ez-Config®

Series 300 & 10'' Version E.3

Table of contents:

Table of figures:

1. Preamble

1.1 Important information about the manual

⚠	Important information – Read carefully
ⓘ	Additional information

1.2 Compatibility information

Using the ez-Config software and ez-Wheel devices requires the following configuration:
- A Windows based computer, with Windows 7 or later, 32-bit or 64-bit (computer not included)
- The Microsoft .NET framework version 4 or later installed
- A USB port
- A USB cable, USB type A / USB type B (cable not included)
- A mini USB cable, USB type A / USB type B (cable not included)

1.3 License and Password

A nominative password is required to use the ez-Config software, provided after acceptance of the software License.

Please download the License following this link:
https://www.ez-wheel.com/storage/upload/pdf/ez-config-licence-en.pdf

Print, read, sign and send a scanned copy to your reseller.
Your login and password will be returned by email.

1.4 Important notice regarding modification of parameters

Machinery. Directive 2006/42/EC CE	Parameter modifications may lead to hazardous situations. By using the ez-Config software you understand that you can modify the behavior of the electric drive installed on your machine, and you take the entire responsibility of any changes performed with ez-Config and their consequences on the machine operation.4 CE Marking: within the European Economic Area, the machine equipped with an ez-Wheel electric drive shall be and remain compliant with the Machinery Directive 2006/42/EC. New settings made with ez-Config may differ from parameters recommended by the machine manufacturer or integrator and may void the CE marking of the machine. Do not perform any change if you are not allowed by the manufacturer or integrator. Your Login and Password are unique and nominative and attest your identity. When programming new parameters on your ez-Wheel device, your identity will be stored in the device.

2. Safety instructions – Precautions for the use of ez-Wheel products

⚠	Do not use ez-Wheel products for other purposes or in other conditions than those mentioned in the technical documentation. Read and make sure you have understood the manual before using ez-Wheel products. Observe all the warnings and usage instructions in this manual. Keep this manual for reference throughout the life of the product. In the event of loss, you can obtain a copy of this manual from the ez-Wheel Customer Department. If the product is transferred to another owner, make sure that the manual is transferred as well. The characteristics, descriptions, and illustrations in this document are applicable at the date of publication. ez-Wheel reserves the right to make any modifications and revisions to this document. Product users obtain their own information on these modifications.

3. Before first use

3.1 Download and install

Install the Driver:

Two possibilities:

1	**Plug the wheel to a USB port and the installation will run by itself.** ⚠ Windows update must be activated ⚠ Your PC must be connected to the internet
2	**Download the driver** Virtual COM Port Driver V1.4.0 **available from the "Download center" on our website.** **Unzip and install the driver executable file.**

ℹ The driver functions at its best with Windows 7 version or later.
ℹ In case you encounter any difficulties while installing the driver, please contact your retailer.

Install the Software:

Download the ez-Config Series 300 & 10'' version E.3[1] **software**

ℹ The ez-Config® Series 300 & 10'' user manual Ver. E.3 is dedicated to hand controls / interface programmed with the ez-Config tool Ver. E.3.
ℹ Make sure that you update the hand control's firmware.
The hand control should be programmed with the firmware Ver. G.3, the update can be done with the update tool Update to version 7.0[1]
The hand controls / interface update can be only done from F.0 version or later.

---

[1] Software can be downloaded from http://www.ez-wheel.com from downloads and resources.

3.2 Connecting the hand control to the computer

Step 1: Plug the USB-B cable to the back port of the tiller head. Or plug the mini USB-B cable to the back port of the interface box.	
Step 2: Connect the USB-A cable to the computer.	

⚠ If the actuator is not connected to the computer or several actuators are connected, a *Selection* window appears.

Check that actuator is connected and press *Retry USB*, if several actuators are connected select the appropriate communications port, and press the *OK* button.

Figure 1 - Selection window

4. First use

4.1 Identification

- Launch the application

An identification *window Log* pops up.
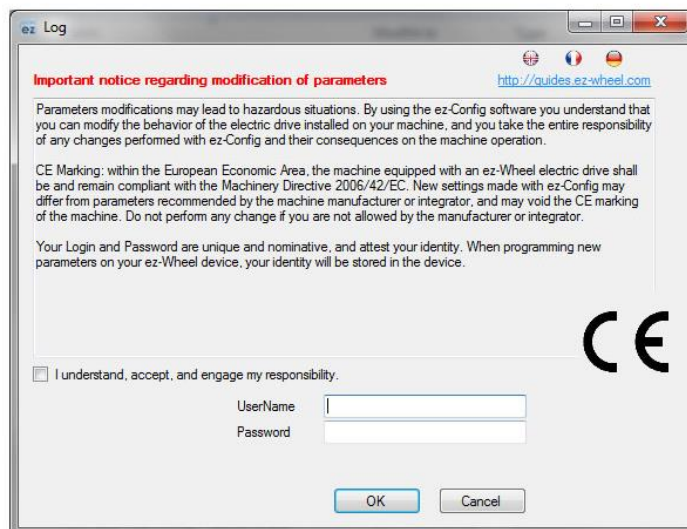
Figure 2 - Identification window

- Fill in the two fields with the data that ez-Wheel has sent to you.

