USER MANUAL

HES NSVK

INDEX

1. SUMMARY OF MODIFICATIONS.

REVIEW	DESCRIPTION
0	First edition of the document.

2. INTRODUCTION

2.1 FIELD OF APPLICATION.

The main purpose of this manual is to provide informational support for the COMMISSIONING OF THE ELEVATORS with the HES NSV maneuverK.

It is necessary to have previous knowledge of assembly and commissioning of hydraulic lifting devices; as well as the ability to interpret the plans, diagrams, and descriptions indicated in this manual.

Knowledge of the safety legislation in force in the geographical area where the installation of the NSVK lifting platform will be carried out is also necessary.

Remember that after the commissioning of the NSVK aerial platform, all the tests indicated in section 8 of the INSTRUCTION MANUAL -HES NSVK, called “Final tests prior to commissioning” of this document, must be carried out.

The start-up operator must be qualified and have specific knowledge to safely carry out the interventions provided for in this Start-up Manual.

ATTENTION: There must be at least one person responsible for the correct and safe handling of the equipment. This person must be educated and must be
Instructed on the correct and safe handling of the equipment and will be responsible for the basic basic and visual controls of the equipment.

Before starting the commissioning tasks, it is necessary to carefully read the entire manual, since it contains information regarding:

- the correct installation of the NSVK aerial platform.
- seguridadthe safety of assembly personnel.
- seguridadthe safety of maintenance personnel.
- seguridad user safety.
- the safety of the lifting platform.

2.2 USED SYMBOLS.

ATTENTION: It points out that, in the described operation, failure to follow and respect the safety regulations can cause damage to the installation or serious physical damage.

2.3 SAFETY DURING INSTALLATION.

ATTENTION: A careful and repeated reading of this instruction manual is recommended, as it contains very important information and warnings regarding the safety of the user, the installer, the conservator and the platform.

2.4 INFORMATION OF THE DOCUMENTATION.

This manual is considered to be an aid to start-up of the lift and does not form part of the fundamental documentation of the equipment, nor does it have to be with the rest of the accompanying documentation,

If you have questions about how to act or proceed, go to your SAT.

