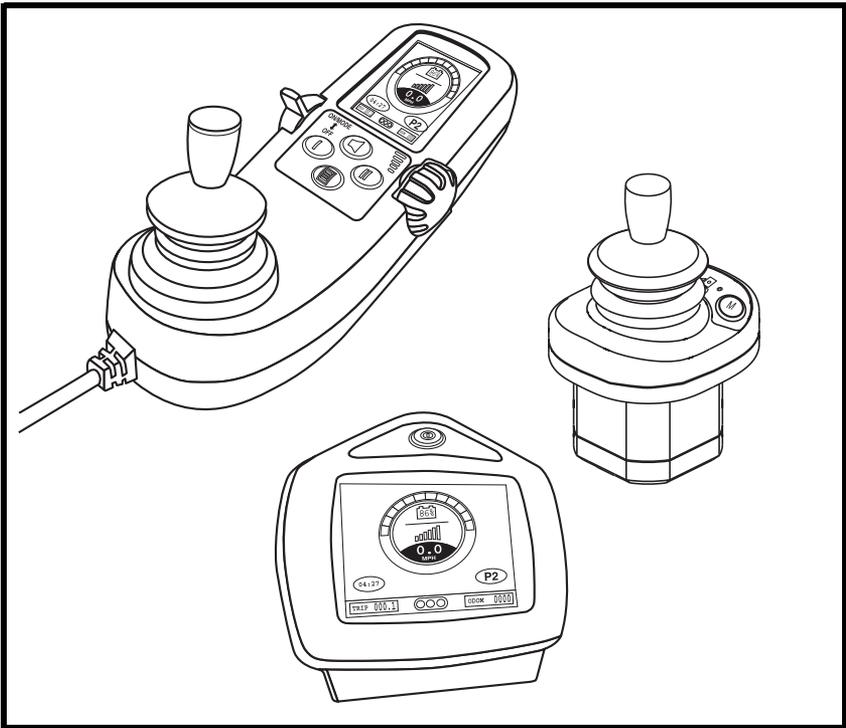


BASIC OPERATION INSTRUCTIONS

Q-Logic™ Controller

ACN# 088 609 661



QUANTUM®
REHAB

A Division of Pride Mobility Products® Corp.

SAFETY GUIDELINES



WARNING! A Quantum Rehab Provider or a qualified technician must perform the initial setup of this product and must perform all of the instructions in this manual.

The symbols below are used throughout this owner's manual and on the power chair to identify warnings and important information. It is very important for you to read them and understand them completely.



WARNING! Indicates a potentially hazardous condition/situation. Failure to follow designated procedures can cause either personal injury, component damage, or malfunction. On the product, this icon is represented as a black symbol on a yellow triangle with a black border.



MANDATORY! These actions should be performed as specified. Failure to perform mandatory actions can cause personal injury and/or equipment damage. On the product, this icon is represented as a white symbol on a blue dot with a white border.



PROHIBITED! These actions are prohibited. These actions should not be performed at any time or in any circumstances. Performing a prohibited action can cause personal injury and/or equipment damage. On the product, this icon is represented as a black symbol with a red circle and a red slash.

NOTE: These instructions are compiled from the latest specifications and product information available at the time of publication. We reserve the right to make changes as they become necessary. Any changes to our products may cause slight variations between the illustrations and explanations in this manual and the product you have purchased. The latest/current version of this manual is available on our website.



ACN 088 609 661

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INFMANU3347/Rev D/January 2011

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LABEL INFORMATION

PRODUCT SAFETY SYMBOLS

The symbols below are used on the controller to identify warnings, mandatory actions, and prohibited actions. It is very important for you to read and understand them completely.



Read and follow the information in the owner's manual.



Avoid exposure to rain, snow, ice, salt, or standing water whenever possible. Maintain and store in a clean and dry condition.



Disposal and recycling — Contact your Quantum Rehab Provider for information on proper disposal and recycling of your Pride product and its packaging.



EMI-RFI — This product has been tested and passed at an immunity level of 20 V/m.



Use correct tie-down points for controller harness to prevent the harness from getting caught in the drive tires, pinched in the seat frame, or damaged when passing through doorways.

INTRODUCTION

WELCOME to Quantum Rehab, a division of Pride Mobility Products (Pride). The product you have purchased combines state-of-the-art components with **safety**, comfort, and styling in mind. We are confident that the design features will provide you with the conveniences you expect during your daily activities. Understanding how to **safely** operate and care for this product should bring you years of trouble-free operations and service.

Read and follow all instructions, warnings, and notes in this manual before attempting to operate your product for the first time. You must also read all instructions, warnings, and notes contained in any supplemental instructional booklets for the controller, front riggings, and/or seating system that accompanied your power chair before initial operation. Your safety depends upon you, as well as your provider, caretaker, or healthcare professional, in using good judgement.

This manual is to be used in addition to the power base owner's manual that came with your power chair. If there is any information in this manual which you do not understand, or if you require additional assistance for setup or operation, please contact your Quantum Rehab Provider. **Failure to follow the instructions, warnings, and notes in this manual and those located on your Pride product can result in personal injury and/or product damage and will void Pride's product warranty.**

PURCHASER'S AGREEMENT

By accepting delivery of this product, you promise that you will not change, alter, or modify this product or remove or render inoperable or unsafe any guards, shields, or other safety features of this product; fail, refuse, or neglect to install any retrofit kits from time to time provided by Pride to enhance or preserve the safe use of this product.

INFORMATION EXCHANGE

We want to hear your questions, comments, and suggestions about this manual. We would also like to hear about the safety and reliability of your new Pride product, and about the service you received from your Quantum Rehab Provider. Please notify us of any change of address, so we can keep you apprised of important information about safety, new products, and new options that can increase your ability to use and enjoy your Pride product.

NOTE: If you ever lose or misplace your product registration card or your copy of this manual, contact us and we will be glad to send you a new one immediately.

My Quantum Rehab Provider Is:

Name: _____

Address: _____

Phone Number: _____

Purchase Date: _____

Q-LOGIC CONTROLLER

The Q-Logic Controller is a fully programmable, modular electronic controller system that allows you to operate your power chair. The Q-Logic has several input devices available that operate through a power module. The hand control will primarily be discussed in this manual, along with references to the Enhanced Display, Stand-alone Joystick, and Attendant Control. Additional input devices are also available for the Q-Logic. Contact your Quantum Rehab Provider for more information.

The controller has been pre-programmed to meet a typical user's needs. The program is adjusted using either a personal computer with software provided by the controller manufacturer or with a hand-held programmer, also provided by the controller manufacturer, by your Quantum Rehab Provider or a trained service technician.



WARNING! The controller program can affect speed, acceleration, deceleration, dynamic stability, and braking. If it is programmed incorrectly or outside of the safe limits as determined by your healthcare professional, it can create a dangerous situation. Only your Quantum Rehab Provider or a trained service technician should program the controller.