⚠ The password provided is personal and strictly confidential. It should not be broadcast in any circumstances.

⚠ Ce mot de This password is valid for one calendar year; it expires on 31 December every year. Contact your dealer after expiry.

- Click on *OK* to open the ez-Config application.

5. Connecting the hand control

- Click on the *Connect* button
- Wait until the program finds the hand control plugged

The following informations are available:

Serial number	Serial number of the hand control (left table)
Software version	Software version of the hand control (right table)
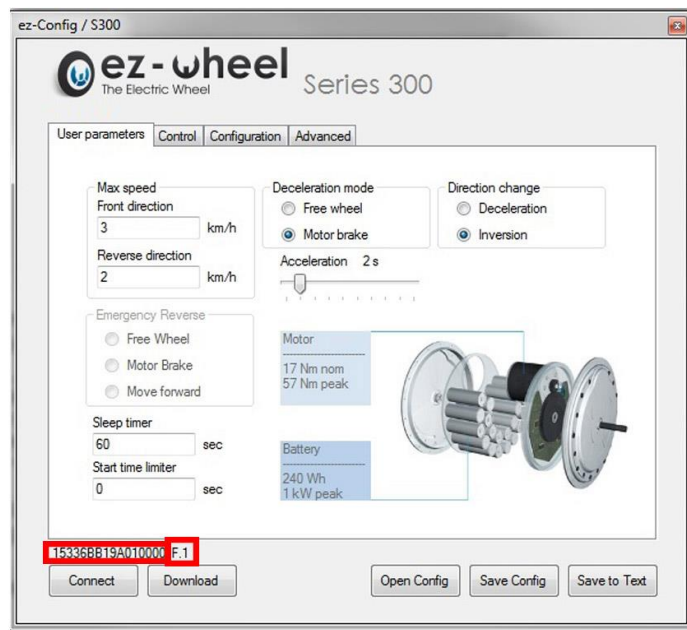
Figure 3 - Hand control connection

ℹ️ The serial number display materializes the established connection of the actuator by the system.

ℹ️ When the Tiller Head ezRTH/W is connected to the computer, the lights of the Tiller Head display are switched off.

ℹ️ You can ensure it is well connected to the computer when the serial number appears in ez-Config, after pressing the **Connect** button.

6. Settings tab

This tab is used to adjust the operation settings.
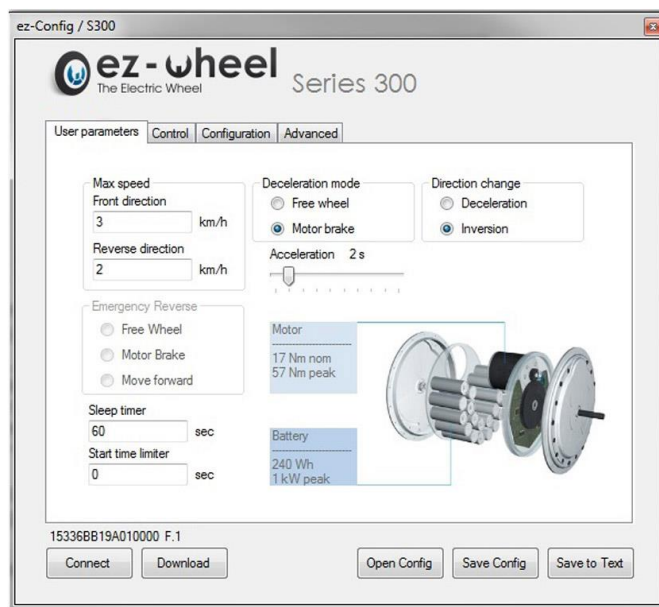
Figure 4 - User parameters panel

Different settings are available:
• Forward speed
• Reverse speed
• Deceleration mode
• Acceleration
• Direction change
• Emergency direction change
• Start time limiter
• Interface switch to "sleep" time

6.1 Forward speed

- In the **Front direction** field, enter a value in the Max Speed box.

Maximum value	15 km/h
Minimum value	0,5 km/h

ℹ If a value is wrong, an **Errors in the form** message appears.

6.2 Reverse speed

- In the **Reverse direction** field, enter a value in the Max Speed box.

Maximum value	15 km/h
Minimum value	0,5 km/h

ℹ If a value is wrong, an **Errors in the form** message appears.

6.3 Deceleration mode

The **Deceleration Mode** mode box enables the user to choose how the wheel behaves when it is not controlled – wheel switched on and setting nil.

Free wheel mode	Enables the wheel to continue to rotate without resistance from the motor.
Motor brake mode	Enables the wheel to reduce its speed by motor braking.

6.4 Acceleration mode

Wheel acceleration can be adjusted by positioning the bar cursor between 1 second and 10 seconds.

