.1 Using Save

To save the current program as a file to your iOS device.

1. Tap the **Application** menu button .
2. Tap **Save**.
   - If you have previously saved the program to a file in the current session it will automatically save to the same file (and overwrite it).
   - If you have not previously saved the program, you will be prompted to **Save as** with a new file name. After saving the program, the tool displays a confirmation message with the file's name.
3. Tap **Dismiss** to remove the message and continue.

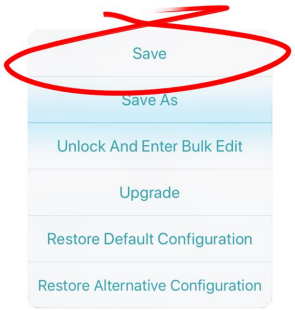


Figure 49: Using Save

Note

All files are saved with a .lci extension.

If, when you save, you are prompted to Save As with a new file name:

- *If the program name is set, you can save with the program name.*
- *If the program name has not been set, the file can be saved with a date/time stamp: **YYYYMMDD-HHMMSS.lci** where:YYYY = year; MM = month; DD = day; HH = hour; MM = minutes; SS = seconds*

6.3.5.2 Using Save As

To save the current program with a different name to your iOS device:

1. Tap the **Application** menu button .
2. Select **Save as**.
3. Enter a new file name (or use the displayed file name).
4. Tap **Save**.
   After saving the program, the tool displays a confirmation message with the file's name.
5. Tap **Dismiss** to remove the message and continue.

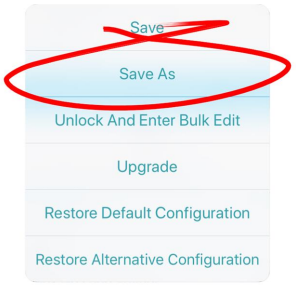


Figure 50: Using Save As

Note

All files are saved with a ***.lci*** extension.

- If the file has not been saved before, and if the program name is set, the save as dialog suggests saving with the program name.
- If the program name has not been set, the file can be saved with a date / time stamp: **YYYYMMDD-HHMMSS.lci** where: YYYY = year; MM = month; DD = day; HH = hour; MM = minutes; SS = seconds.
- If the file has been saved before, the save as dialog suggests saving with "Copy of" prepended before the name. For each subsequent save, it suggests saving with an incremental numerical value appended to the name.

6.3.6 Upgrade the firmware

1. Tap the **Application** menu button .
2. Tap **Upgrade**.
   The screen displays "*Entering Firmware Upgrade Mode. Please Wait...*".

If the connected modules are up-to-date, the Upgrade screen displays FIRMWARE UP-TO-DATE with a list of connected modules and their respective versions.

Modules that need upgrading display under NEW FIRMWARE AVAILABLE.

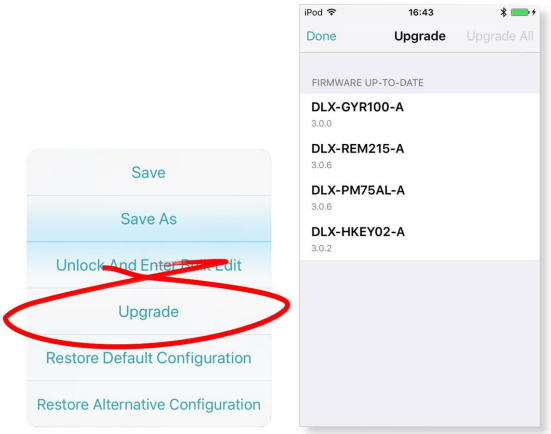


Figure 51: Upgrading the firmware

3. If no modules require updating:
   - Tap the **Done** button (top-left, navigation bar) to finish.

   Otherwise:
   - Tap a single module to upgrade it, or
   - Tap the **Upgrade All** button (top-right, navigation bar).
     During a module upgrade, a progress bar displays.
     Once the upgrade has completed, its status displays (succeed or fail).
   - Tap **Done** to finish.

6.3.7 Tune the gyro

Note

A gyro module must be connected and enabled in the current drive function before continuing. Gyro tuning is available only in live edit. For more information on gyro tuning, refer to the LiNX Systems Installation Manual (GBK54036).

1. From the **Home** screen, tap **Modules**.
2. Tap **GYR 100**.
3. Tap **Go to Gyro Turn Calibration**.
4. Follow the instructions on the screen.

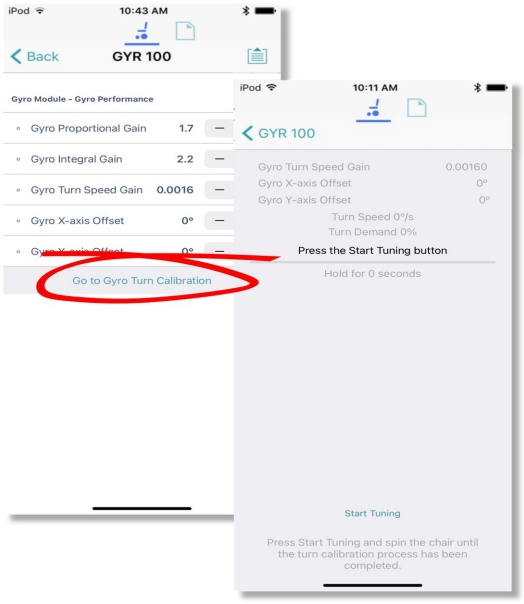


Figure 52: Tuning the gyro

6.3.8 Tune Adaptive Load Compensation (ALC)

Note

Adaptive Load Compensation (ALC) must be enabled before tuning. To enable ALC:

1. *From the **Home** screen, tap **Modules**.*
2. *Tap **Power Module**.*
3. *Scroll down to **Load Compensation**, enable Bulk Edit, and switch on **Adaptive Load Comp Enabled**.*
4. *Tap **Write to Chair**.*

To tune the adaptive load compensation:

1. From the **Home** screen, tap **Modules**.
2. Tap **Power Module**.
3. Scroll down to *Power Module – Load Compensation*, and tap **Go to ALC Calibration**.
4. Follow the instructions on the screen.

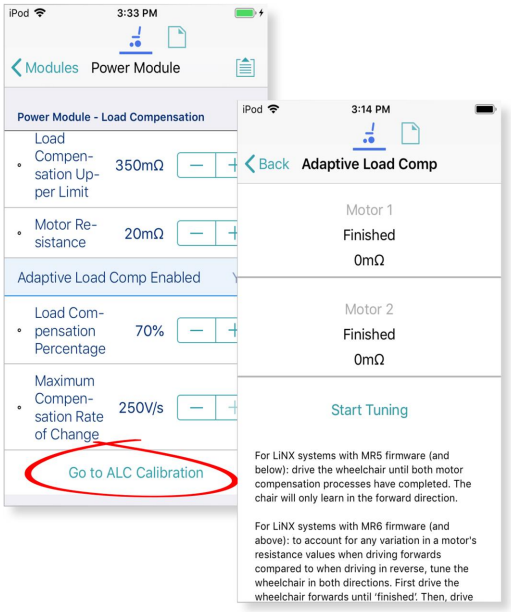


Figure 53: Tuning Adaptive Load Compensation

6.3.9 Calibrate sip and puff

Note

An input module must be connected and Sip and Puff enabled in the module before calibrating. To enable Sip and Puff:

1. *From the **Home** screen, tap **Modules**.*
2. *Tap **IN 5xx**.*
3. *Tap **User Input Configuration**, unlock Bulk Edit, and select Sip and Puff from the **User Input Configuration** drop-down menu.*
4. *Tap **Write to Chair**.*

6.3.9.1 Open sip and puff calibration

1. From the **Home** screen, tap **Modules**.
2. Tap **IN 5xx**.
   The IN5XX screen opens.
3. Ensure *Sip and Puff* is selected in **User Input Configuration**.
4. Tap **Go to Sip and Puff Calibration**.
5. Calibrate *sip*, *puff* and *test* as required.

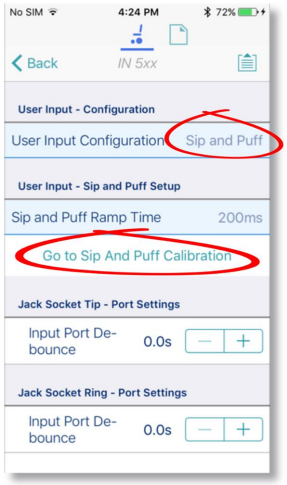


Figure 54: Open sip and puff calibration

6.3.9.2 Calibrate sip

1. Tap the **Sip** tab.
2. Use the sliders on the right of the screen to set the sip levels as required.

6.3.9.3 Calibrate puff

1. Tap the **Puff** tab.
2. Use the sliders on the right of the screen to set the puff levels as required.

6.3.9.4 Test sip and puff

1. Tap the **Test** tab.
2. Use the **Test** screen to test your sip and puff calibrations.

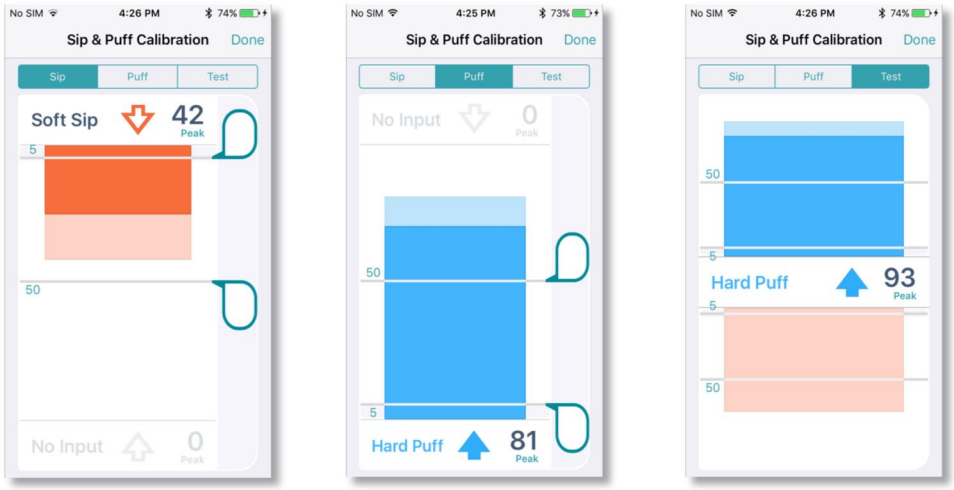


Figure 55: Sip and Puff calibration and test screens

Note

Refer to the LiNX System Installation Manual (GBK54036) for technical details on how to calibrate sip and puff.

6.3.10 Joystick shaping

1. From the **Home** screen, tap on:
   Modules | [Remote Module] | User Input - Joystick Shaping
   For example, for a REM400 remote module, tap on:
   Modules | Rem400 | User Input - Joystick Shaping
2. Tap on the **Go to Joystick Shaping Calibration** button that is located at the end of the Joystick Shaping parameters list (*Figure 56*). The calibration screen opens with an instruction pop-up explaining how to perform the calibration (*Figure 57*).

