

eMAX user manual



elebia.[®]
smart lifting solutions

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Safety recommendations

This is the user manual of the eMax, remote control unit for the elebia autohooks. Before using the elebia autohooks, user must read and understand the user manual of the autohooks.

As the manufacturer has no direct control over the operation of the elebia® autohook, the safe handling of the equipment is therefore the responsibility of the user and of the operating personnel. This list of WHAT MUST and WHAT MUST NOT BE DONE is based on the ISO and ANSI standards. Ask your supervisor for a copy.

Under no circumstance does the manufacturer either accept any liability for the use of these recommendations, which are voluntary, or guarantee them. The recommendations do not take precedence over standards and regulations.

In the event of breakdown or malfunction, withdraw the mechanism and consult the technical service.

Quick Start



If you purchased the eMax with your elebia autohook, the setup has been made in the factory and your unit is ready to start working.

Status bar icons



Radio Signal: Indicates when eMax is emitting

USER

Profile: Shows the user logged in

12:42

Hour: time now



Battery: Battery level of the eMax

Hook state icons



Hook open



Hook open and ring in the magnet



Hook closed and ring in the magnet



Hook closed and ring into the hook

Hook position number (only if multiple hooks are paired with the eMax). If this number is in red color, means there is no loadcell or it is disconnected.

1. If hook is grey, means the eMax is unable to communicate with it.
2. only units with sensor in the magnet can display the ring position.
3. in those hooks without encoder, the info open/closed is managed via software.



Battery



Radio signal quality

5°C

Hook temperature



Low temperature alarm



High temperature alarm

18.725

Weight (only units with load cell)

Kg

Units (only units with load cell)

NET

Net net weight (only units with load cell)



If you already had your elebia autohook and later purchased an eMax, or you purchased this eMax to replace an existing one, you will have to set it up. Please read first the 'Set up' section.



Menu bar icons



Info Center

Settings

Profile

Buttons



ON/OFF Button

When you are not using eMax, press the On/Off button to turn it off. This will put the eMax to sleep, saves the battery, and prevents anything from happening if you touch the buttons. eMax turns off automatically if you do not touch any button for a minute or so.

To adjust the timing, go to **Settings > Auto-Off**.

To turn eMax on, press the On/Off button:

- eMax will beep and vibrate to indicate it is 'ON'.
- eMax will try to communicate with all the autohooks paired.
- Display will turn on and show the info of each hook detected.
- eMax will be 'on', but won't accept orders until the user unlocks it. To unlock it, use the directional keypad.



OPEN Hook

Press this button to open the hook/s. eMax has to be on, unlocked and at least one hook selected. If eMax is off, or locked, or no hook is selected, nothing will happen.



CLOSE Hook

Press this button to close the hook/s. eMax has to be on, unlocked and at least one hook selected. If eMax is off, or locked, or no hook is selected, nothing will happen.



TARE (Gross/Net)

A short press (less than 2 seconds) will alternate between 'NET' and 'GROSS' weight. This can be done with the eMax in locked position and is always applied to all the hooks.

To store the weigh as a Tare:

- unlock the eMax
 - select the hook/s to store the Tare
 - press and hold Tare button (more than 2 seconds)
 - Remote will beep, vibrate and display the message 'Tare stored'
- Tares are stored in the hooks, not in the remote.



DIRECTIONAL Keypad

Use directional keypad to move the yellow frame on the screen. This will allow you to:

- unlock the eMax.
- select the hook/s
- enter and navigate through menus.





Info Center

Visible for: everybody

The info center allows to display info of the hooks and the eMax.

HOOKS INFO:

- **Birth:** Date of manufacturing of the autohook.
- **WLL:** Working Load Limit of the autohook.
- **Total Cycles:** Cycles since unit was manufactured. One cycle=open and close.
- **Partial Cycles:** Cycles since unit had service. After Elebia service makes this value is reseted.
- **Number of overloads:** Indicates how many times this autohook has been overload with weight above the WLL.
- **Max Overload:** Indicates the highest overload value, the time and the user logged when this was produced.
- **Last maintenance:** Time when last maintenace was made.
- **Next maintenance:** Time for advised maintenance.

REMOTE INFO:

- **Firmware:** Version of the installed firmware.
- **Serial:** Serial number of the remote control.
- **Birth:** Date of manufacturing of the remote.



