AMYLIOR

INSTRUCTIONS GUIDE

E-BX PROGRAMMING & TROUBLESHOOTING

Phone : 1 450 424-0288 | Fax : 1 450 424-7211 | info@amylior.com | amylior.com

Table of contents

1 Programming the wheelchair

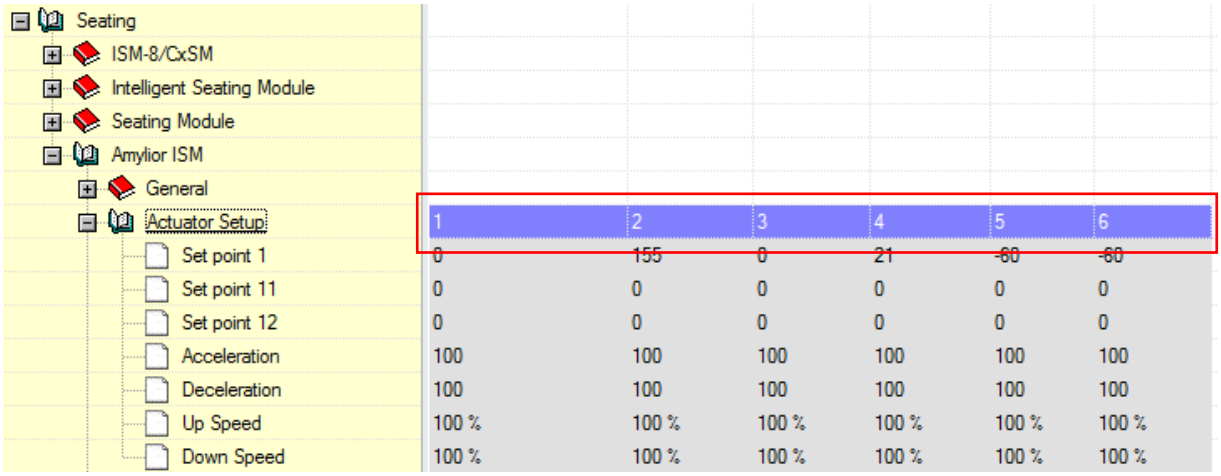
To ensure optimal programming on the Alltrack, use only Amylior's instructions document, R-Net Programmer software, and USB Dongle drivers from the website for the latest version.

Click <Ctrl key> together with this image to access software downloads or use QR code.

2 Adjusting R-Net settings

2.1 E-bx settings under the menu "Seating > Amylior ISM"

2.1.1 Actuator number and its functionality



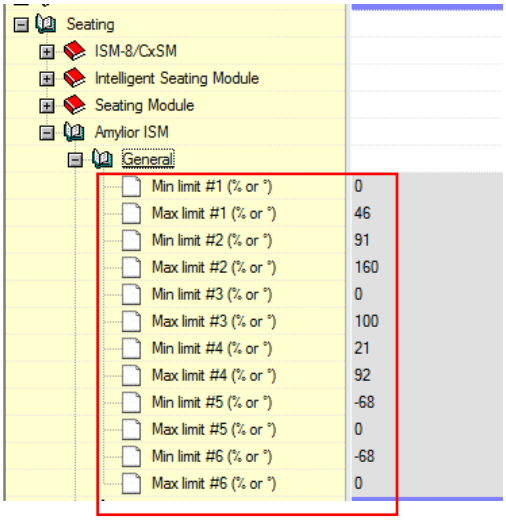
	1	2	3	4	5	6
Set point 1	0	155	0	21	-60	-60
Set point 11	0	0	0	0	0	0
Set point 12	0	0	0	0	0	0
Acceleration	100	100	100	100	100	100
Deceleration	100	100	100	100	100	100
Up Speed	100 %	100 %	100 %	100 %	100 %	100 %
Down Speed	100 %	100 %	100 %	100 %	100 %	100 %

To access all actuators controlled by e-bx, use the following path: "Seating > Amylior ISM > Actuator Setup". In this submenu, the legend for each actuator number is as follows:

1 = Seat tilt actuator	4 = Center mount legrest actuator
2 = Backrest recline actuator	5 = Left legrest actuator or left stander actuator
3 = Seat elevate actuator	6 = Right legrest actuator or right stander actuator

The functions assigned to actuators 5 and 6 depend on the chair's power options. If the chair has the standing option, actuators 5 and 6 will be assigned to the standing module. If the chair has the separate power legrests, then the actuators 5 and 6 will be assigned to the left and right legrests.

2.1.2 Settings under the “General” submenu



The settings included the “General” submenu are all the adjustments available for setting minimum and maximum limits on each actuator. The following table shows all the possible settings.

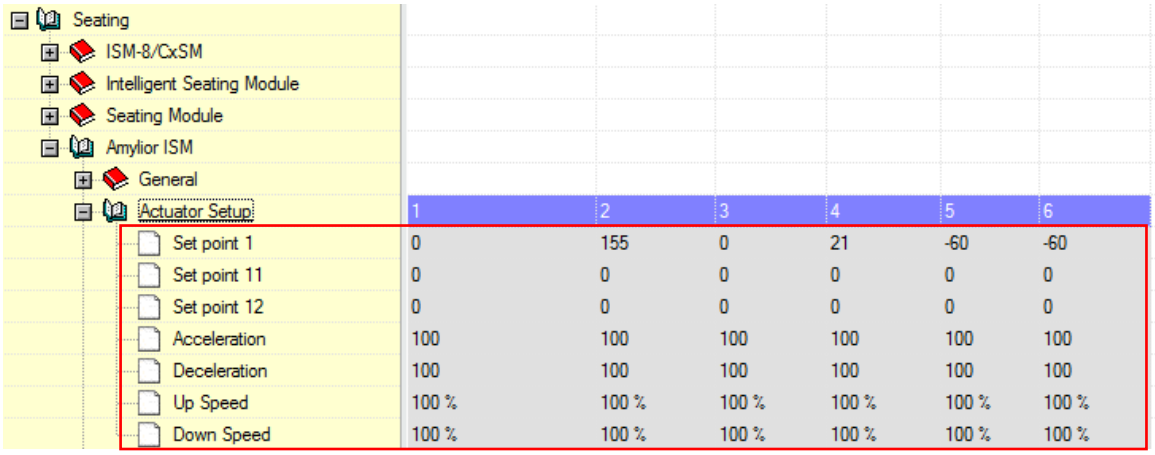
2.1.2.1 Settings under the “General” submenu

Settings	Applicable actuator	Description	Range	Defaut settings
Min limit #1 (% or °)	Actuator #1 (Tilt) **Note 1**	Minimum setting for tilt position (Angle between seat plate and chair base). **Note 2**	0° to 46°	0
Max limit #1 (% or °)	Actuator #1 (Tilt) **Note 1**	Maximum setting for tilt position (Full tilt) max angle between seat plate and base.	0° to 46°	46
Min limit #2 (% or °)	Actuator #2 (Recline)	Minimum setting for backrest recline position (Angle between seat plate and chair base).	91° to 160°	91
Max limit #2 (% or °)	Actuator #2 (Recline)	Maximum setting for backrest recline position (Fully reclined) maximum angle between seat plate and base. **Note 9**	91° to 160°	160
Min limit #3 (% or °)	Actuator #3 (Elevate) **Note 4**	Minimum setting for seat elevate position (Percentage of the range of elevation). **Note 2**	0% to 100%	0
Max limit #3 (% or °)	Actuator #3 (Elevate) **Note 4**	Maximum setting for seat elevate position (Fully elevated) percentage of range. **Note 3**	0% to 100%	100
Min limit #4 (% or °)	Actuator #4 (Center mount)	Minimum setting of center mount legrest position (Legrest fully elevated) minimum angle between legrest and seat plate line. **Note 5**	92° to 5°	5
Max limit #4 (% or °)	Actuator #4 (Center mount)	Maximum setting of center mount legrest position (Legrest fully lowered).	92° to 5°	92
Min limit #5 (% or °)	Actuator #5 (Left legrest)	Minimum setting of left legrest position (Legrest fully elevated) minimum angle between legrest and seat plate line.	67° to 11°	11
Max limit #5 (% or °)	Actuator #5 (Left legrest)	Maximum setting of left legrest position (Legrest fully lowered).	67° to 11°	67
Min limit #6 (% or °)	Actuator #6 (Right legrest)	Minimum setting of right legrest position (Legrest fully elevated) minimum angle between legrest and seat plate line.	67° to 11°	11
Max limit #6 (% or °)	Actuator #6 (Right legrest)	Maximum setting of right legrest position (Legrest fully lowered).	67° to 11°	67
Min limit #5 (% or °)	Actuator #5 (Left stander)	Minimum setting of left stander actuator (Standing module fully deployed) minimum angle between the seat plate and the base **Notes 6 et 7**	-70° to 0°	-68
Max limit #5 (% or °)	Actuator #5 (Left stander)	Maximum setting of left stander actuator (Standing module completely closed) **Notes 6 et 7**	-70° to 0°	0

Settings	Applicable actuator	Description	Range	Defaut settings
Min limit #6 (% or °)	Actuator #6 (Right stander)	Minimum setting of right stander actuator (Standing module fully deployed) minimum angle between the seat plate and the base **Notes 6 et 7**	-70° to 0°	-68
Max limit #6 (% or °)	Actuator #6 (Right stander)	Maximum setting of right stander actuator (Standing module completely closed) **Notes 6 et 7**	-70° to 0°	0

- **Note 1 :** Not applicable on actuators for very heavy-duty seat tilt (450 lb to 550 lb).
- **Note 2 :** If the chair has the power standing option, this setting should never be other than "0", otherwise the standing function will not work.
- **Note 3 :** Setting the height limit can be determined with the following "rule of three": Height limit value needed in % = (Height limit value in inches x 100)/11 inches (maximum height range).
  E.g. Height limit value needed is 5.5 inches → (5.5 X100)/11 = 50%.
  Therefore, the height limit value of *Max limit #3* is 50%
- **Note 4 :** Not applicable on actuators for heavy-duty seat elevate (300 lb to 400 lb).
- **Note 5 :** If the chair has the power standing option, minimum setting of center mount legrest is 21°. It is possible to change this value, but watch for leg hyperextention when in standing mode.
- **Note 6** : Minimum and maximum limits for the left and right stander actuators must be set at the same value.
- **Note 7** : It is strongly recommended not to set this limit lower that -68° (example -70°) because the legrest mechanism may collide with the base of the chair.
- **Note 8** : This setting should never be other than "0" as this would prevent the seat tilt and seat elevate from functionning.
- **Note 9** : **WARNING!** If the chair has the power standing option, it is not recommended to change this value because the backrest will not completely open to its vertical position which makes it dangerous for the user who may risk being thrown forward.

