CONTROL UNIT OMEGA 800-R

User manual

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1. DESCRIPTION AND MAIN FEATURES

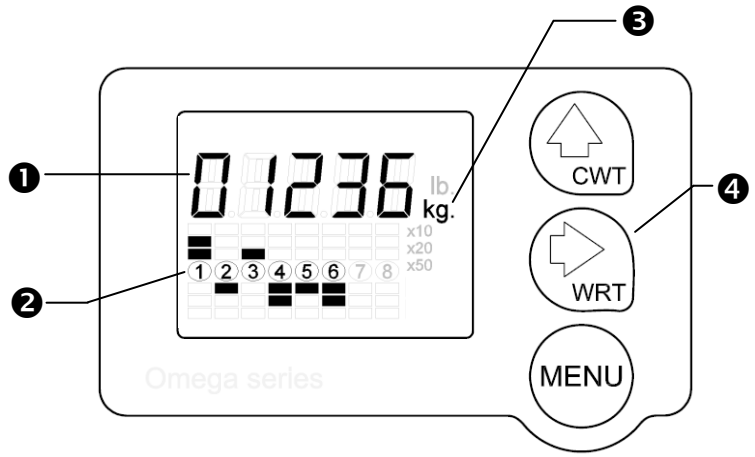
Dinacell OMEGA 800-R is a system to measure the weight of the elevator car (CWT) or counterweight (CTWT) as well as to monitor the tension of each elevator rope individually.

This system consists of inputs for up to eight *sensors*.

Materials of the kit:

Control Unit	RTM Sensors	Suitcase
		

2. DISPLAY AND CONTROL BUTTONS



❶ Show *load* and value of *parameters*
❷ *Rope tension monitor*
❸ Show units
❹ Control buttons

Functions of control buttons:

a. Enter/exit of the menu and navigate through parameters.
b. Accept and save modified values.

a. When load is shown: Enter in the *rope tension monitor* function (WRT)
b. During menu navigation: Enter to modify a parameter.
c. While modifying a parameter: Chose digit to change.

a. When load is shown: while it is keeping pressed it will show the weight of the car (CWT) or counterweight (CTWT) depending on where the sensors have been installed.
b. During menu navigation: Show the stored value of the selected parameter.
c. While modifying a parameter: Change the blinking digit incrementally from 0 to 9.