NOTE: When a power chair is equipped with multiple input devices, the device that powered up the chair will be in control.

PRECAUTIONARY GUIDELINES

Before operating the Q-Logic Controller, please read the following. These guidelines are provided for your benefit and will aid you in the safe operation of the controller system.

- Turn off the power to the controller before you are seated in your power chair.
- Follow all of the procedures and heed the warnings as explained in your power chair owner's manual.

Electromagnetic and Radio Frequency Interference (EMI/RFI)



WARNING! Laboratory tests have shown that electromagnetic and radio frequency waves can have an adverse effect on the performance of electrically-powered mobility vehicles.

Electromagnetic and Radio Frequency Interference can come from sources such as cellular phones, mobile two-way radios (such as walkie-talkies), radio stations, TV stations, amateur radio (HAM) transmitters, wireless computer links, microwave signals, paging transmitters, and medium-range mobile transceivers used by emergency vehicles. In some cases, these waves can cause unintended movement or damage to the control system. Every electrically-powered mobility vehicle has an immunity (or resistance) to EMI. The higher the immunity level, the greater the protection against EMI. This product has been tested and has passed at an immunity level of 20 V/m.



WARNING! Be aware that cell phones, two-way radios, laptops, and other types of radio transmitters may cause unintended movement of your electrically-powered mobility vehicle due to EMI. Exercise caution when using any of these items while operating your mobility vehicle and avoid coming into close proximity of radio and TV stations.



WARNING! The addition of accessories or components to the electrically-powered mobility vehicle can increase the susceptibility of the vehicle to EMI. Do not modify your power chair in any way not authorized by Pride.

WARNING! The electrically-powered mobility vehicle itself can disturb the performance of other electrical devices located nearby, such as alarm systems.

NOTE: For further information on EMI/RFI, go to the Resource Center on www.pridemobility.com. If unintended motion or brake release occurs, turn your power chair off as soon as it is safe to do so. Call Pride or your Quantum Rehab Provider to report the incident.

Q-Logic Controller Features

Figure 1 provides information on the Q-Logic components and connections. Use this diagram to familiarize yourself with the function and location of each component before using the Q-Logic Controller.

The following functions are available with the Q-Logic Controller:

- Joystick Control
The joystick is used to control the direction and speed of the power chair.
- Actuator Adjustment
The user can control positioning of power seat actuators with the Q-Logic.
- Drive Profile Selection
The user can select one of five available drive profiles.
- Speed Adjustment
The user can control the speed of the power chair with the speed adjustment knob.
- Attendant Control
An input device is generally mounted on the back of the power chair for use by an ambulatory attendant.
- Enhanced Display
A color LCD display that may be equipped with built-in infrared (IR) for remote control. It is available with Bluetooth and can be operated by a wide variety of input devices ranging from switches to head controls and different joysticks.
- Sleep Mode
A feature designed to shut off power if the joystick remains stationary for a preprogrammed period of time. This function is intended to preserve battery charge and can be disabled through programming.
- Thermal Rollback
A safety feature designed to prevent the power chair from overheating and causing damage to the motors or controller.

