

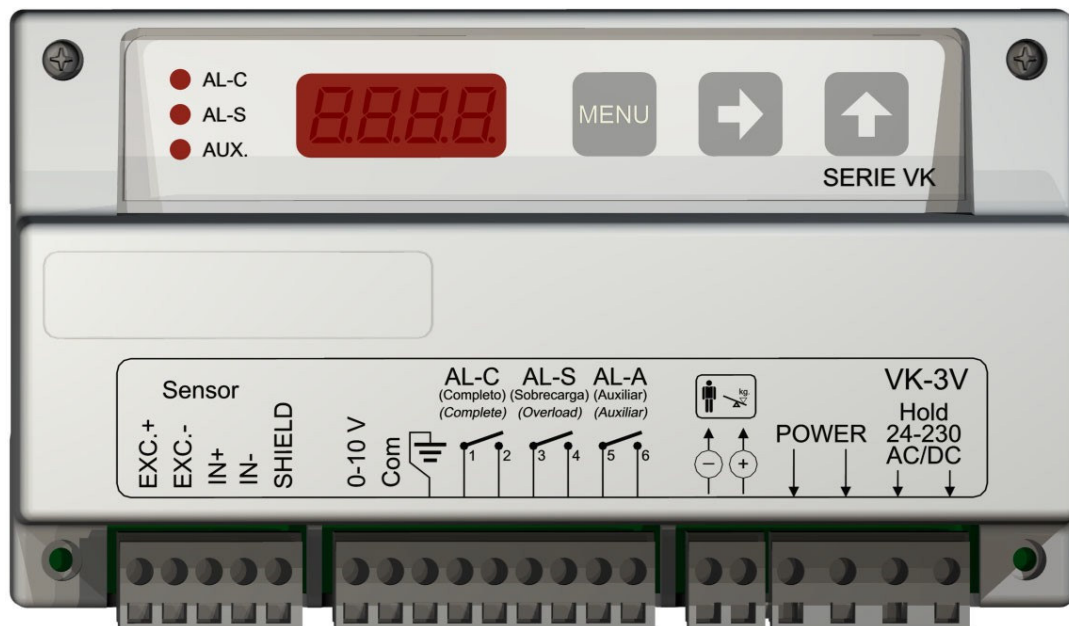


## Load limiting device

# VK-3V

---

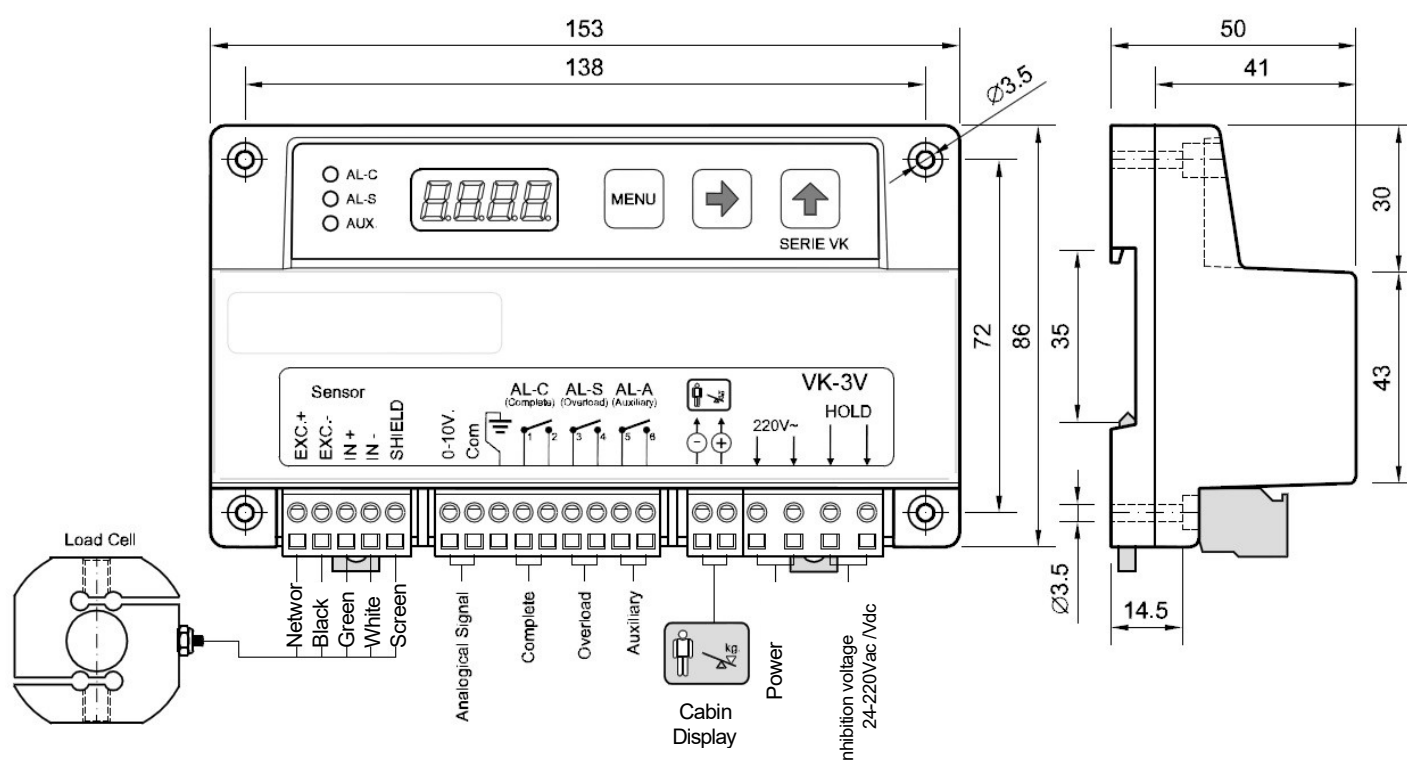
## User Manual



## Index

<b>1.- Installation and connections</b>	<b>3</b>
<b>2.- Connections description</b>	<b>3</b>
<b>3.- Cabin Display Output</b>	<b>3</b>
<b>4.- Analog output</b>	<b>4</b>
<b>5.- Access to menu parameters</b>	<b>4</b>
<b>6.- Modification of the parameters</b>	<b>4</b>
6.1.- CHANGING AN ALARM	
6.2.- MODIFICATION OF A PARAMETER (NON-ALARM)	
<b>7.- Programming menu structure</b>	<b>5</b>
<b>8.- Device calibration</b>	<b>5</b>
I.- Normal calibration	
1.- Zeroing	
2.- Weight adjustment	
II.- Calibration for direct transmission cells	
1.- Setting Zero	
2.- Weight adjustment	
<b>9.- Alarms</b>	<b>6</b>
<b>10.- Auxiliary functions</b>	<b>6</b>
<b>11.- Low power mode</b>	<b>7</b>
<b>12.- Electrical features</b>	<b>7</b>
<b>13.- Fuse change</b>	<b>7</b>
<b>14.- Error codes and solutions</b>	<b>7</b>
<b>15.- Quick Programming Guide</b>	<b>8</b>

## 1. Installation and Connections



## 2. Connections description

**AL-C** (Relay contact for full load).

Changes the state if the scheduled load in the parameter is exceeded. **AL-C**.

**AL-S** (Relay Contact for Overload)

Changes the state if the scheduled load in the parameter is exceeded. **AL-S**.

**AL-A** (Auxiliary Relay Contact)

Changes the state if the scheduled load in the parameter is exceeded. **AL-A**.

**HOLD** (Activated with a current between 24 and 220 V alternating or continuous).

When the elevator is running, the weight measurement is not precise, so the relays could be activated, and the cabin display might look unstable.