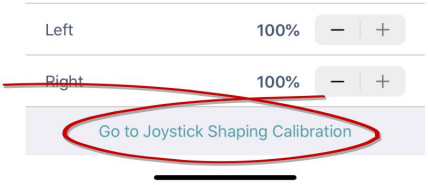


Figure 56: Go to Joystick Shaping Calibration button (LiNX Access iOS)

3. Tap **OK** on the pop-up, or deflect the joystick in any direction to continue.
4. Ask the user to deflect the joystick in all four directions. The user can deflect the joystick in any of the quadrants, in any order, but should be deflected to a point that is comfortable and repeatable.
5. Once the user has completed deflecting the joystick in each quadrant, tap on the **Done** button to exit the calibration screen. At this point, the calibration values, as indicated with the light blue bars and also shown numerically in the parameter interface, will be saved to the configuration.

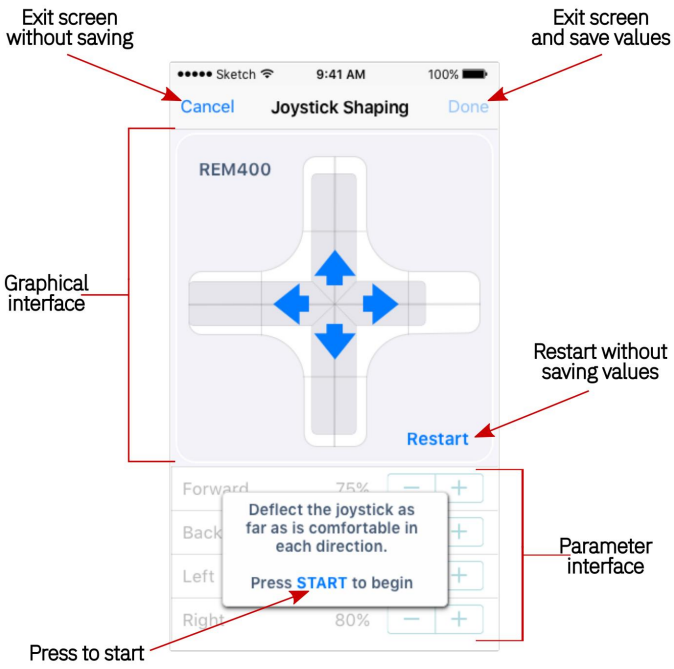


Figure 57: joystick shaping screen control overview (LiNX Access iOS)

Note

- *Select **Cancel** at any time to exit the calibration screen without saving any changes.*
- *Select **Restart** at any time to reset the calibration screen and display the configuration's existing values.*
- *Select **Done** to exit the screen and save any values that have changed.*

Note

Refer to the LiNX System Installation Manual (GBK54036) for technical details on joystick shaping.

6.3.11 Update memory positions

Memory positions can be updated using the LiNX Access iOS tool. This is useful for manufacturers when creating positions, and also distributors and therapists when working with users to fine-tune or replace a memory position.

When updating a memory position, each **Target Angle** parameter related to the selected position is updated with the current, corresponding angle source measurements from the connected chair.

Note

Memory positions that only use switch feedback are not updatable. If a memory position uses a mix of switch and angle feedback, actuators using angle feedback can be updated, but those using switch feedback will not be updated. All memory positions that include angle feedback are updatable with Manufacturer access level. With Distributor access level, memory positions that have been configured by the Manufacturer to have no Distributor access and to not Allow Occupant to Update Position will not be updateable.

To update a memory position's target angles from its current angle settings:

1. reposition the chair's seating to the new target position using motions (such as recline, tilt etc.)
2. from the LiNX Access iOS tool, locate the position you wish to overwrite:
   - scroll down to the bottom of the Home page and tap on **Positions**
   - select the position that you wish to update from the list of positions
3. tap on the **Update Position** button at the top of the screen ( ) - all **Target Angles** associated with this position will be updated according to the current angle source measurements from the chair.

6.3.12 Store the Access Level Certificate

The Access Level Certificate determines how you view and edit offline programs (*.lci files) when in file context. If you do not store your certificate, you get read-only access to your stored .lci files.

The certificate is taken from a connected LiNX Access Key and provides access to your files on one of two levels:

- Distributor – access to a limited number of parameters
- Manufacturer – access to all parameters

To edit files with distributor's access requires an Access Level Certificate from a distributor-level LiNX Access Key (DLX-HKEY01-A). To edit files with manufacturer's access requires an Access Level Certificate from a manufacturer-level LiNX Access Key (DLX-HKEY02-A). To store an Access Level Certificate:

1. Connect to a LiNX system.
2. Tap the **Application** menu button .
3. Select **Store Authorisation**‡1.
4. Tap **Store** to continue‡2 or **Don't Store** to cancel.

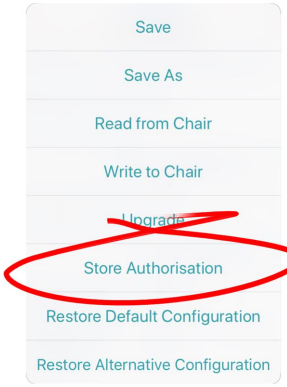


Figure 58: Store authorisation

After storing a certificate, you can edit your stored files.

Notes

‡1 *A message displays showing how many authorisations remain and asking if you want to continue. LiNX Access Keys only permit ten Store Authorisation operations. Once ten authorisations have occurred, the menu item is greyed out.*

‡2 *If the LiNX Access iOS tool application is removed from your iOS device, the Access Level Certificate will be lost.*

Note

Once a certificate has been stored on your iOS device, the access level granted by the stored certificate does not have to be the same as the access level granted by subsequent LiNX Access Keys. You can mix the access levels of LiNX Access Keys and stored Access Level Certificates.

With mixed access levels, the higher level takes precedence when editing parameters. That is, if either the Access Level Certificate or the LiNX Access Key is at manufacturer-level access, you can edit parameters at manufacturer level: a manufacturer's LiNX Access Key (DLX-HKEY02-A) overrides a stored distributor-level certificate, and a stored manufacturer's-level certificate overrides a distributor's LiNX Access Key (DLX-HKEY01-A).

6.4 File context actions

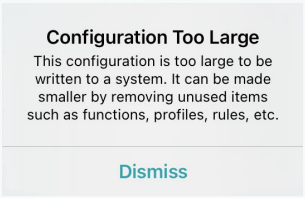
The following tasks are only relevant when in file context. (For tasks related to the connection context, see *6.3 Connection context actions*.)

Find out here how to:

- *Open and close a file*
- *Modify a file*
- *Convert configuration*
- *Save a file*
- *Write a file to a wheelchair*
- *Delete a file*
- *Share a file*

Note

Oversized configurations cannot be written to the system. If the current configuration becomes too large to be written to the system, a pop-up is displayed advising that unused items, such as profiles, functions, and rules, should be removed to reduce its size.



The LiNX Access tool checks for oversized configurations:

- *before writing to a system*
- *on completion of editing functions and profiles*
- *after adding (duplicating) a function*
- *after deleting a function*
- *after adding/deleting a motion, position, trigger angle or angle source*
- *after adding/deleting a module*
- *after a migration*
- *after loading a configuration*

6.4.1 Open and close a file

6.4.1.1 Open a file

1. Select the file context button: (in the *navigation bar*).
2. Tap a file from the list in the **Load From File** screen.

Figure 59: Load from file

Note

*If you already have a file open, tap **Close** (at the top-left of the screen) to return to the **Load from File** screen.*

6.4.1.2 Close a file

Tap **Close** at the top left of the Home screen.

If all data is saved, the tool returns to the *Load from file* screen.

If any data is unsaved, the *Unsaved Changes* options display:
Save — save the file,
Close — close the file without saving changes,
Cancel — return to editing file.

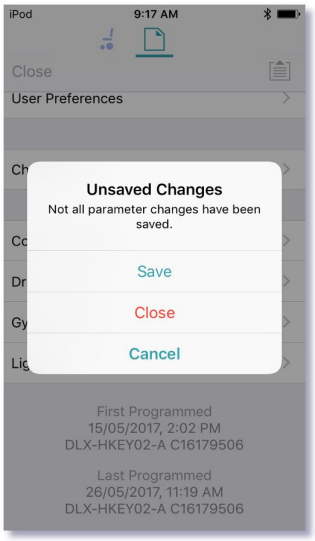


Figure 60: Unsaved changes in file

Warning

*Tap **Close** in the Unsaved Changes option and any unsaved data is lost.*

6.4.2 Modify a file

Values and parameters in a file can be edited:

- *textually*
- *numerically*
- *graphically*

(**Note**: Use *Save or Save As* after editing a file.)

6.4.2.1 If the file cannot be modified

If the file cannot be edited, or certain parameters are not available, check:

- **the Access Level Certificate has been stored**
  The Access Level Certificate from your LiNX Access Key has to be stored on your iOS device before you can edit files. (See section *6.3.12 Store the Access Level Certificate*.)
- **the access level**
  Editing is limited by the stored Access Level Certificate.
  - Manufacturers (using the DLX-HKEY02-A Access Key) can edit the full range of available parameters.
  - Distributors (using the DLX-HKEY01-A Access Key) can edit a limited range.

To view the access level: open the *System Summary* and view *Access Level* at the bottom of the screen.

6.4.3 Convert configuration

If you have a file with an invalid configuration you will be able to open it but not write it to the chair.

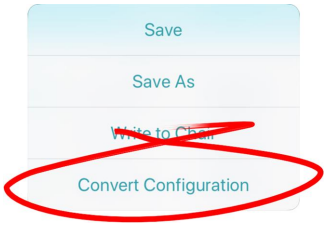


Figure 61: Convert configuration

An invalid configuration dialog appears when you open it.

The convert configuration option allows some invalid files to be converted to a valid configuration.

1. Tap the Application menu button .
   If your file can be converted the Convert Configuration option will be displayed.
2. Tap **Convert Configuration** and follow the screen prompts.

6.4.4 Save a file

Save a file using:

- *Save*
- *Save as*

6.4.4.1 Using Save

To save the current program as a file to an iOS device:

1. Tap the Application menu button .
2. Tap **Save**.
   After saving the program, the tool displays a message that the save was successful and with the file's name.
3. Tap **Dismiss** to remove the message and continue.

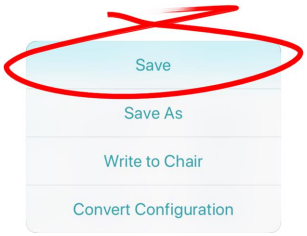


Figure 62: Using Save

Note

All files are saved with a .lci extension.