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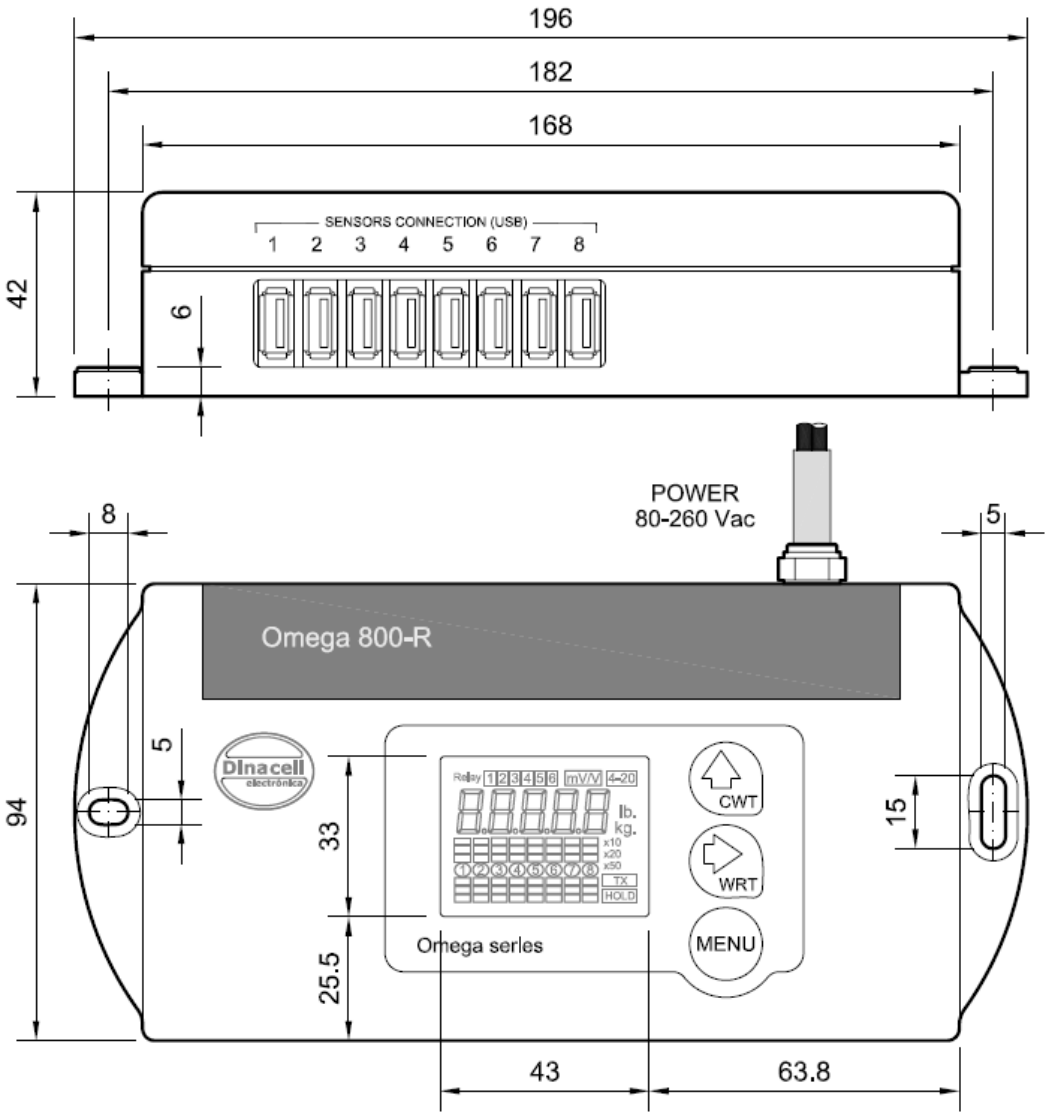
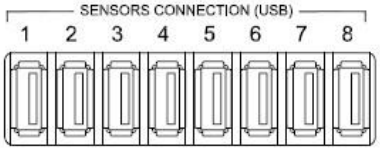
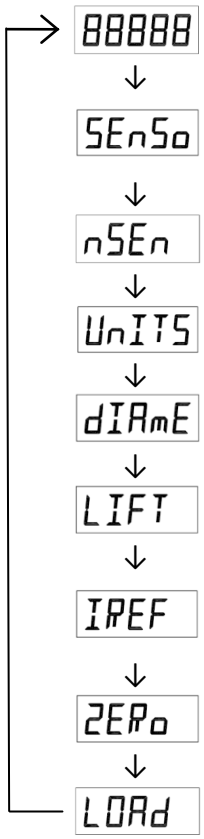
3. INSTALLATION AND CONNECTIONS



Sensors input		USB sockets for load cells.
Power supply cord		Earthed **80-260V ac** power supply

4. MENU STRUCTURE

The menu has the cyclic structure shown in the following figure.
Press (MENU) button for 2 seconds to enter, then press it repeatedly to move from a parameter to another. Press it for 2 seconds to exit.