By activating the HOLD input at the beginning of the movement, the weight measurement is locked, the display is flashing, and the relays along with the cabin display retain their status until this input is deactivated, which must be after the elevator is stopped.

## 3. Cabin display output

You can choose two types of output, which are selected with the **CONF** parameter.

a) Output that flashes when an overload occurs. The output has polarity and can be valid to activate a LED or buzzer (continuous current 7.5 V max.; 75 mA).

b) Activating the MB-D progressive display (two-wire connection without polarity).


## 4. Analog output


Voltage output 0-10V.


0 V	Weight - 0 kg (empty elevator)
10 V	Weight - AL-C (full elevator)

## 5. Access to menu parameters

The device features a menu to access the settings parameters.








 Pressing this key successively cycles through all programmable menu parameters. To return to the weight display press the key until you reach the end of the cycle, or hold it down for 2 seconds.

 Press this key to modify a parameter.






 Press this key to change the digit value.  
Also, this key allows to view the contents of the parameter on which we are located.


## 6. Modification of the parameter


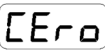
### 6.1. CHANGING AN ALARM

- 1) Press the  key successively until you are placed on the desired alarm.
- 2) Press the  key to enter the parameter modification. The digit on the left will flash.
- 3) Enter the desired value using the keys.  
- 4) Press  to save the entered value.
- 5) Change the relay status with the  (ON/OFF) key.
- 6) Double-click  to save the change. If you press it once, it will not be saved.

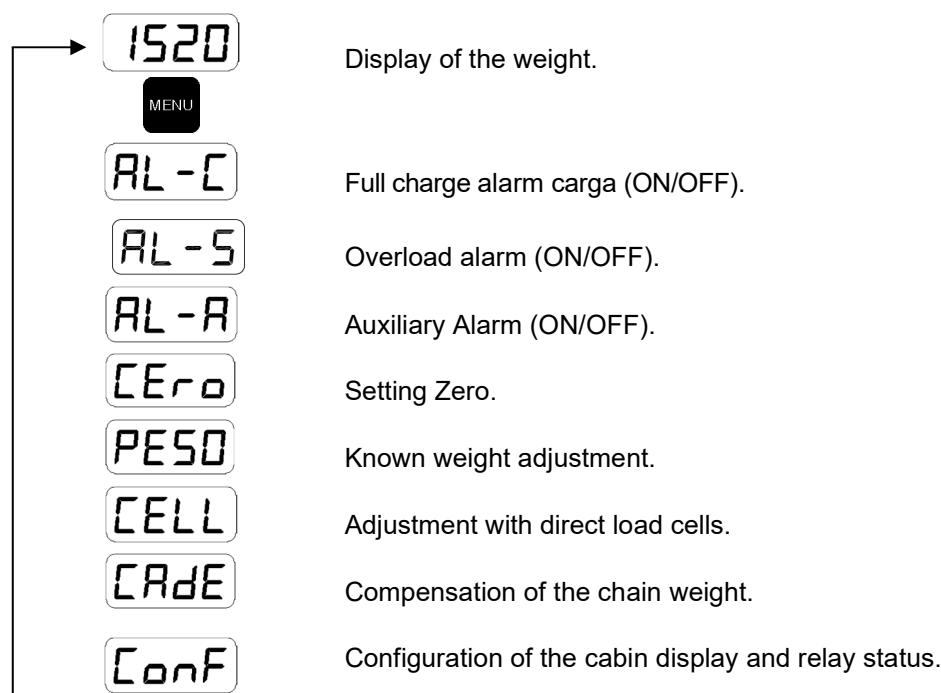
### 6.2. MODIFICATION OF A PARAMETER (NON-ALARM).

- 1) Press the  key successively until you reach the desired parameter.
- 2) Press the  key to enter the parameter modification. The digit on the left will flash.
- 3) Enter the desired value using the keys.  
- 4) Double click  to save the changes. If you press it once, it will not be saved.