- *If the program name has been set, the file can be saved with the program name.*
- *If the program name has not been set, the file can be saved with a date / time stamp: YYYYMMDD-HHMMSS.lci where: YYYY = year; MM = month; DD = day; HH = hour; MM = minutes; SS = seconds.*

6.4.4.2 Using Save As

To save the current program as a file with a different name:

1. Press the Application menu button .
2. Select **Save As**.
   A dialog displays asking for the new file name.
3. Enter the new file name.
4. Tap **Save**.
   After saving the program, the tool displays a message showing the file's name and that the save was successful.
5. Tap **Dismiss** to remove the message and continue.

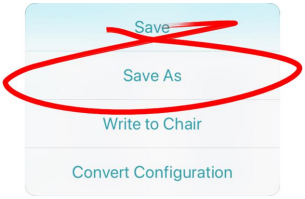


Figure 63: Save As

Note

All files are saved with a .lci extension.

- *If the file has not been saved before, and if the program name has been set, the save as dialog suggests saving the file with the program name.*
- *If the program name has not been set, the file can be saved with a date / time stamp: YYYYMMDD-HHMMSS.lci where: YYYY = year; MM = month; DD = day; HH = hour; MM = minutes; SS = seconds.*
- *If the file has been saved before, the save as dialog suggests saving with "Copy of" prepended before the name. For each subsequent save, it suggests saving with an incremental numerical value appended to the name.*

6.4.5 Write to the wheelchair

Note

This feature is only available when a wheelchair is connected.

There are two options to write a program to a connected wheelchair:

- The Write button (when in bulk edit)
- The Application menu

The Write button

When in bulk edit, tap the **Write** button at the bottom of the screen.

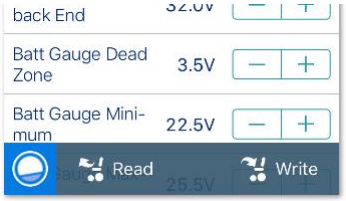


Figure 64: Read/write a file

The Application menu

1. Tap the Application menu .
2. Select **Write to Chair**.

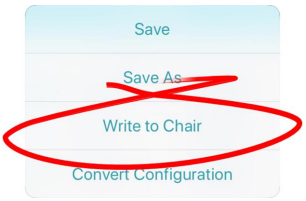


Figure 65: Write to chair

Note

After writing to the wheelchair, the tool power-cycles the system and then automatically reconnects to the system when the power returns.

Warning

When you write to the wheelchair from File context, the data on the wheelchair is over-written.

6.4.6 Delete a file

To delete a file:

1. Select **Edit** from the **Load From File** screen (top-right).
2. Select one or more files from the file list displayed.
3. Tap the trash can (bottom-left of the screen).
4. Tap **Done** to leave the screen.

Warning

Files are deleted immediately when you tap the trash can.

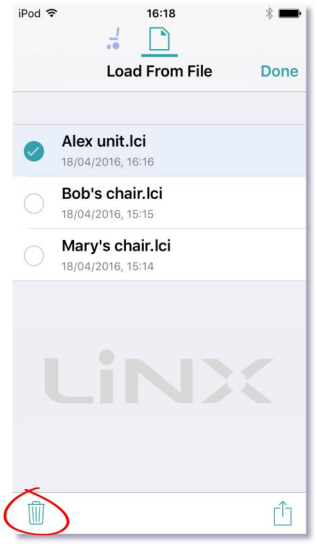


Figure 66: Deleting files

6.4.7 Share a file

You can:

- *share a .lci or .lcb file from the iOS tool* (including by email)
- *import a .lci or. lcb file into the iOS tool*

6.4.7.1 Share a .lci or .lcb file from the LiNX Access iOS tool

To share one or more files with other people:

1. Select **Edit** from the **Load From File** screen (top-right navigation bar).
2. Select one or more files from the file list displayed.
3. Tap the **Share** icon at the bottom-right of the screen.
   A standard range of Share options displays.
4. Select the Share option you require (Mail, for example).
   Selected program files will be added as attachments to the selected option.
5. Follow the prompts to share or send the files.

Figure 67: Selecting the share options

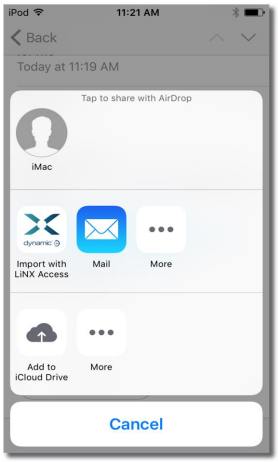


Figure 68: Share options

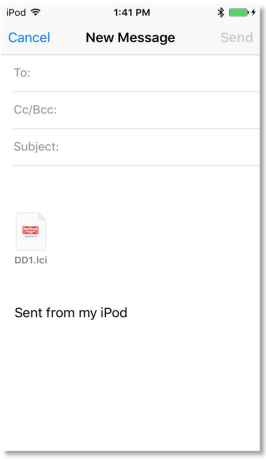


Figure 69: Sending a file via Mail

6.4.7.2 Import a .lci or .lcb file into a LiNX Access iOS tool

To import a .lci or .lcb file into the tool:

1. Email the file (as an attachment) to the email app on your iOS device.
2. Tap the file attachment in your email app.
   A range of Share options displays (see *Figure 68: Share options* above).
3. Select the 'Import with LiNX Access' option.
   The file displays in the **Load from File** screen's file list.

6.4.8 Program a system from a bundle file

Note

*You may not be able to use the LiNX Access iOS tool for all bundle file operations. Some LiNX power modules (those with serial numbers prior to **F17119xxx**) do not support bundle files that contain configurations. If this is the case in your system, use the LiNX Access PC tool instead.*

To program a system from a bundle file using the LiNX Access iOS tool:

1. Open the LiNX Access iOS tool.
2. Connect to a LiNX system.
3. Make sure you are in file context (tap the context switch to toggle between connection context and file context). The **Load From File** screen displays program files at the top and bundle files underneath.

Figure 70: Load from file screen

4. Tap on the bundle file (*.lcb) that you want to write to the wheelchair. The contents of the bundle file will be displayed — see *Figure 71* — with configurations at the top, and module firmware below.

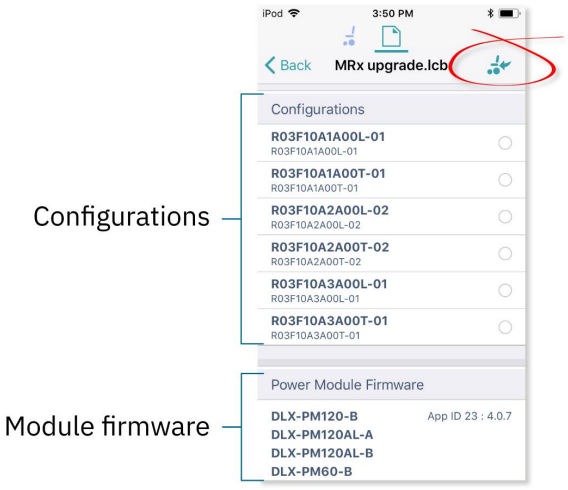


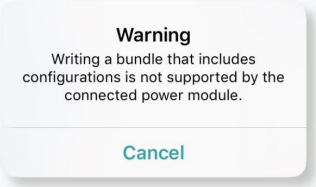
Figure 71: Contents of bundle file

5. Tap on the **Write to Chair** icon ( ) at the top-right of the screen. The bundle file will be written to the connected system. As the file is written, the *Writing Bundle* progress bar is displayed — *Figure 72*.

Figure 72: Writing bundle file progress

Note

If your system is one that does not support bundle files with configurations, when you tap on the Write to Chair icon, the following warning will be displayed and you will not be able to continue:



If you see this message, then you will need to use the LiNX Access PC tool instead to write your bundle file to the system.

6. When the progress bar disappears from the screen, tap on the **Done** button (top left screen). The tool restarts the system and then automatically reconnects to it. At this point, the configuration files will be located in the configuration store.
7. To view and select a configuration, tap on the **Application** menu button ( ) at the top of the screen and then select **Restore Alternative Configuration** — the Chair Configs screen will open — *Figure 73*.

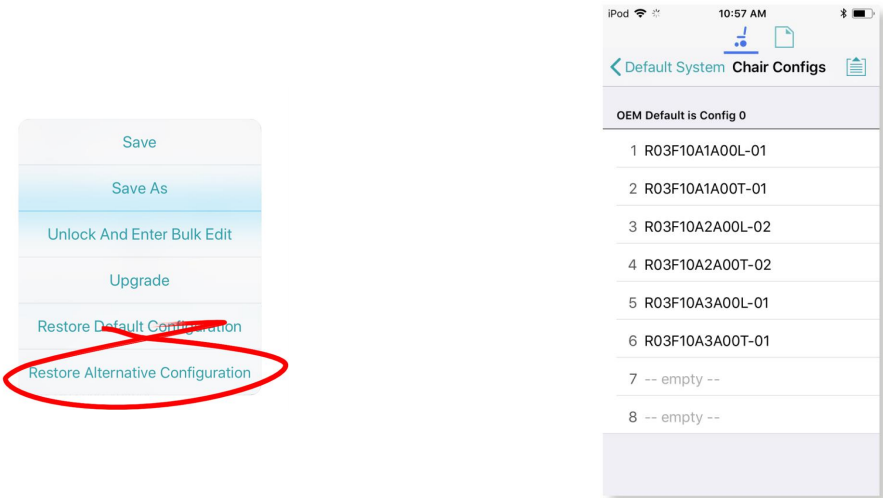


Figure 73: Opening chair configs

8. Tap on one of the chair configurations from the list to make your chosen configuration the active configuration. At this point, a warning will be displayed telling you that if you proceed, then the '*selected configuration will become the active configuration*' — tap on 'Yes" to continue.

6.5 Modify parameters

Note

When you edit a parameter's value, its background colour changes from white to yellow to indicate it has changed from its previous value. Once the value is written to the controller or file, the background reverts to white. In live edit, it might be difficult to see the parameter background changing since live edits can be very rapid.

You can modify parameters:

- *textually*
- *numerically*
- *graphically*

6.5.1 Modify parameters textually

Functions and profiles can have their names changed when in bulk edit mode. To do this:

1. Unlock bulk edit.
2. Tap inside the name you wish to edit.
   A cursor appears in the field.
3. Edit the name as required.
4. Tap the **Return** button.
   The new name appears with a yellow background behind the name text field.
5. Continue editing the program, or write or save it, as required.

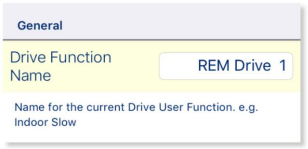


Figure 74: A function name after editing (and before saving or writing)

6.5.2 Modify parameters numerically

1. Tap a parameter's name.
   Its details, including the default, low and high values and summary, display.
2. Either:
   - Increment and decrement the parameter with the plus (+) and minus (-) buttons, respectively.
     Tap these buttons to change the value in discrete steps, or tap and hold to change them more quickly.