Rapid acceleration	Cursor is positioned on the left (1 second)
Slow acceleration	Cursor is positioned on the right (10 seconds)

Figure 5 - Acceleration cursor

6.5 Direction change

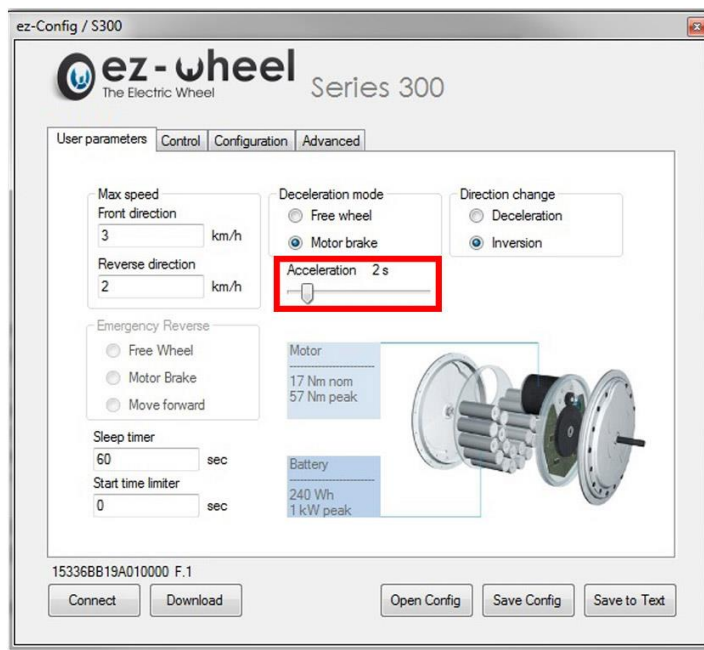The **Direction change** box enables the user to adjust the behavior of the wheel during a change in set direction; 2 modes are available:

Deceleration	The wheel decelerates to a total stop and re-accelerates in the opposite direction
Inversion	The wheel provides a force in the opposite direction

⚠ BE CAREFUL about possible jerks!

6.6 Emergency direction change

The **Emergency reverse** option is available with the ezRTH/W draw bar head and F (and next) firmware, and version D (and next versions) of the ez-Config software. If the draw bar head is connected to firmware before version F, the options are not accessible.

The **Emergency reverse** box enables the user to adjust the behavior of the wheel when the anti-crushing button on the draw bar head is pressed; 3 modes are available:

Free wheel	Disables the drive motor
Motor brake	Makes wheel reduce speed by motor braking
Move forward	When the wheel is in forward drive: Causes motor resistance to be applied until the wheel stops When the wheel is in reverse: Causes the direction to change. The wheel accelerates forward as long as the emergency stop button is activated

ℹ The **Move Forward** function is available when the interface is paired with two wheels.
ℹ A **Warning** window appears when loading the parameters in the interface, press OK button to validate the configuration of the system with the function.

⚠ BE CAREFUL about possible jerks!

6.7 Start time limiter

The *Start time limiter* field enables the operator to set the assistance time during starting.

Accelerator is operated beyond this time period	The wheel continues to rotate in the free-wheel mode
Accelerator is released	The wheel returns to the chosen deceleration mode (free-wheel or motor brake)

6.8 Sleep timer

In the *Sleep Timer* field, it is possible to enter a value in seconds corresponding to the waiting time between the absence of activity on the actuator and switching of the interface to the sleep mode.

- Enter the « 0 » value to prevent the interface going into the sleep mode

⚠ Changes to the system configuration settings should be made with due regard to safety rules.
⚠ The user will be held responsible for any configurations set using his/her password.

7. <u>Control tab</u>

This tab enables the user to adjust the actuator operation settings used to control the wheel.
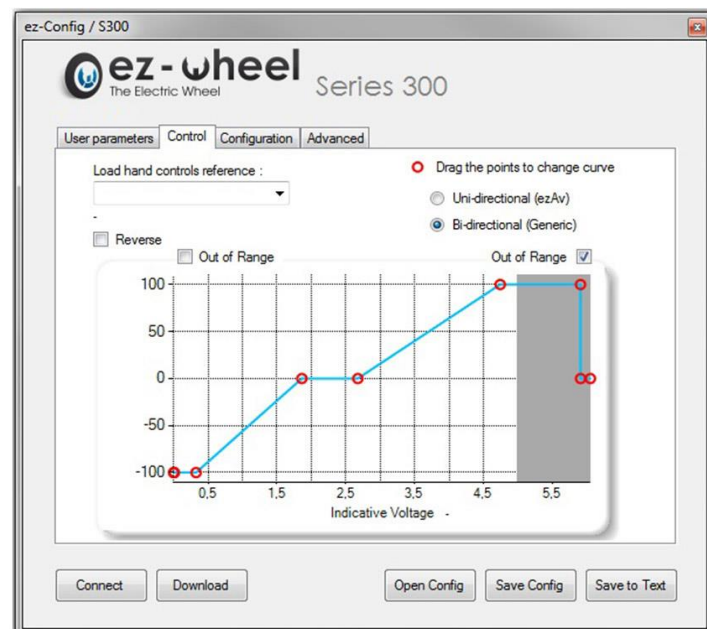

Figure 6 - Control

7.1 Choice of actuator

The **Load hand controls reference** field enables the operator to select an ezW actuator reference, so that its pre-entered control curve is displayed.
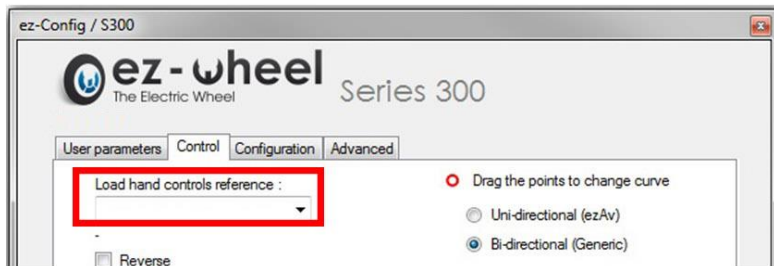

Figure 7 - Choice of actuator

⚠ We recommend keeping the default values suggested for each actuator supplied by ez-Wheel. However, it is possible to change the actuator operating ranges directly on the curve.