- 88888 — Display the value of the measured load
- SEnSo — Sets the sensor type (RTM1 or RTM2)
  Be careful to use RTM1 for ø5-13mm ropes and RTM2 for ø13-20mm
- nSEn — Sets the number of sensors to use
- UnITS — Sets measurement units to kg or lb
- dIAmE — Sets the elevator ropes diameter (in mm)
- LIFT — Sets the elevator roping type (1:1 or 2:1)
- IREF — Initial reference when sensors are not installed on the ropes
  (not available when parameter SENSO is set to TCA)
- 2ERo — Parameter to adjust measurement with empty car
- LOAd — Parameter to adjust measurement with car loaded

5. HOW TO CHECK OR MODIFY PARAMETERS

Once inside menu and display showing the parameter to be viewed or changed:

- Press (CWT) to check the current value.
- Press (WRT) to enter to modify the value:
  - Press (WRT) to chose the digit to change (blinking) and (CWT) to change it.
    (if there's no digit blinking, change the value with (CWT) button directly).
  - Press (MENU) twice to save the value.

> If (MENU) button is not pressed the second time before display blink ends, the changes will not be stored.

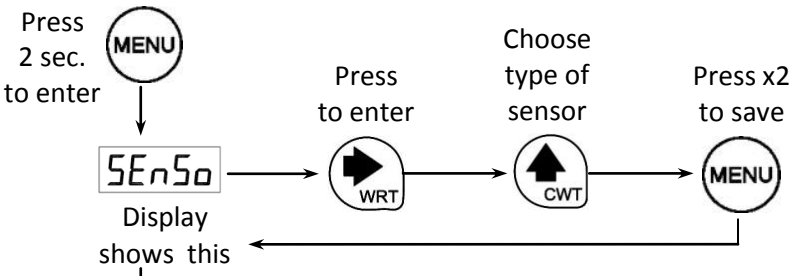
After any of these operations, the display shows the current parameter.

6. SYSTEM CONFIGURATION

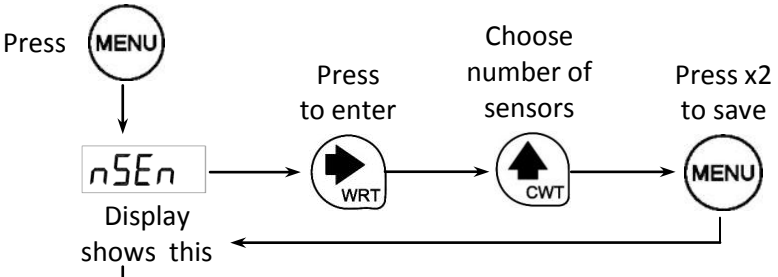
> Make sure that the sensors are NOT installed on the ropes

1. Install the control unit with the information of the *INSTALL AND CONNECTIONS* chapter.
2. Connect sensors to the unit Omega.
3. Power up the unit with the correct voltage (see the SPECIFICATIONS chapter).

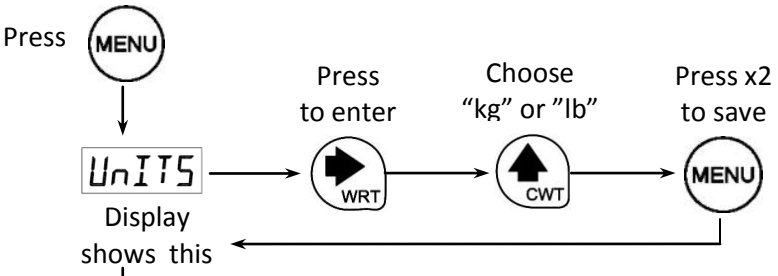
4. Set parameter SEnSo according with the sensors type that it is going to use .



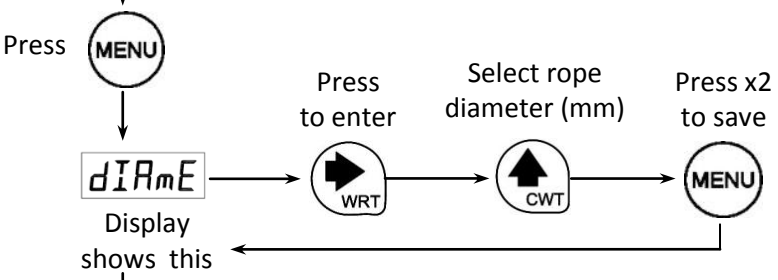
5. Set parameter nSEn according with the number of sensors that it is going to be connected.