   Or:

   - Set the parameter value by tapping the low, default or high button.

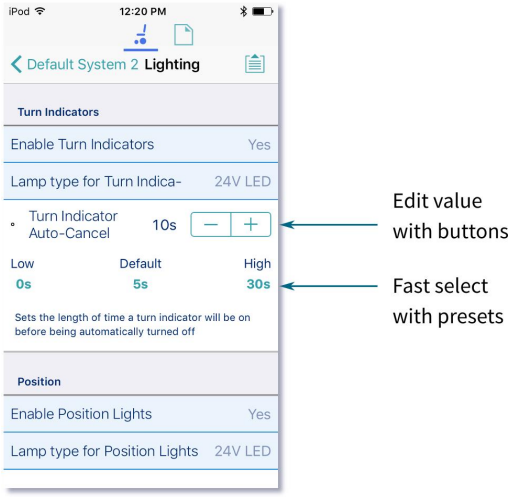


Figure 75: Modifying parameters numerically

6.5.3 Modify parameters graphically

A number of parameters can be edited graphically.

These parameters are grouped according to the access level (manufacturer or distributor):

OEM Drive Limits

- OEM Forward Speed
- OEM Reverse Speed
- OEM Turn Speed
- Turn at Max Speed
- OEM Turn Transition
- Max Speed in Turn

Gyro OEM Drive Limits

- Gyro OEM Forward Speed
- Gyro OEM Reverse Speed
- Gyro OEM Turn Speed
- Gyro Turn at Max Speed
- Gyro OEM Turn Transition
- Gyro Max Speed in Turn

Distributor Drive Function

- Max Forward Speed
- Max Reverse Speed
- Max Turn Speed
- Turn Transition

Note

When connected to a system in live edit mode, only parameters for the currently active drive function are graphically adjustable, otherwise, if in bulk edit or file context mode, all these parameters can be graphically adjusted.

To edit parameters graphically, tap a drive setting from the **Home** screen.

They include:

- Drive functions in the profiles
- Drive Limits (manufacturer only)
- Gyro Limits (manufacturer only)

Graphically, you can edit:

- *speed settings*
- *stability settings*

Speed graphs are at the top of the drive parameter lists.

Stability graphs are accessed from the speed graph.

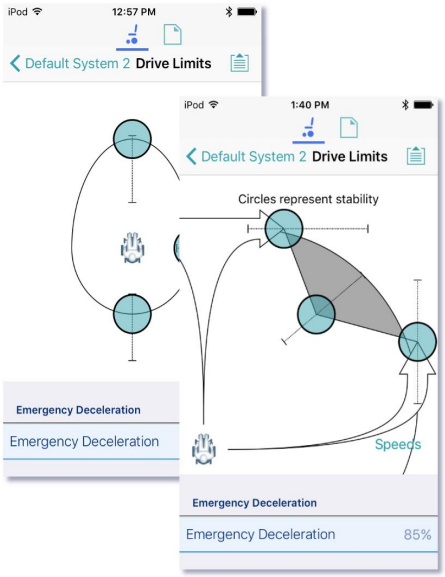


Figure 76: Modifying parameters graphically

6.5.3.1 Edit speed settings

The speed graph allows you to adjust:

- Maximum Forward Speed
- Maximum Turn Speed
- Maximum Reverse Speed

Tap and drag the blue circles inwards or outwards to decrease or increase parameter values respectively.

For example, if you tap and drag the top blue circle in *Figure 77* towards the centre of the graph, the Maximum Forward Speed value decreases.

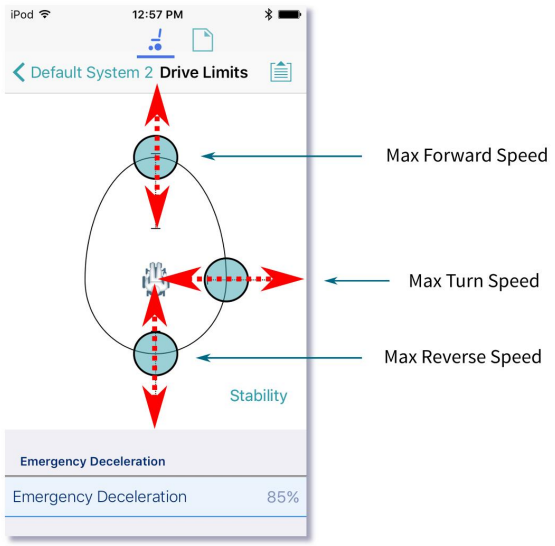


Figure 77: Editing speed settings

Note

The exact value for each parameter is shown at the top of the screen when adjusting the parameter, and is also displayed in the parameter list.

Note

If a gyro module is enabled, the graphic in the centre of the graph changes from a person in a wheelchair to a gyroscope to indicate that the parameters being changed are gyro-specific.

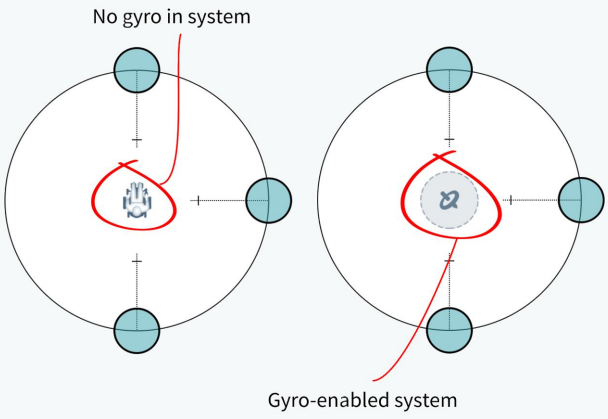


Figure 78: Gyro-enabled system indication

6.5.3.2 Edit stability settings

The stability settings screen is accessed from the speed settings screen.

To access the stability settings screen:

- Tap the word '**Stability**' shown at the lower-right of the speed setting graph.

To return to the speed settings screen:

- Tap the word '**Speeds**' shown at the lower-right of the stability setting graph.

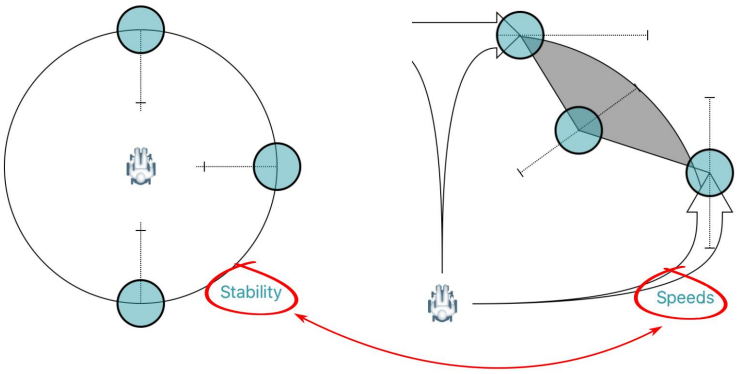


Figure 79: Selecting stability settings

Tap and drag the blue circles, in or out, to decrease or increase parameter values respectively.

In the **Drive Limits** stability graph, the following settings can be set (by the manufacturer only):

- Turn at Max Speed
- OEM Turn Transition
- Max Speed in Turn

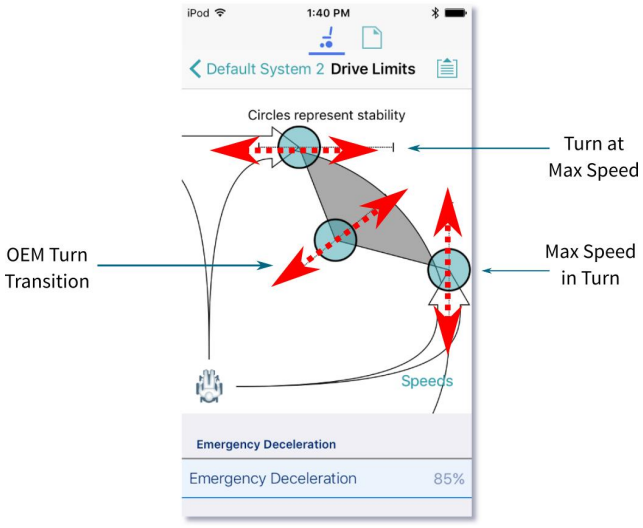


Figure 80: Editing stability settings

6.6 Modify profiles and functions

Functions are grouped in profiles. You can:

- *add and delete profiles*
- *add, delete and move functions*

To access this functionality, tap **Edit** in the Functions title bar on the home screen. (Doing this automatically opens the edit screen in bulk edit.)

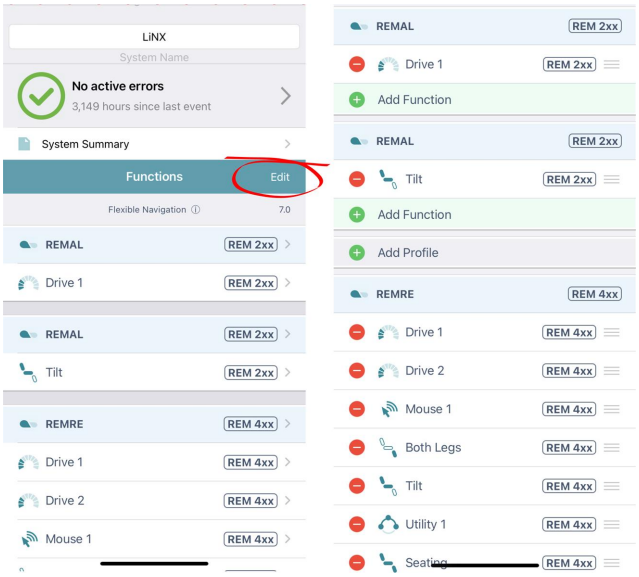


Figure 81: Edit functions

Note

To edit the contents of functions and profiles, open them from the home screen.

Just below the *Functions* title bar, you will see the navigation restriction information and the configuration version.

Tap on the information link to reveal what navigation restrictions are placed on the system. The information displayed depends on the modules in the system. See the *LiNX Systems Installation Manual* for more information about navigation restrictions.

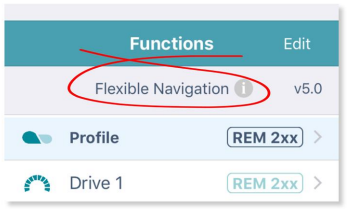


Figure 82: Link to open navigation restriction information

The text to the right of the navigation restriction information link, displays the version of the system's current configuration.