To do this, use the selector to select the type of actuator used
• Uni-directional
• Bi-directional
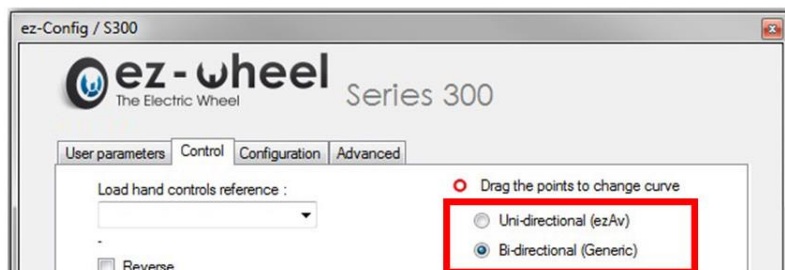
Figure 8 - Hand control choice (kind)

7.2 « Uni-directional » choice

The wheel can only rotate in one direction, the control ranges can be set between 0 and 5V via the following control tab:

Figure 9 - « Uni-directional » actuator

3 ranges can be adjusted/set:

The rest (or "safety") range
Defined between the cursors 0 and 1.
The command must exceed this value
(defined by cursor 1) to actuator the
wheel.

The control operating range
Defined between cursors 1 and 2.
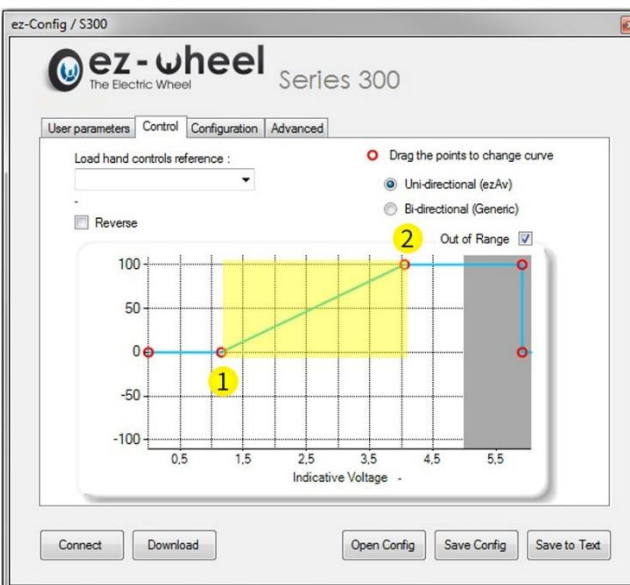
The "max. operation" range
Defined between cursors 2 and 3.
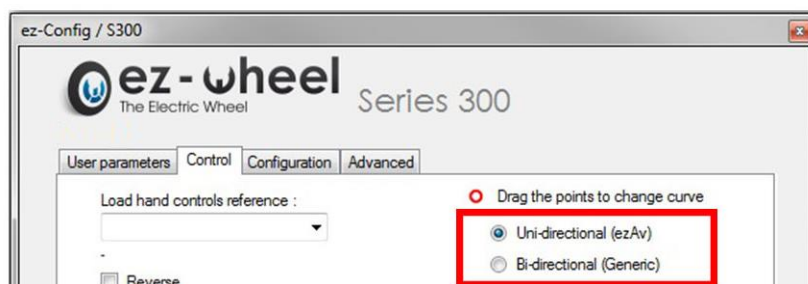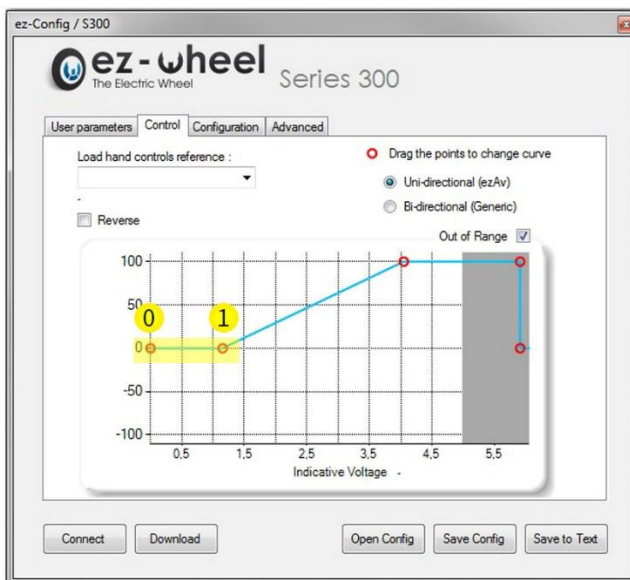Cursor 2 defines the maximum
actuator command value.
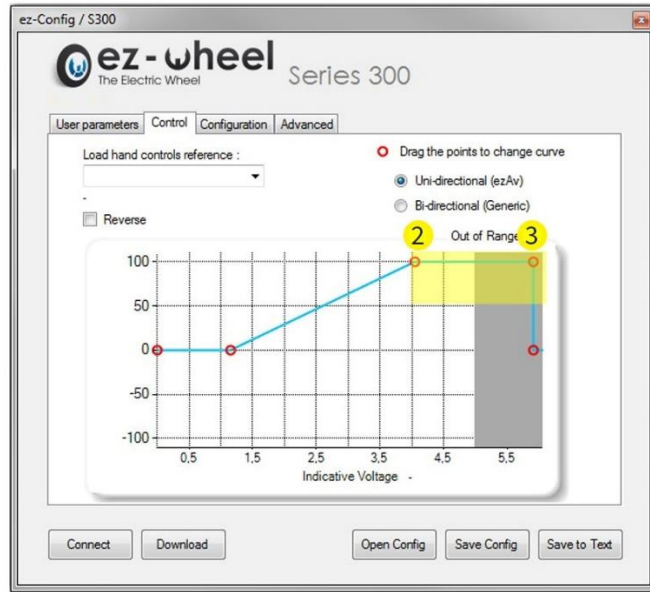
⚠ It is impossible to connect a bi-directional actuator using the settings of a unidirectional actuator even
in a single direction because the signals used on the interface connector (26 pin Sub-D) are different.