2.1.3 Settings under the “Actuator Setup” submenu



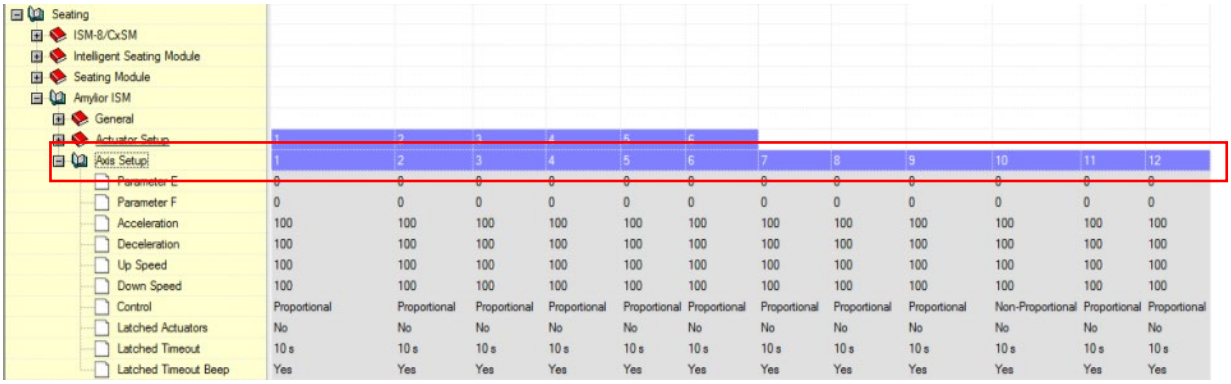
"Actuator Setup" submenu displays all stander actuator settings for proper position angles to allow a "comfortable" operation i.e. Soft start/stop. To adjust the stander actuator for a soft stop, use "Set point 1". This position is the first stop when the stander is deployed. This submenu also contains all the settings for actuator movement speeds, acceleration/deceleration, starts and stops. The following table shows all the possible settings.

2.1.3.1 Settings under the "Actuator Setup" submenu

<table>
<tr><th>Settings</th><th>Applicable actuator:</th><th>Description</th><th>Range</th><th>Default setting</th></tr>
<tr><td>Set point 1</td><td>For stander actuators only: Recline actuator (#2), center mount actuator (#4) and stander actuators (#5 & 6)</td><td>Soft stop angle adjustment in degrees for recline, center mount and stander actuators when standing function is deployed.
Note 1 below</td><td>From minimum to maximum values under the "General" submenu.</td><td>Recline: 155
Center mount legrest: 21
Stander: -60</td></tr>
<tr><td>Set point 11</td><td colspan="4" rowspan="2">Not used. Settings for future development.</td></tr>
<tr><td>Set point 12</td></tr>
<tr><td>Acceleration</td><td rowspan="4">For all actuators except the stander actuator. The standing module follows a specific pattern when deployed and do not consider these settings</td><td>Percentage value of speed acceleration adjustment when actuator starts moving. For a soft start, the value of this setting is reduced.</td><td rowspan="2">1 % to 100 %</td><td rowspan="4">100</td></tr>
<tr><td>Deceleration</td><td>Percentage value of speed deceleration adjustment when actuator stops moving. For a soft stop, the value of this setting is reduced</td></tr>
<tr><td>Up Speed</td><td>Percentage value of actuator speed when deploying (opening).</td><td rowspan="2">25% to 100%</td></tr>
<tr><td>Down Speed</td><td>Percentage value of actuator speed when retracting (closing).</td></tr>
</table>

- **Note 1** : The angle for stander actuators 5 and 6 must be set at the same value.

2.1.4 Axis number allocation under the "Axis Setup" submenu.



Under this submenu, there are twelve axis numbers which correspond to a specific function. Each axis can control between 0 to 6 actuators at the same time according to their predetermined functions. These axes can also control operations such as standing, memory setting and actuator position recalling.

For chairs without the power standing option, the following table shows basic functions assigned to each axis.

*2.1.4.1 Table 1: Axis assignment of actuators for chairs **without** stander*

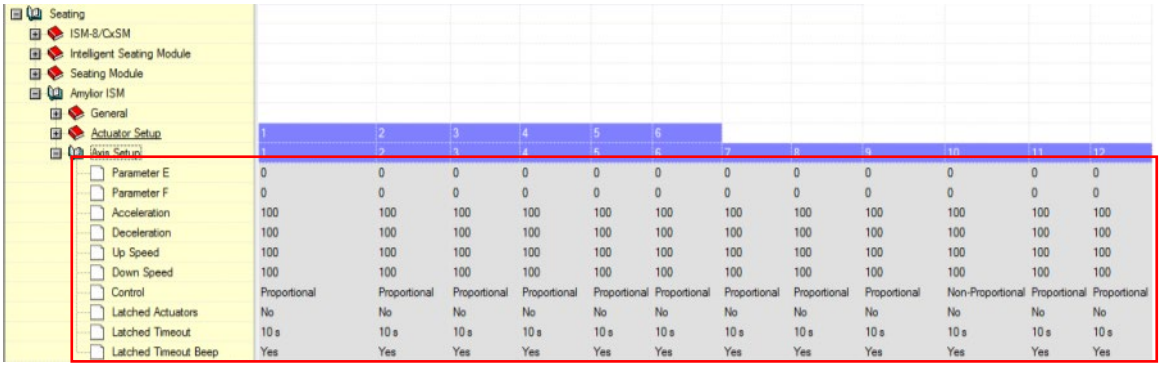
Axis number	Function/Actuator
1	Tilt
2	Recline
3	Seat elevate
4	Left legrest
5	Right legrest
6	Left & right legrests
7	Recline and Left & right legrests
8	Center mount legrest
9	Recline and Center mount legrest
10	Not used
11	Memory positions 1 & 2
12	Memory positions 3 & 4

For chairs with the power standing option, the following table shows basic functions assigned to each axis.

*2.1.4.2 Table 2: Axis assignment of actuators for chairs **with** stander*

Axis number	Function/Actuator
1	Tilt
2	Recline
3	Seat elevate
4	Not used
5	Not used
6	Not used
7	Not used
8	Center mount legrest
9	Recline and Center mount legrest
10	Stander
11	Memory positions 1 & 2
12	Memory positions 3 & 4

2.1.5 "Axis Setup" settings



These settings are for adjusting certain movements on the different power options.

The following table shows all the possible settings.

2.1.5.1 Settings under the "Axis Setup" submenu

Settings	Applicable actuator:	Description	Range	Default setting
Parameter E	Not used. Settings for future development.			
Parameter F				
Acceleration	Standing function only	Percentage value of speed acceleration setting when actuators start moving for the stander's deployment. .	1% to 100% **Note 1**	100
Deceleration	Standing function only	Percentage value of speed deceleration setting when actuators stop moving after the stander's retraction. .		
Up Speed	Standing function only	Percentage value of deployment speed of actuators for the standing function.	25% to 100% **Note 1**	
Down Speed	Standing function only	Percentage value of retraction speed of actuators for the standing function.		
Control	All functions assigned to an axis number	Performance setting for the joystick controlling the axes. In **non-proportional** mode, whether toggling lightly or with intensity, forward or backward, actuators assigned to an axis will move at the speed setting found in the "Actuator Setup" or "Axis Setup" submenus (for stander speed). In **proportional** mode, the speed of actuators assigned to an axis will vary according to the joystick's position forward or backward. When toggled all the way, the speed of actuators assigned to an axis with move at the speed setting found in the "Actuator Setup" or "Axis Setup" submenus (for stander speed).	Non-proportional or proportional mode	All axes are adjusted to proportional mode except for Axis 10 of the stander. **Note 2**

Settings	Applicable actuator:	Description	Range	Default setting
Latched Actuators	All functions assigned to an axis number	Enables or disables the latch option. The latch option maintains movement of the actuators assigned to an axis for a length of time. When this option is enabled, any movement on an axis will make all actuators for this axis move and maintain motion for a certain length of time. You can stop this movement, at any time, by pressing any buttons on the keypad (SWKEYPAD) or by toggling joystick forward or backward. **Note 3**	No or Yes	No
Latched Timeout	All functions assigned to an axis number	Setting the length of time that the actuators for the axis are in motion. **Note 4**	0 to 250s	10s
Latched Timeout Beep	All functions assigned to an axis number	Enables or disables the joystick's audible warning that can be heard at around 2 seconds before the latched mode movement ends.	No or Yes	Yes

- **Note 1 :** Even though the standing function is adjustable, it is recommended not to change the value of these two settings. This can affect the standing function's performance and create errors while in motion. Before modifying these settings, contact Amylior for approval.
- **Note 2** : Even though the Control setting for the standing function's axis is adjustable, it is recommended not to change the setting to "proportional". This can affect the standing function's performance and create errors while in motion. Before modifying this setting, contact Amylior for approval.
- **Note 3** : For both axes reserved for memory positions (#11 & #12), Control must be set to non-proportional for the Latched Actuators to work properly.
- **Note 4 :** The length of time from the minimum position to the maximum position (deployment) for each actuator should be around the times shown in the following table.

2.1.5.2 Approximate length of time for actuator deployment

Recline: 26s	Seat elevaste: 23s	Right & Left legrests: 30s
Tilt: 22s	Center mount legrest: 25s	Stander (from the minimum position to the Soft Stop "comfortable" position): 47s

Note that the default values were established for the chair's optimal comfort and performance. It is recommended to be very careful and vigilent before modifying any settings.

3 E-bx special boot-up modes and position reset.

WARNING!
Never use special boot-up modes if the user is in the chair. This can cause serious injury to the user. When these modes are in use, actuator movement limits are temporarily disabled and can create major mechanical conflicts. These modes should only be used for troubleshooting different problems with the chair. Handle with care as there is also a risk of damaging some of the chair's mechanisms or components. Judgement and vigilance are key while using these special boot-up modes. To exit the mode once it is no longer needed, turn the chair off and turn it back on.