**Notes:** a) If  is not pressed 2 times, the operation is not saved, and the display will show the parameter that was being modified again.

b) To modify the parameters  and,  please refer to the Device Calibration section.

## 7. Programming menu structure



## 8. Device calibration

This section is necessary for the device to know the relationship between the cells signal and the weight that is placed into the cabin.

There are two ways to calibrate the device:

### I) NORMAL CALIBRATION (Valid for all types of cells).

#### 1) SETTING ZERO:

a) Position yourself in the **CEr0** menu option.

b) Check that the cabin is empty. Press the key, and then press while the display flashes to confirm the reset. The operation will be confirmed by a countdown. When completed, the display will display the **PES0** parameter.

**Note:** If it is not pressed before the flashing is complete the operation will not be stored and the will display the **CEr0** parameter again.

#### 2) WEIGHT ADJUSTMENT:

a) Position yourself on the **PES0** menu option.

b) Place a known weight into the cabin (It is recommended that it is at least 50% of the nominal load) and press .

c) Enter the value of the weight placed in the cabin by using the keys.

d) To save the value press 2 times (The device will start a countdown and the value is stored). Then the display will show the following parameter. **CELL**

**Note:** If you do not press a second time, the procedure is not stored and the display will display the **PES0** parameter again.


## II) CALIBRATION FOR DIRECT TRANSMISSION CELLS



To perform this procedure, it is not necessary to place a known weight in the cabin.


1) **SETTING ZERO:** (same as normal calibration).


2) **WEIGHT ADJUSTMENT:**

a) Position yourself on the **CELL** menu option.

b) To enter and be able to assign the value press. 

c) Enter the cell value by using the   keys. This value matches the calibration value of the cell performed by the manufacturer.

d) To save the value press  2 times (Value is stored). Then the display will show the following parameter. **CRdE**

**NOTE:** If  is not pressed for a second time, the operation is not stored and the display will display the **CELL** parameter again.

## 9. Alarms

Alarms are the load levels at which relays change state. To adjust them does not require any weight, just program them with the keyboard and specify the resting state.

**AL-C** Load value from which the elevator is full. When the contents of the elevator exceed that value the status of the relay changes and the **MB-D** display will turn on to the figure's head. The **AL-C** value also defines the load required for the analog output to give us **10 V**.

**AL-S** Load value from which the elevator is overloaded. When the contents of the elevator exceed that value the status of the relay changes and the **MB-D** display will indicate both visually and by sound that the elevator is overloaded. If you connect a LED to the display output, the display will turn on intermittently.

**AL-A** Load value from which the auxiliary relay changes state. This relay has no specific function. It can be programmed with any load value and used to light a lamp, activate a buzzer, detect a minimum charge, etc.

**Note:** 1) For alarm setting refer to the "Modifying a Parameter" section.

2) It is recommended to set the sleep state to **ON** because if there is a data loss in the programming the relays will always go into the **OFF** state.

## 10. Auxiliary functions

**CRdE** Chain compensation option: compensates for the difference in weight between floors produced by the chain. The approximate weight of the chain must be specified, taking into account that it must not exceed 50kg. If you leave this function to zero, it will be overridden.


**ConF** Allows you to configure the cabin display output and relay status.

Configuration	Low-power display mode	Cabin display output
ConF s 0	ON	Blinking activation (LED)
ConF 1	ON	Progressive activation (MB)
ConF 2	Off	Blinking activation (LED)
ConF 3	Off	Progressive activation (MB)

## 11. Low-power mode

The display is what consumes the most, but it is not noticeable by the user. That is why a low-power mode has been considered in which the display is turned off by presenting a rotating segment to indicate that it continues to work.

