

Safety Bollard Controller

IAIJM-01

Industrial IoT Controller

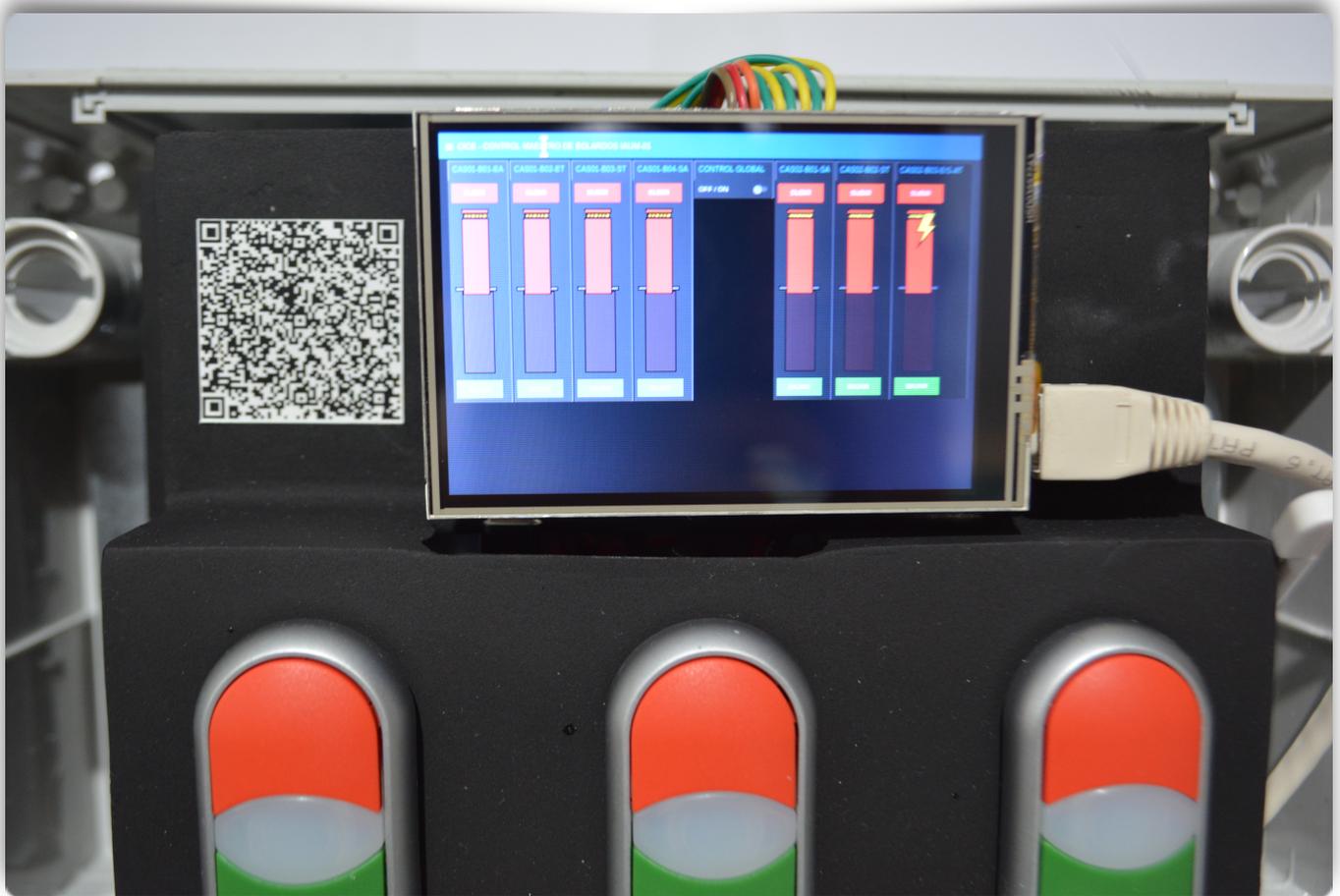


BOLLARD CONTROLLER IAIJM-01

INTRODUCTION



The IAIJM-01 Bollard Controller is an electronic device that allows the control of up to three Bollards that support external control via mechanical contact (dry contact). The control of the bollards is carried out through a web page that graphically shows the state in which each Bollard is and with a single click allows its control. This control can be remote from any computer that has access to the IP address where the controller is located or can also be controlled from the device itself since it has a small Touch Screen that shows the



same control page. The Bollard Controller is implemented in a Raspberry Pi 3B pocket computer and the control software is based on Node Red, which was developed by IBM, is currently open source and is used among many other things for the implementation of the Internet of Things (IoT). This allows the connection of many controllers to each other, facilitating the control of Bollards from a single and simple interface.