7.3 « Bi-directional » choice

The wheel can rotate in both directions; the « control » tab will be the following:
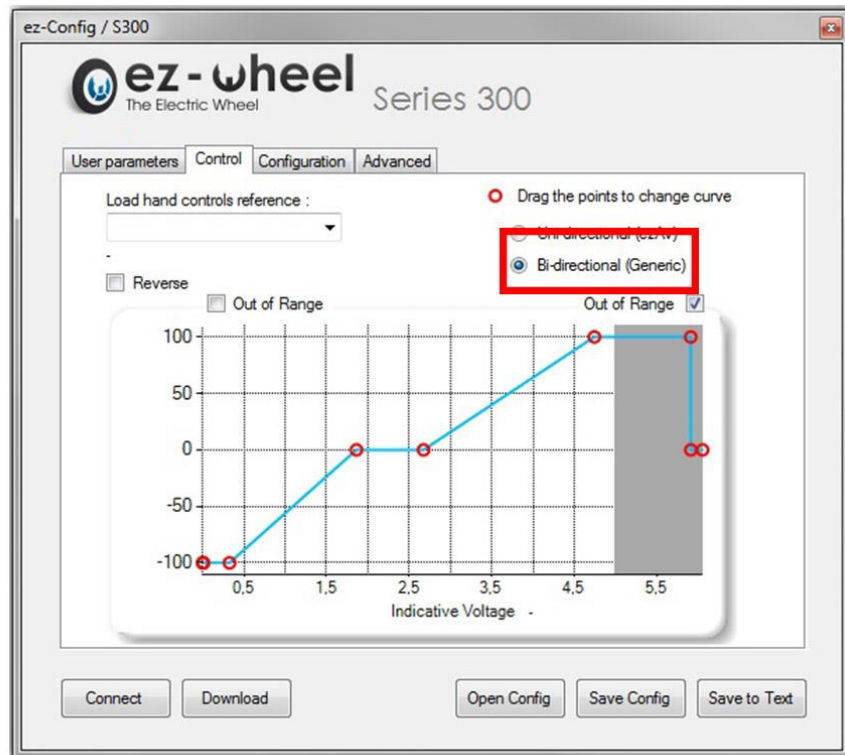
Figure 10 - Bi-directional choice

The adjustment principle is the same as for a uni-directional actuator, with in addition, the possibility of adjusting the control in both wheel rotation directions independently.

⚠ The command is always at 0-5V, with a safety position value at approximately 2.5V (wheel stopped).

⚠ For proper operation, it is important to ensure that the actuator safety voltage (central position) is within the set voltage range.
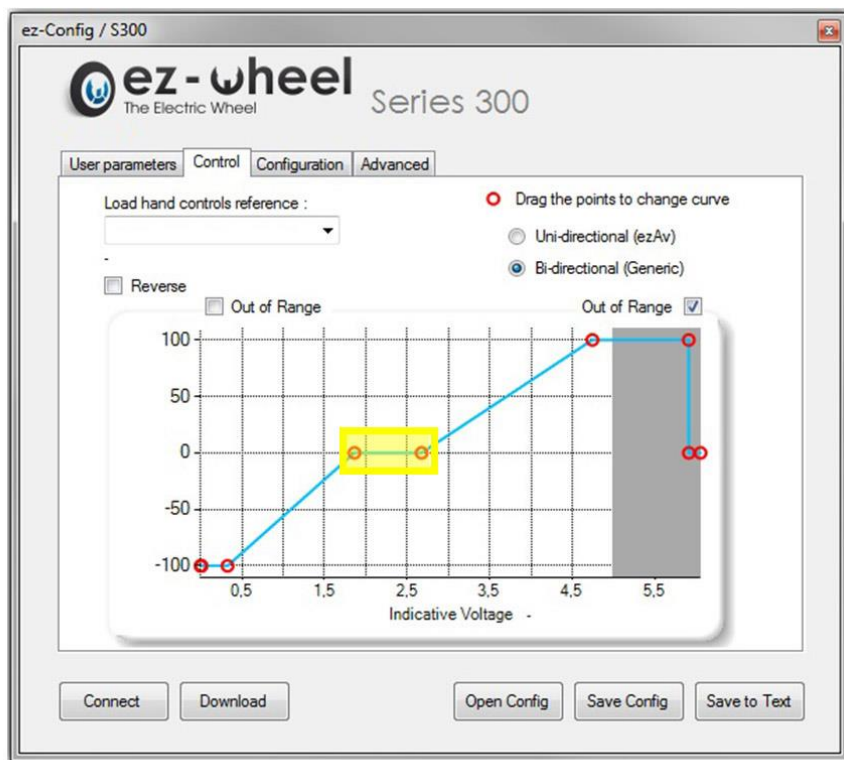
Figure 11 - Resting range