Settings

Visible for: administrator and above

HOOKS:

Here you will find all options to adjust parameters of the hooks.

- **Serial:** Type the serial number of the autohook/s you want to pair with this eMax. Once you type it, eMax will communicate with it and then hook will beep, eMax will beep and a radio signal will be displayed after the serial number.
- **Zero** (If autohook has loadcell): Allows to set the calibration zero on the autohook. Before setting the zero value, it is advised to make sure the autohook is closed, steady and no weight nor slings are suspended.
- **Span** (If autohook has loadcell): Allows to set the calibration span value on the autohook. There are two ways of calibrating the span value:
 - You can type the span value (data delivered by elebia)
 - Calibrate using a load suspended from the autohook:
 - Type the exact weight value of the suspended load.
 - Once the load is steady, press 'Get'. Span value will be captured and displayed.



PARAMETERS:

Here you will find parameters that allow to adjust the settings of the hook. This parameters affect the motor control, radio configuration, sensors, power management. No one without the appropriate training should modify this parameters. Modifying the parameters can result in a cancellation of the warranty.

- **P (Power):** The max current allowed through the motor. The higher the value, higher torque can be delivered by the motor. (Amper).
- **t (time):** Currents above the allowed max value are allowed if duration is less than t. (milliseconds).
- **o (opening time):** Max duration allowed for the opening movement. (seconds).
- **c (closing time):** Max duration allowed for the closing movement. (seconds).
- **A (Autoclose):** The hook will close automatically when sensor in the magnet detects the masterlink. (off/on/on fast).
- **h (halt):** Allows to stop the hook at any position by pressing a button on the remote. (on/off).
- **S (sensitivity):** Sensitivity of the sensor in the magnet.
- **d (brake):** When hook is not moving, motor can be shortcuted to act as a brake. (up/down/on/off).
- **f (frequency):** Allows to select the radio band. (868MHZ, 916MHZ,...).
- **r (reach):** Allows to reduce bandwidth to increase reach up to 150m (on/off).
- **e (sleep radio):** Allows to adjust the sleep mode to maximize battery duration.
- **u (re-close):** If opening movement is interrupted before 'u' seconds, hook goes back to closed position. (seconds).
- **y (re-open):** if closing movement is interrupted before 'y' seconds, hook goes back to opened position. (seconds)

REMOTE:

Here you will find all options to adjust parameters of the Remote.

- **Language:** Choose language.
- **Date:** Set day, month and year.
- **Time:** Set time.
- **Auto-off:** eMax turns off automatically if you don't touch any button. Here you can adjust the timing. Set it to 0 to disable Auto-off.
- **Units:** Set units.
- **Load:** (Kg, Ton, ...).
- **Temperature:** (C, F).
- **Frequency:** [Visible for: Service and above] Set radio band for the eMax. eMax will only communicate with autohooks operating in the same band. Do not modify.
- **Refresh rate:** You can adjust how often the eMax sends messages to the hooks to retrieve all the info. This refresh rate has an impact on battery consumption. Three different rates can be set:
 - **Weight:**
 - **Hook state:**
 - **Temperature:**
- **Resolution:** Size of the steps displayed for the weighing scale.
- **Alarms:**
 - **Overload:**
 - Warning 90% WLL
 - Alarm 100% WLL
 - **Unbalance:**
 - Warning xx%
 - **Temperature:**
 - High:
 - Low:
- **Auto-Log:**



MASTER:

Visible for: Service and above

- **Inquire data:**
- **Delete remotes:**
- **Add remote:**
- **Replace remote:**
- **Open/close:**
- **Service:**



Profile

Visible for: everybody

The eMax uses profiles to determine who is able to adjust settings or who will be only operating the hooks. That's why It is very important to assign the right profile to each user.

There are 3 profiles or kind of users:

- **User**
- **Admin**
- **Service**

'User' is the lower level and 'Service' is the higher. The higher the profile, the more options are available in the menus.

All the profiles need a password to login (except User0). When logout, User0 is logged by default.

- **User:** this kind of profile is the one for those who will be operating the autohooks. This profile only allows operation and can't modify the settings, erase the log file or the alarm messages. Up to 4 different users can be created, each of them with its own password to login. So you will be able to track all events in the log file, track overloads, productivity,...
- **Admin:** this profile also allows to adjust the settings, erase the log file, reset alarm messages, pairing, calibration, update eMax firmware... So it is not to be used for daily operation. Is to administrate the eMax.
- **Service:** this profile is for elebia technical service only.