3.1 Overview of both special boot-up modes

There are two special boot-up modes on the e-bx. These modes are very useful tools for technicians to determine the cause or sources of power option failure; to boot-up actuators that may have lost their positioning; or to replace a defective actuator related to the e-bx. Each mode has its own distinctive features.

3.2 Activating special boot-up modes

Before activating these modes, the joystick must be off. Locate the button under the e-bx. Using a screwdriver push the button and maintain it. At the same time while keeping the button pushed, turn on joystick to start the system. The green LED, located beside the button, flashes with a delay of two seconds. The number of flashes corresponds to the mode required. Release the button when the number of flashes equals the mode required. Therefore, if the first mode is required, release the button at the first green LED flash and if the Second mode is required, release at the second flash.

Tables in this section provide a summary of features for each mode.

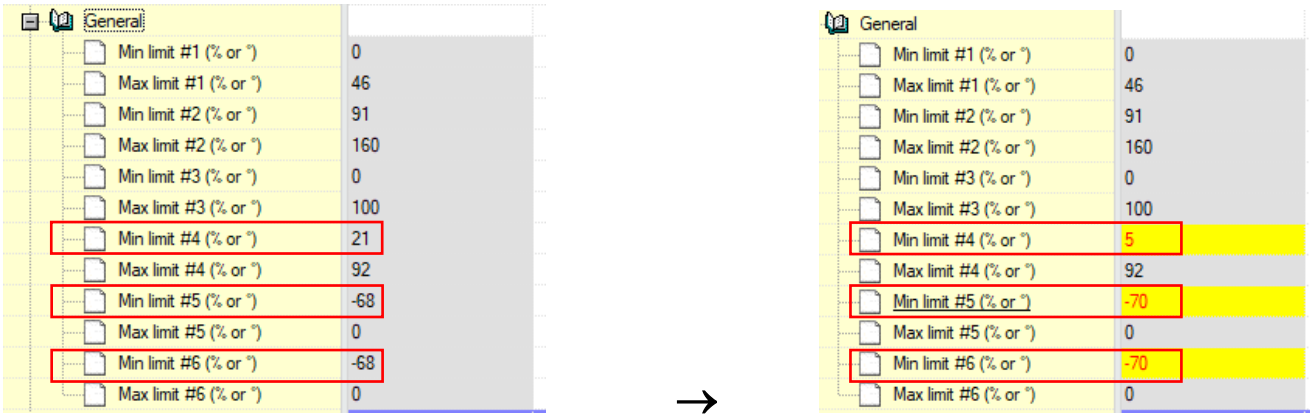
3.3 First special boot-up mode

This mode was designed to help determine if an actuator is defective or if it stopped moving because of a problem with the controller. This mode can also be used for an actuator position reset. In this mode, all movement limitations will be disabled except for minimum and maximum limits for each actuators under the "General" submenu (section 2.1.2.1.)

3.3.1 Table for the first special boot-up mode

Number of green LED flashes at start-up on the e-bx	Mode 1 indications	What becomes disabled	Applicable actuators	Features
1	• Red light left of the pushbuttons (SWKEYPAD) flashes constantly. • Power options are displayed in “seating” on joystick screen	Actuator movement limits are disabled. If actuator positioning system is defective, movement will not be possible.	• Tilt (1). See **Note 1** • Recline (2). See **Note 1** • Seat elevate (3). See **Note 1** • Center mount legrest (4). See **Note 2** • Left legrest (5). See **Note 1** • Right legrest (6). See **Note 1** • Left stander (5). See **Note 2** • Right stander (6). See **Note 2**	• Allows a minimum and maximum position reset of any actuator that are not defective. • Works with joystick and pushbutton keypad (SWKEYPAD) • Possible error warnings are not disabled • The stander operates normally and will automatically soft stop at the comfortable position. • The chair is not restricted in its driving by default except for normal limit settings.

- **Note 1: Resetting actuators using the first special boot-up mode**
  For custom limits: Note all settings beforehand. Replace them with values shown in the Default Settings column of the General submenu table (Section 2.1.2.1) and then proceed to a position reset of actuator(s). Restore the settings to their original values before returning the chair to the user.
- **Note 2: Resetting stander actuators using the first special boot-up mode**
  For the standing function, the center mount legrest actuator minimum limit and that of the stander actuators are not set to the minimum physical limit of these actuators. Since the value shown in the Default Settings column of the General submenu table (Section 2.1.2.1) is not the minimum physical limit of stander actuators, the values must be replaced as follows:



Once these values are set, procced with a position reset of the center mount legrest actuator or of the stander actuators through the first special boot-up mode.

Important! Prior to modifying settings, take note of the original values. These values will be restored before returning the chair to the user.

3.4 Second special boot-up mode

Once the Second special boot-up mode is accessed, a position reset of actuators can be done by moving the targeted actuators from the minimum position to the maximum position using the keypad (SWKEYPAD). Retract all actuators to neutral position before exiting this mode and return to normal mode by turning chair off and back on. To execute a position reset, refer to the Features column in the table below.

3.4.1 Table for the Second special boot-up mode

Number of green LED flashes at start-up on the e-bx	Mode 2 indications	What becomes disabled	Applicable actuators	Features
2	• Red and green LEDs on the pushbutton keypad (SWKEYPAD) constantly flash. • Power options are not visible on the joystick's display in "Seating" mode	• All position limits • All error alarms that may occur • All automatic actuator functions and memory positions.	All actuators See **Note 1.** For stander actuators See **Note 2**	• Allows a minimum and maximum position reset of actuators. • Works only with pushbutton keypad (SWKEYPAD). • Only actuators connected to channels A to E can be activated. If needed, connect channel F actuator to channel E to move it in this mode. The left pushbutton activates channel A, the second from the left activates channel B and so on. • All automatic functions such as stander actuator management during deployment and memory position recall are disabled. All actuators become independent. • The chair goes into drive lock-out and can no longer move.

- **Note 1**: **The Second special boot-up mode**
  Only in this mode, can actuators connected to channels A to E on the e-bx be activated. As an example, upper and lower buttons on the extreme left of the keypad (SWKEYPAD) control the actuator connected to channel A. The second set of buttons from the left, control the actuator connected to channel B and so on for the other actuators. If an actuator is connected to channel F as in the case of the right legrest actuator or the right stander actuator, disconnect one of the cables not going through the position reset (among channels A to E) and connect the channel F actuator cable to the newly freed channel. Once position reset has been done, reconnect actuator cables in their original channels.
- **Note 2**: **Actuator position reset using the Second special boot-up mode**
  In this mode, if one or both stander actuators need to go through a position reset, the center mount legrest needs to be completely up so that it doesn't collide with the base when stander actuators deploy. To prevent the stander mechanism from twisting, both stander actuators must move at the same time while pressing upper or lower buttons on the keypad (SWKEYPAD) that correspond to the stander actuators. Move stander actuators to a full deployment (both upper buttons) followed by a complete retraction (both lower buttons).

  IMPORTANT!
  When an actuator is replaced, it must go through a position reset using the Second special boot-up mode because the new actuator's positioning may have changed during installation. In the case where an entire standing module is replaced, a position reset is not necessary because the actuator cannot be incorrectly set.

4 Troubleshooting guide

4.1 All about error codes

Important! Before handling anything, take note of the error code, the power option, the keypad's (SWKEYPAD) pushbutton(s) and/or the memory position that generated the error. Error codes are prompted either on the joystick's screen, with the number of times the light underneath the e-bx flashes or in the program journal of the "R-Net Programmer" application. This is useful for knowing what direction to take when solving the problem.

4.1.1 Error code reading on the joystick's screen

There are basically two types of joysticks: joysticks with a color screen and joysticks with a LED display.

A joystick with a color screen will show a message such as "e-bx Module Error 9662" to indicate an error. The number in the message is the error code. The meaning of error codes is described in the Error Codes table in section 4.1.4 below.

A joystick with a LED display will show a change in the lighting pattern to indicate an error. Depending on the error generated, the lights will turn on, turn off or flash. The meaning of error codes is described in the Error Codes table in section 4.1.4 below.

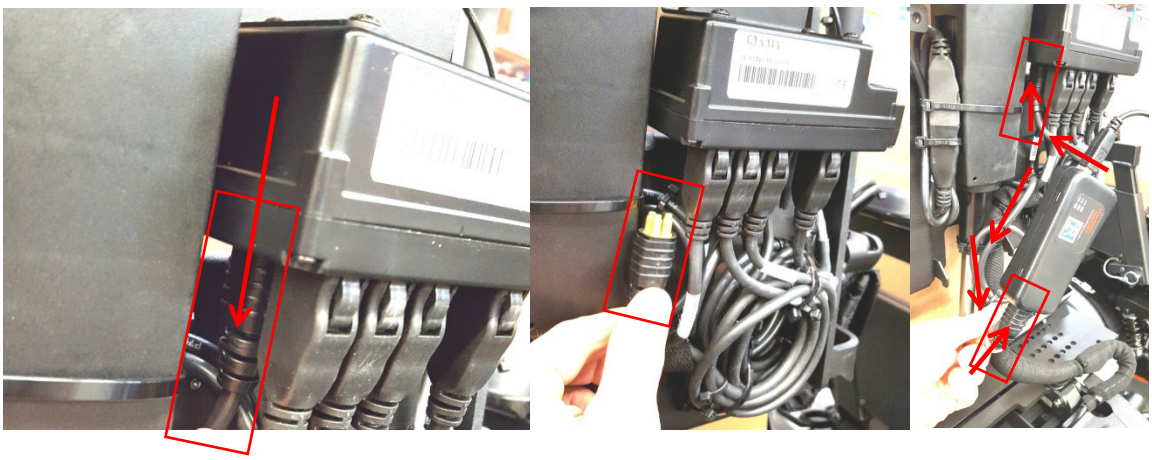
4.1.2 Error code reading by counting the number of times the indicator light underneath the e-bx flashes

If there is an error, the green indicator light underneath the e-bx can indicate certain error codes. The error is shown with a two-second pause separating the very first flash and the second flash. During this pause, the light is off. When the light starts flashing, count the number of times it flashes before the light turns off again for another two-second pause. After this pause, the light will flash again the same amount of times until the next pause, and the cycle repeats.