3. PREVIOUS INTRODUCTIONS BEFORE START-UP

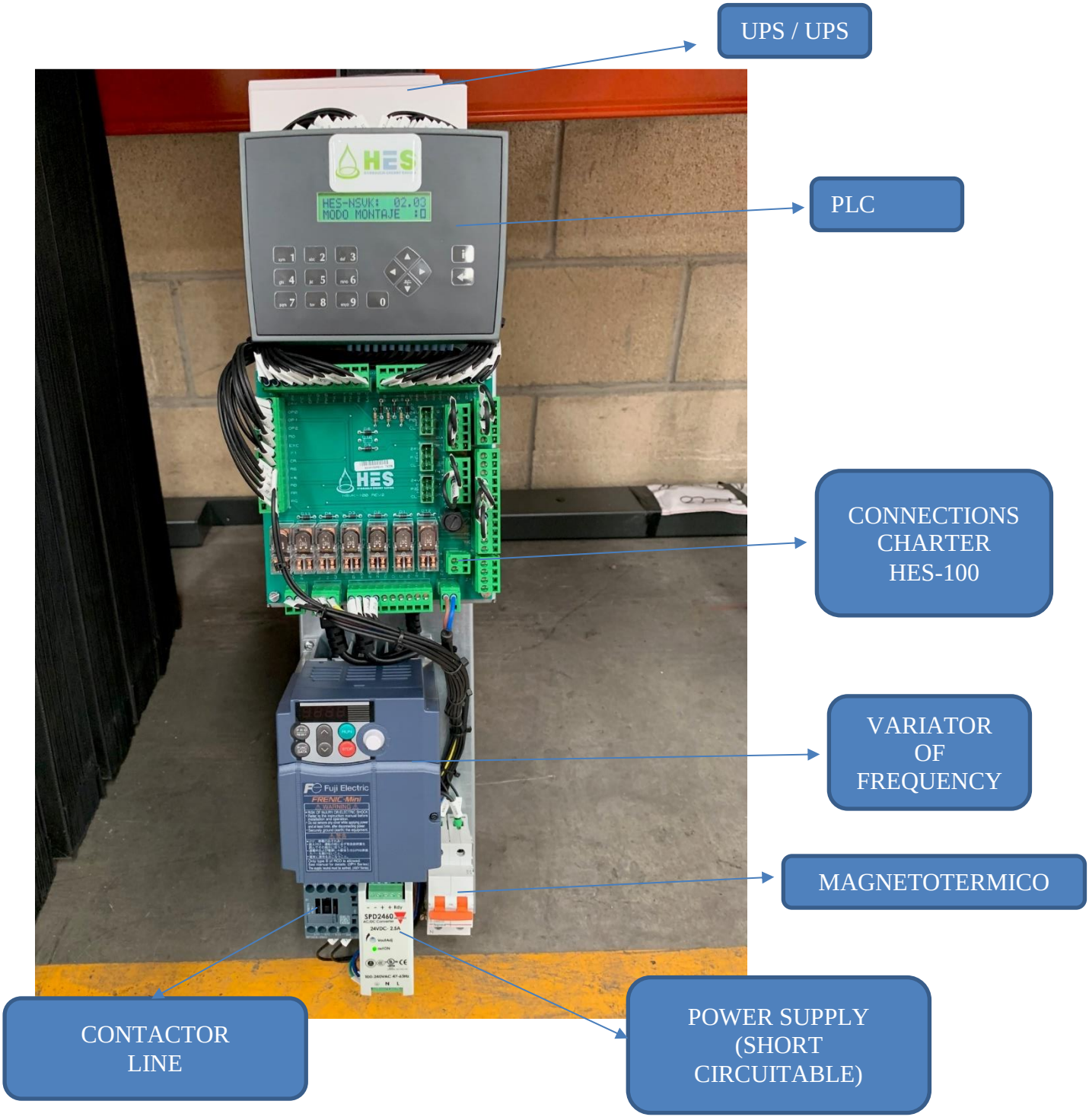
3.1. GENERAL REVIEW OF THE INSTALLATION

Before starting the elevator, we must ensure that both the mechanical and electrical assembly are correct and in accordance with the assembly manual.

In addition, it must be ensured that all the elevator connections are made and we will be using the connectors with jumpers, as we need them to identify possible problems.

We will know the different electrical organs that make up the electrical maneuver, prior to its manipulation.

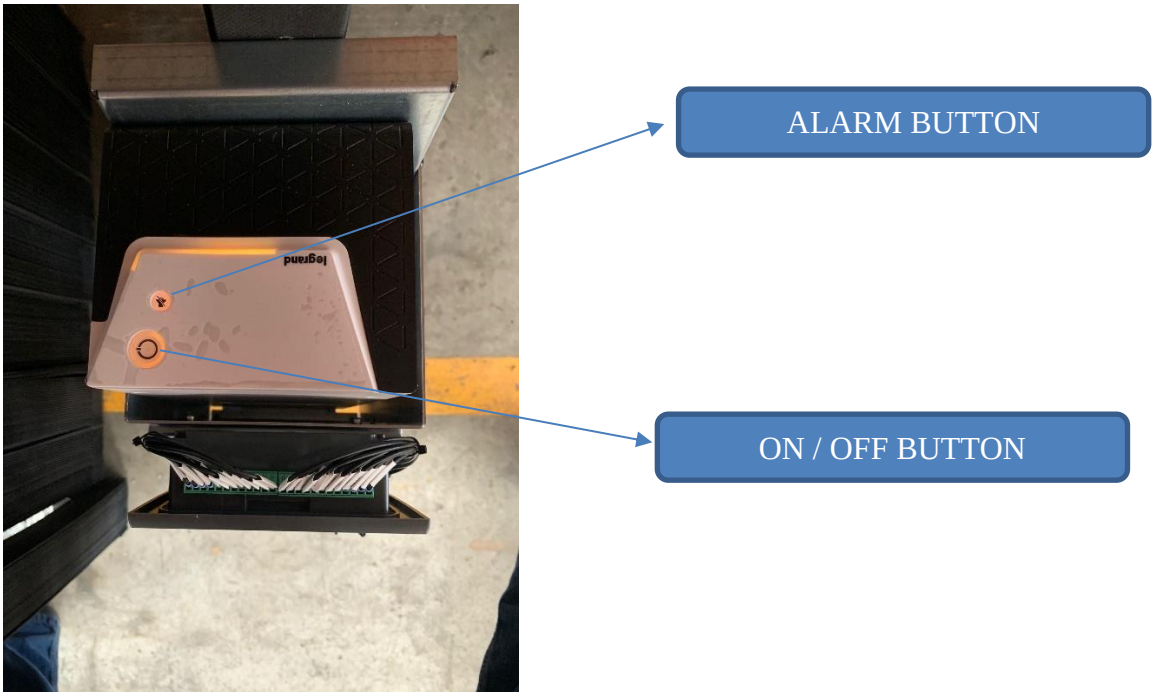
3.2. DESCRIPTION OF THE COMPONENTS OF THE ELECTRIC MANEUVER



3.3. UPS / UPS

The maneuver is equipped with a 220 Vac battery, located at the rear of the maneuver, just behind the PLC-PLC.