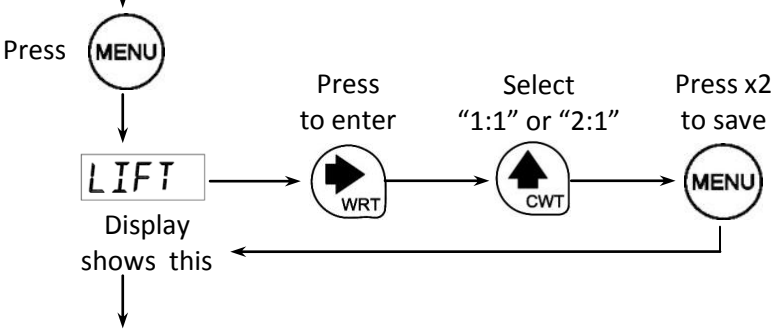
6. Set units of measurement.



7. Set diameter of ropes.

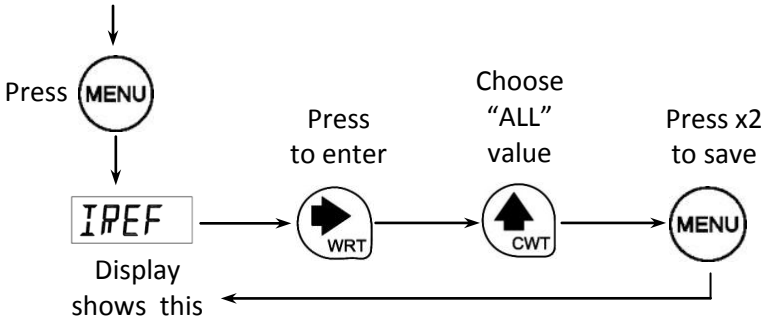


8. Set roping type of elevator.



The IREF operation sets the zero when sensors are not installed on the ropes. After this, the ropes tension can be measured and adjusted individually as well as the car and counter weight load can be measured.

9. Set IREF with the value “ALL”.



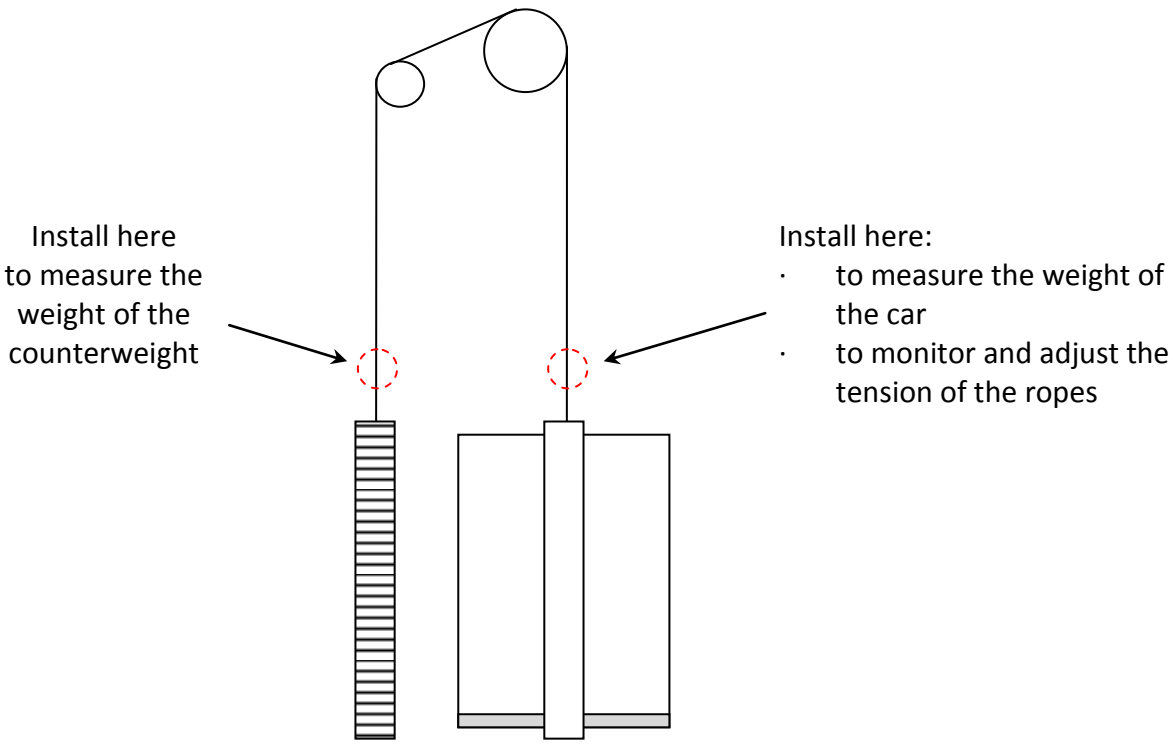
7. OPERATION DEPENDING ON THE APPLICATION