7.4 Out of range

The **Out of range** field enables the operator to set a limit to the actuator voltage.
When the applied voltage reaches this limit, the actuator gives a NIL command to the wheel.
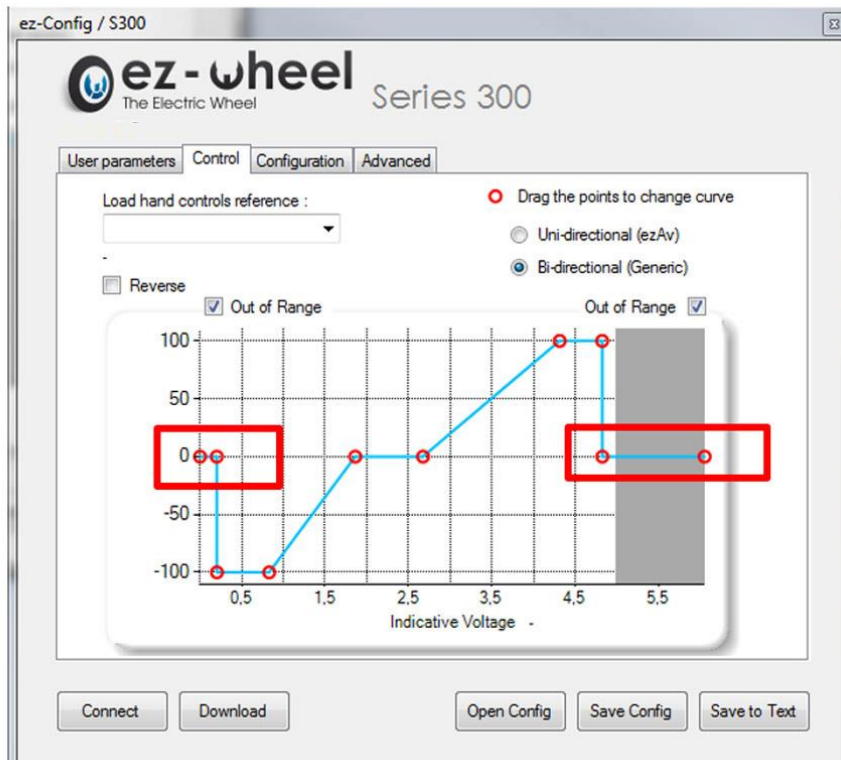
Figure 12 - Out of range

This function can be used, for example:

• With special actuators which have a voltage range different from 0-5V (the voltage must nevertheless remain in the range of 0-5V)
• To detect a potential control cable open circuit (zero voltage applied)

If the "Out of range" boxes are unchecked the actuator will continue to give a maximum value to the wheel in both directions of operation.

Figure 13 - Absence of the "Out of range" function

7.5 Reverse

The *Reverse* field enables the operator to reverse the actuator operating direction. This field is used according to the direction of assembly of the actuator.

8. Configuration tab

This tab is used to match the wireless interface to the wheel.
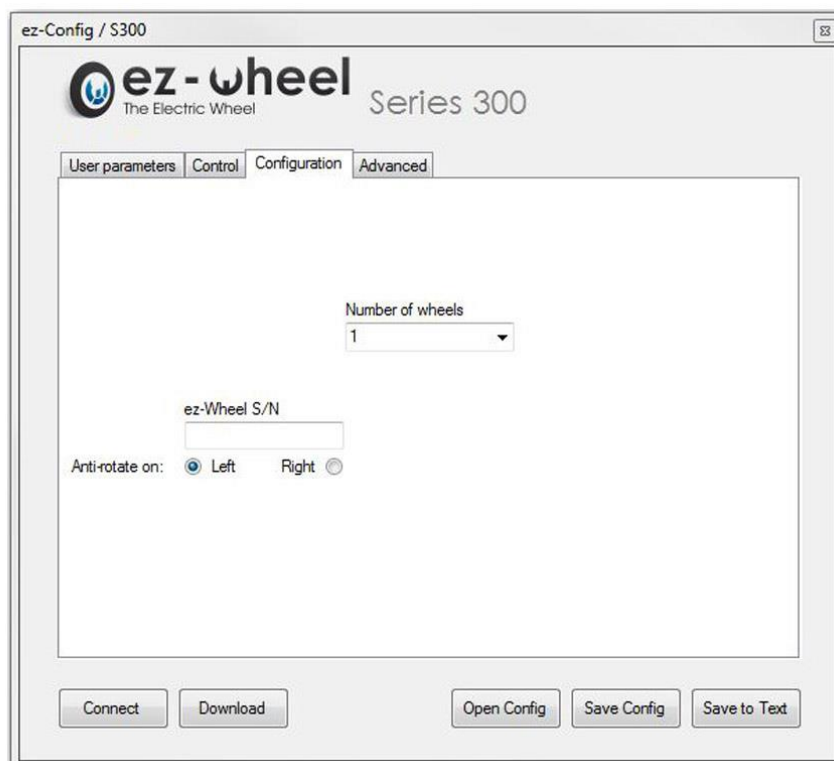
Figure 14 - Configuration