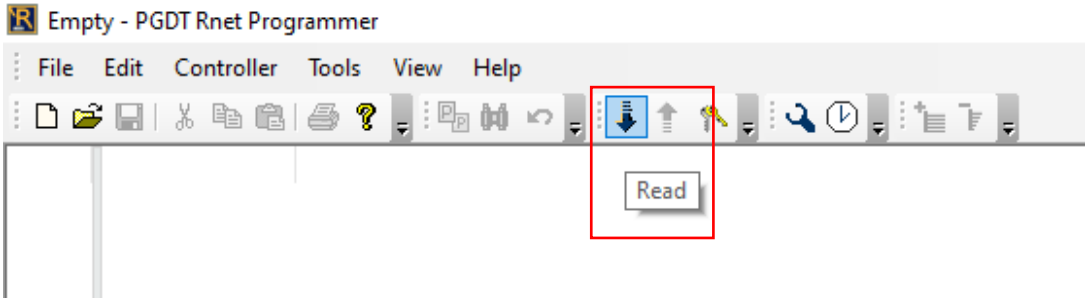
4.1.3 Error code reading using the program journal of the “R-Net Programmer” application

Connect the R-Net dongle to the computer’s USB port.
Remove the chair’s backrest cover.

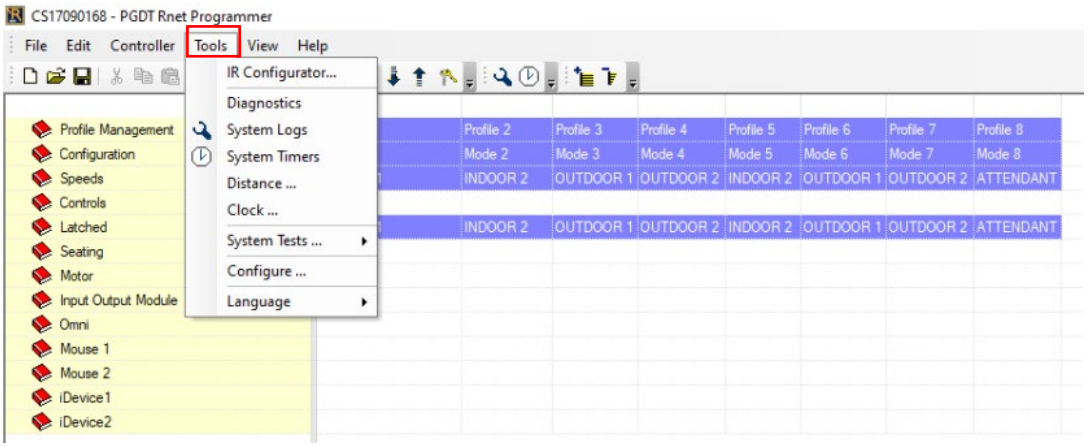
Plug the R-Net dongle into the chair by removing one of the R-Net cables connected to the chair, for example, one of the 2 cables connected to the e-bx and turn on the chair using the joystick.



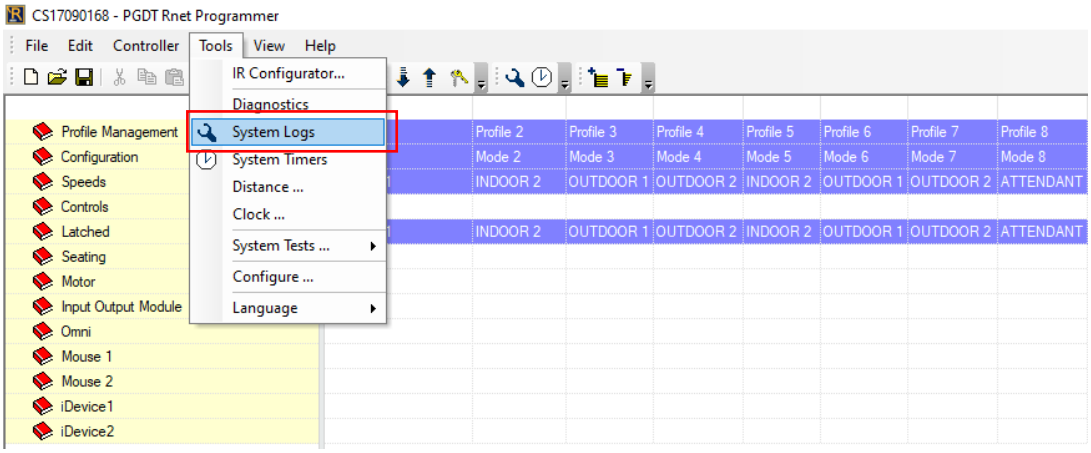
Open the PGDT « R-Net Programmer » application and click on Read, the icon with the black arrow point down.



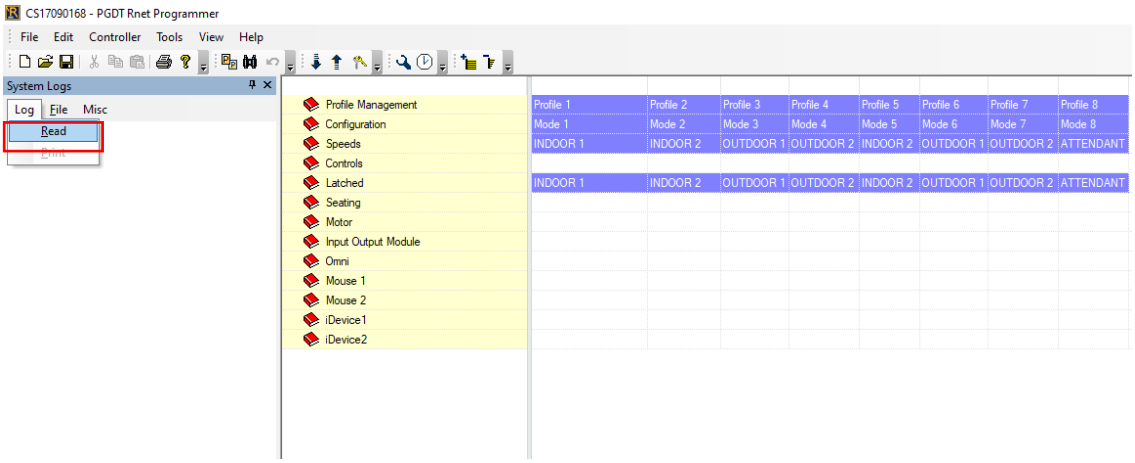
Click on the Tools tab.



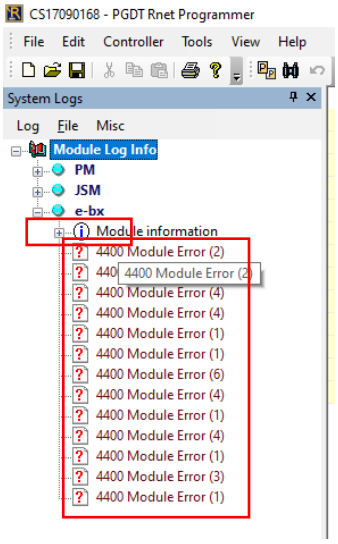
Click on Systems Logs menu



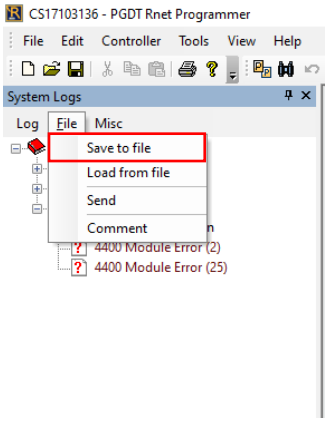
The following window will appear on the left. Click on the Log tab and select Read menu.



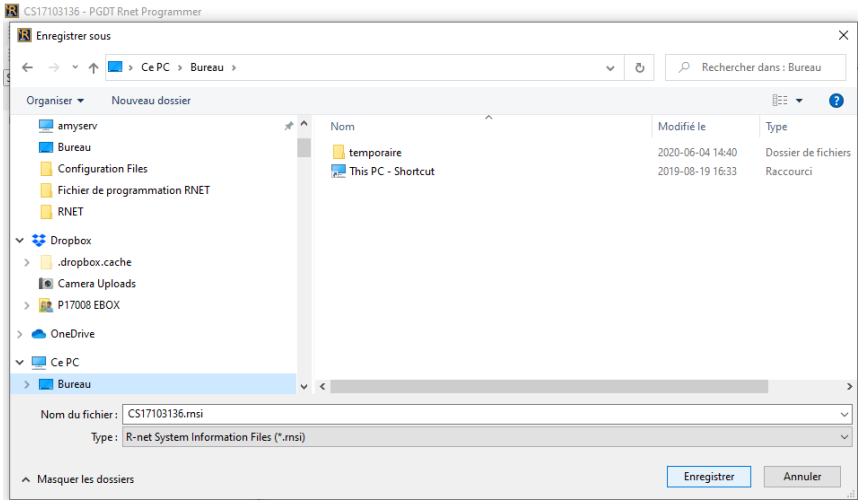
From Module Log Info directory, select e-bx. The list of error codes will appear starting with 4400.



The e-bx actual error codes are not shown on the Dealer version of the application. The file containing the error codes must be sent to Amylior to be examined and analyzed. To save the journal of error codes, click on the File tab and select Save to file.



Choose the location for the saved file, e.g. the desktop. Send the saved file as an attachment in an email to Amylior: techsupport@amylior.com



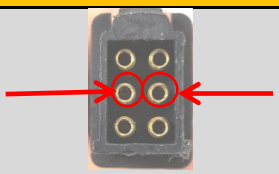
4.1.4 Error codes table

The table below lists possible error codes, the reason for error occurrence, and ways to resolve them. The following section (4.1.5.1) describes methods on “How to” and provides “additional information”.

NOTE: In the table below, checking or replacing a cable (actuator extension cable or R-Net cable) can be done with **a temporary cable not belonging to the chair**. This makes it possible to verify whether the suspected faulty cable is truly defective without wasting time in unnecessary disassembly.