INSTALLATION REQUIREMENTS

AIR CONDITIONING

It is recommended that all controllers to be installed be free of dust, within specified limits of temperature and humidity, mainly within a computer equipment SITE.

It is recommended that the equipment be used at a temperature of $21^{\circ}\text{C} \pm 1^{\circ}\text{C}$ and a relative humidity of $50\% \pm 5\%$.

ELECTRIC POWER

It is recommended that the equipment has a dedicated power line and preferably regulated voltage. The equipment supports an input voltage of 110 / 220VAC +/- 15% @ 50/60 Hz.

The device has a polarized power cable for a voltage of 110 VAC.

INSTALATION

CAUTION: THE EQUIPMENT MUST BE INSTALLED BY QUALIFIED PERSONNEL.

- 1.- The area to be installed must be dry and free of dust.

2.- Use the drill guide supplied with the equipment and mark the four points to be drilled on the wall. Perform the perforations and place 1/4 "holes in each hole.

3.- Remove the cover of the equipment and place this on the perforations. Fix it to the wall using 8x25mm screws. ATTENTION: DO NOT TIGHTEN IN EXCESS.

4.- Route all cables from each Bollard to the controller and identify each one.

4.- Using a clearing screwdriver, install the cables of each Bollard using the CONNECTION DIAGRAM supplied with the equipment.

5.- Route and terminate the LAN network cable and insert it into the RJ45 connector of the Raspberry computer (lower right side).

6.- BEFORE ENERGIZING THE EQUIPMENT, VERIFY ALL THE CONNECTIONS AGAIN.

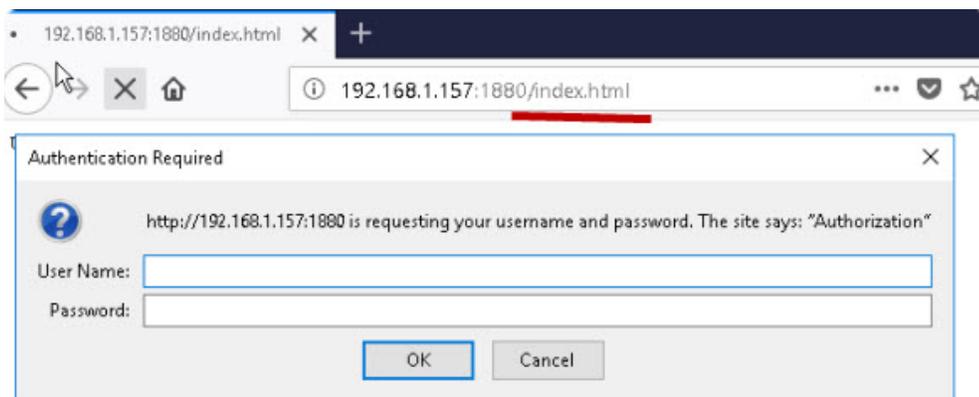
7.- Connect the equipment to the power supply and verify that it turns on correctly. NOTE: The boot process of a Raspberry computer takes a few minutes and this can be observed on the TOUCH screen of the computer.

READY! Your equipment is ready to operate.

REMOTE OPERATION

When you energize your equipment, the Bollard control software automatically starts and the only thing you need is to access the control website that the device has programmed. This version of the client is formed by three boxes, controlling a total of seven Bollards. The IP addresses to access the control screens are:

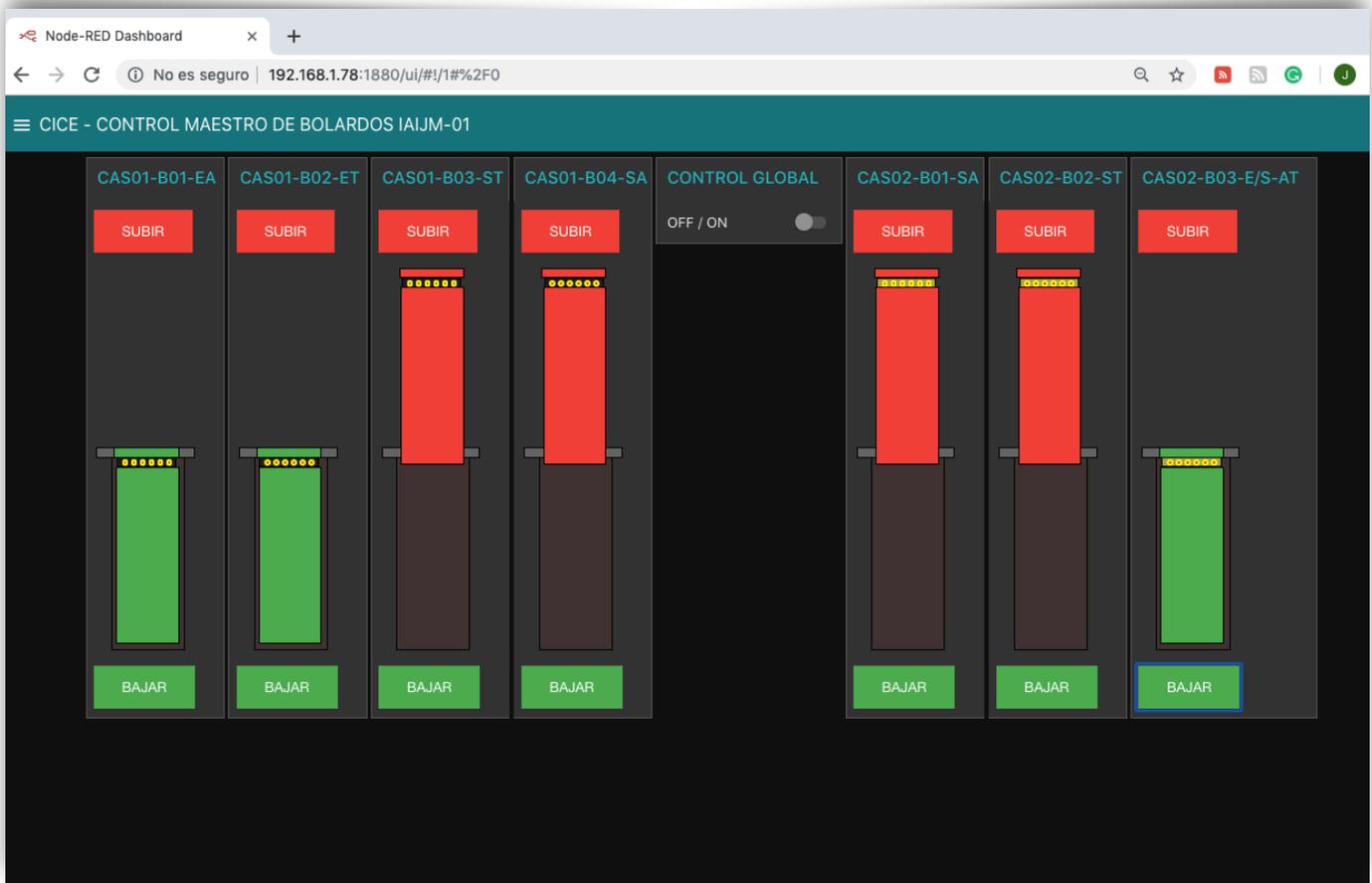
`http://IP_CLIENT:1880/ui//#!/1`, which upon entering for the first time asks us for a Username and Password:



The Users and Passwords assigned to the controller boxes are:

IAIJM-01	BOX 01	BOX 02	BOX 03
User	admin1	admin2	admin3
Password	Pass1	Pass 2	Pass 3

After entering the username and password corresponding to the first box, the following screen should be displayed:



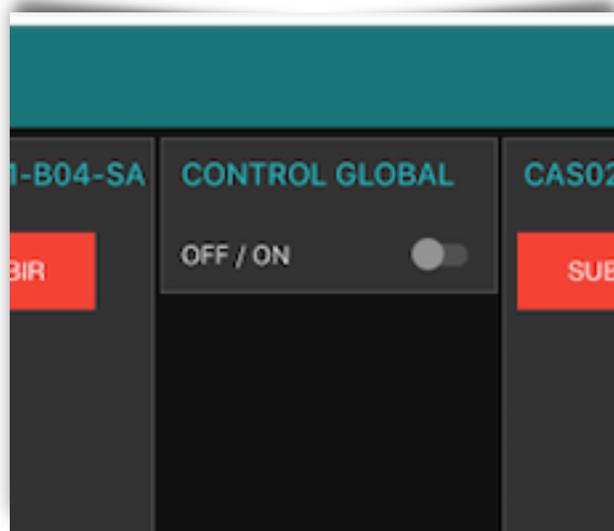
This page shows the Master Control screen of all Bollards and is programmed only on this equipment. From this screen the status of each of the seven Bollards is displayed and each one of them is also controlled, so it is not necessary to open the screens of the rest of the controllers. The two remaining teams have the following addresses:

<http://xxx.xxx.xxx.xx2:1880/ui/#!/1> : Access the second controller device, which operates the bollard: CAS01-B04-SA.

<http://xxx.xxx.xxx.xx3:1880/ui//#!/1> : Access the third controller device, which operates bollards: CAS02-B01-SA, CAS02-B02-ST y CAS02-B03-E/S-AT.

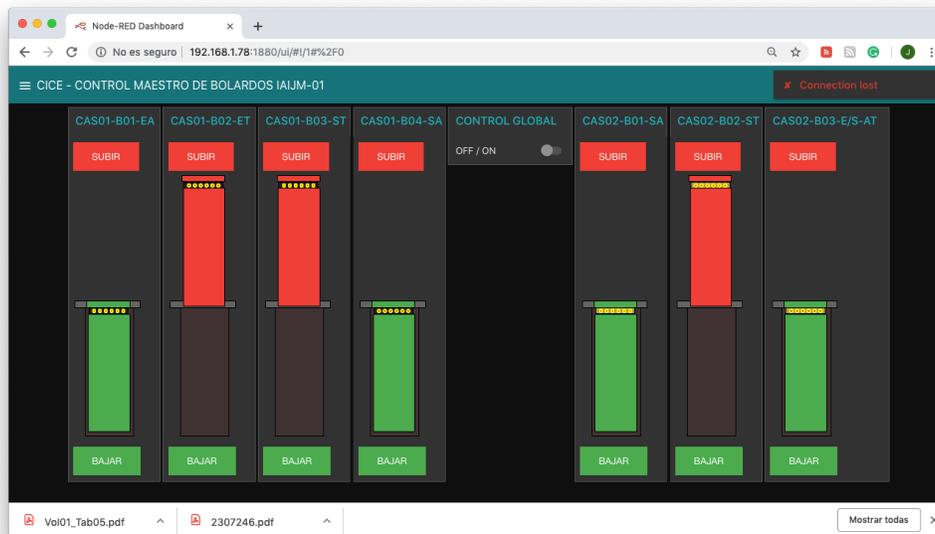
By clicking on any of the **UP** or **DOWN** buttons, the control commands are sent to the respective Bollard.

The screen has a **GLOBAL CONTROL** switch which allows up and down all Bollards Simultaneously.