- Enter the type of wheel and the number of wheels available on the application.
- Enter the wheel serial number (shown on the label on the wheel flange).

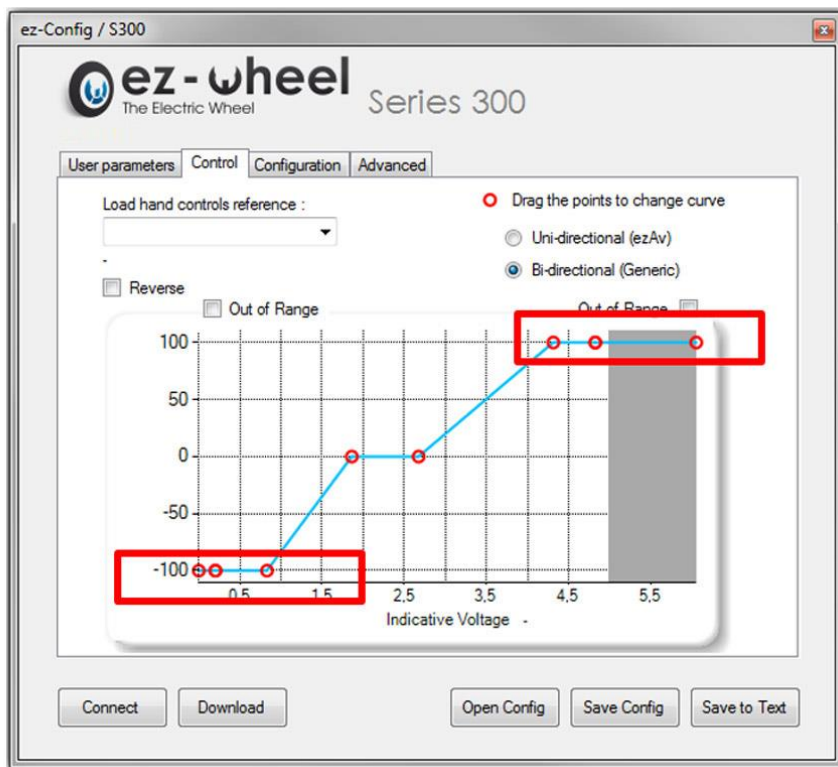- Choose the direction of rotation of the wheel according to the operating direction of the application:

Left	If the anti-rotation hexagon of the wheel is on the left when the application is in forward drive.
Right	If the anti-rotation hexagon of the wheel is on the right when the application is in forward drive.

9. « Advanced » tab

The *Advanced* tab enables to access to advanced functions for the definition of the parameters of the ON/OFF button type used:
• Impulse button
• Bistable button

Figure 15 - Advanced tab

9.1 Impulsional button

The *Impulse button* enables to configure the ON/OFF button to be compatible with impulse buttons.

Figure 16 - Impulse button

This functionality is compatible with:

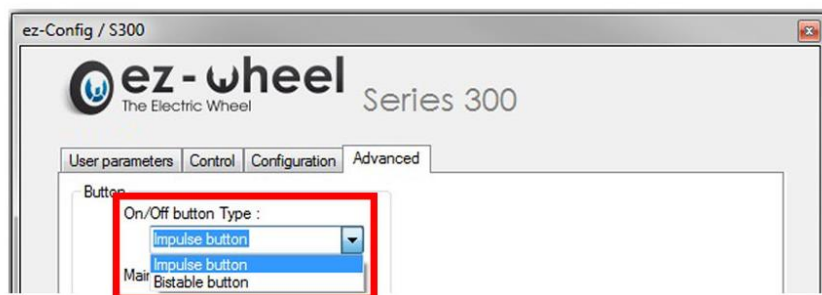| |
|---|
| ✓ The ezR44IN/x interface + ezACxM-UCB/Box cables or ezACxM-B/Box + ezSPBC-BD |
| ✓ The ezRTH/W or ezRTH/W/IP tiller head |

⚠ Specificities of Tiller Head product:

When a Tiller Head or a push pull sensitive control connection occurred, the *Impulse button* is automatically ticked and it is impossible to change the status of the button.