Error code displayed on joystick with color screen	Error code on joystick with LED display (indicator lights)	Number of flashes of indicator light on e-bx	Reason	Problem solving tips
9600		14	Problem inside the e-bx controller **(from now on referred to as e-bx)**	1. Make sure that all connections to the e-bx are secure and that none are damaged. After inspection, turn off the R-Net system and turn it back on. 2. If the problem persists, replace the e-bx.
9601		14		
9602		14		
9603		14		
9604		14		
9605		14		
9606		14		
9607		14		
9608		14	Wrong version of R-Net	1. If necessary, update the e-bx firmware. 2. If the update does not solve the problem, reconfigure the R-Net system. 3. If the problem persists, replace the e-bx.
9609		14	Problem inside the e-bx	1. Make sure that all connections to the e-bx are secure and that none of the cables are damaged. After inspection, turn off the R-Net system and turn it back on. 2. If necessary, update the e-bx firmware. 3. If the problem persists, replace the e-bx.
960A		14		
9620		8		
9621		9		
9640	The speed indicator light flashes 10 times, then the battery voltage indicator turns off and one light of the battery voltage level flashes twice.	7	Problem with the internal calibration of e-bx	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If error reoccurs, replace the e-bx.
9641		14	Interrupted R-Net communication	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If error reoccurs, replace the e-bx.

Error code displayed on joystick with color screen	Error code on joystick with LED display (indicator lights)	Number of flashes of indicator light on e-bx	Reason	Problem solving tips
9642		2	The e-bx internal relay is defective.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If error reoccurs, verify battery voltage. Refer to section 4.1.5.1.1, **Erreur ! Source du renvoi introuvable.**further. The code is displayed if the if the voltage is lower than 17 VDC 3. If the battery is too low, recharge it. Once fully charged, turn chair off and back on. 4. If battery voltage is good, verify both R-Net cable buses between the R-Net power module and the e-bx. 5. If both R-Net cable buses are properly connected and in good condition, replace the e-bx controller. 6. Once the e-bx has been replaced and the problem is solved, make sure that power positioning modules do not jam and that all actuators work properly throughout their entire range of movement. 7. If one of the actuators does not work or constantly stops its movement, it is possible that this actuator, its cable, or its power positioning module could be the cause for premature wear of the e-bx. In this case, also replace the actuator, its cable or the power positioning module components as required.
9643				
9644		3	The actual voltage of the 12-volt supply in the e-bx's internal circuitry is too low.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If error reoccurs, unplug the keypad's cable DB9 connector (female) from the e-bx, then turn chair off and back on. 3. If error does not reoccur, verify the condition of the DB9 connectors on the e-bx and the keypad cable. There shouldn't be any trace of verdigris, any crooked or broken pins. Replace the e-bx or the keypad's pushbuttons as required. 4. If error does not reoccur after disconnecting the cable from the keypad and the DB9 connector are in good condition, properly reconnect the DB9 cable back onto the e-bx and see if the error reoccurs. If it does, replace the keypad's pushbuttons. 5. If error reoccurs after disconnecting pushbuttons from keypad, unplug all actuator extension cables from the e-bx, then turn chair off and back on. 6. If error does not reoccur, verify that actuator extension cables and those of the e-bx are properly connected and replace inconsistent or damaged parts if need be. 7. Using a multimeter, reconnect, one by one, actuator extension cables into the e-bx until error pops up. Disconnect from the e-bx the cable causing error, but keep it connected to its actuator. With the ohmmeter, measure the resistance between both center female terminals on the extension cable. The ohmmeter reading should be between 3.5 kOhms and 35 kOhms.

Error code displayed on joystick with color screen	Error code on joystick with LED display (indicator lights)	Number of flashes of indicator light on e-bx	Reason	Problem solving tips
				  8. If the reading is lower than 3.5 kOhms, disconnect the actuator from its extension cable and take another reading. The reading should show the infinity sign (OL). If the reading is lower than infinity (OL), replace the extension cable. 9. If the resistance reading is infinity (OL) on the extension cable only and the value is lower than 3.5 kOhms, replace the actuator. 10. If a multimeter is not available and nothing is inconsistent or damaged, reconnect each actuator extension cables, one by one, to the e-bx until an error pops up and verify which cable or which actuator caused the error. Turn off chair, replace extension cable and reconnect actuator causing error. Turn chair back on. 11. If error reoccurs, replace the actuator. 12. If after executing all these steps, the source of the error is still not found, replace the e-bx.
9645		2	Problem with the output unit of the e-bx	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. Make all actuators move in each direction. If error reoccurs, replace actuator and its extension cable responsible for generating the error and then replace the e-bx.

Error code displayed on joystick with color screen	Error code on joystick with LED display (indicator lights)	Number of flashes of indicator light on e-bx	Reason	Problem solving tips
9646	The speed indicator light flashes 4 times, then the battery voltage indicator turns off and the last light of the battery voltage level flashes twice.	4	Internal temperature is too high.	1. Turn off chair and let the system cool off for 30 minutes. 2. Verify that all actuators are working properly, and they do not jam or stop during their full range of movement. Inspect the power positioning modules of all power options. Replace any suspicious actuator as well as any defective power positioning component as required. 3. After waiting 30 minutes for the system to cool off, turn the chair back on. If error persists, replace the e-bx.
9647		4	Total current drawn from actuator is too high.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. Determine the situation responsible for this error. Usually this error occurs when the power drawn from several actuators at the same time exceeds their nominal capacity. This phenomenon could also occur when recalling memory positions or when using the stander because many actuators are operating at the same time. 3. Verify that all power positioning modules operate properly and that they are not damaged or bent (broken welds, cracked bolts or missing parts). 4. Verify each power functions individually to see if one or more actuators constantly stop during movement under a load (e.g. with user in chair). 5. Replace the actuator(s) that appear(s) to constantly stop under a load. 6. If none of the actuators constantly stop under a load or the replacement of one or more actuators does not solve the problem, reduce the speed and/or acceleration of the actuators responsible for the error with the R-Net Programmer application. Refer to section 2.1.3, Settings under the Actuator Setup submenu for regular actuator functions and section 2.1.5, Settings under the Axis Setup submenu for the standing function actuators. 7. If after executing all these steps, the error reoccurs, replace the e-bx.
9648		10	The internal program is no longer responding	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If error persists after turning the chair off and on, replace the e-bx.
9649	Only one light of the battery voltage level is flashing	3	Battery voltage is too high or too low.	1. Check battery voltage. Refer to section 4.1.5.1.1, Checking battery voltage. This error code is generated when battery voltage falls below 15 VDC. 2. If battery is too low, recharge it. Once fully charged, turn chair off and back on. 3. If voltage is between 20 V and 27.5 V and error reoccurs, verify that all R-Net bus cables and connectors, between the R-Net power module and the e-bx are in good condition. (Refer to section 4.1.5.1.3, Verifying R-Net bus cables, actuator cables and intermittent problems) 4. Battery voltage is good and R-Net bus cables are good, but the error persists after turning chair off and back on, verify battery connections and tighten battery terminals as required.

Error code displayed on joystick with color screen	Error code on joystick with LED display (indicator lights)	Number of flashes of indicator light on e-bx	Reason	Problem solving tips
				5. Battery connections are good, but the error persists after turning chair off and back on, verify the condition of connections as well as the cables connecting the battery to the power module. (Refer to section 4.1.5.1.2, Verifying power cables). Replace defective cables as required. 6. Battery cables are good and the power supply to the chair is adequate, but the problem reoccurs, replace the R-Net power module on the chair.
965A	The power options indicator light flashes 4 times and the 2 last green lights on the battery voltage level turn off and stay off while the other 8 lights flash quickly twice. Once this sequence has finished, another sequence starts again and this, in perpetuity.	5	• A configuration mistake has been detected. • R-Net settings in the e-bx section are not compatible with the configuration of one or more of the chair's actuators	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur while examining the operation of all actuators during basic power option deployment as well as more advanced movements such as memory position recalling and standing function. 2. If returning to factory settings does not solve the problem, reprogram the chair with R-Net Programmer settings file saved on the computer. 3. If reprogramming does not solve the problem, replace the e-bx. 4. If an error occurs after having replaced an actuator, replace the power option actuator that generated the original error by a new actuator specifically configured for this chair. 5. If replacing the actuator does not solve the problem, copy the chair settings into an R-Net file on the computer and perform a "Return to factory settings" while referencing the PGDT SK78009 manual.
965B	– Both speed and power option indicator lights turn off. – The level on the battery voltage turns off, then one light flashes twice and then all lights turn on. – After 4 seconds, the cycle repeats.	5	• One or more actuators were not included or detected when position was stored in memory • Position stored in memory did not include the recent actuator(s) added to the chair.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. Verify that all power options work without any problems. 2. Verify actuator cables (Refer to section 4.1.5.1.3, Verifying R-Net bus cables, actuator cables and intermittent problems. 3. If after step 1 and 2, power options are operating without any problems, go to step 5 below. 4. If one power option does not work properly or is not detected, verify connections and faulty actuator cables. (Refer to section 4.1.5.1.3, Verifying R-Net bus cables, actuator cables and intermittent problems). Verify the faulty actuator and replace responsible or suspicious components. 5. To verify that the faulty position has been properly restored, store this position in memory. Recall another position and recall once again the original faulty position to make sure the error does not reoccur. (To store positions in memory, refer to the Alltrack power wheelchair Owner's manual). 6. If error reoccurs, reprogram the R-Net power module 7. If after reprogramming the R-Net power module and turning chair off and back on, the error reoccurs, replace the e-bx.
965C	Speed, power options and battery voltage level indicator lights flash.	5	• One of the stander actuators is not available. • Wrong configuration (of one of the stander	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. If error code appears after replacing an actuator, it is possible that the actuator's configuration is not compatible with the R-Net power module settings. Replace this actuator with a new properly