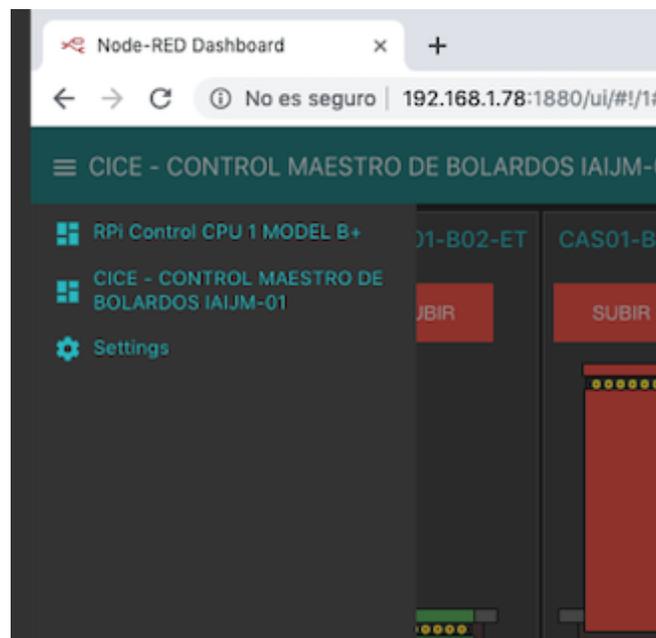


CONNECTION LOST

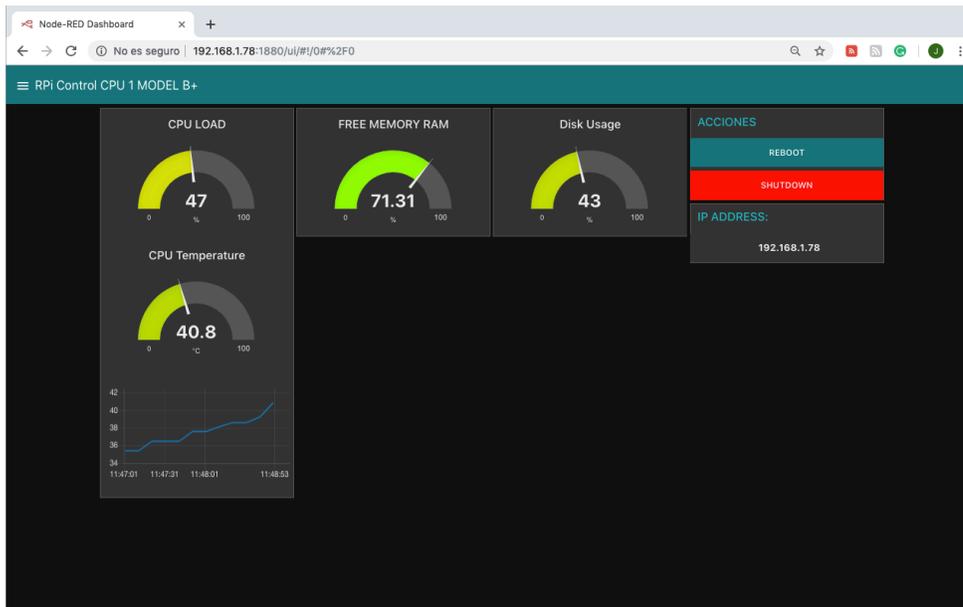
If you do not have access to the website of the controller due to loss of network connection, the legend **x Connection Lost** will be displayed on the upper right side of the screen.



In the upper left part of the screen there is an icon that allows us to display a menu in which we can select two internal information screens of the Raspberry computer.



If the **RPi Control CPU** option is selected, a screen will appear indicating the status of the Raspberry computer: CPU usage, Temperature, Free Memory, Disk Capacity, Restart and System Shutdown.



If the **Settings** option is selected, a screen appears that allows us to change the IP address, Router and DNS:

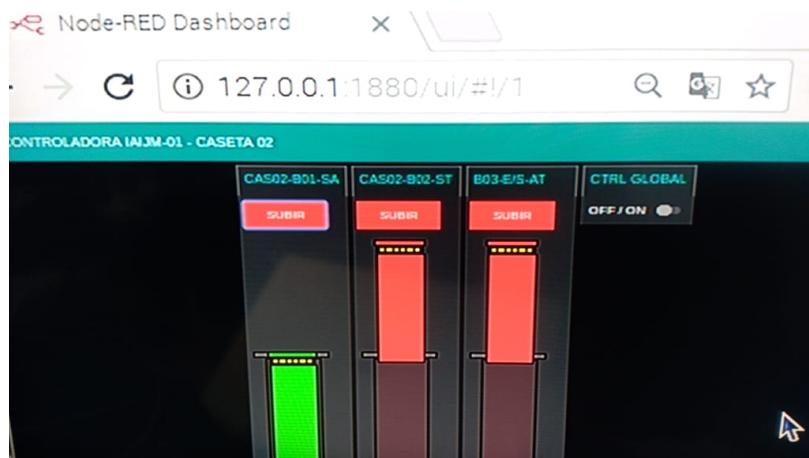
The screenshot shows the 'Settings' page with a modal window for 'IP Settings'. The 'Static ip' toggle is set to 'false'. A message states: 'To store the new value, once edited, press ENTER or TAB'. The configuration fields are: 'Indirizzo IP' (192.168.0.10/24), 'Router' (192.168.0.1), and 'DNS' (192.168.0.1 8.8.8.8 fd51:42f8:caae:d92e). 'REBOOT' and 'UPDATE' buttons are at the bottom of the modal.