This emergency battery will ONLY work in the event of a power cut from the main 220 Vac power line. but it must ALWAYS be connected, during the period of operation of the elevator.



To do this, press the button to the ON position (press for 3 s) (see fig)

To turn it off, press the same button for 3 s (OFF POSITION) (see fig.)

It is mandatory that in ASSEMBLY MODE or during the installation or operation period of the equipment, THE UPS IS TURNED ON AND OFF, to avoid unnecessarily exhausting the useful life of the internal batteries.

The UPS has another button with the “HOOD” symbol, which is used to activate / deactivate the acoustic signal of the UPS (see figure)

When the UPS is not powered, an intermittent beep will sound and when the UPS is overloaded, this beep will be continuous.

In the event of a power failure and the UPS does NOT have stored power or is depleted, a rescue without voltage cannot be carried out. However, if we detect it when the elevator has main line power, we must proceed to:

1) Remove the 2-wire power input hose located on the bottom of the UPS.
2) Remove the 2-wire hose OUTPUT current located on the bottom of the UPS
3) Count them between them (MALE-FEMALE) (We bypass the UPS)
4) Proceed to replace the UPS as soon as possible

To change the UPS, it is recommended to remove the entire maneuver from the cabinet, removing the 2 M8 DIN 912 screws, located at the bottom, and lifting the panel upwards about 2 cm and proceeding to remove it. Make sure that there is no connection in the control panel.

3.4. AUTOMATA or PLC

The elevator maneuver is governed by a programmable automaton or PLC.

Before proceeding to start up the equipment, we must know the meaning contained in each of the available screens.

3.4.1 SCREEN 1: MAIN SCREEN

On the main screen, the SOFTWARE version and the status of the elevator:

1) **INSTALL MODE:**the lift will only work with closed series, and will only obey the UP and DOWN commands in the HES-100 connection chart. In addition the elevator positioning signals (PS, PB, RESET) will NOT work, nor will the re-leveling.

2) **NORMAL MODE:** the elevator will work with all the signals and we can also move the elevator using the buttons 0 (to go down) and 1 (to go up), from the membrane keyboard of the PLC.

INSTALL MODE

NORMAL MODE

TO GO TO THE NEXT SCREEN, PRESS THE MEMBRANE KEYPAD BU OF THE PLC

3.4.2 SCREEN 2: STATUS OF THE STOP-CHANGE-RESET SIGNALS

This screen shows the STATUS of the lift and how the magnets are positioned.

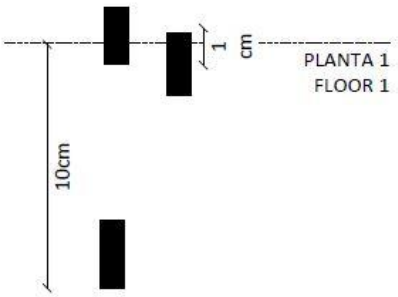
STATE (E :)

A: Rescue. (when there is no 220V)
I: Inspection / MOUNTING Mode
C: Centered (looking for a lower position. When the lift is not on floor 0. You have to lower the lift so that it knows the lowest position, and can start to go up and down)
N: Normal

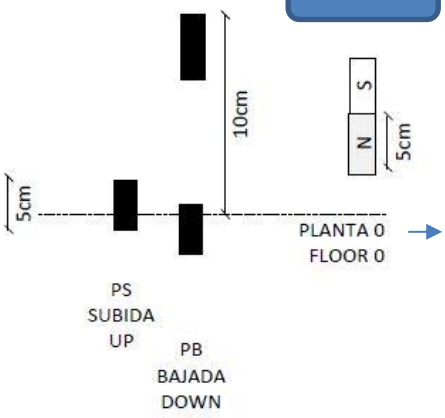
CONTACT CLOSED

OPEN CONTACT

PS ∧ PB ∨ → PULSE SIGNAL (BLACK PENCILS)