Error code displayed on joystick with color screen	Error code on joystick with LED display (indicator lights)	Number of flashes of indicator light on e-bx	Reason	Problem solving tips
			actuators) required for the standing function.	configured actuator or reprogram chair settings to be compatible with the new actuator. 2. Reprogram chair settings. 3. If the problem persists, replace the e-bx.
965D	– The 2 last lights on the battery voltage level turn off while its other lights flash constantly. – Speed and power options indicator lights are off.	5	• The difference between both stander actuator positions is greater dans 10%. • One of the stander actuators was not included when storing a position in memory or when a stander actuator was moved manually.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If error occurs after trying to store a position in memory go to error 965B problem-solving steps 3. If error occurs other than trying to store a position in memory, go to the next step. 4. Verify stander actuator extension cables and replace them as required. 5. Reset position on stander actuators using the Second special boot-up mode (Section 3.4) and SWKEYPAD keypad pushbuttons. 6. Reset alarm by turning chair off and back on, making sure the error does not reoccur when stander actuators or other power options are activated. 7. If error persists, reprogram R-Net power module and turn chair off and back on. 8. If the problem persists, replace the e-bx.
9661	Battery voltage level indicator light flashes twice and power options indicator light turns off.	6	• The tilt actuator is defective, or actuator ID card is faulty. • More than one tilt actuator (#1) connected to the same e-bx.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. If error persists, verify extension cable corresponding to error code between actuator and the e-bx. Replace defective cable. 2. If error reoccurs after replacing the extension cable, replace actuator corresponding to error code. 3. If this error reoccurs after replacing the actuator, execute a position reset. Refer to section 3, E-bx special boot-up modes and position reset. If the error persists, turn off the chair and disconnect all actuators from the e-bx except the actuator cable causing error. Turn chair back on. 4. If error does not reoccur after making the actuator responsible for the error move, it is possible that more than one actuator has the same configuration. 5. Reconnect one of the actuator cables previously disconnected and make the original actuator responsible for error code, move. 6. Repeat the previous step for each actuator until the error is generated again and replace the last connected actuator that caused this error. Logically, one of the last actuators replaced should be the one to be replaced again.
9662		6	• The recline actuator is defective, or actuator ID card is faulty. • More than one recline actuator (#2) connected to the same e-bx.	
9663		6	• The seat elevate actuator is defective, or actuator ID card is faulty. • More than one seat elevate actuator (#3) connected to the same e-bx.	

Error code displayed on joystick with color screen	Error code on joystick with LED display (indicator lights)	Number of flashes of indicator light on e-bx	Reason	Problem solving tips
9664		6	• The center mount legrest actuator is defective, or actuator ID card is faulty. • More than one center mount legrest actuator (#4) connected to the same e-bx.	7. If an actuator must be replaced, execute a position reset for the new actuator. Refer to section 3, E-bx special boot-up modes and position reset. 8. If an entire module must be replaced (tilt, recline, seat elevate, legrests), a position reset is not necessary because the new module has been factory-calibrated and the actuator would not have been disrupted during transportation or installation of module onto the chair.
9665		6	• The left legrest or left stander actuator is defective, or actuator ID card is faulty. • More than one left legrest or left stander actuator (#5) connected to the same e-bx.	
9666		6	• The right legrest or right stander actuator is defective, or actuator ID card is faulty. • More than one right legrest or right stander actuator (#6) connected to the same e-bx.	
9680		13	• Failed factory test. • Internal memory is corrupted or defective.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If the problem persists, replace the e-bx.
9690		12	Internal problem in the e-bx.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If the problem persists, replace the e-bx.
9691				
9692				
9693				
9800 à 9817 et 9820-9821		14	Communication problem between the e-bx and the R-Net power module.	1. Reset alarm by turning chair off and back on, making sure the error does not reoccur. 2. If the problem persists, replace the e-bx.

In the event that all the instructions in the “Problem solving” column of the above table have been carried out and the problem (s) persist(s), contact Amylior’s technical support by email at techsupport@amylior.com or by phone at 1 888 453-0311

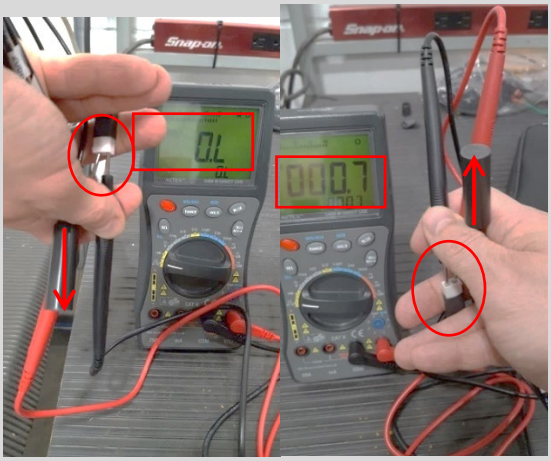
4.1.5 Additional symptoms table

The table below lists main symptoms for possible failures and troubleshooting methods to find the source of the breakdown.

NOTE: In the table below, checking or replacing a cable (actuator extension cable or R-Net cable) can be done with **a temporary cable not belonging to the chair**. This makes it possible to verify whether the suspected faulty cable is truly defective without wasting time in unnecessary disassembly.

	Symptoms	Reason	Troubleshooting tips
A	– Regardless of the chair's power options configuration, it refuses to move forward or backward (Drive Lock Out 'DLO' mode). – The "**red turtle**" symbol flashes on the joystick with color screen or the **yellow LED** on extreme left of speed indicator flashes on the joystick with LED display. **Note**: All power options are available on the joystick.	The power module jumper is not connected properly, damaged or missing	Verify that the jumper on the power module is properly connected and it is not damaged. Replace jumper as required.
B	– Regardless of the chair's power options configuration, it refuses to move forward or backward (DLO mode). – The "**red turtle**" symbol flashes on the joystick with color screen or the **yellow LED** on extreme left of speed indicator flashes on the joystick with LED display. **Note**: None of the power options are available on the joystick.	The e-bx is not on or not detected by the R-Net power module.	1. Verify that the indicator light underneath the e-bx is constantly on or it is flashing and that all power options are available on the joystick. 2. If the e-bx indicator light is off (or doesn't flash) and the power options are not available on the joystick, check that the 24 V power supply is reaching the e-bx through contacts 1 & 4 of the R-Net bus cable 3. If the 24 V power supply is getting to the e-bx and the connection between the R-Net bus cable and the e-bx is good, replace the e-bx. 4. If the 24 V power supply is not reaching the e-bx, verify that the R-Net bus cables are properly connected from the power module to the e-bx. Check for any damage. Replace defective or suspicious cables (with intermittent contact). 5. If the e-bx indicator light turns on and the power options are not available on the joystick, verify that R-Net bus cables between the power module and the e-bx are properly connected and in good condition. Replace defective cables as required. 6. If replacing R-Net bus cables and bus bar does not change anything, replace the e-bx. 7. If replacing the e-bx does not change anything, replace the R-Net joystick. 8. If replacing the joystick does not change anything, replace the R-Net power module.
C	– Regardless of the chair's power options configuration, it refuses to move forward or backward (DLO mode). – The "**red turtle**" symbol flashes on the joystick with color screen or the **yellow LED** on extreme left of speed indicator flashes on the joystick with LED display. **Note**: All power options are available on the joystick.	• The tilt is lifted over 15° (normal operation) • E-bx controller also thinks that the tilt is lifted over 15°.	For chairs with iQ Tilt Actuators (weight capacity of less than 450 lb / 205 kg) or bariatric actuators (weight capacity between 450 lb and 550 lb / 205 kg and 250 kg 1. Lower the tilt to its minimum position and check to see if the chair can move forward or backward again. 2. If the chair still does not move (DLO mode), take the following steps: **For an iQ Tilt Actuator** (Weight capacity of less than 450 lb / 205 kg) a) Access the First special boot-up mode. b) Completely forward retract the power recline. Make the tilt deploy to its maximum position and retract back to its minimum position. If error code #9661 appears on the joystick or this solves the problem, replace the tilt actuator and its extension cable

	Symptoms	Reason	Troubleshooting tips
			For a bariatric actuator (Weight capacity between 450 lb and 550 lb / 205 kg and 250 kg) a) Rise tilt halfway and verify its drive lock-out switch (DLO switch). Make sure the switch is secure and properly adjusted. The switch must activate when the tilt lowers to 15° or less. b) If the switch is secure and properly adjusted, lower tilt. The **red turtle** symbol should disappear (for a joystick with color screen) or the **yellow LED** on extreme left of speed indicator should stop flashing (for a joystick with LED display) and the chair should be able to move forward and backward. c) If securing and properly adjusting the DLO switch does not solve the problem, check the connections as well as the cables between the e-bx and the tilt's DLO switch. Replace switch and/or cables as required.
D	– Regardless of the chair's power options configuration except for the stander, the chair remains in reduced speed (creep mode). – The tilt module does not rise. – The "**orange turtle**" symbol is lit on the joystick with color screen or the yellow LED on extreme left of speed indicator flashes on the joystick with LED display. **Note**: All power options are available on the joystick.	• The seat elevate actuator is higher than 25% of its range (normal operation). • E-bx controller also thinks that the seat elevate actuator is higher than 25% of its range (positioning error).	Lower the elevate module to its minimum position and verify that the **orange turtle** symbol has disappeared (for a joystick with color screen) or that the **yellow LED** on speed indicator has stopped flashing (for a joystick with LED display). **For an iQ Actuator,** if the problem persists, reset alarm by turning chair off and back on, making sure error does not reoccur. 1. If the problem persists, access First special boot-up mode and perform an actuator position reset on the seat elevate using joystick or keypad. 2. If error 9663 appears on the joystick's screen, replace the extension cable as well as the seat elevate actuator. 3. If error 9663 did not appear after a complete seat elevate position reset, turn chair off and back on. 4. Try moving seat elevate again. If errors do not appear, the problem was that the actuator had lost its position. By performing a position reset, the actuator has recalibrated itself. In this case, replace the extension cable and the seat elevate actuator anyway, as this symptom indicates an intermittent problem. **For a bariatric tilt actuator (**Weight capacity between 450 lb and 550 lb / 205 kg and 250 kg) 1. Rise seat elevate halfway and verify the reduce drive switch. Make sure the switch is secure and properly adjusted. The switch must activate when the seat elevate reaches 25% of the height when lowered. 2. If the switch is secure and properly adjusted, lower seat elevate module. The **orange turtle** symbol should disappear (for a joystick with color screen) or the **yellow LED** on extreme left of speed indicator should stop flashing (for a joystick with LED display) and the chair should be able to move forward and backward. 3. If securing and properly adjusting the reduce drive switch does not solve the problem, check the connections as well as the cables between the e-bx and the seat elevate's reduce drive switch. Replace switch and/or cables as required. 4. Regardless of actuator type, if the problem persists, replace the e-bx. 5. If the problem persists, replace the R-Net power module.
E	– The chair equipped with iQ Actuators and a standing module remains in creep mode – Tilt and seat elevate do not rise. – The legrest and backrest recline move within a reduced range.	• Stander is deployed (normal operation). • E-bx controller also thinks that the stander is deployed.	1. Retract the standing module to its minimum position and check that the **orange turtle** symbol has disappeared (for a joystick with color screen) or that the **yellow LED** on extreme left of speed indicator has stopped flashing (for a joystick with LED display) 2. If the **orange turtle** symbol remains on the joystick color screen or the **yellow LED** of speed indicator on the joystick LED display is still flashing, access the First or Second special boot-up modes and perform a position reset on stander actuators. Turn chair off and back on.