LOCAL MODE

At the top of the TOUCH screen of the Raspberry computer, the navigation menu where the web browser icon is located is displayed:

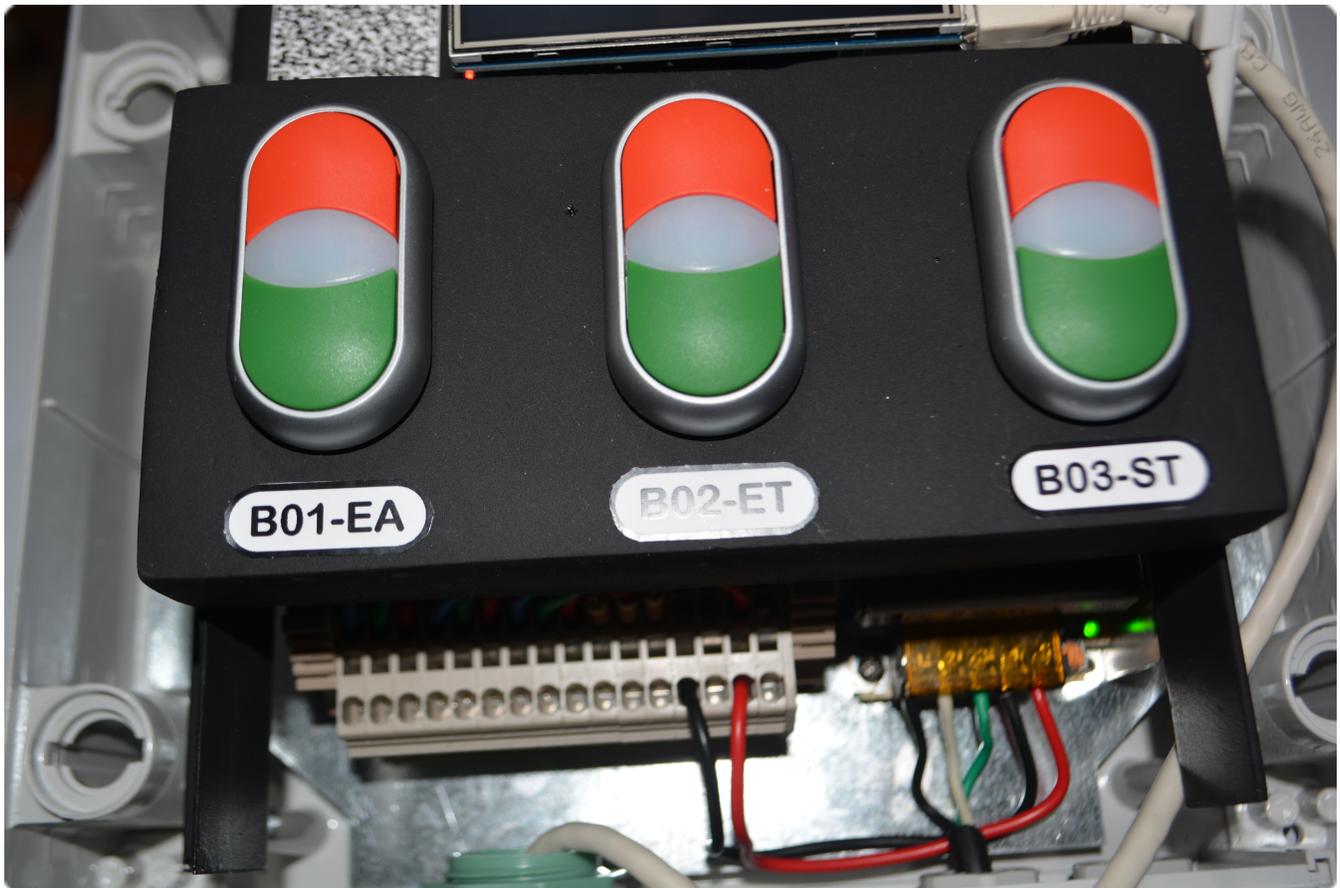


If we select it, when it opens it asks us the option to restore the previously viewed pages, Select the Accept option and the Bollard control page will be displayed:



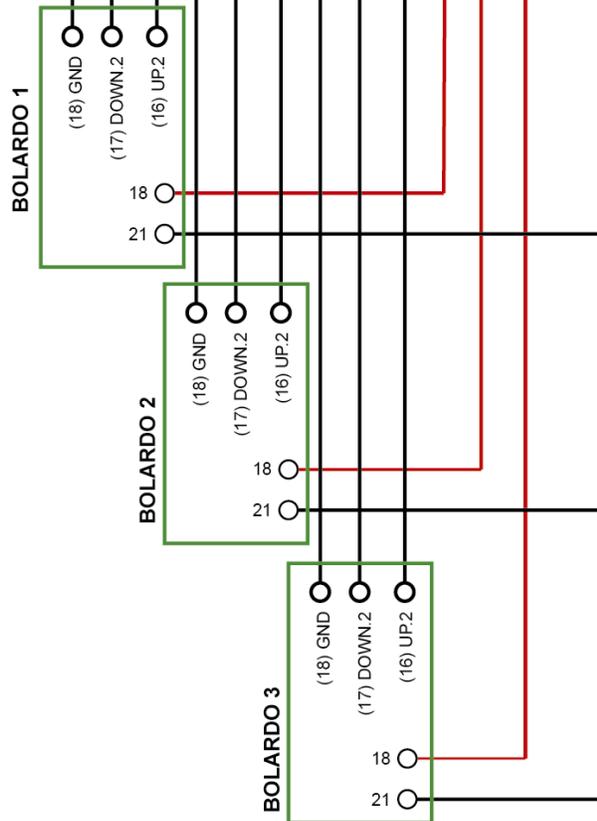
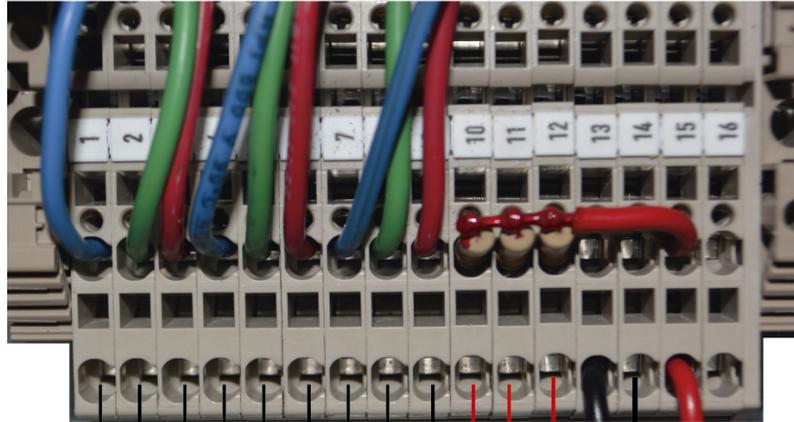
PUSH-BUTTONS

In the event of a computer failure or a loss of communications, it is possible to operate the Bollards manually. For this, each Controller has three sets of selector buttons. The Red button is for UP the Bollard and the Green button is for DOWN the Bollard.



WIRING

CONEXIONES



SIMBOLOGIA:

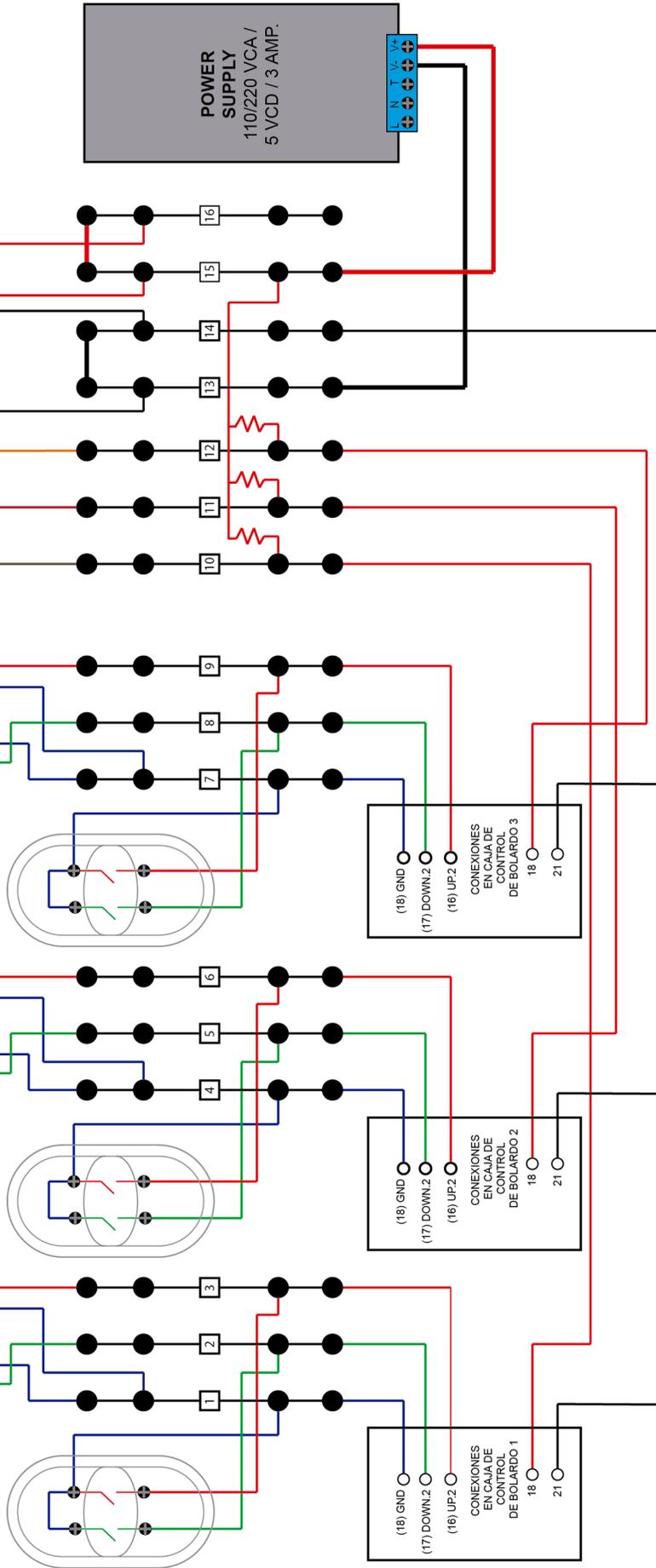
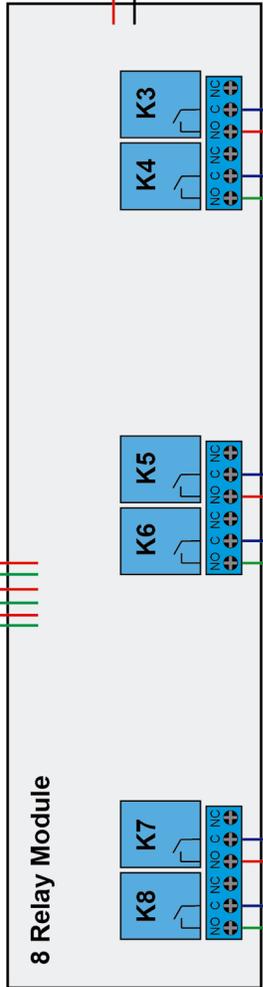
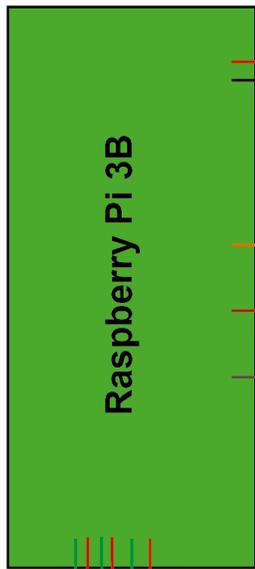


DIAGRAMA DE CONEXIONES - CONTROLADORA DE BOLLAROS IAIJM-01. versión 1.1