>**Login:** Select a profile and type the password to login.

>**Logout:** Accept and you'll be logged out. User0 is automatically logged in.

>**Change password:** Type your password and the new one. Admin can use his password to login as any User, and modify its password. Service can use his password to login as Admin, and modify its password.

SETUP (pairing and calibration)

Visible for: Admin and above

If you purchased the eMax with your elebia autohook, the setup has been made in the factory and your unit is ready to start working.

If you already had your elebia autohook and later purchased an eMax, you will have to set it up. (software update of your autohook might be necessary too). If you also upgraded your autohook with load cell, calibration will be needed.

If you purchased this eMax to replace an existing one, you will have to pair it. No need to repeat calibration of weighing scale (calibration values are stored in the autohook).



PAIRING AND CALIBRATION:

Pairing:

1. Log in as Admin or Service. (Profile>Login>).
2. Go to Settings>Hooks.
3. Enter the serial numbers of the autohooks to be controlled. If the autohooks are on, a green radio signal will appear, pairing is done and communication is good.
4. If autohook has load cell and it is calibrated, calibration values are displayed and then setup ends here. If it has loadcell and values are not displayed, calibration is needed.

Calibration:

1. Zero calibration (*refer to settings, page 9*).
2. Span calibration (*refer to settings, page 9*).

Update Firmware

Administrator and above

eMax firmware can be updated via the USB connection.

You need a pc or laptop with Windows XP/Windows 7/Windows 8:

1. Log in as Administrator or Service (if not modified, admin password is '0000').
2. Turn off the eMax.
3. Connect it to a computer with the USB port.
4. Press and hold the left direction in the keypad, and turn on the eMax.
5. Replace the old 'firmware.bin' with the new one. (in the computer, file explorer, folder 'elebia_eMax'). Important! file name has to be exactly the same. 'firmware(1).bin' won't work.
6. Disconnect eMax from the USB. It will turn off.
7. Turn on the eMax.

8. A yellow '!' appears on the status bar, indicating updated firmware.
9. In the infocentre>remote you will also see the new firmware.

If everything went right, unit is updated, log back in as user before delivering the emax to the user.

Troubleshooting: If eMax does not awake after updating. This can randomly happen with windows pc, be due to a windows bug problem with usb devices. Then open emax case (4 screws under the bumpers) and disconnect and connect the battery. Then repeat updating process.

in OSX

1. Log in as Administrator or Service.
2. Turn off the eMax.
3. Connect it to a computer with the USB port.
4. Press and hold the left direction in the keypad, and turn on the eMax.
5. Delete the old 'firmware.bin' file in the folder 'elebia_eMax'.
6. Empty the trash bin of the Mac.
7. In the Mac, open a terminal (Applications>Utility>Terminal).
8. in the Terminal:
 - type this:
 - dd if=
 - drag the new file firmware.bin and drop it onto the terminal window. The path should appear after 'dd if='.
 - after the path, write type this:
 - of=/Volumes/ELEBIA_eMAX/firmware.bin conv=notrunc.
 - press enter.
9. Disconnect eMax from the USB. It will turn off.
10. Turn on the eMax.
11. A '!' appears on the status bar, indicating updated firmware.
12. In the infocentre>remote you will also see the new firmware.



Data log

in Windows XP

1. Connect EMAX to one of USB of the PC.
2. Push the On/Off Button on the eMax.
3. The "new hardware assistant" will automatically appear.
4. Select "Install from a list or specific location (Advanced)" and click "Next".
5. Click "Browse" to find the folder where the "usbser.inf" file is located. Once the folder is selected, click "Next".
6. Click "Continue Anyway" to complete the driver installation. Once installed, click "Finish" and the EMAX will be recognized by the PC.

in Windows 7

1. Connect EMAX to one of USB of the PC.
2. Push the On/Off Button on the eMax.
3. Click the right button on Computer -> Properties. Click on 'Device Manager'.
4. Click the right button on 'USBSerial Unknown device' and then on 'Update Driver Software'.
5. Click on 'Browse my computer for driver software'. In the next screen click on 'Browse' and locate the driver "usbser.inf". Once selected the file, click 'Next'.
6. For finish the driver installation, click on 'Install this driver software anyway'.