	Symptoms	Reason	Troubleshooting tips
			5. If error has disappeared, the problem was that the left stander actuator had lost its position. By performing a position reset, the actuator has recalibrated itself. In this case, replace the extension cable and the stander actuator anyway, as this symptom indicates an intermittent problem. 3. If the problem persists, refer to previous symptom (D) regarding a problem with the seat elevate remaining in creep mode.
F	– The chair equipped with a power tilt and recline (regardless of power options) moves forward and backward without limitations. – The tilt and recline functions can only move forward or can no longer move because they are both forward.	• The tip limit switch is defective or not adjusted properly • One of the connectors between the e-bx and the tip limit switch is disconnected. • A wire between the tip limit switch and the e-bx is cut or damaged. • The tilt or recline actuator has lost its position.	1. Verify the setting on the tip limit switch 2. If the setting is good but the problem persists, remove the tip limit switch, and disconnected it. 3. With a multimeter, check the electrical resistance between the two tabs of the switch connector. Refer to images below. a. An infinite reading is needed on the ohmmeter when the head of the tip limit switch points down. b. A reading below 0.9 Ohms is needed when the head of the tip limit switch points up. c. Repeat these 2 previous steps several times in order the get a reliable reading. If this result is not achieved, replace the tip limit switch.  4. If the problem persists, check that the connectors between the tip limit switch and the e-bx are properly connected and that the cables are in good condition. Replace cables as required. 5. If a multimeter is not available and adjusting the tip limit switch did not solve the problem, replace the switch as well as the cable that connects it to the e-bx. 6. If the problem persists, fully retract the tilt forward and access the First special boot-up mode. Fully recline the backrest and then fully retract it forward. Turn chair off and back on. 7. In a normal way, fully recline the backrest making sure it reaches its maximum position without problems. If the backrest can recline, the actuator and its extension cable must be replaced as this symptom indicates an intermittent problem. 8. If the problem persists, fully retract the backrest forward and access the First special boot-up mode. Fully tilt the chair backward, then fully retract forward. Turn chair off and back on. 9. In a normal way, fully tilt the chair making sure it reaches its maximum position without problems. If the tilt can move, the actuator and its extension cable must be replaced as this symptom indicates an intermittent problem. 10. If the problem persists, replace the e-bx.

Important!
In the case where the modules are retracted and inspection on cables is difficult, use the Second special boot-up mode to move actuators manually. Refer to section 3, E-bx special boot-up modes and position reset. The section below describes methods on “How to” and provides “additional information”.

4.1.5.1 How to and additional information

4.1.5.1.1 Checking battery voltage

Examples of batteries with a low voltage

There are two methods to check battery voltage:

1. Visually, on the joystick’s battery voltage level display
   Refer to example above.
   If only one light is on or flashing, the battery voltage is less than 23.5 Volts. When battery voltage falls below that, the e-bx and the R-Net power module can generate error codes. A fully charged battery will have all 10 lights on. The voltage should be between 25.3 and 27.5 Volts.

2. Using a multimeter in voltage mode, connect probes directly to the joystick’s charger port positive and negative terminals.
   Refer to the images below showing probe connections from multimeter to joystick.
   Turn on multimeter and set it to “V” for voltage mode. Select DC voltage reading mode. It is not possible to get a proper voltage reading in AC mode. Probes must be well connected to desired terminals to obtain a reliable reading.

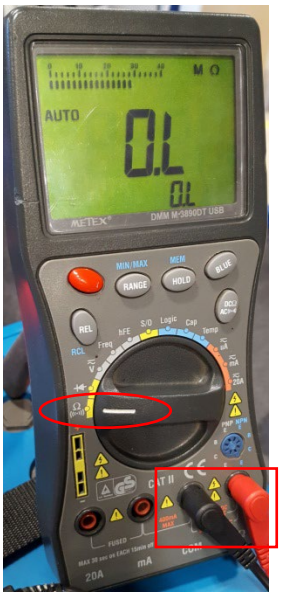
   CAUTION! Extreme care must be taken while connections are made between multimeter probes and desired terminals when reading current measurements because there is a risk of damaging multimeter, probes and chair; of burning oneself; of getting pieces of metal in the eye when getting a reading.

Probe connections from multimeter to joystick

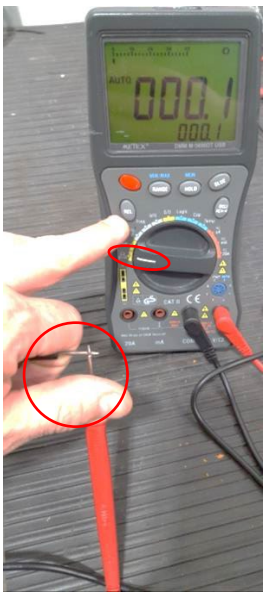
4.1.5.1.2 Verifying power cables

- To verify the condition of the chair's power cables, check their sheaths. There must be no tears, signs of wear or deep throttling which can alter the dielectric insulation properties of the sheath.
- Check that there are no areas of discoloration, blackening, brittle or missing areas on the sheath near the connectors. This indicates that there is a faulty contact which can cause overheating.
- Check that all cables are securely connected to their respective terminals. Cables should not move inside their terminals and there should not be any loose strands of wire near the terminals.
- Check that there are no traces of oxidation or verdigris near the terminals.
- Open the battery compartment and remove the two 12 Volt batteries.
- Disconnect both batteries from the chair by pulling on the black "Anderson" connector to separate both parts.
- Using the voltmeter mode on a multimeter, check the total battery voltage. To do this, turn on the multimeter and select V mode. The multimeter should be in DC voltage reading mode. It is not possible to get a proper voltage reading in AC mode. Probes must be well connected to desired terminals to obtain a reliable reading.
  CAUTION! Extreme care must be taken while connections are made between multimeter probes and desired terminals when reading current measurements because there is a risk of damaging multimeter and/or the chair and of serious injury when attempting to read it.
- Connect the multimeter probes to the positive and negative terminals of the "Anderson" connector on the battery. *Refer to images below.*

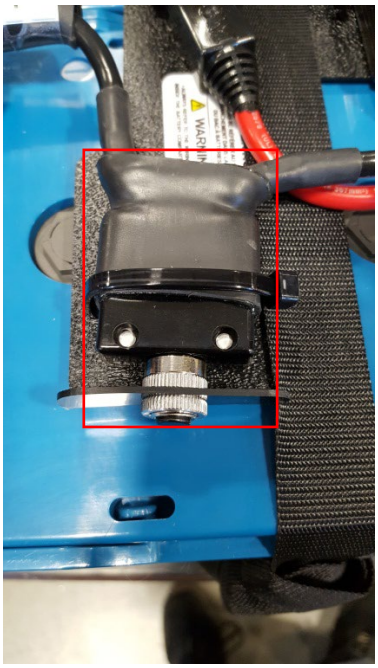
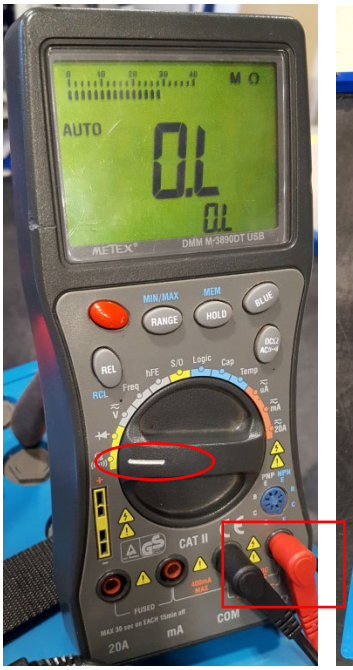
- If the reading result is between 23.5 Volts and 27.5 Volts, check the cable as well as the connections between the battery and the R-Net power module.
- If the total battery voltage reading is near 0 Volts, inspect the battery protection devices by checking the electrical continuity of the circuit breaker. Turn dial to Ohmmeter on the multimeter. To avoid false readings, be sure to properly connect probes to desired jacks for a reliable resistance reading.

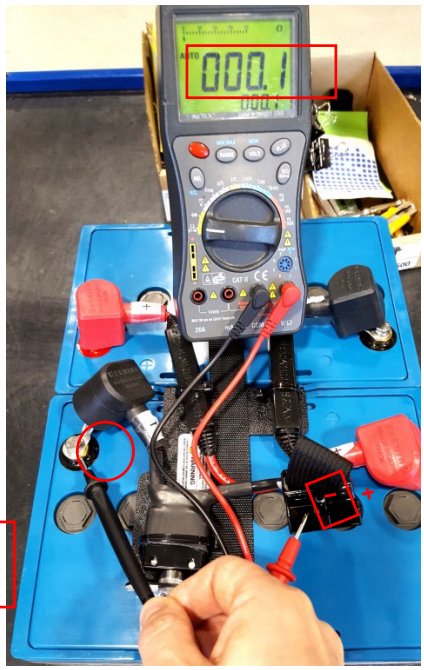


- Connect the end of the probes together and wait for the reading on the multimeter to stabilize. Ideally, the reading should be 0.0 Ohms. If the value is around 0.1 Ohms, write down this value, as it becomes the reference value equal to 0.0 Ohms. If the multimeter has a "rel" mode, activate it while the two probes are touching each other and once the value has stabilized. This mode will correct the value to 0.0 Ohms for a strong contact.




- After removing both batteries, connect one of the two probes to the negative (-) terminal of the nearest 12 Volt battery and the other probe to the negative (-) terminal of the "Anderson" connector. Make sure that the multimeter's probes are properly connected to desired jacks for a reliable resistive reading. If the probes are connected to the desired jacks for a current reading, a false resistive reading is obtained. The resistance value measured between the circuit breaker terminals should not exceed 0.1 Ohms.