RESET → BI-STABLE SWITCH (WHITE PENCIL)



When the elevator is NORMAL on the lowest floor, PS-PB-RE, they will be ON (contacts closed)

3.4.3 SCREEN 3: STATUS OF THE STOP-CHANGE-RESET SIGNALS

(I) = INPUT

(O) = OUTPUT

BOK (I):They are the OBSTACLE DETECTION contacts that are UNDER the cabin when there is a SAFETY TRAY, or they are the contacts that are on the edge of the cabin, when there is a safety BELLOW. They only interrupt the operation of the lift when it DOWN, but not when it RISES. This signal in normal mode MUST BE CLOSED (icon on).

FC (I):It is the contact of the LIMIT SWITCH installed on the chassis behind the cab. In normal mode it MUST BE CLOSED (icon on).

SPC (I):It is the MAIN CABIN SERIES signal, which constitutes the STOP of the cabin and the LATCH contact (only in SVU models). This signal in normal mode MUST BE CLOSED (icon on)

TK0 (I): It is the PRESENCE signal of the lock of the door of the LOWEST FLOOR, either a semi-cabin door, or a 2,000 mm free height exterior door

RK0 (I): It is the LATCH signal of the lock of the door of the LOWEST FLOOR, either a semi-cabin door, or a 2,000 mm free height exterior door

OP0 (O):It is the sign of the status of the COIL of the lock of the door of the LOWEST FLOOR, either a semi-cabin door, or a 2,000 mm free height exterior door. When the coil is excited and therefore we can open the door or half-door of P0, this signal will be ON.

3.4.4 SCREEN 4: STATUS OF DOOR SIGNALS P1 AND P2

TK1 (I): It is the PRESENCE signal of the lock of the door next to the ground floor, which will be an exterior semi-door, or an exterior door with a height of 2,000 mm. In the event that the elevator has only 2 stops (more case usual), this door will be the HIGHEST, otherwise it will be the intermediate one.

RK1 (I): It is the LATCH sign of the lock of the door next to the ground floor, which will be an exterior semi-door, or an exterior door with a height of 2,000 mm

OP1 (O): It is the signal of the state of the COIL of the door lock of the door lock next to the ground floor, which will be an exterior semi-door, or an exterior door of free height 2,000 mm When the coil is excited and therefore we can open the door or semi-door of P1, this signal will be ON.

TK2 (I): It is the PRESENCE sign of the lock of the highest door, which will be an exterior half-door, or a 2,000 mm free height exterior door (it is not frequent)

RK2 (I): It is the LATCH sign of the lock on the highest door, which will be an exterior half-door, or a 2,000 mm free height exterior door (not frequent)

OP2 (O):It is the COIL status signal of the highest door lock, which will be an exterior half door, or a 2,000 mm height free exterior door (not frequent). When the coil is energized and therefore we can open the door or half-door of P0, this signal will be ON.

3.4.5 SCREEN 5: SIGNAL STATUS: PR, EXC, VC, RO, UPS, LT.

PR (I):It is the PRESSURE SWITCH (or overload) signal. This signal will come on when there is excess weight in the cab. The pressure switch is mechanically adjusted with a screw. In the event that this signal acts during a trip (up or down), the lift will continue to operate, and will only interrupt its operation when it is at ground level.

EXC (O): It is the signal that activates the OVERLOAD LIGHT on the cabin keypad.

VC (I):It is the CONTACTOR SURVEILLANCE signal. In case of contactor failure (Contactor stuck).
This signal will be ON when the lift is STOPPED and will be OFF when the lift is going up and down. If something different happens to these 2 states, the automaton will fail.

RO (O):It is the signal that indicates that the elevator is OCCUPIED (OUTDOOR push button light). When it blinks intermittently for 1 sec, it means that the main series is open (Photocell, STOP, Limit switch….) And when it blinks for 2 sec, it means that there is NO 220 Vac POWER SUPPLY FROM THE MAIN LINE.

UPS (I): It is the signal that indicates that the elevator has a power failure in the main line and is working with the UPS (only down).

LT (O):It is the signal that indicates the status of the TIMED LIGHT (in the cabin or in the shaft). It is used to time the LIGHTING of the shaft / cabin, when the user reaches the floor and exits the elevator. This signal will be ON when there is a light in the cabin / shaft and OFF when the light is switched off.
3.4.6 SCREEN 6: SIGNAL STATUS: P0, P1, LLC, COP.