IMPORTANT: For correct operation, JAVA version 8u60 must be installed on your PC!

- If the operating system is windows XP, VISTA or 7, please follow the file 'Driver Installation Manual' to install the EMAX drivers on you PC.
- If the operating system is MAC os, please follow the file 'MAC OS commands'.
- Copy the folder 'win' or 'MAC', depending on your operating system, to the desired PC folder.
- If EMAX is connected to the PC and turned ON, the serial port will appear in the drop-down menu. If it's not connected, connect and turn it ON and click the refresh button. The EMAX serial port will appear.
- Once the EMAX serial port is selected, click on the check box if you want to remove the EMAX logfile.
- Click on 'Save data' to download and save the logfile from EMAX to PC. Note that the .csv file will be created in the same folder of 'SerialEMAX_v1.4.jar'
- The .csv file can be opened by Excel or similar program.

in MAC OS

IMPORTANT: Before start using SerialEMAX on MAC, please follow the next commands:

1. Open 'Terminal' from Applications->Utilities
2. Enter the commands:
 - `sudo mkdir /var/lock` (hit enter end type your password)
 - `sudo chmod 777 /var/lock` (hit enter again)

Specifications

Available code combinations

Detection of errors in transmission

Frequency selection

Frequencies

Communication

Certification Standards

Radiated power

Antenna

Range

Consumption at rest

Consumption at transmission operation

Working temperature

Regulatory Standards

- Directive on machine safety (D89/37/EEC).
 - UNE-EN 1050
 - UNE-EN ISO 12100-1
 - UNE-EN ISO 12100-2
 - UNE-EN 61000-6-4
 - UNE-EN 61000-6-2
 - UNE-EN 1677
 - EN 10204 3.1.B
 - Assurance of production quality in accordance with ISO 9001.
 - Each mechanism is delivered with the CE stamp and a declaration of CE conformity.
- D89/391/EEC
 - D89/654/EEC
 - D89/655/EEC
 - D89/656/EEC
 - D92/58/EEC



65,536 different combinations.

2 CRC Bytes + Forward error correction.

1

868 Mhz / 915 Mhz / 917 Mhz / 924 Mhz) (Custom frequency upon demand).

Bi-directional return of receiver battery status.

EN 300 220 Telecommunications.

EN 301 489 Electromagnetic Compatibility.

EN 60730 Low Voltage.

Under 5 dB.

Printed circuit.

100 metres / 330 Feet.

5uA

20mA

-20 to +85°C / -4 to +185°F.

FCC and IC

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be colocated or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures. Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna; Increase the separation between the equipment and receiver.

Warranty

The guarantee for elebia® eMax is for 2 years and covers parts and labour for the use envisaged and recommended in the system's manual of use. Battery warranty is 6 months. Maintenance operations, and the materials and labour involved therein, are exempt from guarantee.

Distributor / Service:

Date:

Conformity declaration and manufacturer's certificate

ELEBIA AUTOHOOKS, S.L.U., with registered office at plaça Pere Llauger Prim, naus 10-11, Polígon Industrial Can Misser, 08630 Canet de Mar, Barcelona, Spain, Tax Identification Certificate: B65770265, and ISO 9001 certificate No. 9000041.

DECLARES:

Under its sole responsibility, that the following model eMax remote control for the elebia® automatic hook system, with serial number _____, complies with the EC Machinery Directive 2006/42/EC of the European Parliament and of the Council, of 22 June 1998, on the approximation of the laws of the Member States relating to machinery, and 2004/108/EC, on the approximation of the laws of the Member States relating to electromagnetic compatibility, and has been manufactured in accordance with the following harmonised standards:

EN 300 220 TELECOMUNICATIONS
EN 301 489 ELECTROMAGNETIC COMPABILITY
EN 60730 LOW VOLTAGE

As stipulated by EC Machinery Directive:

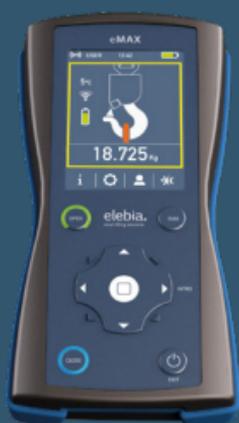
- CE symbol fixed to the autohook
- Technical documentation filed in manufacturer's site.

Authorised signatory:

Oscar Fillol Vidal

AUTOHOOKS





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