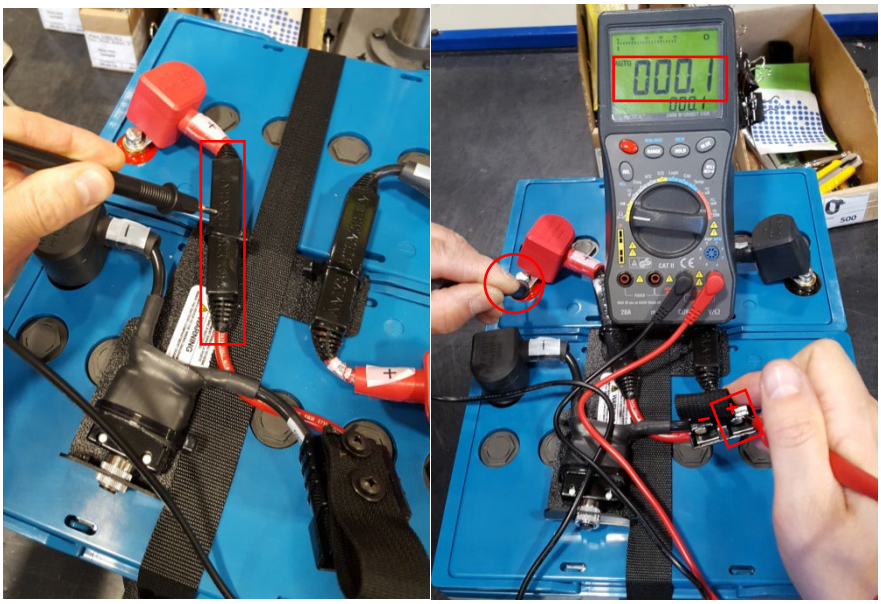





- If the result of the resistance reading of the circuit breaker shows a value of O.L. (Infinity), reset by pressing the black button of the circuit breaker. If continuity is not restored, replace the circuit breaker.
- If the reading has a resistance value greater than 0.1 Ohms but less than O.L (infinity), disconnect the circuit breaker and clean the contacts with a fine or medium synthetic scouring pad. Do not use real steel wool! Once the contacts are clean, reconnect the circuit breaker and secure bolts so that the circuit breaker terminals cannot move at all.

Synthetic scouring pad

- If the continuity of the circuit breaker is good (less than 0.1 Ohms), using the multimeter's ohmmeter mode, check the continuity of the fuse between the positive terminal of the rear battery and the "Anderson" connector.

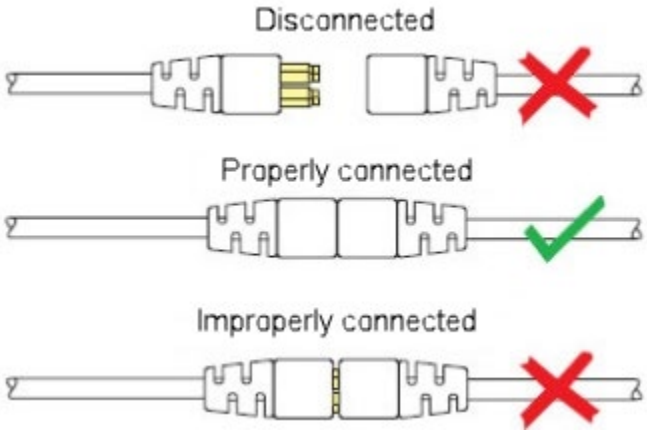


- If continuity of the fuse between the positive (+) terminal of the battery and the positive (+) terminal of the "Anderson" connector is good (0.1 Ohms or less), check the continuity of the fuse that connects both 12-volt batteries using the multimeter's ohmmeter mode. If the ohmmeter shows a reading of O.L (infinity), replace the cable with the built-in fuse. If the value is greater than 0.1 Ohms but less than O.L (infinity), unscrew terminals of the fuse cable and clean the contacts as well as those of the battery using a synthetic scouring pad. Do not use steel wool. Once the contacts are clean, reconnect the fuse and secure bolts so that the fuse terminals cannot move at all. Check for continuity again. Replace the fuse if in doubt.
- If after doing all previous steps, the voltage of the battery "Anderson" connector terminals is around 0 Volts, check continuity between the fuse terminals connecting both 12 Volt batteries. The reading should be 0.1 Ohms or less. If the ohmmeter shows a value of O.L (infinity), replace the fuse, making sure that the terminals of the new fuse are tight so that they cannot move at all. If the resistance value is greater than 0.1 Ohms but less than O.L. (Infinity), remove fuse bolts connecting both 12-volt batteries and clean contacts using a fine or medium synthetic scouring pad. Do not use steel wool! Once contacts are clean, reconnect the fuse and secure bolts so that the fuse terminals cannot move at all. Check for continuity again. Replace the fuse if in doubt.

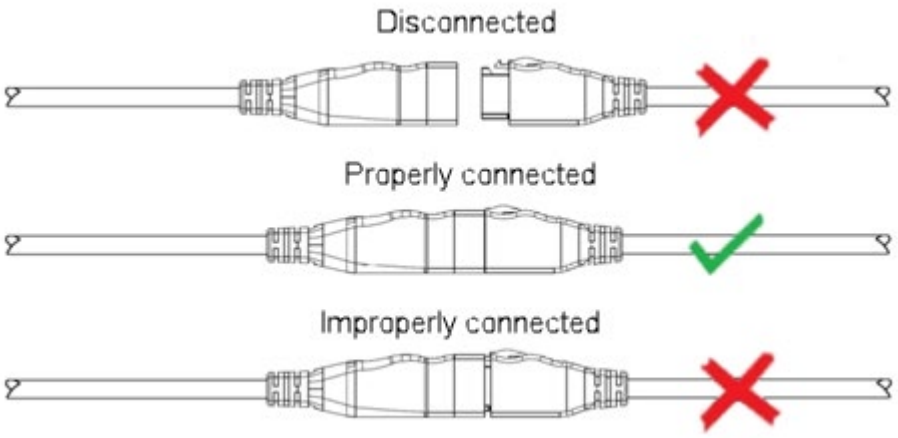
4.1.5.1.3 Verifying R-Net bus cables, actuator cables and intermittent problems

- Verify that all cables are properly connected and well secured as shown below.

R-Net bus cable connection



Actuator cable connection

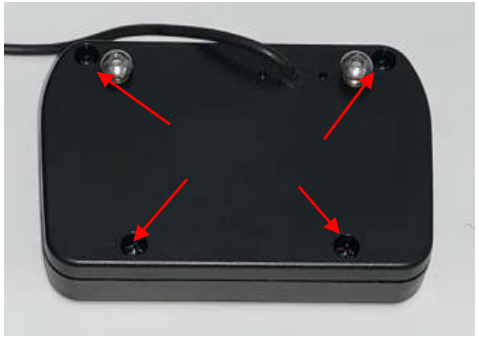


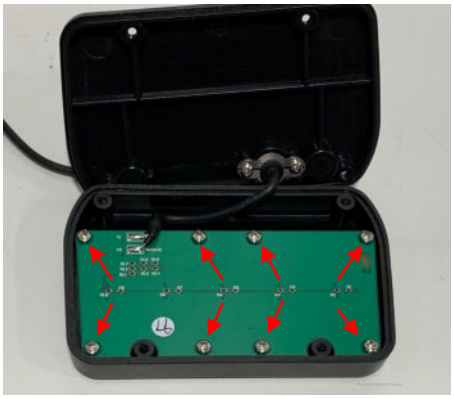
- Check the condition of the connector terminals by examining that all connections are secure. Verify that there are no traces of oxidation or verdigris on the terminals, that there are no crooked or broken terminals, etc. Check that the cable sheath is not damaged, broken or burnt.
- Check for intermittent problems and reset alarms by turning the chair off and back on using the joystick. Move and pull (without disconnecting) on each cable to try to recreate the error.
  WARNING! Use extreme caution when activating actuators and handling cables, as the movements of the chair mechanisms can pinch or maim a limb.
- Check cables by disconnecting the cable that seems defective from the chair and replacing it with a temporary cable that does not belong to the chair. By using a temporary external cable time will be saved since it will be possible to determine which cable is truly faulty without having to undo the current installation. This process can be repeated for every suspicious cable. Once the temporary external cable is connected, reset the alarms by turning the chair off/on again using the joystick and activate all the power options to check if an alarm occurs. If an alarm occurs with this temporary cable, perform additional problem-solving tips before replacing any parts. Refer to section 4.1.4, Table of error codes.
  WARNING! If this method is used, to avoid personal injury, be careful that there are no parts of the body that could be pinched or mutilated when activating power options. Also make sure that the temporary exterior cables used are not able to be caught or cut by any mechanisms.

5 Replacing pushbuttons in keypad (SWKEYPAD):

5.1 Pushbutton replacement

The following procedure shows how to replace pushbuttons in keypad.

STEP	DESCRIPTION	IMAGE
1. MAKE SURE TO HAVE ALL THE REQUIRED MATERIALS	Tools and material: 1. Screwdrivers (Phillips # 1 and #2) 2. Allen key (2.5 mm) 3. Replacement pushbuttons 4. Cutters 5. Tie-wraps	
2. REPLACING PUSHBUTTONS	1. Cut ties securing keypad. 2. Remove keypad from mount using 2.5 mm Allen key. 3. Disconnect keypad from e-bx. 4. Using the Phillips #2 screwdriver, unscrew and remove 4 screws for cover.	 

STEP	DESCRIPTION	IMAGE
	5. Remove cover. 6. Be careful not to break the cable attached to the electronic board. 7. Using the Phillips #1 screwdriver, unscrew the 8 screws on electronic board 8. Remove electronic board and pushbuttons to be replaced. 9. Install new pushbuttons. 10. Place electronic board back and secure the 8 screws. Do not over tighten. 11. Close cover 12. Secure the 4 screws on cover. 13. Reinstall keypad on its mount and secure the 2 screws using 2.5 mm Allen key. 14. Connect keypad to chair. 15. Using tie-wraps, secure keypad cables to chair. Ties should be attached in the place they were before.	 

This completes the ***e-bx controller Instruction Guide***. If further information is required, please contact Amylior Technical Support by email at techsupport@amylior.com or by phone at 1 888 453-0311