### Cases in which the device enters the low power function.

- 1) When you connect the device to the network, it displays the weight for 3 minutes, and in case no key is pressed it will automatically switch to low power consumption.
- 2) When an hour passes since you have last pressed a key.
- 3) Pressing the  key for 2 seconds when the machine shows the weight. Note: To exit low power mode press any key.






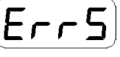


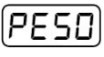
## 12. Electrical features


Model:	<b>VK-3V 230 Vac</b>	<b>VK-3V 115 Vac</b>	<b>VK-3V 48 Vac</b>
Nominal voltage:	230 Vac	115 Vac	48 Vac
Fuse:	100 mA	150 mA	150mA
Nominal current:	60 mA	120 mA	
Nominal frequency:	50-60 Hz		

## 13. Fuse change

- 1) Disconnect the device.
- 2) Open the unit by removing the 5 screws that hold the back cover.
- 3) Remove the circuit from the box and replace the fuse, which is located in a vertical bayonet fuse holder next to the transformer. Reassemble the circuit and the back cover.

## 14. Error codes and solutions

	Description	Action
	Improper connection. Sensor faulty or cable damaged.	Check the cell cables and/or connection to the device.
	Negative signal overflow. The sensor is working in the opposite direction or it is incorrectly connected.	Check the installation sensor.
	Positive overflow. The sensor is supporting a load greater than the nominal value.	The load cell may be damaged. Replace the load cell with a higher nominal value.
	Polarity error. It is detected when the adjustment has been made with a known weight and the polarity of the cell is changed or the weight is not present in the cab during adjustment.	Check the cell connection and re-adjust zero and weight.
	Short circuit in the output of the cabin display MB.	Locate and remove the short circuit. In version 24 Vdc this error is not given. -Turn off the device and plug it back in so that  disappears from the display.
	Data loss in memory.	Reset the unit..
	Very low sensitivity.	- The unit has not received any measures when the  parameter has been adjusted. - Repeat the zero calibration and adjust the weight.

**Note:** When an error occurs, all alarms are triggered, and the elevator remains locked. If the error occurs, the  relay contacts will be opened (RELE - OFF).

## 15. Quick programming guide



This quick guide helps us to configure the most important parameters of the device. Before starting the process, the following process must be performed.

- I. **Take the cabin to the lower floor** and "jump" inside the elevator, this will loosen the frictions on the guides.
- II. **Install the sensor and connect it to the device.**

To connect the sensor properly to the unit please read the Installation section.

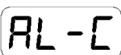
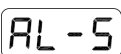
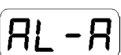
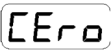






- a) To find the parameter you want to change, press  successively, and to access that parameter by clicking



- b) Modify the value using the  and  keys.

- c) To save it press  2 times

### III. Setting up the most important parameters

1. Set in  the load value, from which you want the full alarm to be triggered.
2. Set in  the load value, from which you want the overload alarm to be triggered.
3. Set in  the load value, from which you want the auxiliary alarm to be triggered (if used).
4. Perform a zero to the device with an empty elevator:
  - Position yourself in the  parameter.
  - Press   to start a countdown.
5. Adjusting the weight:
  - Placing a known weight in the cab (at least 50% of the nominal load)
  - Specify in  the load value that has been placed in the cabin by using the  and  keys and, press  twice to save it, the device will start a countdown.

**Note:** It is important to perform the zero adjustment before performing the weight adjustment operation.

**Dinacell Electronic Sl.** has all rights reserved.

Dinacell Electrónica S.L. reserves the right to add, modify and/or delete content of the document without prior notice. The content indicated here should be used as general product information. It should not be interpreted as a guarantee of quality or durability.

**Dinacell Electronic Sl.**

Pol. Ind. Santa Ana C / Torno No. 8 – 28522 - Rivas Vaciamadrid

- Madrid Tel.: +34 91 300 14 35 s Fax.: +34 91 300 1645

[www.dinacell.com](http://www.dinacell.com)

D1304-00  
23.07.2020