This system has two modes of working:

a) can be used to adjust ropes tension (WRT) (see chapter 7.1)
b) can be used to measure the weight of the car (CWT) or of the counterweight (CTWT). (see chapter 7.2)

⚠	Now install sensors on the ropes

Install the sensors according with the next drawing depending on the application:

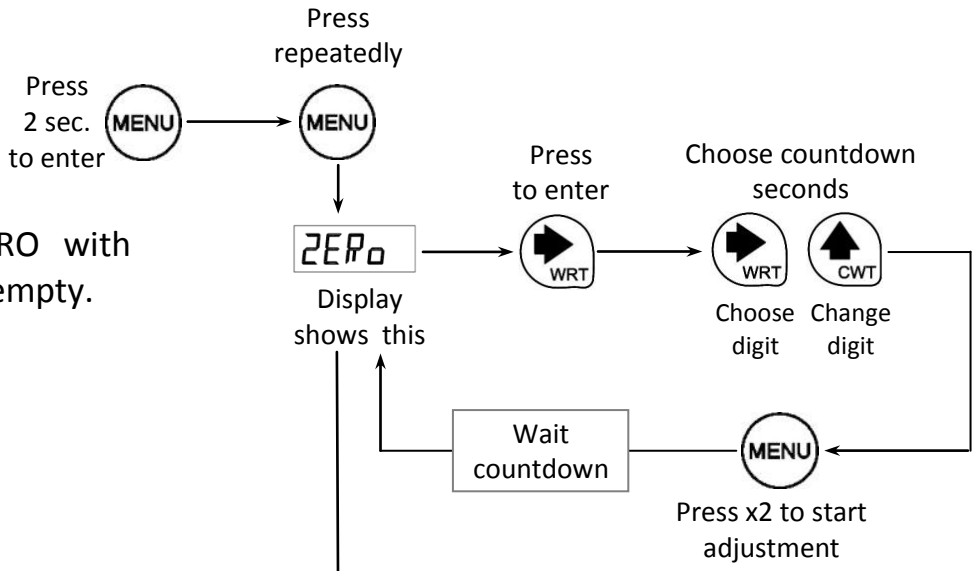


(Drawing for 1:1 roping)