P0 (I): It is the call input signal of FLOOR 0, or lower floor (both cabin and outdoor)

P1 (I): It is the call input signal of FLOOR 1, or higher (or intermediate) floor.

LLC (I):It is the signal that indicates if THE CALL IS A CABIN. If pressed from the cabin, this signal will turn ON

COP (I):It is the ENABLING signal of the cabin keypad. It is used when we have external call keys and ONLY buttons in the cabin (without restriction). It prevents someone from using the cabin without having the corresponding key. In case of having external buttons, there would be a key in the cabin and this signal would be ALWAYS CLOSED (constant enable)

3.4.7 SCREEN 7: SIGNAL STATUS: RS, RB, KS, RR, RG, TRAVEL

RS (O):It is the output signal of the RISE RELAY. This signal goes to the frequency inverter.

RS (O):It is the output signal of the RISE RELAY. Operate the lowering valve

KS (O): It is the output signal that activates the LINE CONTACTOR (rise contactor).

RR (O):It is the QUICK RELAY output signal. This signal goes to the frequency inverter and also to the quick coil of the hydraulic valve.

RG (O):It is the output signal of the GENERAL RELAY. This signal is activated when the elevator goes UP or DOWN. It acts as a "double contactor" for safety.

TRIPS (O): Indicates the NUMBER of times that the RG signal acts. This counter is used to analyze the trips made by the elevator and can be set to “0” by entering programming mode.

3.4.8 SCREEN 8: RESET SVK SIGNAL

RESET SVK:It is used to RESET the elevator. The function is the same, that if we REMOVE CURRENT to the PLC (automaton). To reset, proceed to press the ENTER key on the PLC membrane keyboard twice.

3.4.9 SCREEN 9: RESET ERROR SIGNAL

RESET ERROR:It is used to DELETE the LAST registered error of the elevator. This PLC stores the LAST registered error that we will see on the next page). To reset the last error, press the ENTER key on the PLC membrane keyboard twice.

3.4.10 SCREEN 10: LAST REGISTERED ERROR (LAST SCREEN)

The last screen describes the LAST REGISTERED ERROR. EXAMPLE:

ERR: 13 UPS => Main line power error (power failure)

1608 => The time 16:08 h

12112019 => The date 11/12/2019

Next, we show the list of errors programmed in the PLC

COD.	SUMMARY DESCRIPTION	DESCRIPTION	POSSIBLE CAUSE
0	NO ERROR	No mistake	
one	F_FC	Limit switch failure	Check the limit switch
two	F_SPC	Cabin stop failure or there is a photocell or chassis trigger (SVU)	Check cab stop, photocells (if switched), or trigger contact.
3	F_TK0_MAR	Failure of the presence of floor 0 with the elevator RUNNING	Check presence floor 0
4	F_RK0_MAR	Floor 0 deadbolt failure with elevator RUNNING	Check bolt floor 0
5	F_TK1_MAR	Failure of the presence of plant 1 with the elevator ON	Check presence floor 1
6	F_RK1_MAR	Floor 1 deadbolt failure with elevator RUNNING	Check bolt floor 1
7	F_TK2_MAR	Failure of the presence of floor 2 with the elevator RUNNING	Check presence floor 2
8	F_RK2_MAR	Floor 2 latch failure with elevator RUNNING	Check bolt floor 2
9	F_VC_STP	The KS contactor or the DOWN relay has not dropped at the stop	Check the NC contacts of the contactor or relay on the HES-100 board
10	F_VC_MAR	The KS contactor or RB relay did not enter when operating the elevator	Check the NC contacts of the contactor or relay on the HES-100 board
eleven	F_LIMIT_MAR	Exceeded the maximum limit of 1 minute between magnets. Running time limit	- Review PS-PB - Check Overpressure valve (cabin does not move) - Check inverter slow speed (parameter C05)
12	F_RESET	The RESET flip-flop has NOT been activated by entering FLOOR 0	Check bi-stable or hollow magnets
13	UPS	Absence of power supply to the MAIN LINE 220 Vac	Check main supply or cut-off switch
14	LIMIT RVL	Re-leveling failure.	- Check magnets and detectors - Check the slow speed (parameter C05 of the drive)
fifteen	EN_DOWN	BOK has been disabled on download	Check the contacts / wiring of the BOK mics