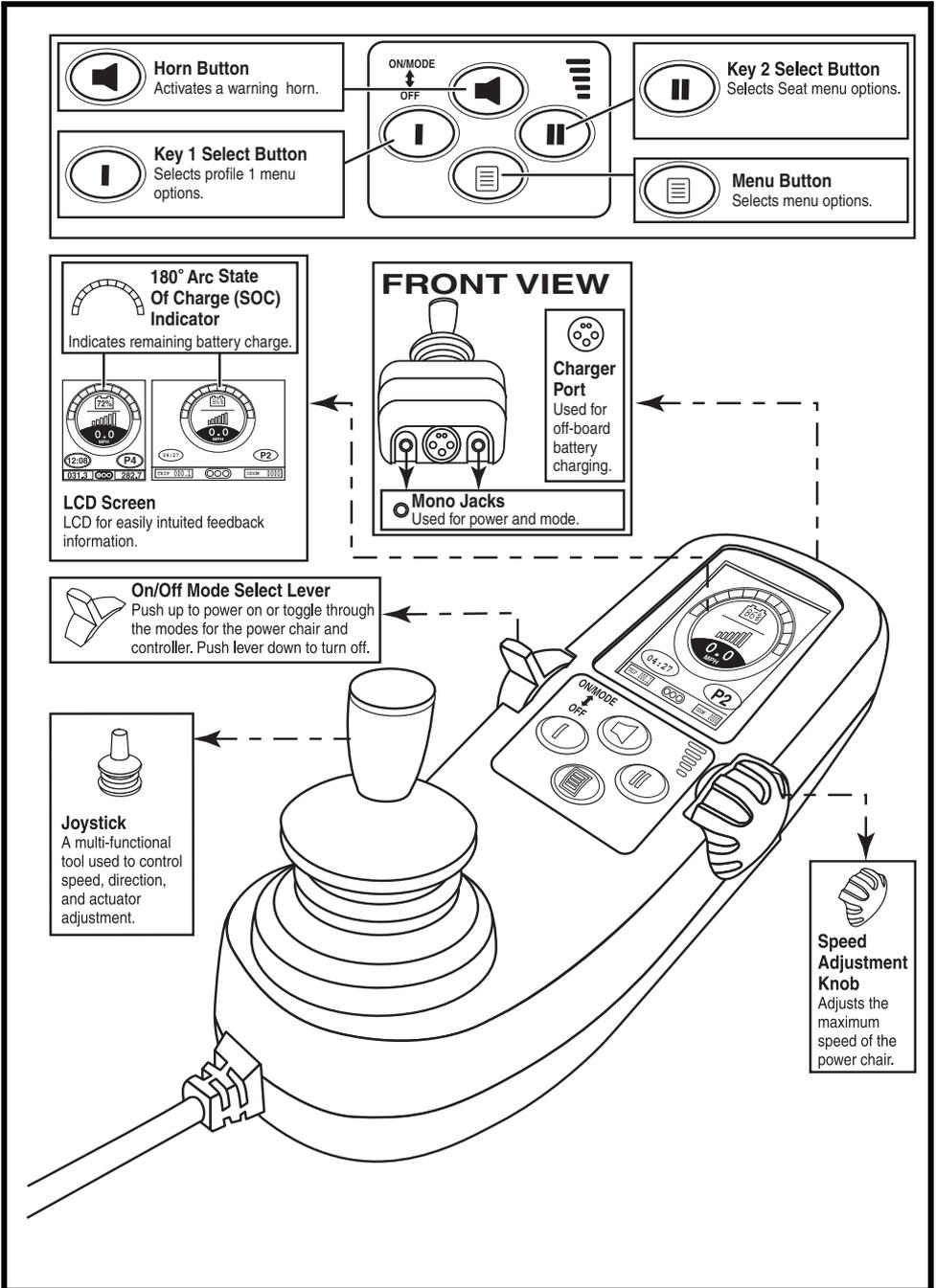


Figure 1. Q-Logic Hand Control Components and Connections

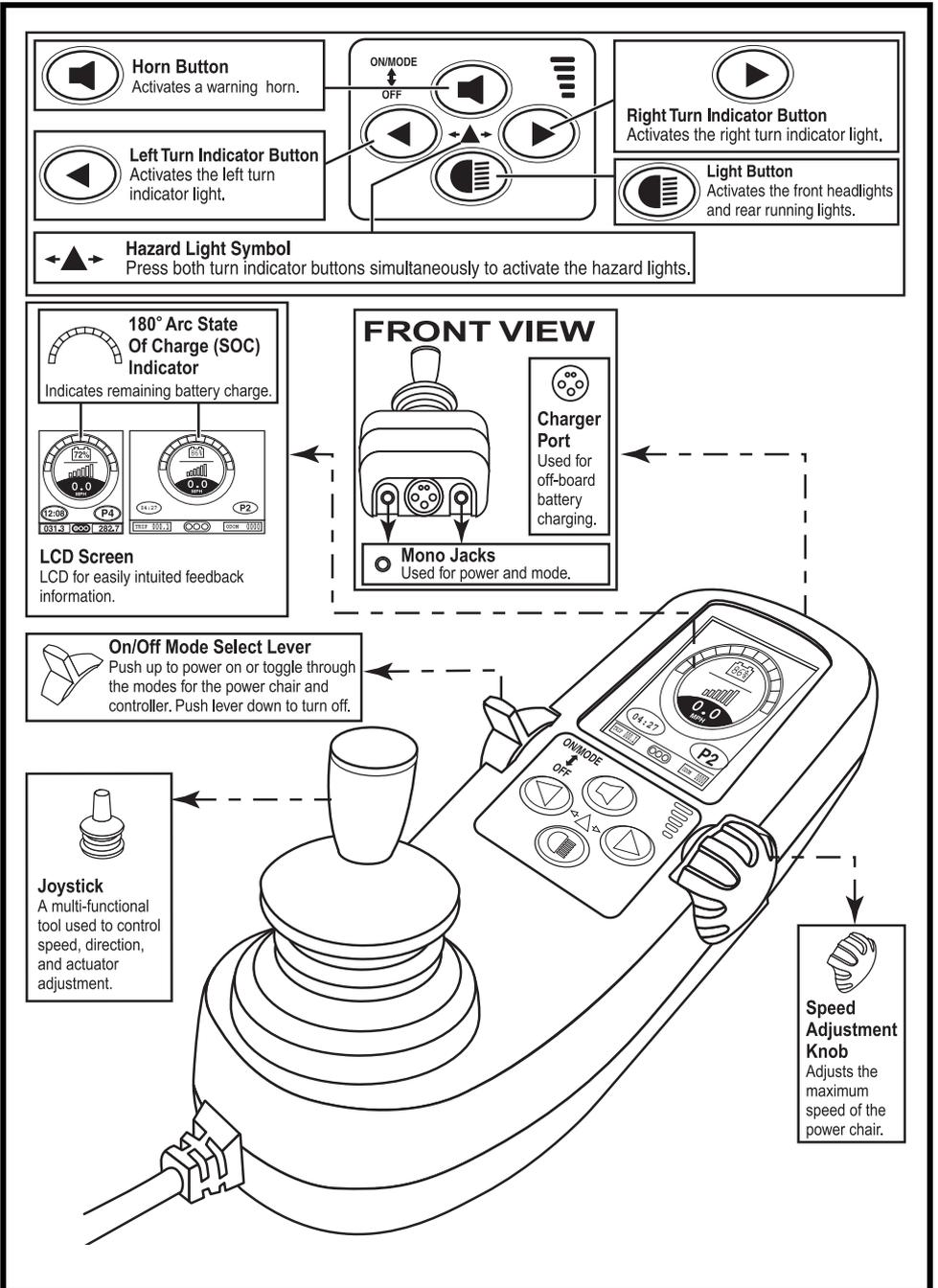


Figure 2. Q-Logic with Lights Hand Control Components and Connections

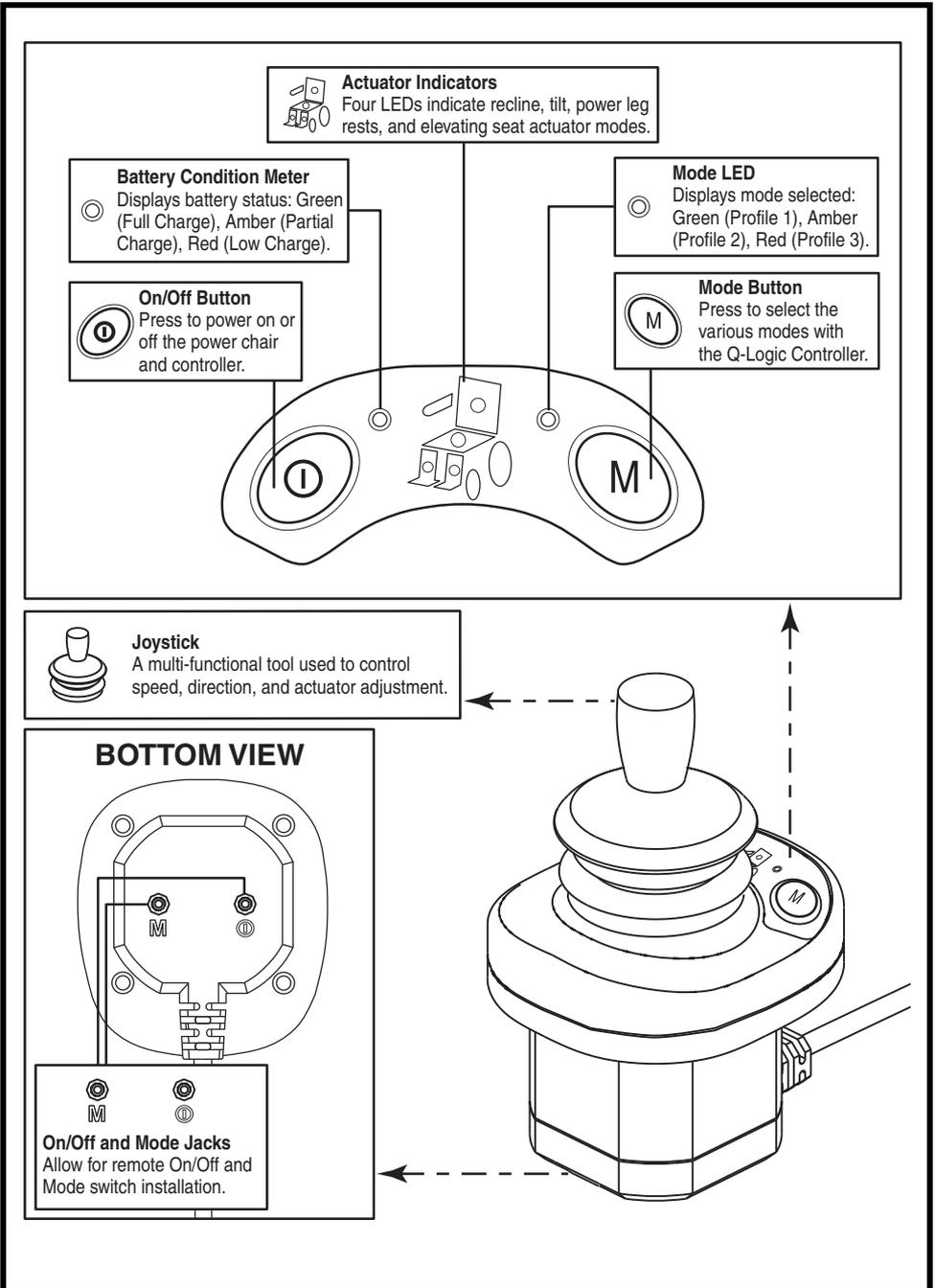


Figure 3. Q-Logic Attendant Control Components and Connections

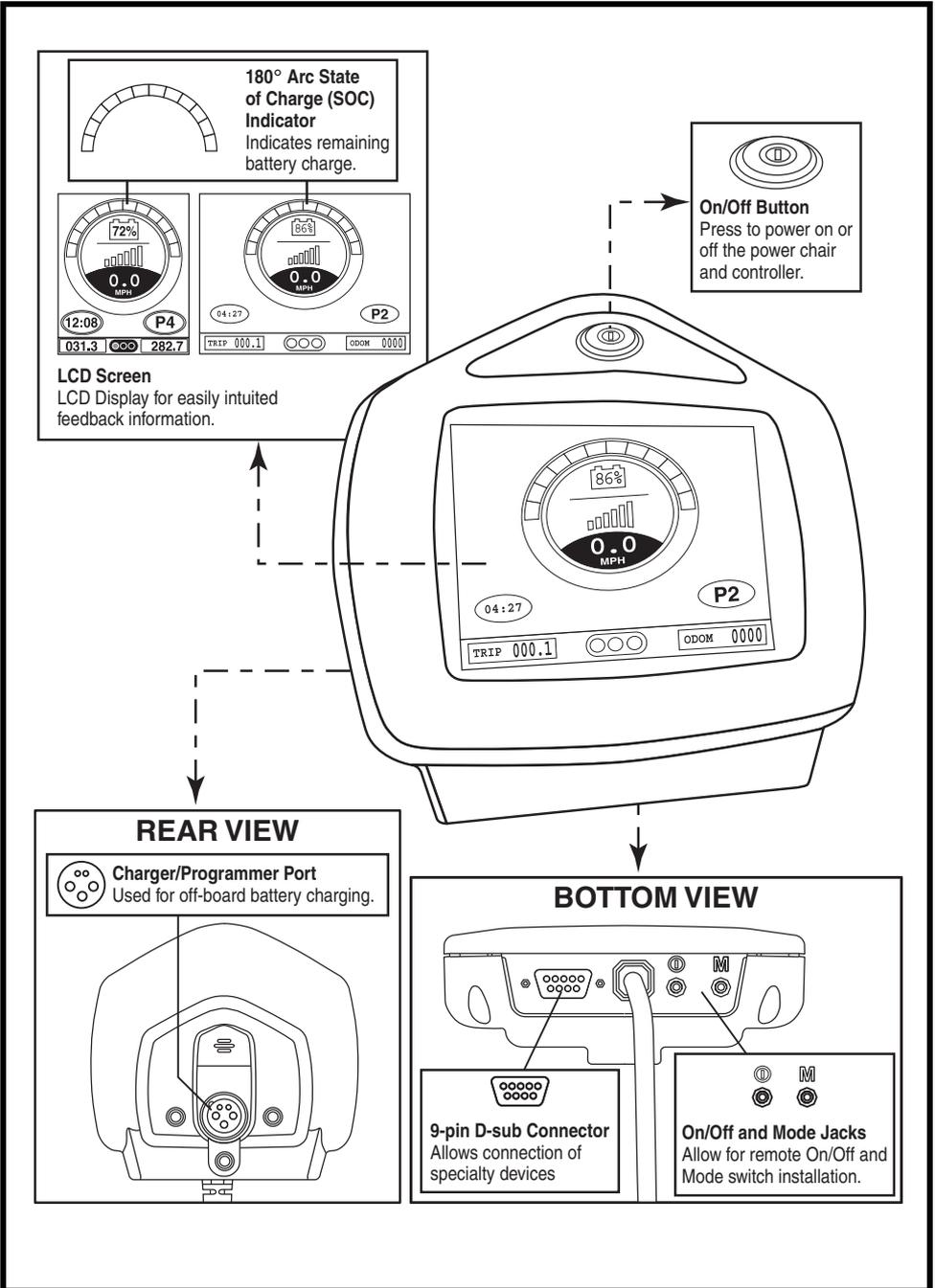


Figure 4. Q-Logic Enhanced Display Components and Connections

OPERATING THE Q-LOGIC CONTROLLER

The Q-Logic hand control is used to operate your power chair and all of its components.

On/Off and Mode Select Lever

The On/Off and Mode Select Lever turns the system on and off and is also used to select drive profiles. See figure 1.



WARNING! Unless faced with an emergency situation, do not use the on/off lever to stop the chair. This will cause the power chair to stop abruptly.

WARNING! Always turn the power off when you are stationary to prevent unexpected movement.

Joystick Control

The joystick controls the driving speed and direction of the power chair. When the joystick is at rest, it is in the neutral (center) position and the chair is stationary. In order to drive the chair, the joystick must be taken out of neutral. Moving the joystick in any direction will switch the chair from neutral to drive, and the chair will move in the direction indicated by joystick position. The farther away from the neutral position the joystick is, the faster the chair will move in that direction. To stop chair movement, simply release the joystick or move it back to the neutral position. The chair's electromagnetic brakes will engage after the chair has come to a controlled stop.

Lock/Unlock Procedure

The Q-Logic Controller comes with a programmable lock/unlock option.

NOTE: The lock-out feature is not programmed at the factory. To have this feature added, contact your Quantum Rehab Provider.

To lock the controller:

1. Power the controller on.
2. Push and hold the On/Off and Mode Select Lever in the on position until the controller turns off. The controller is now locked.

To unlock the controller:

1. Turn the controller on. The words "System Lock" will appear on the display screen.

2. Move the joystick to the full forward position until you hear a beep.
3. Move the joystick to the full reverse position until you hear a beep.
4. Release the joystick. The controller is now unlocked.

Speed Adjustment Knob

The speed adjustment knob is used to control the speed of the power chair. See figure 1.

To change the speed:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. To increase your speed, turn the speed adjustment knob up.
3. To decrease your speed, turn the speed adjustment knob down.