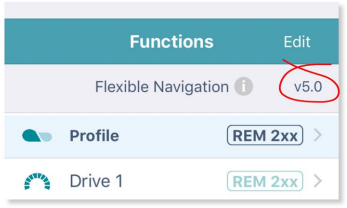


Figure 83: Configuration version

6.6.1 Add and delete profiles

6.6.1.1 Add a profile

1. Tap the **Add Profile** button.

2. Give your profile a name.
3. Select the required **User Input**.
4. Tap **Done** to return to the **Functions** Edit screen.
5. *Add functions to your profile*.
6. Tap **Done** (top right of the screen) to return to the home screen.
7. From the home screen, tap the **Write** button to write the program to the chair; or, on the Application menu, save your changes to a file.

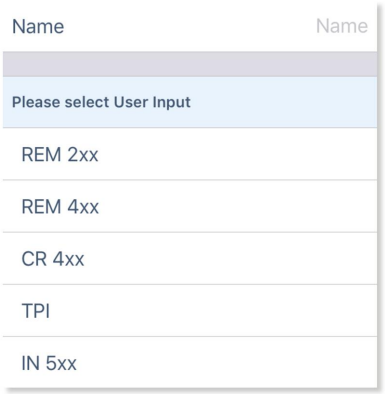


Figure 84: Add profile

Note

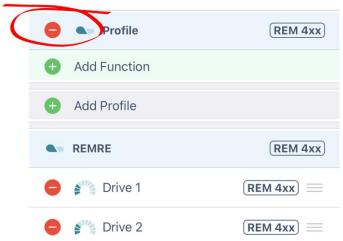
A profile cannot be written to the wheelchair until it contains functions (see Add a function).

6.6.1.2 Delete a profile

Note

A profile cannot be deleted until all its component functions have been deleted. (See Delete a function.)

1. Tap the red **Delete** button to the left of the profile name.



2. Tap the **Delete** button that appears.

   The profile is deleted.
3. Continue editing, or tap **Done** (top right of the screen) to return to the home screen.
4. From the home screen, tap the **Write** button to write the program to the chair; or, on the Application menu, save your changes to a file.

6.6.2 Add, delete and move functions

This section describes how to:

- *Add a function* (including duplicate a function)
- *Delete a function*
- *Move a function*

6.6.2.1 Add a function

There are three ways to add a function:

- *Add a new function*
- *Copy a function template* (A function template is a preset function.)
- *Duplicate an existing function*

Add a new function

1. Tap the **Add function** button.

2. Tap the **New function** button.

3. Select the **Function type** you require.
4. Select a **User input**.‡1
5. Tap **Done** (top right of the screen).
6. Continue editing, or tap **Done** again to return to the home screen.
7. From the home screen, tap the **Write** button to write the program to the chair; or, on the Application menu, save your changes to a file.

Note

‡1*If you select a user input of "Follow Profile", then when you change the user input at the profile level the function also updates. A function with a user input set to "Follow Profile" displays with a box around its user input.*

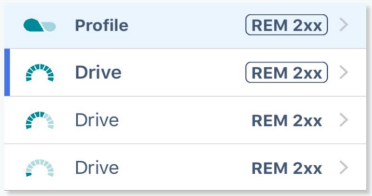
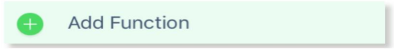


Figure 85: Follow profile

Copy a function template

1. Tap the **Add function** button.

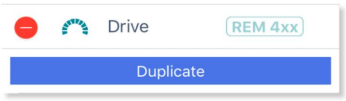


2. Tap the **From template** button.

3. Select the template you require.
4. Tap **Done** (top right of the screen).
5. Continue editing, or tap **Done** again to return to the home screen.
6. From the home screen, tap the **Write** button to write the program to the chair; or, on the Application menu, save your changes to a file.

Duplicate an existing function

1. Tap a function.
   A blue **Duplicate** button appears.

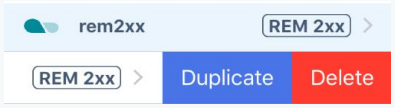


2. Tap the blue **Duplicate** button. An identical copy of the function is added below it.
   Note: The duplicate will have the same name as the original. To give the new function a new name, access it at the functions list on the home screen.
3. Continue editing, or tap **Done** (top right of the screen) to return to the home screen.
4. From the home screen, tap the **Write** button to write the program to the chair; or, on the Application menu, save your changes to a file.

Note

You can also duplicate a function from the home screen. To do this:

1. *Swipe a function to the left.*
   ***Duplicate** and **Delete** buttons appear.*



2. *Tap **Duplicate**.*
   An identical copy of the function is added below it.
3. *Give the new function a new name.*

6.6.2.2 Delete a function

1. Tap the red **Delete** button to the left of a function name. A **Delete** button appears on the right.

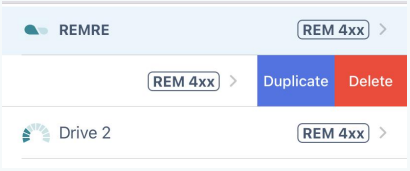
2. Tap the **Delete** button. The function is deleted.

3. Continue editing, or tap **Done** (top right of the screen) to return to the home screen.
4. From the home screen, tap the **Write** button to write the program to the chair; or, on the Application menu, save your changes to a file.

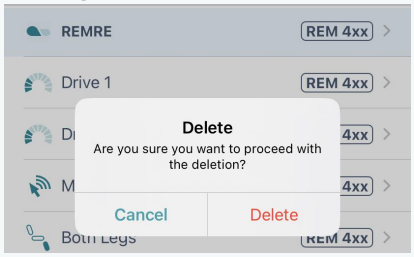
Note

You can also delete a function from the home screen. To do this:

1. *Swipe a function to the left.*
   ***Duplicate** and **Delete** buttons appear.*



2. *Tap **Delete**.*
   A dialog appears.



3. *Tap **Delete** in the dialog.*

6.6.2.3 Move a function

1. Tap and hold the three horizontal lines on the right of a function.
2. Drag the function to a new location and release.

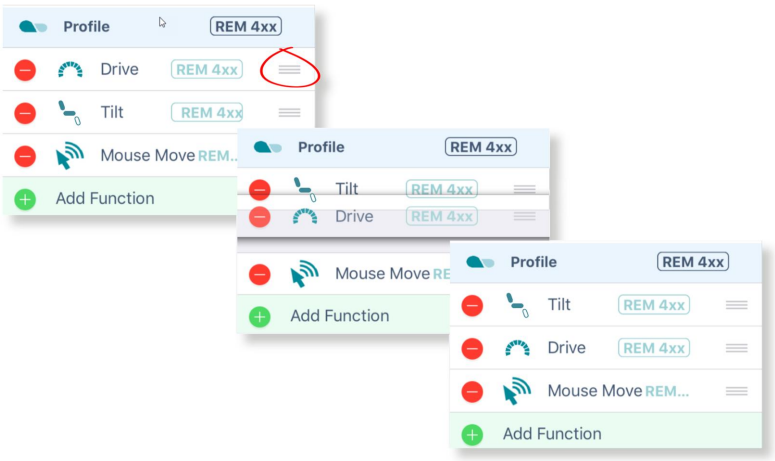


Figure 86: Move a function

3. Continue editing, or tap **Done** (top right of the screen) to return to the home screen.
4. From the home screen, tap the **Write** button to write the program to the chair; or, on the Application menu, save your changes to a file.

Note

A function can be moved to a new location in a profile or to a new profile.

6.6.3 Edit function icons

The drive and seating function icons are dynamic to reflect the activity in each function.

6.6.3.1 Drive icon

The drive icon indicates the percentage of maximum speed selected for a drive function.

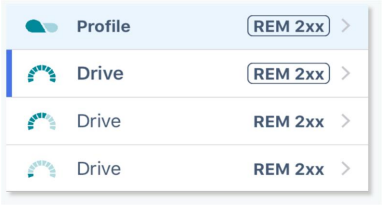


Figure 87: Dynamic drive function icons

The icon changes when you edit the speed graph.

6.6.3.2 Seating icon

The seating icon can be edited to indicate what part of the seat the function is for.

To do this:

1. From the home screen, open a seating function.
2. Scroll to **Axis**.
3. Open **Motion**.
4. Unlock bulk edit.
5. From the **Motion** drop-down menu, select the motion you require. The function icon changes to the icon of the selected motion.

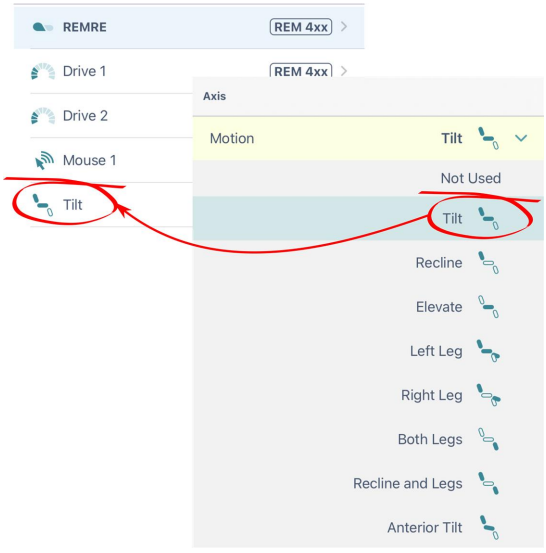


Figure 88: Edit a function seating icon

6. Tap the **Write** button on the home screen to write the icon edit to the chair.

6.7 Configure control inputs and outputs (control IO)

On selected LiNX modules, you can configure a control input (CI) to select and control an output (CO) such as another LiNX module, function or feature.

An input, for example, can be an external buddy button connected to a control input pin on a power module, a multi-way switch connected to a CI pin on an input module, or one of the rocker buttons on a remote module. Outputs include seating, lighting, horns, and function selection.

Control IO can be configured with unconditional or conditional rules. An unconditional rule (or **always** rule) is applied to an output when you want to ensure that the output is activated whenever its input is triggered.

A conditional rule (using **if** and **if/else**) is applied to control IO where you want the activation of an output to be subject to the state or function of the system at the time the input is triggered. That is, instead of an output always activating when its input is triggered (like the always rule), it will activate only if the condition is true.

See also

For more detailed descriptions about conditional control IO, including worked examples, see the LiNX System Installation Manual (GBK54036).

This section describes how to set up control IO for your system:

1. *Select and configure an input*
2. *Configure an always rule*
3. *Configure a conditional rule*
4. *Configure advanced settings* (optional)

6.7.1 Select and configure an input

1. From the home screen, scroll down and tap on **Modules**.
2. From the **Modules** screen, select the module that your input is connected to. For example, *Power Module*.
3. Scroll down until you find the **Port Settings** for the control input that you want to configure. For example, *Control Input 1 - Port Settings*.
4. Under **Port Settings**, tap on **Input Type** to reveal which input types are available for the input.
5. Tap on one of the Input Types to reveal its control IO slots. For example, Momentary, Switch 1 etc.