Figure 17 - Specifications of Tiller Head product

9.2 Delayed Switch on function

The **Maintained push** field allows to apply a delay on the switch on by maintaining the ON/OFF button push during a time defined between 1 and 20 seconds.
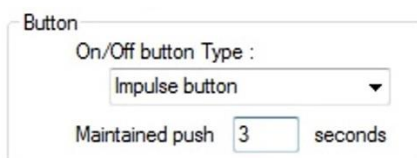
Maintained push

9.3 Bistable button

The **Bistable button** functionality allows to configure the ON/OFF button to be compatible with 2 positions buttons.

Bistable button

⚠ The **Delayed Switch on** functionality is not available with bistables buttons, the option field is then grayed out.

⚠ The sleep time of the system have to be disabled when the interface ezR44IN is configured with the bistable button.

If a sleep timer value is defined, the following windows appears:

9.4 Restrictions

⚠	Do not configure the ezR44IN in "Bistable" and use it without bistable button, it should be the impossible to switch on the interface thanks to its ON/OFF button.
	Do not configure the external button of the ezR44IN interface in "Impulse" mode and use the interface with bistable button, the wheel would then go in standby.
	Do not configure the external button of the ezR44IN interface in Bistable and use the interface with an impulse button, the system would switch off as soon as the ON/OFF button is released.
	The use of bistable button of the ezR44IN interface does not allow to get a sleep time of the system.

10. Buttons

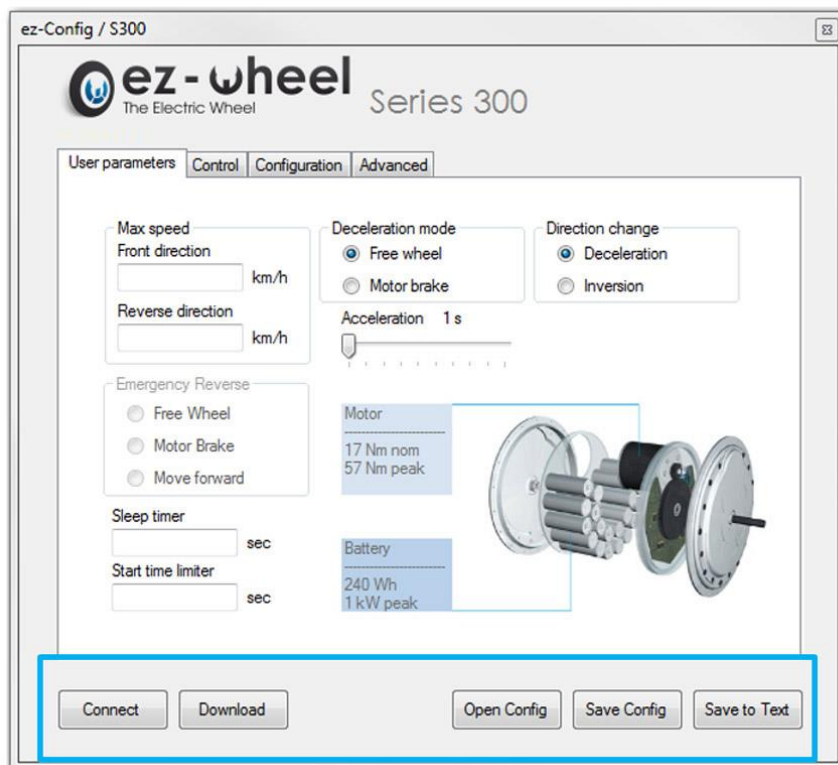5 buttons are provided for controlling the actions; they are situated at the bottom of the ez-Config application.

Figure 18 – Buttons

10.1 " Connect button "

This button creates a connection between the ***ez-Config*** software and the interface connected to a USB port.

- Click on the ***Connect*** button

If the connection is not achieved, several hypotheses are possible:

Connection problems	If the interface is not connected to the PC, a window indicates that the interface has not been found on any of the USB ports of the computer. - Connect the interface to a USB port - Click on **OK**, and then click on the **Connect** button again
Pilot problems	If a pilot problem is detected: - Refer to *"Installation du driver"* paragraph of the manual Configuration retrieval: Once the connection is established, a message appears asking if the configuration in the interface memory should be retrieved. **If *No* is clicked*:*** The connection with the interface will be made and the fields in the window will remain empty or will show values from a previous entry. **If *Yes* is clicked*:*** The connection with the interface will be made and the fields in the window will be filled from the settings in the interface memory.

	- Fill in or change the fields

10.2 " Download " button

This button serves to load the interface with the settings entered so that the wheel can be controlled according to the criteria entered.
If the *Download* is clicked with a NIL entry, an error message is displayed.

- Enter the values in the fields properly

10.3 " Open Config " button

This button serves to load a configuration that already exists in the form of an .ezC file.
A window opens for choosing a configuration file.

- Choose a file and click on *Open*.

The choice to open a given file results in an update of the fields and consequently the loss of the previous configuration data.

10.4 " Save Config " button

The settings can be saved for future use.

- Click on the *Save* button.

A window opens for the name of the .ezC file and its backup location to be saved.
Data linked to pairing cannot be accepted in the backup.

10.5 " Report " Button

The report button serves to save a .txt file containing the configurations established. This .txt file can be exchanged with the technical departments to check a configuration or be used as a source for the configuration of another ez-Wheel Series 300 system.