Keypad

The keypad is located directly in front of the joystick. It contains the components that you will use to control your power chair. See figures 5 and 6.

Horn Button

The horn button activates a warning horn.

Menu Button

The menu button is used to access user accessibility features such as trip odometer reset and time set.

Key 1 and Key 2 Select Buttons

The key 1 select button is used to quickly and easily select drive profile 1. The key 2 select button selects the Seat. Contact your Quantum Rehab Provider with any questions.

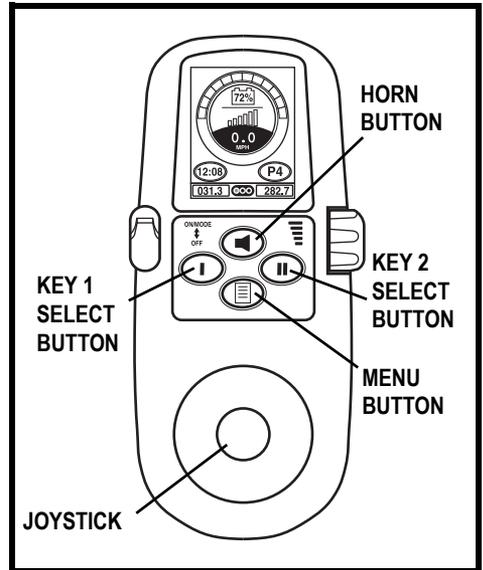


Figure 5. Q-Logic Keypad

NOTE: *If your Q-Logic Controller is equipped with a lighting system, the menu button and key 1/key 2 select buttons will be replaced with a light button and left/right turn indicator buttons. See figure 6.*

Light Button

The light button controls the front headlights and rear running lights.

To operate the lights:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. Press the light button once to activate the front headlights and rear running lights.
3. Press the light button again to turn off the lighting system.

Left/Right Turn Indicator Buttons

The left/right turn indicator buttons toggle either the left or right turn indicators.

To operate the turn indicators:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. Press the desired turn indicator button once to turn on that indicator.
3. Press the same turn indicator button again to turn off that indicator.

NOTE: *If the left turn indicator is activated, pressing the right indicator button will turn off the left indicator and activate the right indicator.*

NOTE: *The turn indicator buttons also control the hazard lights. Press both turn indicator buttons at the same time to activate the hazard lights and press both buttons again to turn off the hazard lights. If the hazard lights are left on and the controller is turned off, the hazard lights will continue to flash. The Q-Logic must be turned back on and both turn indicator buttons must be pressed to deactivate the hazard lights.*

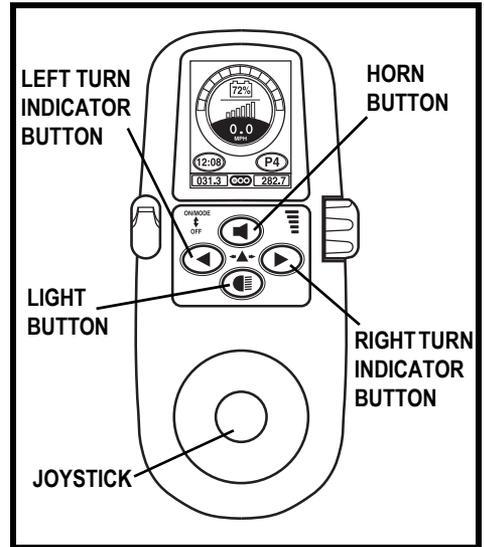


Figure 6. Q-Logic with Lights Keypad

LCD Screen

The Q-Logic provides the user with easily intuited feedback information via the LCD screen. The three circles at the bottom middle of the screen represent a stoplight. A green light indicates full drive operation, an amber light indicates limited drive operation, and a red light indicates that drive operation is prohibited.

Drive Screen

The LCD provides the current time in either 12- or 24-hour clock format, the current profile, drive operation, the speed the chair is traveling at, the speed adjustment setting, the trip odometer, and the overall odometer reading.

In **figure 7**, the current time is eight minutes past noon (in 24-hour clock format). The chair is operating in profile 4 at 0.0 mph. The trip meter reads 31.3 miles, and the overall odometer reading is 282.7 miles. The battery is at 72% state of charge (SOC). The battery SOC is shown two different ways; numerically inside the battery icon and graphically as the proportion of the SOC 180° arc.

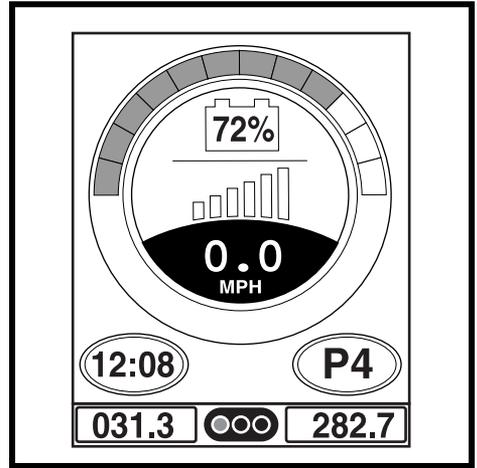


Figure 7. Drive Screen

Drive Profile Selection

Your Q-Logic Controller may be programmed for up to five drive profiles that allow the system to be custom tailored to your environment. The drive profile may be changed two different ways. Profiles 1-5 may be selected by pressing the On/Off and Mode Select Lever in the forward direction. Profile 1 may be selected by simply pressing the Key 1 select button. The selected profile is displayed on the Drive Screen. See **figure 8**.

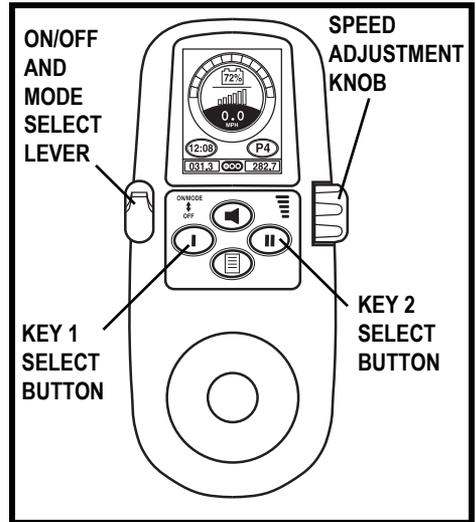


Figure 8. Profile Selection

NOTE: Drive profiles are set by your Quantum Rehab Provider. Contact your Quantum Rehab Provider to change or add a drive profile.

To select a profile setting using the On/Off and Mode Select Lever:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. Push the On/Off and Mode Select Lever up again to select a drive profile. Continue to cycle through the five available drive profiles.

NOTE: You can only scroll forward through the drive profiles. Pushing the On/Off and Mode Select Lever down will power off the controller.

Actuator Adjustment (Seat Screen)

The Q-Logic Controller can control five power seat actuators using the mode select lever and the joystick.