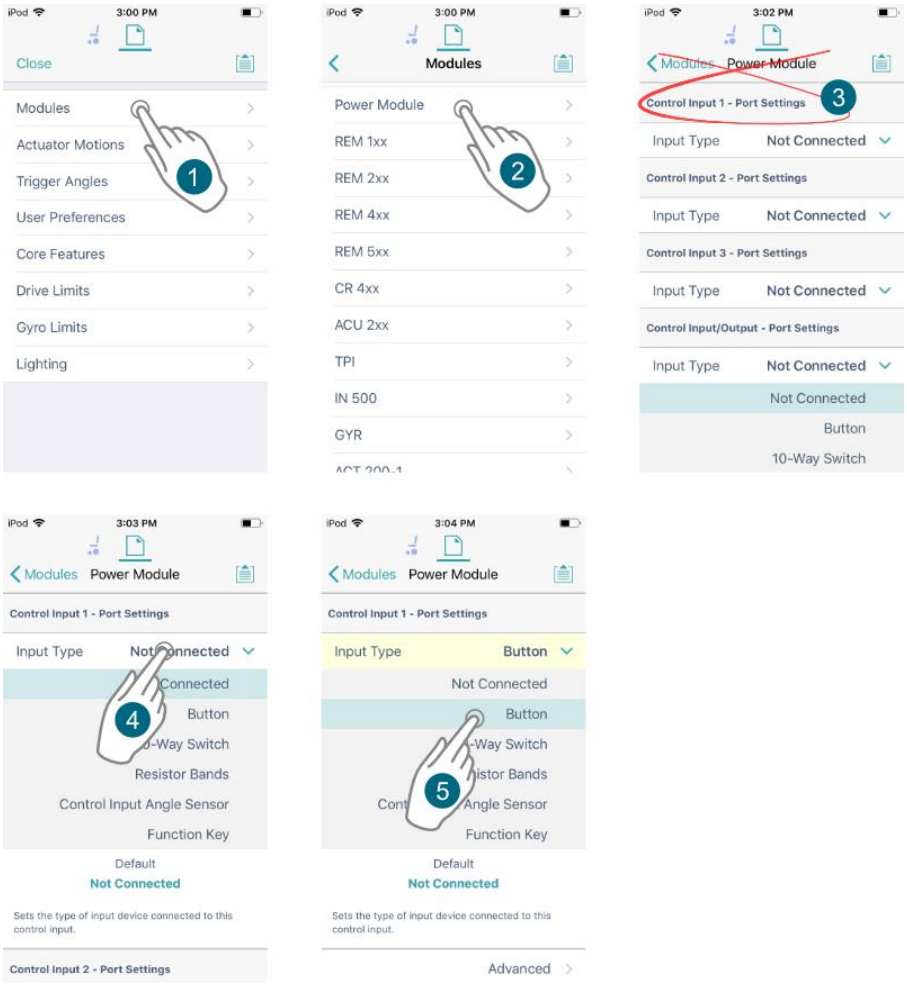


Figure 89: Select an input

Note

Control IO slots that are configurable are marked with  *and labelled* ***None*** *or, if they have been configured, display the configuration summary.*

Figure 90: Complex configurations

Complex configurations, which have been pre-configured for the manufacturer, are not configurable through the tool. For these slots:

- *if the slot can display the configuration summary, the slot will display the configuration summary and show this icon:*  .
- *if the slot cannot display the configuration summary, because of its complexity, it will display 'Restricted' and the slot will show this icon:*  .

6.7.2 Configure an always rule

To configure an always rule, you need to select an output from the output list.

The following steps (1–3) are used when no rules have yet been defined. If a rule already exists, and you want to add further outputs to a rule, go to step 4.

1. Open the output list by tapping on the right-hand side of the control IO slot (*Figure 91* ①).

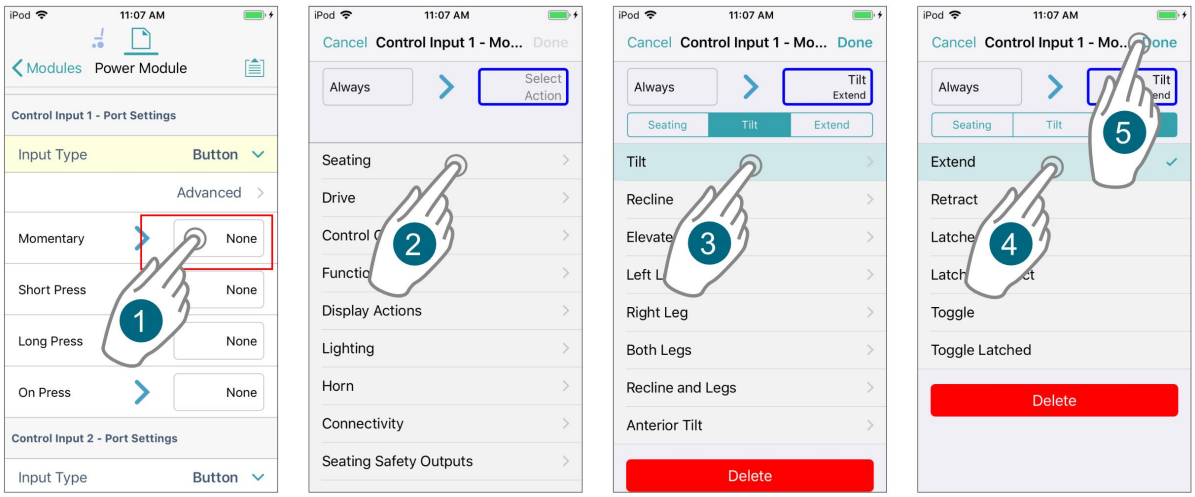


Figure 91: Assigning an output where no rules exist for slot

2. From the output list, select an output, drilling down through the options as they are presented (*Figure 91* ② to ④).
3. Tap on **Done** (*Figure 91* ⑤). A summary of the rule is displayed in the control IO slot.

The following steps (4–6) are used when a rule already exists, and you want to add further outputs.

4. Tap on the left-hand side of the control IO slot (*Figure 92* ①) to expand the slot and reveal the **Add Rule** button.
5. Tap on **Add Rule** (*Figure 92* ②), which opens the conditions list.
6. Tap on the output button (*Figure 92* ③) to display the output list (*Figure 92* ④).
7. Continue to add an output as described above in steps 2–3.

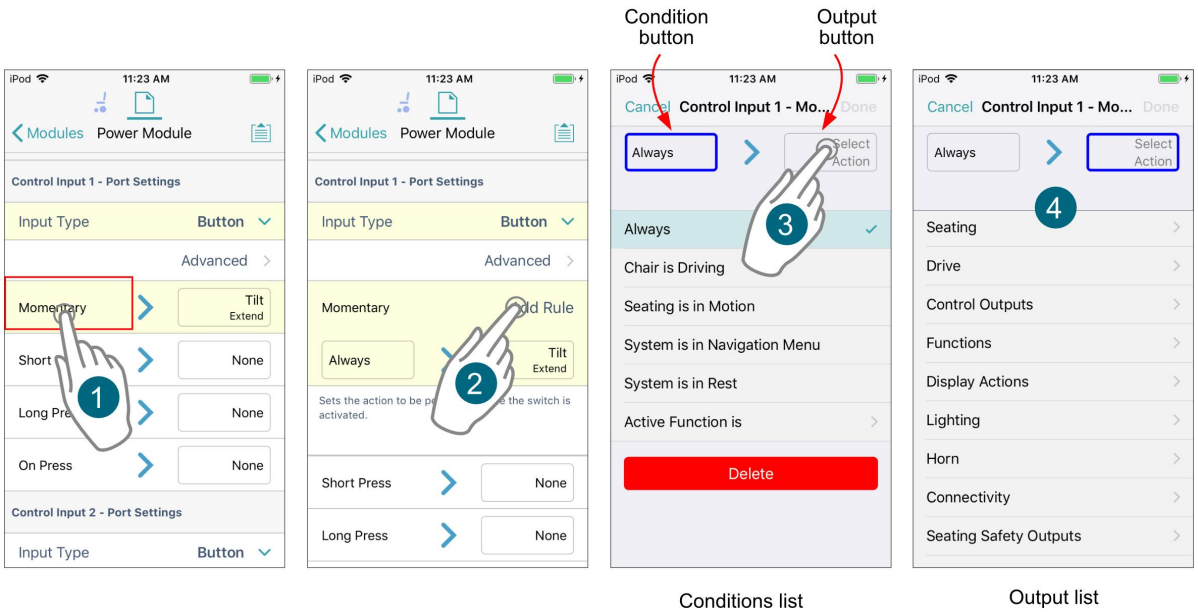


Figure 92: Assigning an output where rules already exist for slot

Note

You can easily switch between viewing the conditions list and the output list by tapping on the condition and output buttons, respectively.

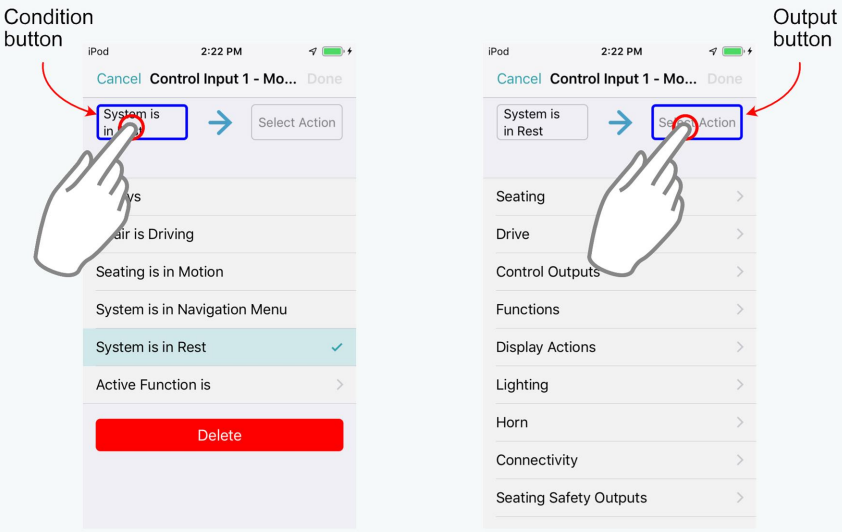


Figure 93: Toggling between conditions list and output list

6.7.3 Configure a conditional rule

Conditions are selected from the conditions list. To assign a condition to your rule:

1. Tap on the left-hand side of the control IO slot *Figure 94* ①) to reveal the **Add Rule** button.
2. Tap on **Add Rule**(*Figure 94*②) — the condition list is displayed.
3. Select a condition from this list (*Figure 94* ③) — the condition button will display your choice.