3.4.11 HOW TO MOVE FROM ASSEMBLY TO NORMAL AND VICE-VERSA

- GO FROM ASSEMBLY MODE TO NORMAL MODE (4 STEPS)

1) Press DOWN button on the main screen 2) Press ENTER button

3) Remove power to the PLC by disconnecting the connector in the figure (bottom left)
4) Insert the connector again, feeding the PLC. It will now pass to NORMAL MODE

- GO FROM NORMAL MODE TO MOUNTING MODE (1 STEP)

1) At the same time, press buttons 4 and 6 of the PLC membrane keyboard

3.4.12 CONFIGURABLE PARAMETERS

To change the elevator PARAMETERS, YOU CAN ONLY DO IT IN MOUNTING MODE (see previous procedure).

While in assembly mode and on the main screen, press the DOWN button on the keyboard (see fig. 1) and press the DOWN ARROW button again (fig. 2)

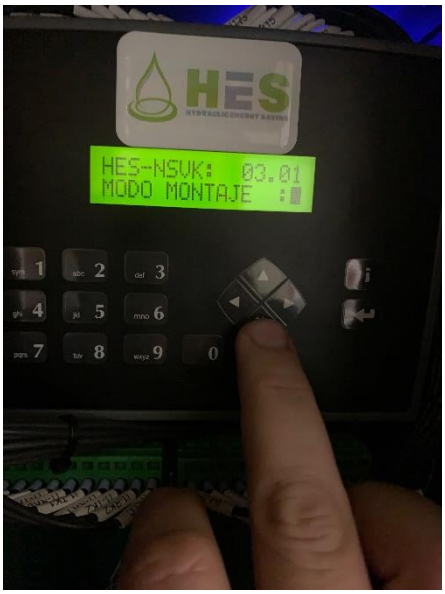


FIg. 1

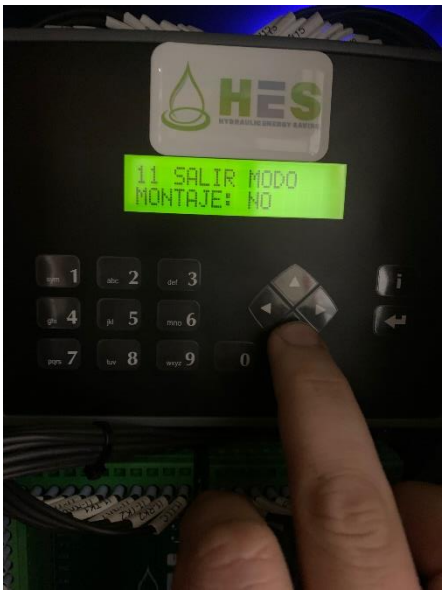
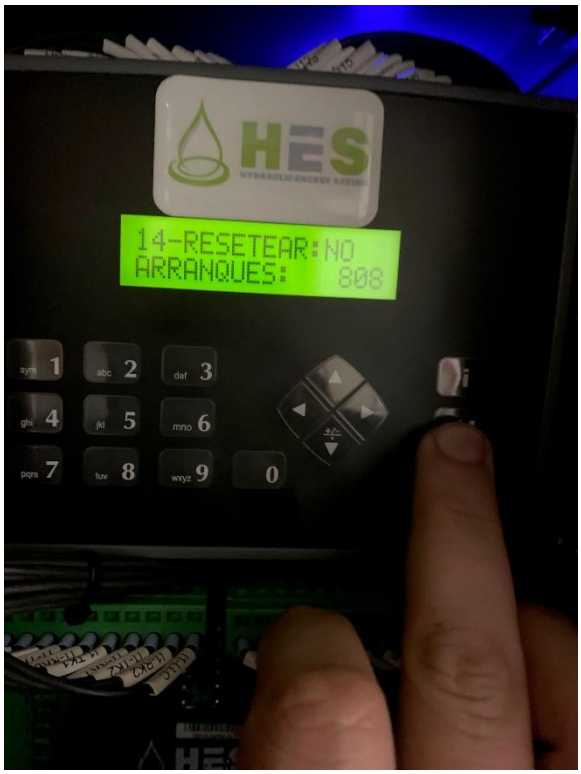