To select and adjust an actuator:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. Push the On/Off and Mode Select Lever up several times until the seat screen is displayed on the LCD or push the key 2 select button once to go directly to actuator mode.
3. Push the joystick to the left or right to cycle through the available actuators until the desired actuators are illuminated on the actuator indicator. **See figure 9.**
4. When the desired actuator is selected, give a forward command to the joystick to adjust position in one direction or give a reverse command to the joystick to adjust position in the opposite direction.
5. Push up and release the On/Off and Mode Select Lever until you return to the desired drive profile.

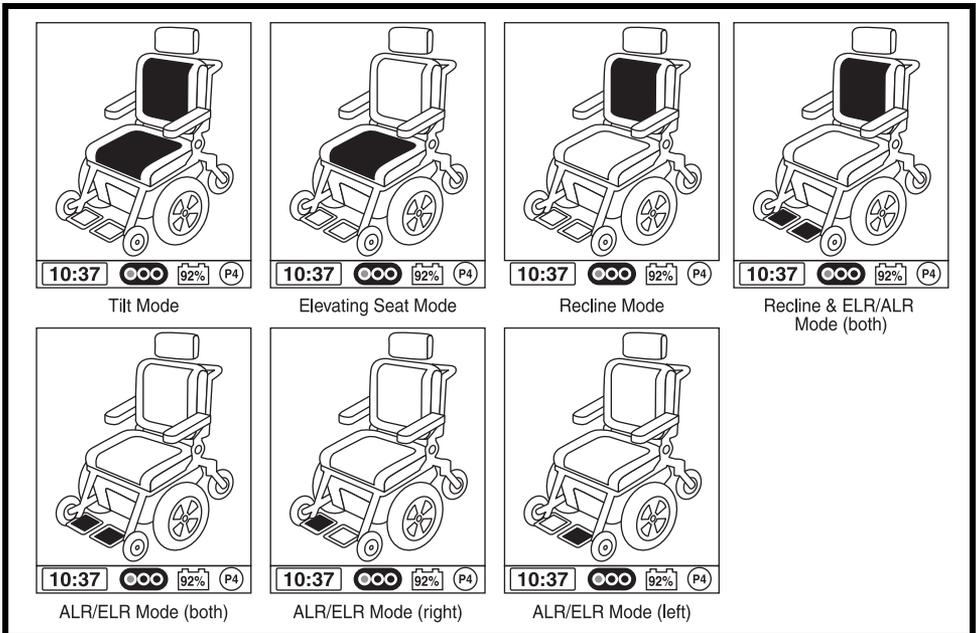


Figure 9. Actuator Selection

Main Menu

The Main Menu screen displays a list of preference settings that are user adjustable: 12-hr./24-hr. clock, amount of backlighting, measurement system (miles/kilometers), English, German, Italian, French, and Spanish language choice, and tripmeter and odometer resetting.

To make a selection from the Main Menu:

1. Push the Main Menu button.
2. Push the joystick up or down to scroll through the available main menu functions.
3. When the desired function is highlighted on the LCD, push the joystick to the right to select that function.
4. To return to the previous screen, push the joystick to the left.

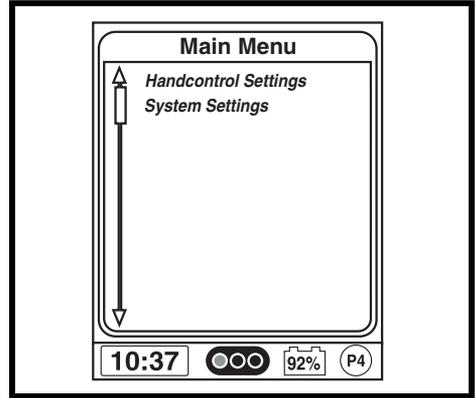


Figure 10. Main Menu Screen

To change units of measurement:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. Push the Menu button to access the Main Menu screen. **See figure 10.**
3. Use the joystick to highlight the Handcontrol Settings option, then push the joystick right to select that function. **See figure 11.**
4. Use the joystick to highlight the Sound & Display option, then push the joystick right to select that function.

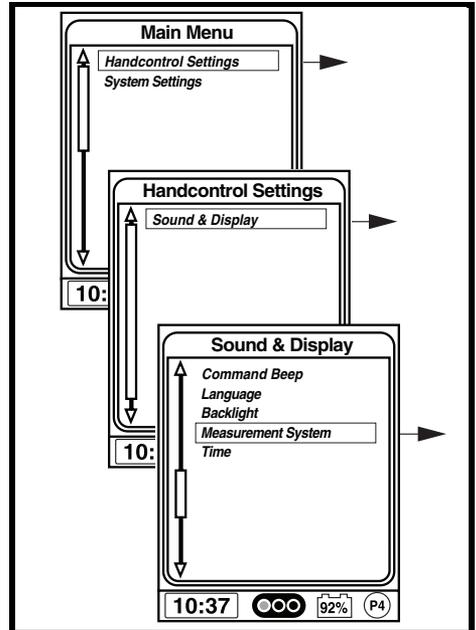


Figure 11. Menu Screens

5. Use the joystick to highlight the Measurement System option, then push the joystick right to select that function.
6. Use the joystick to highlight the Max option, then push the joystick right to select that function. **See figure 12.**
7. Push the joystick left to select the ESC option and return to the Sound & Display menu. **See figure 12.**
8. Press the Menu button to return to drive mode.

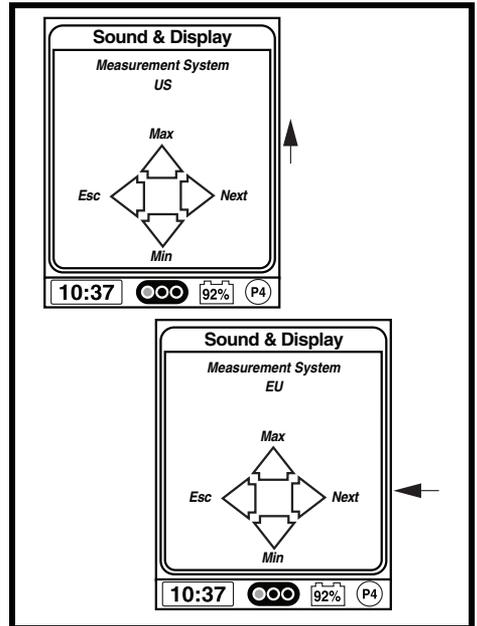


Figure 12. Measurement System Screen

To change the language choice:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. Push the Menu button to access the Main Menu screen. See **figure 10**.
3. Use the joystick to highlight the Handcontrol Settings option, then push the joystick right to select that function. See **figure 13**.
4. Use the joystick to highlight the Sound & Display option, then push the joystick right to select that function.
5. Use the joystick to highlight the Language option, then push the joystick right to select that function.
6. Push the joystick up until the desired language is displayed. See **figure 14**.
7. Push the joystick left to select the Esc option and return to the Sound & Display menu.
8. Push the Menu button to return to drive mode.