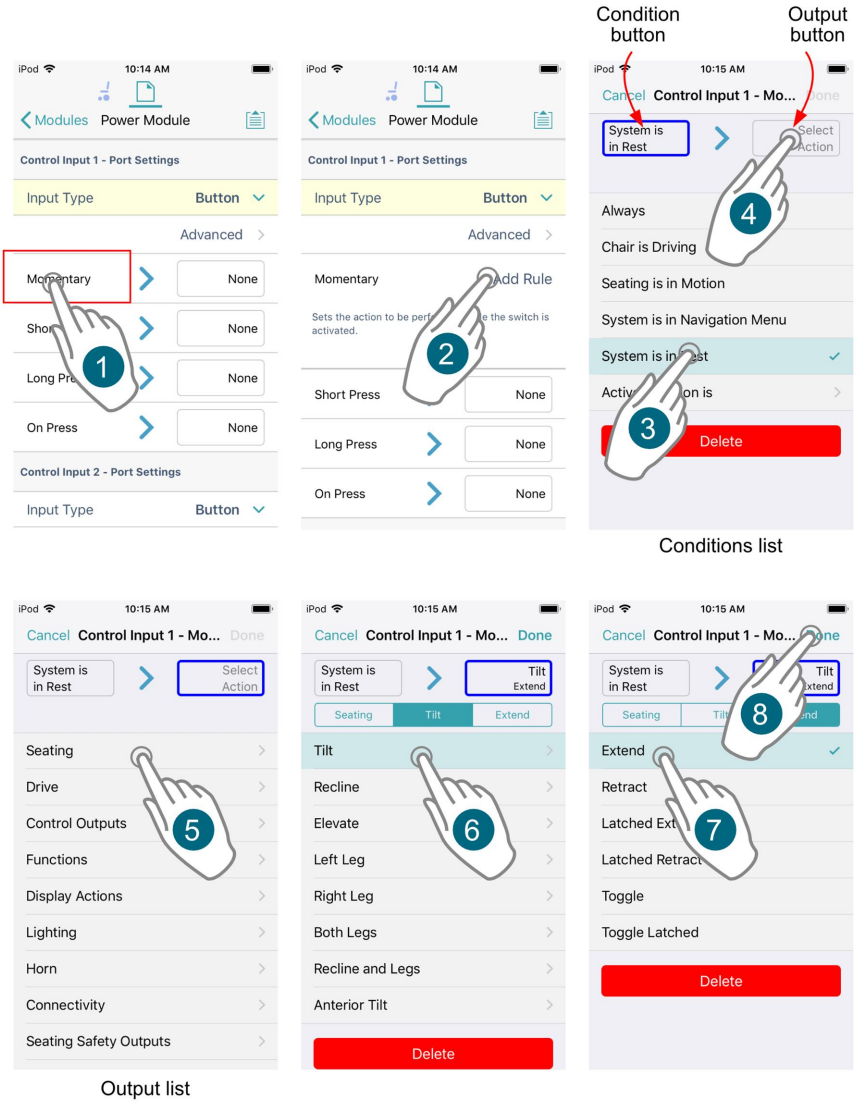
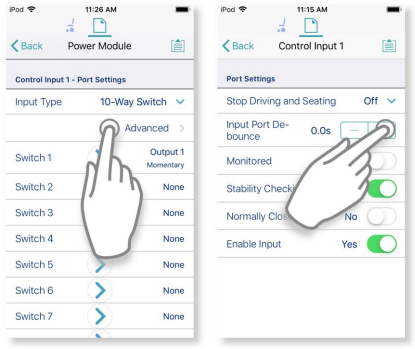


Figure 94: Assigning a condition and output

4. Tap on the output button (*Figure 94* ④) to display the output list.
5. From the list, select an output, drilling down through the options as they are presented (*Figure 94* ⑤ to ⑦).
6. Tap on **Done** (*Figure 94* ⑧) — a summary of the rule is displayed in the control IO slot.

6.7.4 Configure advanced settings



The advanced settings allow you to configure the control inputs further. Tap on the **Advanced** button to reveal the following options:

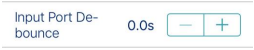
- Stop Driving and Seating
- Input Port Debounce
- Monitored
- Stability Checking
- Normally Closed
- Enable Input

Stop Driving and Seating

This option ensures activation of this control input in any way will cause driving and seating operations to stop.

Tap on the slider button to select **Yes** or **No**.

Input Port Debounce



This option sets the time the signal on the input port has to be stable for before the system responds to the input.

Set the **Input Port Debounce** time by tapping on the **+** and **-** buttons.

If it is set to zero seconds, no additional debounce is applied.

Note

When Input Port Debounce is set to any value greater than zero, the following button inputs cannot be configured: short press, long press, on press.

Monitored

This option sets whether this input is monitored for electrical faults.

Tap on the slider button to select **Yes** or **No**.

Stability Checking

This option sets whether this input is monitored for signal stability. Tap on the slider button to select **Yes** or **No**.

Normally Closed

This option sets whether the switch is normally-open or normally-closed.

Tap on the slider button to select **Yes** or **No**.

Enable Input

This option sets whether the input is enabled.

Tap on the slider button to select **Yes** or **No**.

See also

For more detailed descriptions about the advanced settings, and worked examples using these steps, see the LiNX System Installation Manual (GBK54036).

6.8 Configure memory positions

The following is an abridged, and more generic version of the LiNX Application Note *Memory Positions - Installation and Configuration*. Its intention is to help you locate the parameters you will need to set up an angle sensor-based memory position using the LiNX Access iOS tool.

6.8.1 Overview

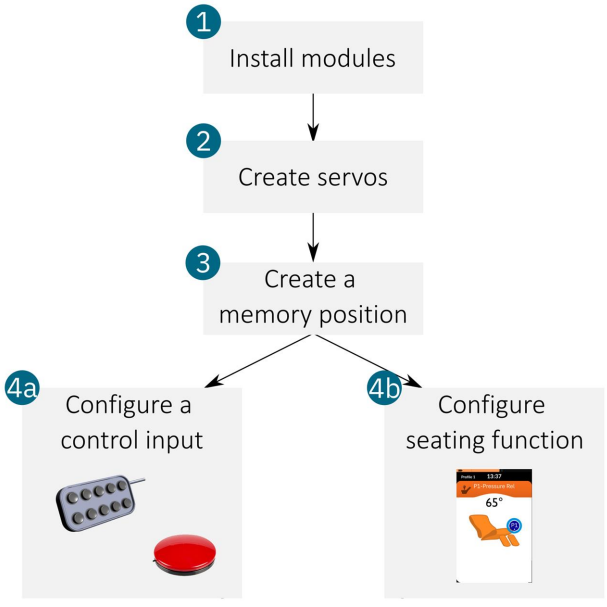


Figure 95: Setting up a memory position in four steps

Figure 95 shows the four steps to install and configure a LiNX system with memory positions. It starts with installing the necessary modules (1), creating the servos (2), and then creating a memory position (3).

After creating the memory position, you then have a choice on how to operate it: you can either set up a control input (4a), for example, a buddy button, or set up a seating function (4b) to operate it from a remote module.

6.8.2 Step 1 - Install modules

Install and connect the required actuators, actuator modules, and angle sensors to the wheelchair and then edit the **port settings** and **angle sources**, detailed below.

6.8.2.1 Port settings

For each control input angle sensor[1] in your system, specify the port that it is wired to. The **Port Settings** (*Figure 96*) are found under **Modules | [module] | CONTROL INPUT [n] - PORT SETTINGS** (where [module] is a connected module such as the power module or actuator module, and [n] is the control input number). For example, if the angle sensor is connected to control input 1 on the power module, select **Modules | Power Module | CONTROL INPUT 1 - PORT SETTINGS**.

- Change **Input Type** to *Control Input Angle Sensor*.
- Edit **Zero Point Offset**, if applicable (depends on your installation)
- Edit **Clockwise Rotation**, if applicable (depends on your installation)

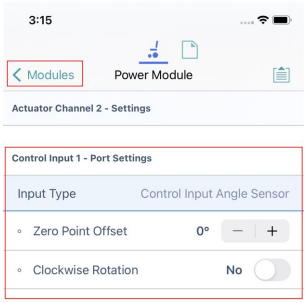


Figure 96: Specify the port to which the control input angle sensor is wired

6.8.2.2 Angle sources

Identify and map each installed angle sensor to specific, named angles called "Angle Sources". Select **Angle Sources** from the home screen and then select an unused angle source from the list of angle sources (*Figure 97*) — the default name for these sources is Angle Source 1, Angle Source 2, etc.

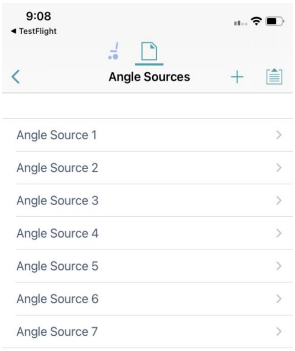


Figure 97: Select an Angle Source

Note

*If **Angle Sources** is not available from the home screen, you can add it by tapping the **Add new item** button + at the top of the home screen and then tapping on **Add Angle Source**.*

[1] You do not have to do this for actuator module angle sensors — the actuator module connects to the LiNX system via the LiNX bus and its angle sensor is recognised at power-up.

- From your selected angle source (*Figure 98*), tap on **Angle Source Name** and rename the source to something more appropriate and memorable ('Backrest', for example, if the source measures the angle of the backrest).
- Tap on the **Angle Sensor** drop-down box and select which angle sensor you will be using for this angle source.
- If you intend to use a relative angle for position control, select a second angle sensor from the **Reference Angle Sensor** drop-down box.

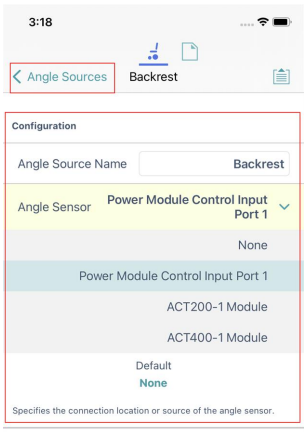


Figure 98: Edit an Angle Source

6.8.3 Step 2 - Create servos

Create one or more **servos** by linking the **angle sources** to the **actuator channels.**

Locate the actuator channel settings for the module you are using under **Modules | [module] | ACTUATOR CHANNEL [n] - SETTINGS** (where **[module]** is a power module or actuator module, and **[n]** is the actuator channel number). For example, if you are using actuator channel 1 on the ACT200-1 module, the settings parameters can be found under **Modules | ACT200-1 | ACTUATOR CHANNEL 1 - SETTINGS** (*Figure 99*).

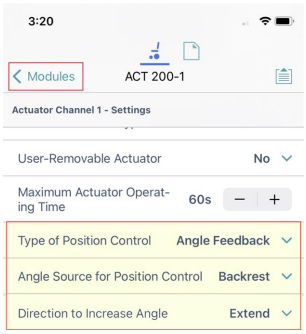


Figure 99: Create servos

- Select the type of position control for this actuator channel from the **Type of Position Control** drop-down box.
- Select the angle source that will be associated with this actuator from the **Angle Source for Position Control** drop-down box — the names in the drop-down box are derived from the **Angle Sources** you created in step 1.
- With **Direction to Increase Angle**, select the direction this actuator will move in order to increase the angle during position control. Set to **Extend** if the angle of the angle source increases when the actuator extends; set to **Retract** if the angle of the angle source increases when the actuator retracts. To help you with this, use Live Diagnostics to monitor the angle readings while operating the actuator.