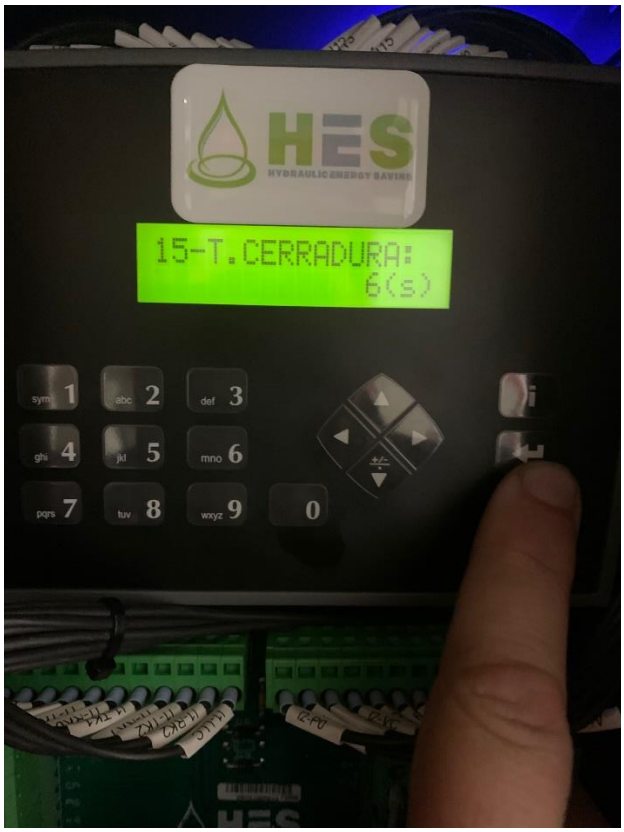
Fig. 2

1º- The first configurable parameter is DATE AND TIME. Pressing ENTER, you enter EDIT mode and with the numbers on the keyboard the date is changed, pressing ENTER we would change the time using the numbers and pressing ENTER again, WE EXIT EDITING MODE.

2º- the second configurable parameter is RESET STARTINGS. Pressing ENTER, we reset the start counter. Pressing DOWN ARROW, we go to the next parameter.



3º- the third parameter is the TIME THAT THE UNLOCKED LOCK REMAINS (coil supply). Pressing ENTER you enter EDIT mode and the time is changed. Press DOWN ARROW for next parameter.



4º- The fourth parameter is to choose if we want to open the lock, after performing a RENIVELATION. Pressing ENTER you enter EDIT mode and the time is changed. Press DOWN ARROW for next parameter.