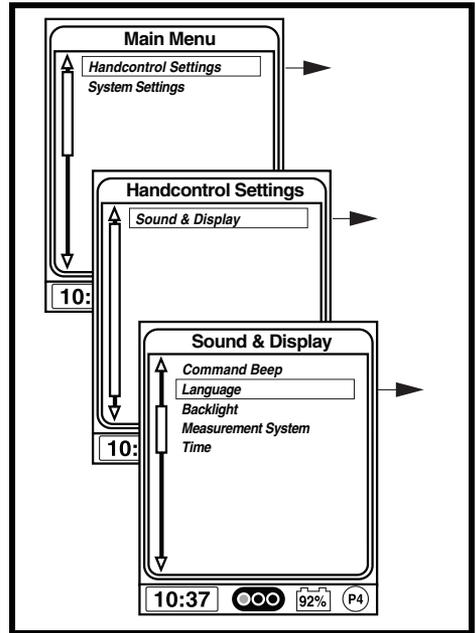


Figure 13. Menu Screens

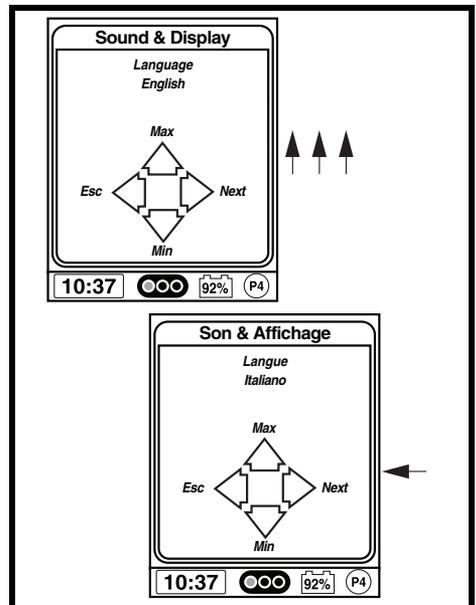


Figure 14. Language Screen

Auxiliary (Aux) Menu

The Aux Menu screen displays the auxiliary operations that are available when operating in the Aux profile. In a standard basic system with only a hand control and a power module, typically there is no Aux profile. In more complex systems, an Aux profile provides access to the operations made possible by the additional modules. Contact your Quantum Rehab Provider for more information.

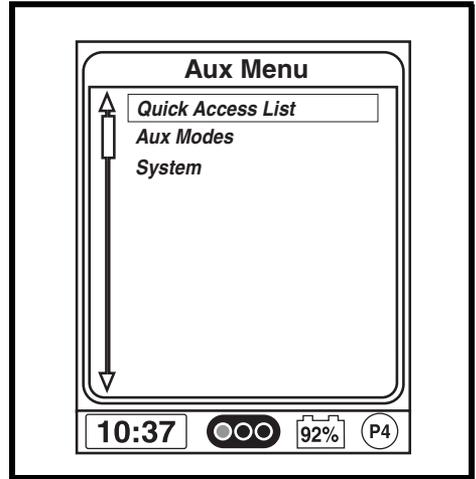


Figure 15. Aux Menu Screen

Standby Select Menu

The Standby Select Menu screen appears after the programmed timeout when Standby Select is enabled. Standby Select allows the user to navigate through the available profiles without the use of a Mode key. The profile that was active when the timeout occurred is highlighted. Contact your Quantum Rehab Provider for more information.

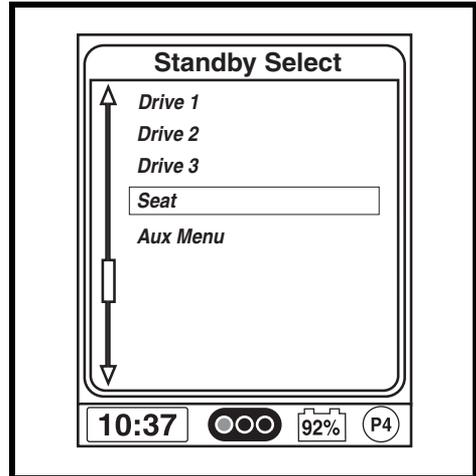


Figure 16. Standby Select Menu Screen

Attendant Control and Stand-alone Joystick

For more information on these applications, contact your Quantum Rehab Provider.

The Attendant Control and the Stand-alone Joystick are similarly laid out:

- On/Off Button
Enables/disables power
- Battery Condition Meter
Indicates battery charge
- Actuator LEDs
Indicates actuators in use
- Mode LED
Used for profile selection
- Joystick
Controls speed and direction in Drive mode; selects actuators in Seat mode
- On/Off and Mode Jacks (not shown)
Allow for remote On/Off and Mode switch installations

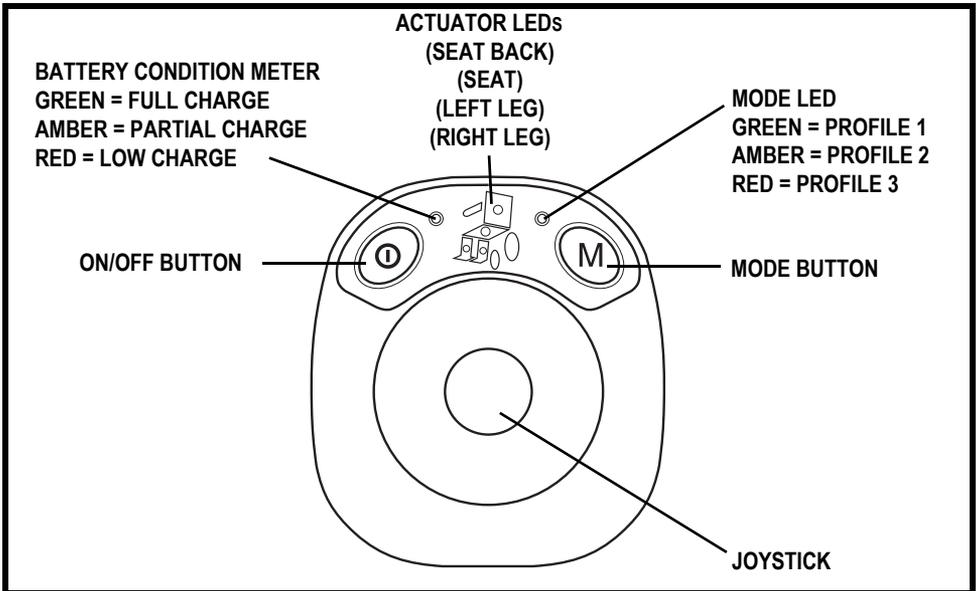


Figure 17. Attendant Control

Enhanced Display

The Enhanced Display module is primarily used with specialty control devices like a head array. It also can be used to provide a graphical display for the Stand-alone Joystick. When used with the hand control, it provides a larger display than the hand control's LCD. The Enhanced Display is mainly used in more advanced applications. Contact your Quantum Rehab Provider for more information.