6.8.4 Step 3 - Create memory position

Name and **define a memory position** using its identification and actuator parameters.

From the home screen, tap on **Positions** and select an unused position from the list — *Figure 100*. If you need to add a new position, tap on the **Add new item** button + at the top of the screen — a new position will be added.

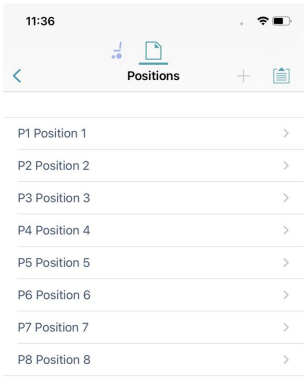


Figure 100: Selecting a position

Note

*If the option to add **Positions** is not available from the home screen, you can add it by selecting the **Add new item** button + at the top of the screen and then tapping on **Add Position**.*

Under the *Identification* section in your selected position (*Figure 101*), edit the following parameters:

- **Position Name**
- **Position Icon**
- **Angle Source to Display** (useful for display remote modules only)

Under the *Channel* section, edit the following parameters:

- **Sequence Order**[1]
- **Target Angle**[2]

You may also consider editing the following parameters under the *Configuration* section:

- **Soft Start Time**
- **Direct Access Position Speed**
- **Distributor Access**
- **Allow Occupants to Update Position**

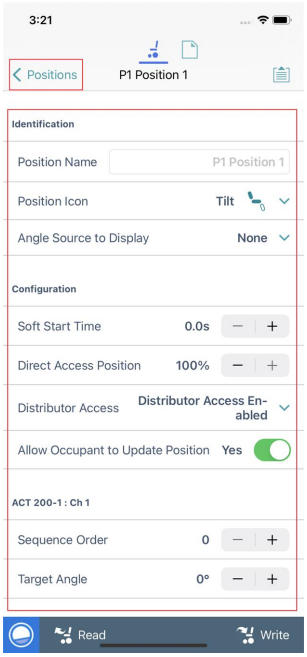


Figure 101: Configuring a Position

[1]The **Sequence Order** determines at which point, if at all, the actuator channel powers during the operation of this memory position. Any channel whose Sequence Order is set to zero is not used in the memory position operation. If different values are used (except zero), the actuator channels drive in order, one after the other, starting with the lowest number - that is, 1 first, 2 second, etc. If the same value is used across channels, they power at the same time.
[2]The **Target Angle** is set between -180° and +180° with a resolution of 1°. When an actuator drives as part of this memory position, it stops when it reaches the target angle.

6.8.5 Step 4a - Configure a control input

Set up a **control input** to activate a memory position.

Skip this step if you want to set up a seating function to activate your memory position, detailed in step 4b, otherwise, follow the steps below to specify which port the control input (button/switch) is connected to, and then set its behaviour — that is, for example: when pressed momentarily by the user, activate and latch the named memory position:

1. From the home screen, tap **Modules | [module] | CONTROL INPUT [n] - PORT SETTINGS** (where [module] is a power module or actuator module, and [n] is the control input number) — see *Figure 102*.

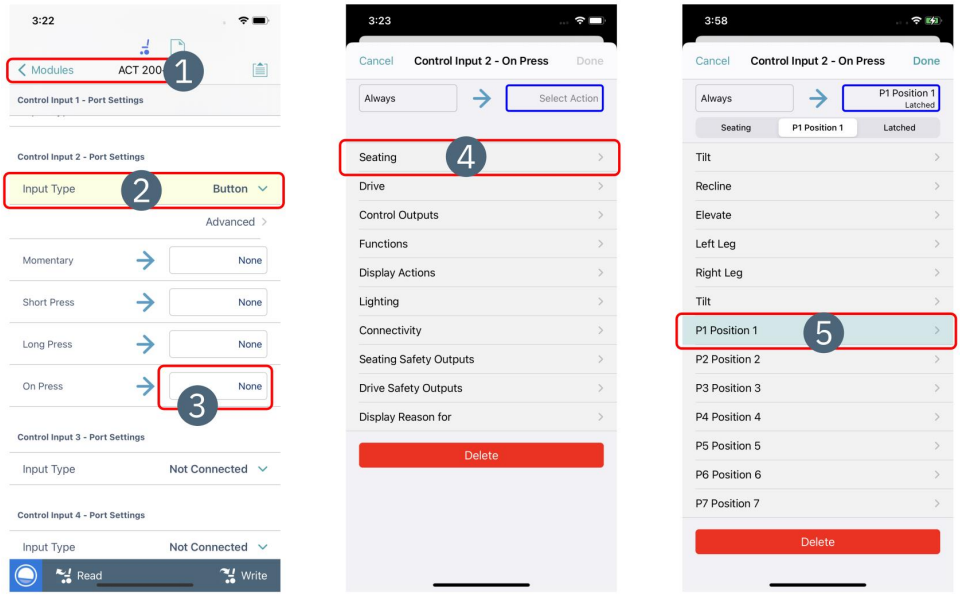


Figure 102: Configure a control input steps 1-5

2. Under **Port Settings**, tap on **Input Type** and select **Button** or **10-Way Switch** — this will reveal its control IO slots: *Momentary*, *Short Press*, *Long Press*, and *On Press*.
3. Open an output list by tapping on the right-hand side of the control IO slot (the box displays 'None').
4. From the output list, select **Seating**.
5. From the next screen, select the name of the Position, for example: **P1 Position 1**.

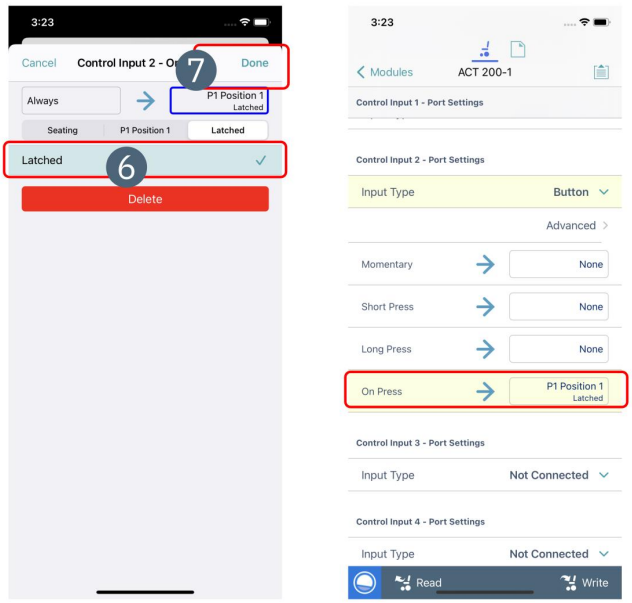


Figure 103: Configure a control input steps 6-7

6. From the final screen, select **Latched** - *Figure 103*.
7. Tap on the **Done** button to save this input.

Your memory position is now ready to be used. Test its operation with the control input created above.

6.8.6 Step 4b - Configure seating function

Set up a **seating function** to activate a memory position.

Skip this step if you have set up a control input in step 4a, otherwise, follow the steps below to create a new seating function and then configure a quadrant to activate the memory position.

6.8.6.1 Create function

1. From the home screen, tap on **Edit** in the functions section.
2. Select a profile and tap on **Add Function**.
3. Add the name of the memory position.
4. Select **Seating** and tap on the user input (eg REM 4xx)
5. Tap **Done** to exit adding the new seating function.
6. Tap **Done** to exit editing functions.

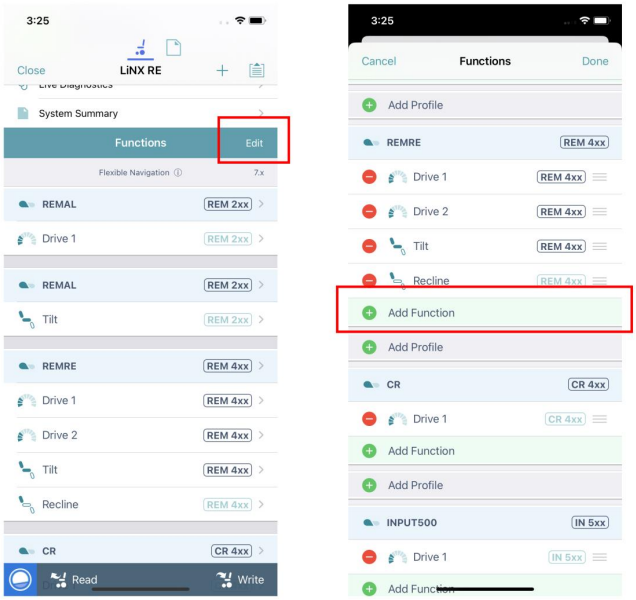


Figure 104: Creating a new seating function

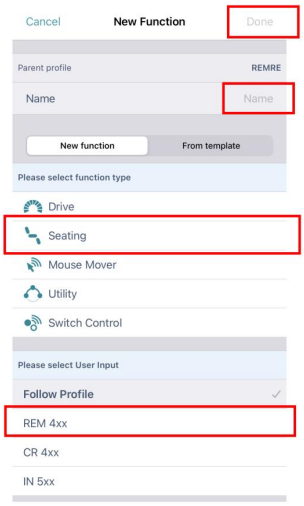


Figure 105: New Seating Function details

6.8.6.2 Configure quadrant

From the home screen, select the function you created above, and set **Input Mode** (under the **General** settings, *Figure 106*) to **Four Quadrant** — memory positions cannot be used when Input Mode is set to either *Forward/Reverse* or *Left/Right*.

Select a quadrant that will activate the memory position (for example, forward quadrant), and set its parameters as follows:

- tap on the **Motion/Position** drop-down box and select the position;
- tap on the **Operating Mode** drop-down box and select **Latched**;
- set the **Speed**.

Your memory position is now ready to be used. Test its operation with the seating function created above.

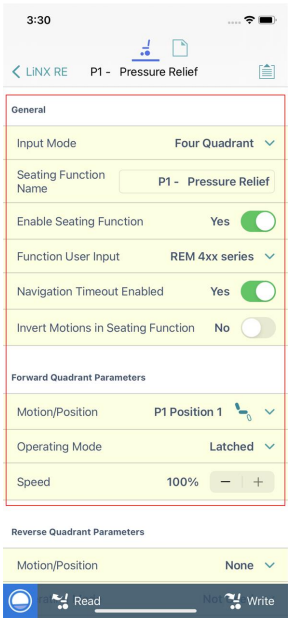


Figure 106: Seating functions - configuring a quadrant for position activation

See also

See "Update memory positions" on page 52

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