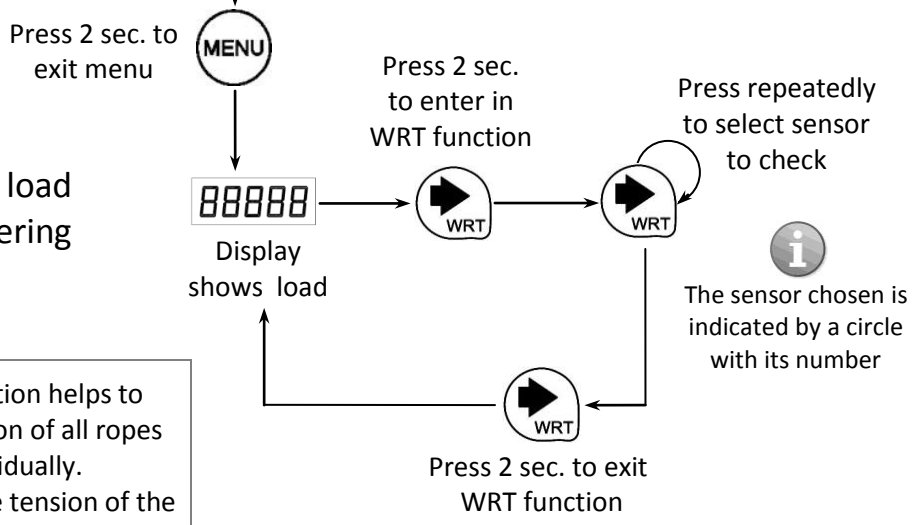
7.1. SYSTEM USED AS A ROPE TENSION MONITOR (WRT)

- Make sure the sensors are installed on the ropes.
- Make sure the cabin is empty and there's no weight on the car roof.

1. Adjust ZERO with the cabin empty.

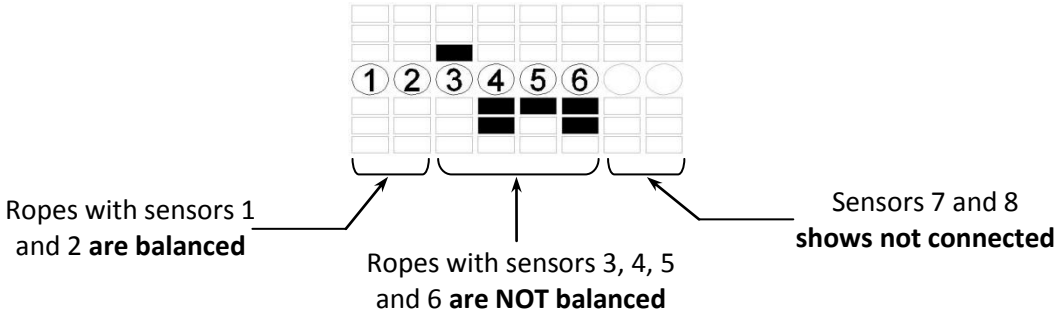


2. Check sensors load individually entering in WRT function.



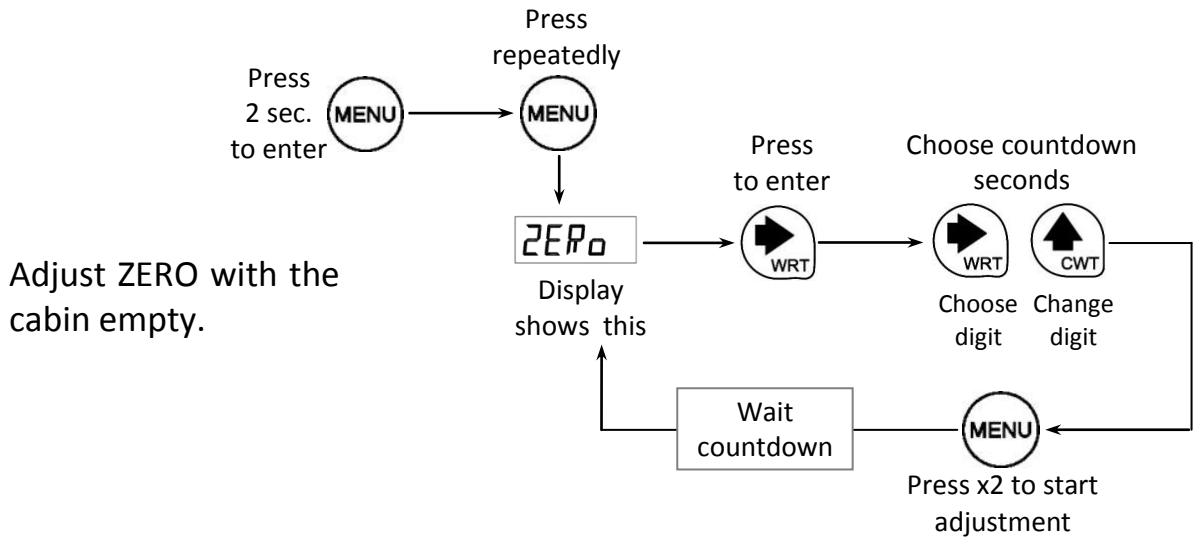
WRT function helps to check tension of all ropes individually.
To adjust the tension of the ropes, follow the next step.