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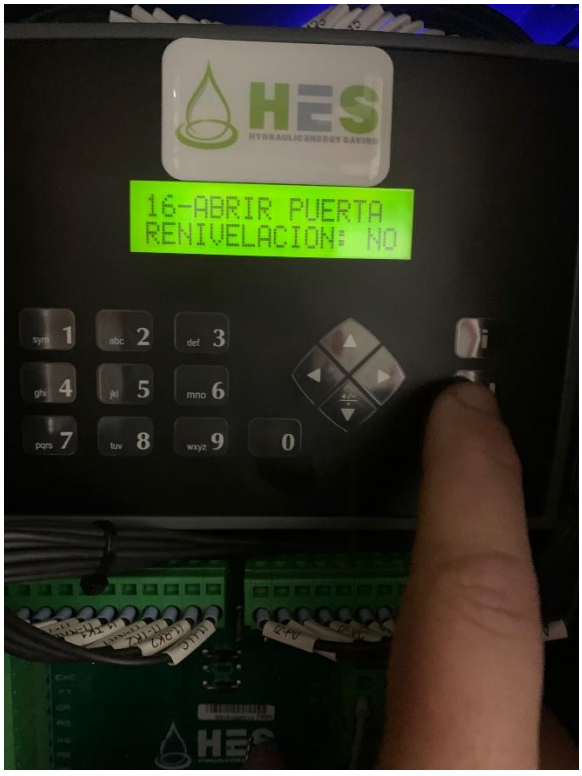
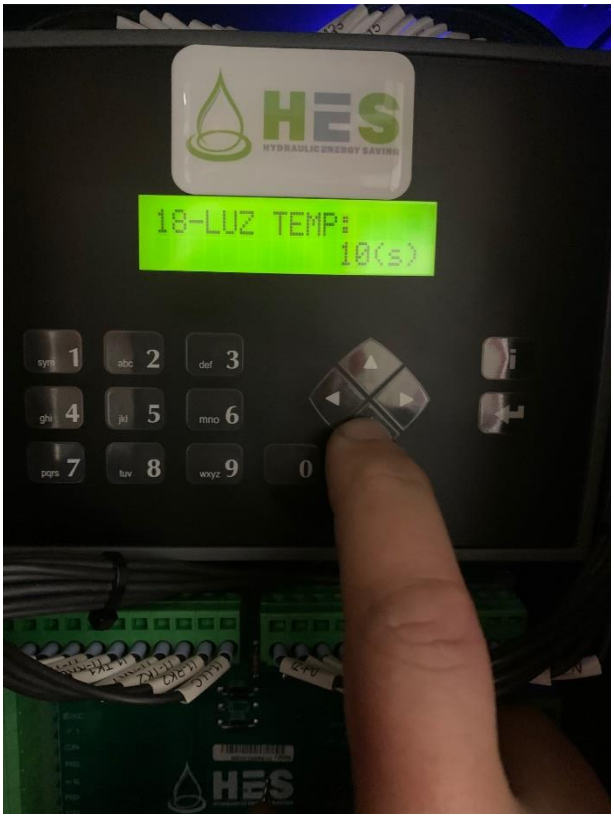
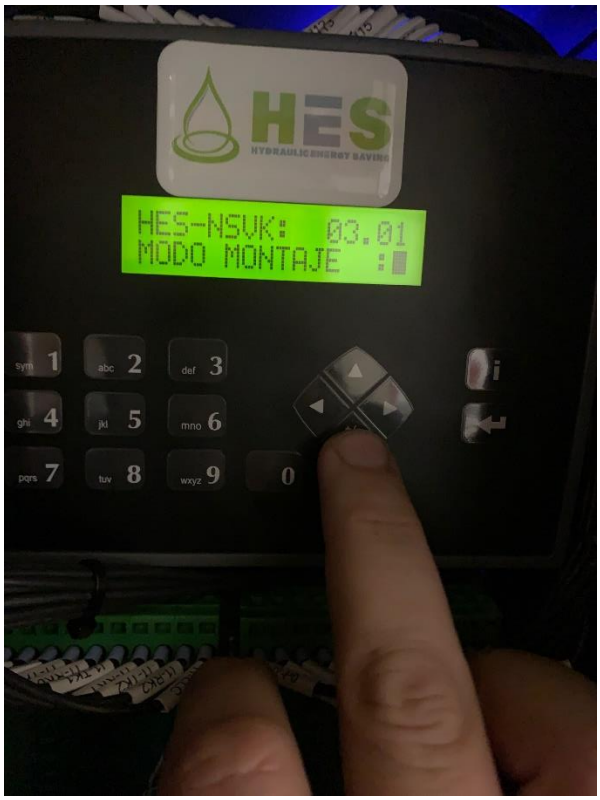


5º- The fifth configurable parameter is to select the time of the timed light, that is, the time that the light stays on when the doors are closed, unless a series is activated.



6º- the sixth parameter is the TIMING OF THE CAB BUTTON, that is to say the time that the cabin keypad has been enabled since the door is unlocked. If the time is "0", it is ALWAYS ENABLED

PRESS BUTTON DOWN AND WE ARE IN MAIN MENU



4. FINAL TESTS PRIOR TO COMMISSIONING.

7.2 Pre-commissioning checks

ATTENTION: The final tests prior to the launch of the platform must be carried out by qualified personnel.

	Right	Incorrect
Is the surface in the boarding area a smooth and continuous surface?		
Verify that the platform does not generate any possibility of trapping at the crossing of any floor (intermediate stop)		
Verify that the distance between the passenger compartment and the landing is not more than 25mm (20mm is an optimal value).		
Verify that the clearance with the attached structure or walls allows the safe movement of the appliance		
Verify that the piston and suspension elements are installed correctly		
Does the upper limit switch cut the safety series and act before the piston stops?		
Does the interior emergency stop work correctly?		
Do all doors lock properly?		
Does the presence of the doors work correctly and order the platform to stop when it is operated?		
Does the bodyguard or bellows not lock and does it work well from a mechanical point of view?		
Are the contacts of the bumper or the bellows correctly installed and does the safety series cut when they are operated?		
With the stopcock closed, make a call and check that the safety pressure is according to the installation.		
Do the cabin buttons work correctly and are they conditioned to the key?		
Do the landing buttons work correctly?		
Does the platform stop level at all stops, both up and down?		
Is the overload contact connected and operating at 110% of the nominal load?		