The Enhanced Display has the following controls:

- On/Off Button
Enables/disables power
- On/Off and Mode Jacks (not shown)
Allow for remote On/Off and Mode switch installations
- 9-pin D-sub Connector (not shown)
Allows for connection of a specialty control device
- LCD Screen
A color LCD display that may be equipped with built-in infrared (IR) for remote control and with Bluetooth mouse control

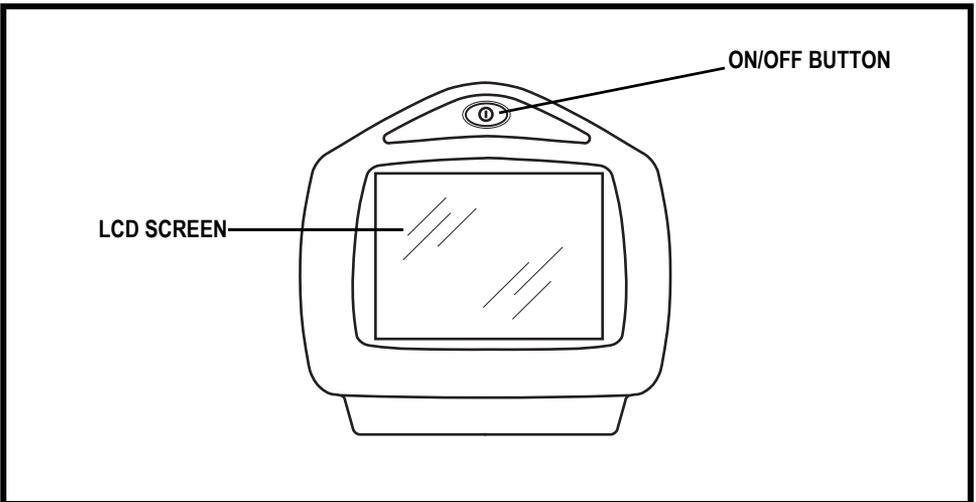


Figure 18. Enhanced Display

SLEEP MODE

The Q-Logic Controller offers a sleep mode feature that will shut off the main power if the joystick remains stationary for a programmed period of time from 0 to 240 minutes. To restore power and resume operation of the chair, push the On/Off and Mode Select Lever up once. A set time of 0 minutes disables the sleep power mode feature.

THERMAL ROLLBACK

The Q-Logic Controller is equipped with a thermal rollback circuit that monitors the temperature of the chair's motors and controller. If either exceeds the safe operating temperature, the controller reduces the output to 20% of full operation level. This reduces the chair's speed and allows a cool down period. Once the temperature returns to a safe level, the chair will resume normal operation.

BATTERY CONDITION METER

The battery condition meter is located in front of the joystick on the hand control and as an LED on the Attendant Control and Stand-alone (see figure 1, 2, 3, or 17).

Hand Control Battery Condition Meter

The state of charge (SOC) on the hand control is shown two different ways: as a 180°-arc illuminated display and numerically inside the battery icon. See figure 1.

- **180°-arc and battery icon are green:** Batteries charged.
- **180°-arc and battery icon are yellow:** Charge batteries if possible.
- **180°-arc and battery icon are red:** Charge batteries as soon as possible.

NOTE: When charging the battery, the 180°-arc will ripple continuously.

Attendant Control Battery Condition Meter

The state of charge (SOC) on the Attendant Control and Stand-alone is shown on an LED. The color of the tri-color LED indicates the battery SOC. See figure 17.

- **LED is green:** Batteries charged.
- **LED is amber:** Charge batteries if possible.
- **LED is red:** Charge batteries as soon as possible.

NOTE: When charging the battery, the LED sequences continuously.

Q-LOGIC ERROR CODES

The Q-Logic displays four types of messages: information, warning, error, and general error. See figure 19.

- **Information:** Displays information that does not impact power chair functionality or performance.
- **Warning:** Alerts you to conditions that may affect power chair functionality and performance.
- **Error:** Alerts you to conditions that influence power chair functionality and performance.
- **General Error:** Alerts you to system or component failures that greatly influence power chair functionality and performance and may result in emergency shutdown.

Error codes are displayed on the LCD by number. The following table identifies the error codes that may be easily rectified, probable causes, and possible solutions. If you receive one of these error codes, follow the recommended solution, and if the problem persists, or you receive any other error code or experience any other problem with your power chair, contact your Quantum Rehab Provider.

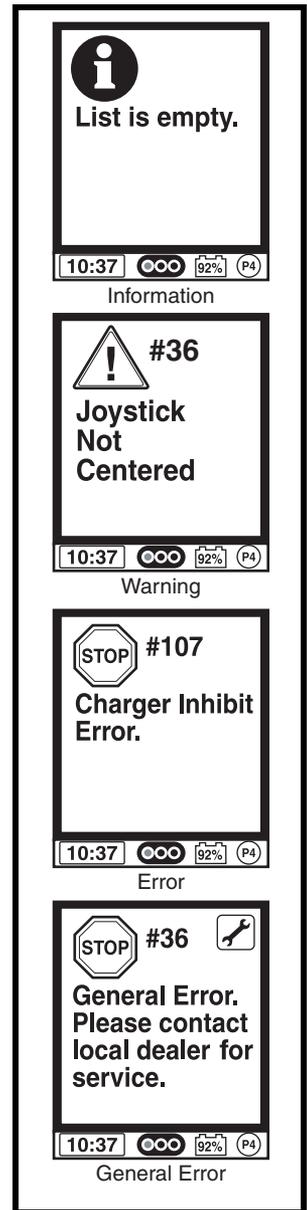


Figure 19. Types of Errors

ERROR CODE	DIAGNOSIS	SOLUTION
35, 37	Joystick Fault/Connection	Check if joystick cable is connected.
36, 110	Joystick Not centered	Release joystick while turning chair on.
46	High Battery Voltage	Disconnect charger.
47, 101, 105	Low Battery Voltage	Charge battery.
49-53	Motor Not Connected	Check motor brake connector.
74-75	Motor Disconnected	Check motor brake connector.
81-90	Motor/Brake Fault	Check motor brake connector.
107	Charger Drive Inhibit	Disconnect charger.
111-112	Center Detect Fault	Check joystick cable connection.
131-132	Motor Fault	Check motor wiring.
141, 187	Drive/Actuator Restriction	Clear restriction.
192-195	Motor Disconnected/ Shorted	Check motor brake connector.
200-201	Motor Fault	Check motor wiring.

CARE AND MAINTENANCE

Refer to your power chair owner's manual for proper cleaning and disposal instructions.

WARRANTY

Refer to your power chair owner's manual for specific information on controller warranty.

NOTES

NOTES

NOTES

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