3. Adjust tension of ropes with the help of *rope tension monitor (WRT)* in display, as it is explained with the next figure.



7.2. SYSTEM USED TO WEIGH THE CAR (CWT) OR COUNTERWEIGHT (CTWT)

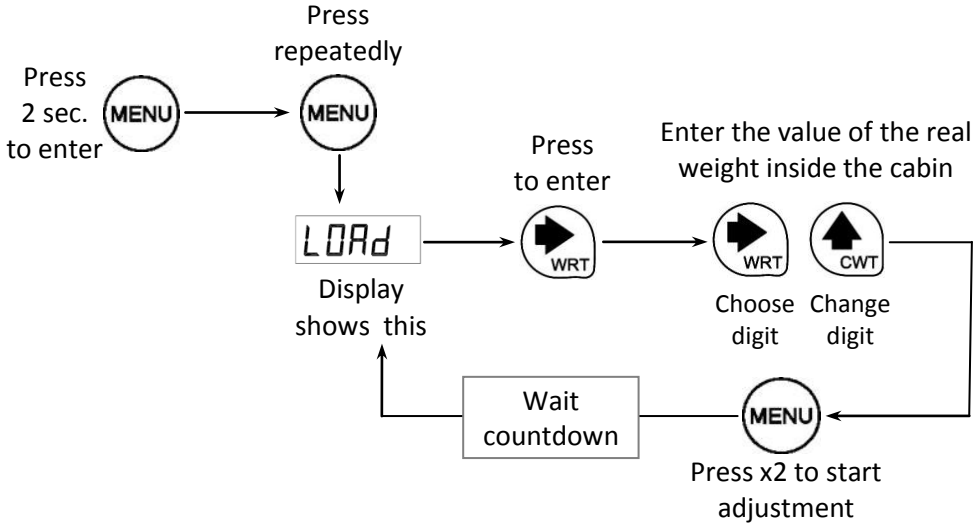
- Make sure the sensors are installed on the ropes.
- Make sure the cabin is empty and there's no weight on the car roof.



Now, after ZERO setting, the measured value of the Car Weight (CWT) or Counterweight (CTWT) can be checked (depending on where the sensors were installed). **Keep pressed the** CWT **button** during 2 seconds and the weight will be shown in display. This value remains stored despite the sensors are uninstalled from the ropes.

The system is factory calibrated, nevertheless, if it is considered that there is a high friction on the guides of the elevator, in order to optimize results on the measurement, an additional operation could be done using a well known weight inside the cabin.

- Make sure that zero adjustment is already done
- Introduce inside the cabin a well known weight (minimum 50% of the elevator full load).

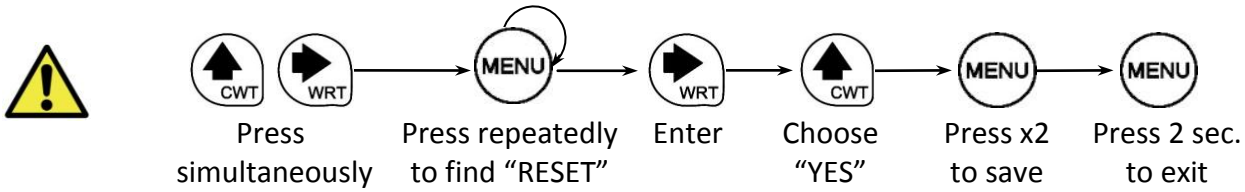


8. ERROR CODES AND TROUBLESHOOTING

When the unit detects some anomaly it will show an error codes of the following:

	Error description	Action
Err 1	Load cell is not properly connected, it or its cable is damaged.	Check the load cells connection.
Err 2	Negative overflow. The load cell is giving a negative signal too high.	Check the load cell connection because it should be no negative charge.
Err 3	Positive overflow. Load cell is holding a higher load than its nominal value.	load cell by another with higher nominal load.
Err 4	Polarity error. This happens when the unit adjusts the weight with the wrong load cell polarity, or the weight is not in the cabin during the adjustment.	Check the load cells connection. Adjust the zero and weight again.
Err 6	Loss of data in memory. **Notice**: When this error appears, every relay will remain in OFF state.	The unit must be configured again with the properly values.
Err 7	Load cell with very low sensibility. Usually the unit is wrong adjusted.	Adjust the zero and weight again.

RESTORING THE FACTORY SETTINGS (Only in case of configuration problems)

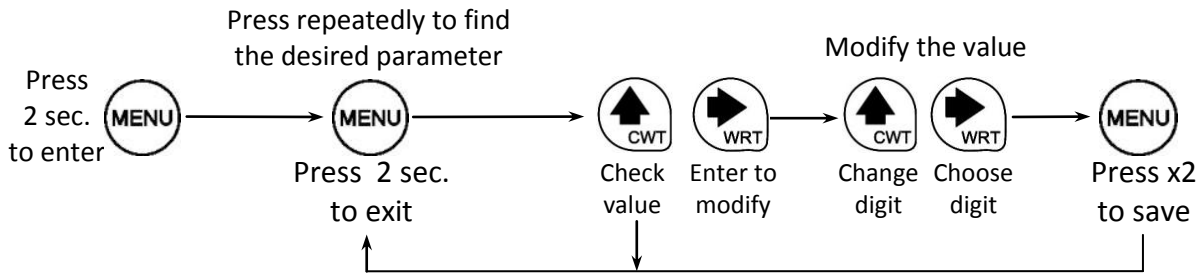


9. SPECIFICATIONS

Power supply characteristics	Short-circuitable. It is not necessary to replace any fuse.
Nominal voltage	80-260V ac
Maximum current	130mA
Nominal frequency	50-60 Hz
Box	IP-50 V0 fireproof plastic.

10. QUICK CONFIGURATION GUIDE

- **Parameters checking or modification**



- **System configuration**

1. Make the necessary connections.
2. Make sure that the sensors are not installed on the ropes.
3. Set parameter SEnSo according with the sensors type.
4. Set parameter nSEn according with the number of sensors.
5. Set UnITS of measurement (“kg” or ”lb”).
6. Set dIAmE according with the type of ropes of the elevator.
7. Set LIFT according with the roping type of the elevator.
8. Set IPEF with the value “ALL”.
9. NOW, install sensors on the ropes as shown in drawing of the chapter 7 depending on the application
10. Adjust ZERO with the cabin empty.

- **Follow next operations a) or b) depending on the application:**

a) When system is working as a rope tension monitor (WRT)

1. Check sensors load individually pressing WRT button during 2 seconds and then exit pressing WRT button during 2 seconds.
2. Adjust tension of ropes with the help of *rope tension monitor (WRT)* in display.

b) When system is working to measure the weight of the car (CWT) or the counterweight (CTWT)

1. Keep pressed the CWT button during 2 seconds and the weight of the car or the counterweight will be shown in display. Depending on where the sensors were installed.